submitted as instructed in the **ADDRESSES** section.

Lesley A. Field,

Acting Chair, Cost Accounting Standards Board.

Cost Accounting Standards Board Request for Information

48 CFR 9903.201–1(b)(14)

Exemption From Cost Accounting Standards for Contracts Executed and Performed Entirely Outside the United States

Background

Purpose

48 CFR 9903.201–1(b) is a list of categories of contracts and subcontracts that are exempt from CAS requirements (CAS exemptions). Paragraph (14) of this provision provides an exemption for ''[c]ontracts and subcontracts to be executed and performed entirely outside the United States, its territories, and possessions'' (overseas exemption). The purpose of this request for information is to explore whether this CAS exemption should be retained, eliminated or revised.

The History of the Exemption

The original CAS Board (CASB) was established by Section 2168 of the Defense Production Act of 1950 (DPA). Section 2163, ''Territorial application of Act,'' of the DPA provided that Sections 2061 through 2171 (which includes the authority for the CASB) ''shall be applicable to the United States, its Territories and possessions, and the District of Columbia'' (United States). Since the applicable DPA provisions were applicable only within the United States as defined, the CASB's rules, regulations and CAS were only applicable within the United States, as specifically defined, and thus, they were not applicable overseas.

On September 24, 1973, Defense Procurement Circular No. 115 amended ASPR (Armed Services Procurement Regulation) 3–1204 to provide for this CAS exemption in contracts as follows:

3–1204 Contract Clause. The Cost Accounting Standards clause set forth in 7–104.83 shall be inserted in all negotiated contracts exceeding $100,000, except when the price is based on established catalog or market prices of commercial items sold in substantial quantities to the general public or is set by law or regulation. In addition to the foregoing exceptions, the clause shall not be inserted in the following contacts:

* * * * *

(vi) contracts which are executed and performed in their entirety outside the United States, its territories and possessions [(overseas exemption)].

Additional historical background is provided in the SDP published at 70 FR 53977 (September 13, 2005) which previously invited public comments on whether the overseas exemption should be revised or eliminated.

In 1980, the CASB ceased to exist under the DPA. In the absence of the CASB, the Department of Defense (DOD) took over the responsibility for the administration of CAS. DOD administered CAS until the CASB was re-established in 1988 under the authority of the OFPP Act.

In 1991, the re-established CASB reviewed the rules and regulations applicable to the administration of CAS. FAR 30.201–1(14), the exemption from CAS for contracts and subcontracts executed and performed entirely outside the United States, its territories and possessions, was part of that review. The re-established CASB retained the overseas exemption and incorporated it into its current recodified rules and regulations at 48 CFR 9903.201–1 on April 17, 1992 (57 FR 14148.)

More recently, in response to the 2005 SDP regarding the overseas exemption, the CASB received three public comments in response. All the comments offered arguments for why the CASB should retain the exemption; none of the comments supported any revision to, or an elimination of, the overseas exemption. After reviewing and discussing the comments to the SDP, the CASB discontinued its review of the overseas exemption. (73 FR 8259, February 13, 2008.) While the CASB did not agree with all of the views expressed, it did agree with the conclusion not to delete or revise the overseas exemption.

Questions for Consideration

The CASB is soliciting information and comments on the overseas exemption from interested parties. In framing your responses, be aware that contracts and subcontracts that are executed and performed entirely outside of the United States can be executed and performed by entities with a variety of legal statuses. The focus of this request for information is with respect to contracts that would be otherwise subject to CAS, but for the exemption because the contract is executed and performed entirely overseas. Thus, the class of affected contractors is likely to be U.S. concerns and other concerns authorized to do business in the United States.

More specifically, the CASB is particularly interested in information and comments related to the following questions:

1. What is your experience with the overseas exemption:

a. As a procuring entity (*e.g.,* procurement office, higher tier contractor) awarding contracts/subcontracts; or

b. As the contractor/subcontractor claiming the applicability of the overseas exemption?

2. How often (number of actions, dollar amounts, by fiscal year) has the overseas exemption been claimed?

3. If the overseas exemption is eliminated, what problems will that cause you:

a. As a procuring entity (*e.g.,* procurement office, higher tier contractor) awarding contracts/subcontracts; or

b. As the contractor/subcontractor claiming the applicability of the overseas exemption?

4. How does the overseas exemption help, or not help, to implement the CASB's mandate ''to achieve uniformity and consistency in the cost accounting standards governing measurement, assignment, and allocation of costs to contracts with the United States''?

5. What are the arguments for, and against, the requirement in the overseas exemption to require execution of the contract overseas?

6. What are the arguments for, and against, the requirement in the overseas exemption to require performance of the contract overseas?

[FR Doc. E9–9359 Filed 4–22–09; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 217

[Docket No. 090206146–9332–01]

RIN 0648–AX32

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to the Port of Anchorage Marine Terminal Redevelopment Project

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

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS has received an application from the Port of Anchorage

(herein after ''POA'') and the U.S. Department of Transportation Maritime Administration (herein after ''MARAD'') for issuance of regulations governing the take of small numbers of marine mammals incidental to the Port's Marine Terminal Redevelopment Project (herein after ''MTRP''), Anchorage, Alaska. The MTRP includes expanding the current POA by 135 acres and replacing and expanding the current dock to accommodate additional berths. Construction activities which have the potential to harass marine mammals include in-water pile driving and demolition of the existing dock. Species which could potentially be taken from the MTRP include the beluga whale (*Delphinapterus leucas*), harbor seal (*Phoca vitulina*), harbor porpoise (*Phocoena phocoena*), and killer whale (*Orcinus orca*).

DATES: Comments and information must be postmarked no later than May 26, 2009.

ADDRESSES: You may submit comments by any one of the following methods:

• Electronic Submissions: Submit all electronic public comments via the Federal eRulemaking Portal: *http://www.regulations.gov*.

• Hand delivery or mailing of paper, disk, or CD-ROM comments should be addressed to P. Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910–3225.

Instructions: A copy of the application containing a list of references used in this document, Demolition Plan, Final Marine Mammal Monitoring Report for 2008, the Final 2008 Environmental Assessment (EA), and the Draft Supplemental Environmental Assessment (SEA) may be obtained by writing to the above address, by telephoning the contact listed under **FOR FURTHER INFORMATION CONTACT**, or on the Internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*. Documents cited in this proposed rule may also be viewed, by appointment, during regular business hours at the above address. To help NMFS process and review comments more efficiently, please use only one method to submit comments. Attachments to electronic comments will be accepted in Microsoft Word, Excel, WordPerfect, or Adobe PDF file formats only.

All comments received are public record and will generally be posted to *http://www.regulations.gov* 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. To submit anonymous comments, enter N/A in the required fields.

FOR FURTHER INFORMATION CONTACT: Jaclyn Daly, NMFS, 301–713–2289, ext 151.

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1361 *et seq.*) directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) if certain findings are made and regulations are issued or, if the taking is limited to harassment, notice of a proposed authorization is provided to the public for review. 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].

Authorization for incidental takings may be granted for up to 5 years 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 certain subsistence uses, and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such taking 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.''

On July 14, 2008, NMFS issued a one-year incidental harassment authorization (IHA) to the POA/MARAD for takes of marine mammals incidental to the MTRP (73 FR 41318, July 18, 2008). Intent to promulgate regulations was included in the March 18, 2008 **Federal Register** notice for the proposed IHA (73 FR 14443, March 18, 2008); however, on November 20, 2008, NMFS received an updated application from the POA/MARAD specifically for regulations. The application included, among other things, information on the demolition process of the existing dock, detailed take calculations, results from marine mammal monitoring conducted under the IHA, results of a more robust acoustic study, and additional mitigation. NMFS published a notice of receipt of application and solicitation for public comments on the application (73 FR 77013, December 18, 2008). NMFS is now inviting comments on the following proposed regulations for taking of marine mammals as described in this notice.

Summary of Request

On November 20, 2008, NMFS received an application from the POA/MARAD for regulations and subsequent Letters of Authorization (LOAs) to take, by Level B harassment only, marine mammals incidental to the MTRP. The POA/MARAD have been in discussions with NMFS Office of Protected Resources Permits Division and Alaska Regional Office (AKR), Anchorage, since inception of the MTRP (2003) to ensure compliance with the MMPA and to reduce impact to marine mammals and their habitat. In 2008, NMFS issued the POA/MARAD a one-year IHA authorizing incidental take of marine mammals from pile driving (73 FR 41318, July 18, 2008). The IHA, which expires on July 15, 2009, authorizes the take, by Level B harassment only, of 34 beluga whales, 20 harbor seals, 20 harbor porpoise, and 5 killer whales. To date, marine mammal observations (submitted by trained, NMFS approved observers on-site at the POA and a second independent scientific marine mammal monitoring team) indicate that the effects analysis in NMFS 2008 Environmental Assessment (EA) on the Issuance of an Incidental Harassment Authorization and Subsequent Rulemaking for Take of Small Numbers of Marine Mammals Incidental to the Port of Anchorage Terminal Redevelopment Project, Anchorage, Alaska is appropriate and justifiable as pile driving noise does not appear to impact beluga whale surface behavior (see Impacts to Marine Mammals). The POA/MARAD's LOA application, supporting documents, NMFS' 2008 EA and Supplemental EA (SEA) can be found on the NMFS Protected Resources Permits website at *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*.

Specified Activity

According to the application, the MTRP is designed to upgrade and expand the existing POA facilities by removing and replacing aging and obsolete structures and providing

additional dock and backland areas, without disruption of maritime service during construction. The POA serves 85 percent of the population within the State of Alaska by providing 90 percent of all consumer goods and is an economic engine for the State of Alaska. The rehabilitation and expansion of the POA is critical to improving national defense capabilities and provides additional land and facilities necessary to support military deployments during and after construction. The POA is one of nineteen nationally designated Strategic Ports with direct calls scheduled by the Department of Defense for critical deployments in-and-out of Alaska's military bases and training facilities (Fort Greely, Eielson Air Force Base, Fort Wainwright, Fort Richardson, and Elmendorf Air Force Base [EAFB]) to Iraq, Afghanistan, and other defense theaters around the globe. POA operations began in the early 1960s with little build-up in the past fifty years and is currently under-serving Alaska's transportation system as its primary hub.

Located within the Municipality of Anchorage (MOA) on Knik Arm in upper Cook Inlet, the existing 129–acre POA facility is currently operating at or above sustainable practicable capacity for the various types of cargo handled at the facility. In addition, the existing infrastructure and support facilities are substantially past their design life, have degraded to levels of marginal safety, and are in many cases functionally obsolete. The MTRP will replace, upgrade, and expand the current POA facility to address existing needs and projected future needs, allowing the POA to adequately support the economic growth of Anchorage and the State of Alaska through 2025 and beyond. Upon completion, the phased MTRP will add 135 acres of usuable land to the current 129 acre POA (total area of 264 acres). The completed marine terminal at the POA will include: seven modern dedicated ship berths; two dedicated barge berths; rail access and intertie to the Alaskan railbelt; roadway improvements; security and lighting improvements; slope stability improvements; drainage improvements; modern shore-side docking facilities; equipment to accommodate cruise passengers, bulk, break-bulk, roll on/roll off (RO-RO) and load on/load off (LO-LO) cargo, general cargo short-term storage, military queuing and staging, and petroleum, oils, and lubricants (POL) transfer and storage; and additional land area to support expanding military and commercial operations.

Creation of over 65 of the 135 unimproved acres have been completed to date in preparation of accepting new container cranes and relocating shipping operations by the year 2010: thus far, 26.8 acres were added in 2006; 22.4 acres were added in 2007; and 18.4 acres were added in 2008. Future efforts will add 8.4 acres in 2010; 14.15 acres will be added in 2011; 29.85 acres will be added in 2012; and 15.35 acres in 2013. NMFS and environmental organizations have worked with the POA/MARAD to ensure minimal impact to natural resources and were heavily involved in the U.S. Army Corps of Engineers (USACE) scoping process for issuance of the POA/MARAD's USACE Section 404/10 Permit POA–2003–502–N (located in Appendix B of the LOA application). As a result, numerous mitigation measures to protect natural resources, including beluga whales, habitat, and fish are contained in that USACE permit.

In a letter dated May 9, 2006, NMFS determined that non pile driving related in-water construction activities (i.e., construction of a dike, discharge, settlement and compaction of fill material, installation of utilities, and paving within a 27–acre intertidal area) would not result in takes of marine mammals and therefore did not require an MMPA authorization if certain operational procedures and mitigation measures were implemented by the POA/MARAD. In contrast, NMFS determined that an incidental take authorization was necessary for in-water pile driving operations and issued the aforementioned IHA in July 2008 after NMFS concluded that all required MMPA determinations were met. Marine mammal takes from in-water construction activities, specifically in-water pile driving and demolition of the existing dock structure, would be authorized by this proposed rulemaking.

The POA/MARAD have submitted a detailed schedule of in-water construction activities. Please refer to Table 1–1 and Section 1.3.1. in the application for a description. In general, pile driving would occur from April to October/November when sea ice is absent but could start earlier or later depending on presence of sea ice. Pile driving cannot occur during winter months due to the danger of floating sea ice. NMFS suggested this option to the POA early in discussions about the MTRP but it is clear installing piles during winter is hazardous to workers' safety and could damage material. The schedule in Table 1–1 of the application may change slightly based on unanticipated construction delays. Potential causes of schedule delay might include: changes in planned construction sequencing due to changes in commercial or military maritime operations, changes in USACE harbor dredging schedules to maintain navigation, longer than anticipated settlement and consolidation time for foundation soils or other unanticipated site conditions, national security requirements prohibiting or delaying construction access, delays in steel production or longer than anticipated delivery or availability of construction materials, changes in planned funding or financing, prolonged work stoppages due to presence and protection of marine mammals or other regulatory actions affecting construction schedules, prolonged shut downs due to inclement weather, or other force majeure causes.

Pile Driving

Open Cell Sheet Pile Installation

The new bulkhead waterfront structure will be comprised of conjoining face and tail sheet-pile cells, forming a row of U-shaped open cell sheet pile (OCSP) structures, with the face placed parallel to and approximately 400 ft (122 m) seaward of the existing dock face. The face of each OCSP cell is curved outward, creating a scalloped surface (see application for figures of sheet pile design). The finished marine terminal will abut and tie into the Flint Hills open cell sheet pile retaining wall currently on the adjacent Railroad property; however, the existing Flint Hills structure is not part of the MTRP.

Individual face sheets are approximately 20 inches wide horizontally, 0.5–inch thick, and up to a maximum of 90 ft in vertical length; 17 sheets are required for each cell face. At each junction between cells, a tail wall is constructed and anchored to the face sheets with a wye connector. The tail walls are spaced 27.5 ft apart. The arc along the U-shaped face is approximately 28 ft. The face sheets will be up to 80 ft in length in the areas with -35 ft berths and up to 90 ft long in the -45 ft berths. The tail wall sheets vary from 30 ft to 90 ft long, but generally are 70 ft for the primary tail walls and 30 ft for the tail wall extensions. Approximately 30 linear ft of OCSP wall could be constructed in a 10-hour period.

The face and immediately adjoining primary tail walls are installed using vibratory or impact pile driving procedures from either land-based or barge-based pile driving equipment. The cell is then filled to design elevations with the earthen material, allowing the tail wall extensions to be installed with

land-based equipment. The dock face will be constructed in areas that are completely ''submerged'' (below low tide). Primary tail walls are installed in areas that are below low tide and in areas that are tidally influenced or ''intertidal'' (in-water during high tide and out of the water during low tide), and areas completely out-of water. Only driving piles installed in-water in the submerged and intertidal zones has the potential for impacting marine mammals.

Two main methods used to install piles are impact and vibratory pile driving. An impact hammer is a large metal ram that is usually attached to a crane. A vertical support holds the pile in place and the ram is dropped or forced downward. The energy is then transferred to the pile which is driven into the seabed. The ram is typically lifted by mechanical, air steam, diesel, or hydraulic power sources. The POA/MARAD have indicated that an impact hammer similar to Delmag D30–42 diesel, 13,751 lb hammer with a maximum rated energy of 101 kilojoules (kj) will likely be used; however, this may be slightly altered based on the contractor. Driving piles using an impact hammer generally results in the greatest noise production; however, this noise is not constant and is considered as a ''multiple pulse'' source by NMFS. NMFS' current acoustic threshold for pulsed sounds (e.g., impact pile driving) is 180 and 190dB re 1 microPa for Level A harassment of cetaceans and pinnipeds, respectively, and 160 dB re 1 microPa for Level B harassment.

Vibratory hammers install piles by applying a rapidly alternating force to the pile by rotating eccentric weights about shafts, resulting in a downward vibratory force on the pile. Vibratory hammers are attached to the pile head with a clamp and are usually hydraulically powered. The vertical vibration in the pile disturbs or ''liquifies'' the soil next to the pile causing the soil particles to lose their frictional grip on the pile. The pile moves downward under its own weight plus the weight of the hammer. This method is very effective for non-displacement piles such as sheet piles, H-beams, and open-end pile or caissons. NMFS has established a 180/190dB threshold for Level A harassment; however, no Level B threshold is currently implemented across the board due to the immense variability in acoustic behavioral studies. In the 2008 IHA, NMFS established a threshold of 120dB for vibratory pile driving; however, acoustic studies in Knik Arm provide overwhelming evidence that background levels around the POA are consistently at or above this level, in absence of POA related construction. Therefore, NMFS proposes to implement a 125dB threshold for Level B harassment for vibratory pile driving.

The type of hammer used depends on subsurface conditions and the effort required to advance the sheet pile to final elevation. The difference between the top of adjacent sheets can be no more than 5 feet at any time. This means that the sheets will be methodically driven in a stair-step pattern and the hammer will move back and forth along the cell until all sheets are driven to depth. This stair-step driving pattern results in short periods of driving. For the vibratory hammer, driving is in progress from less than 1 to approximately 3 minutes followed by a minimum 1- to 5-minute period with no driving, while the vibratory hammer is moved and reset. When the impact hammer is being used, driving takes place from less than 1 to 20 minutes, followed by a period of no driving, while the hammer is moved and reset (between 1 and 15 minutes). Where driving conditions allow, two or three adjacent sheet piles may be driven simultaneously (the grips on the vibratory hammer allow one to three sheets to be driven at a time). Actual driving time is determined by local soil conditions. The estimated number of pile driving hours, by method, per year is outlined in Table 1. The POA/MARAD estimate that vibratory pile driving will be the main method of pile installation (75 percent of the time) but may use impact pile driving when substrate is too difficult for a vibratory hammer (25 percent of the time). The POA/MARAD's USACE permit and current IHA require that all piles be driven with the vibratory hammer and only use the impact hammer when vibratory methods are not sufficient to achieve proper depth.

TABLE 1: PILE DRIVING LOCATION, TIMELINE, AND ESTIMATED HOURS FOR THE PORT OF ANCHORAGE MARINE TERMINAL REDEVELOPMENT PROJECT.

Year	Location	Pile Type	Number of Piles	Hours of Vibratory Pile Driving	Hours of Impact Pile Driving
2009	Barge Berth North Extension	fender pile OCSP temporary pile	11 4,106 268	8 496 17	3 235 0
2010	North Extension South Extension	fender pile OCSP temporary pile fender pile	82 1,831 145 36	46 216 9 20	15 103 0 7
2011	North Replacement	OCSP temporary pile	2,718 145	325 9	155 0
2012	North Replacement South Replacement	OCSP temporary pile OCSP temporary pile	2,718 145 3,034 163	325 9 366 10	155 0 173 0
2013	North Replacement South Replacement	fender pile OCSP temporary pile	94 3,034 163	53 366 10	18 173 0
Prior to July 15, 2014	South Replacement	fender pile	41	23	8

TABLE 1: PILE DRIVING LOCATION, TIMELINE, AND ESTIMATED HOURS FOR THE PORT OF ANCHORAGE MARINE TERMINAL REDEVELOPMENT PROJECT.—Continued

Year	Location	Pile Type	Number of Piles	Hours of Vibratory Pile Driving	Hours of Impact Pile Driving
Post July 15, 2014	South Replacement	fender pile	41	23	8
TOTAL				2,331	1053

Demolition of the Existing Dock

Demolition of the existing, active dock is currently scheduled in two phases to begin in 2010 and could continue intermittently through 2013, depending on the demolition approach and sequencing selected. Phase 1 of dock demolition, scheduled for 2010/2011, will focus on the northern portion of the existing dock (approximately 175,000 sq ft) and includes Terminals 2 and 3. Phase 2 would include the southern portion of the dock (approximately 225,000 sq ft) which is scheduled for demolition during 2011/2012. Phase 2 includes Terminal 1 and the petroleum, oils, and lubricants (POL) Terminal 1 and 2. The existing dock is inside the footprint of the planned MTRP; therefore, all concrete debris from demolition would be in areas already planned to be filled in during the construction of the new dock. All demolition activities would be subject to appropriate marine mammal mitigation measures (see Mitigation section).

The existing dock encompasses approximately 400,000 sq ft of surface area and is comprised of an 18 to 24–inch thick steel reinforced concrete deck supported by over 4,000 steel piles. Select structural portions of the concrete deck are up to 3½ to 4 feet thick. Pile diameters range from 24 to 48 inches with a wall thickness of 7/16 inch and are filled with gravel. The existing dock structure includes three obsolete container cranes, a three-story combination administration building and warehouse at the southern portion of the dock, steel trestles, catwalks, fuel piping, and miscellaneous utility appurtenances. POA expansion activities will include the demolition of the existing dock structure to allow the placement of gravel fill to extend the functional wharf line approximately 400 feet beyond the existing dock face.

The Port submitted a demolition plan to NMFS that outlines three possible methods for demolition and mitigation measures for each option. These include (1) in-water demolition by mechanical means using chipping hammers, (2) out-of-water demolition using mechanical means and explosives, and (3) out-of-water demolition by mechanical means only. Demolition approaches for removal of the existing dock structures were reviewed with regard to technical feasibility, cost, and ability to minimize Level B harassment takes of marine mammals. Although the most economical and fastest approach includes combining in-water mechanical means and blasting during winter months, the potential adverse effects to marine mammals of blasting in-water would necessitate extensive mitigation. Therefore, in-water blasting has been eliminated from further consideration.

The specific method of choice cannot be determined at this time due to the need for flexibility in the construction bidding process and to facilitate integration of the demolition work into the other components of the MTRP, therefore, all three methods are proposed with appropriate, respective mitigation. A detailed description of methodology can be found in the POA/MARAD's Demolition Plan posted on the NMFS website listed above (see **ADDRESSES**) and are summarized here.

In-Water Demolition by Mechanical Means Only- Option 1

Option 1, dock demolition by mechanical means, requires breaking or sawing the existing concrete away from the steel support structure and cutting or breaking the steel piles in summer and winter. Concrete demolition would be accomplished using hydraulic chipping hammers, concrete cutter jaws and crushers, and shears mounted to large tracked excavators. Additional equipment would be used to grab, cut, or load salvaged steel during demolition activities. Demolition of the reinforced concrete deck would be performed by excavators working from the surface of the deck. Large excavators with hydraulic hammers or concrete jaws would chip or break the concrete away from the steel support structure and internal reinforcing steel. The concrete would be broken into small pieces and dropped by gravity to the sea floor below, well within the final MTRP footprint. The concrete debris on the sea floor would be encapsulated with clean fill material and left in place. Alternately, a subcontractor may choose to saw cut the concrete deck into sections and use cranes or large excavators to remove the sections and transport them to shore for use as aggregate elsewhere in the MTRP. Deck demolition work would begin at the furthest point (waterside) moving toward the shore, and then along access trestles until the final demolition areas are accessible from land. Metal reinforcing steel debris would be segregated and removed with additional excavators and loaded into trucks for removal and recycling. The concrete deck demolition and salvaging of reinforcing steel could occur during any tidal stage. Although this option is considered ''in-water,'' the chipping hammer would not operate beneath the water's surface as the deck of the dock is not below water during any tidal stage.

Steel piles would be cut or broken using heavy equipment as the concrete deck is removed or additional clean granular fill may be placed in the dock area, if necessary, to allow equipment access to remove the remaining steel piles from below the dock. During lower tides the steel piles would be cut using large track mounted excavators with shear attachments or simply bent and broken at least 10 feet below finish grade using excavators with buckets. An alternate access for removal of the steel pile would require use of a tug and barge to approach from the waterside and remove the steel pile after the deck demolition is complete. Salvaged portions of the piles would be removed for recycling. The concrete debris and remaining portions of steel pile would later be encapsulated with clean fill during the construction of the expanded wharf.

Option 1 could be accomplished either in the winter or in the summer, but not both, with demolition during the winter being the preferred option. Total demolition activities for Phase 1 of this option (northern portion) are anticipated to continue for

approximately 960 hours (60 hours/week x 16 weeks). Demolition of Phase 2 structures (southern portion) is anticipated to take approximately 1,320 hours (60 hours/week x 22 weeks). Concrete demolition activities would be conducted continuously throughout each day; however, steel pile demolition may be limited to low tide cycles for ground access. It is assumed that both portions of work would be performed concurrently, although a portion of the concrete deck must be demolished before steel pile demolition can begin, and steel pile demolition may be limited to low tide intervals.

If Option 1 is chosen, harassment to marine mammals could occur from chipping hammers transmitting sound into the water through the steel piles. Chipping is similar to vibratory pile driving in terms of sound type (i.e., non-pulse), but these hammers operate at 19% less horsepower (i.e., lower energy) than the vibratory hammer and therefore are quieter. In addition, because of the considerable structural mass of concrete that the vibrations would pass through prior to reaching the water, the energy is expected to attenuate to a minimal level. Other cutting tools, such as shears and cutter jaws, operate in short duration at low energy, and do not impart energy directly to the water column or sea floor. Despite demolition activities being quieter than pile driving, the POA/MARAD have proposed to implement the same harassment and safety zones as vibratory pile driving.

Out-of-Water Demolition by Mechanical and Blasting Means- Option 2

Option 2 is comprised of two parts: (1) construct a dike (which acts like a cofferdam) around the existing dock during the summer; and (2) demolish the dock in the winter. The construction of a granular fill dike along the outer limits of the proposed POA expansion area would isolate the existing dock from marine waters allowing demolition to be accomplished out-of-water with a 300–foot land barrier to demolition activities. The dike constructed would be inside the footprint of the area already planned and permitted to be filled in with soil to build the future new dock. The sequence of the filling operations would simply be modified to construct the dike first, demolish the dock, and then complete the remainder of the fill. Dike construction would not result in any additional dewatering or habitat loss.

De-watered dikes/cofferdams represent the most effective way of reducing sound created by impact pile-driving into the water column because the pile is completely decoupled from the surrounding water column. Phase 1 dike construction would begin in the spring to early summer 2011; Phase 2 dike construction would begin in spring or summer 2012.

This option would require the construction of approximately 2,600 linear feet (LF) of granular fill dike prior to Phase 1 demolition and approximately 2,300 LF prior to Phase 2. The dike would be constructed to an elevation above the highest anticipated tide elevation, would be up to 100 feet wide at the top with approximately 2:1 side slopes. The dike would be constructed of clean granular fill placed by off-road dump trucks and bulldozers and compacted with vibratory rollers, similar to fill activities currently under way. After completion of the dike the contained water will be removed to a depth sufficient to access the limits of the demolition area from below. The proposed dike would be constructed in accordance with current permit conditions with regard to fish protection and provide fish escapement and/or rescue and release from entrapment. Summer construction of the dike would be necessary for proper fill placement and compaction and is anticipated to take approximately five months. After dike completion, the dock will be set back approximately 300 feet inland from the water line.

Once the dike is completely constructed to accommodate a specific phase of demolition, the applicable concrete deck structure would then be demolished or partly demolished in sections using precision charges (blasting) to break or loosen the concrete. Blasting would expedite the demolition of the concrete structure and will allow for easier handling and removal of concrete and steel debris using mechanical equipment such as track mounted excavators and dump trucks working from an adjacent section of the deck structure or from below.

Blasting would be out-of-water and entail a series of controlled events or shots to demolish the deck in a predetermined sequence of sections. It is anticipated that the dock would be segregated into approximately 30 linear foot sections and that there will be one blasting event for each section (i.e., 30 blasting events total). Each section would be broken up by a single shot event comprised of approximately 150 to 300 charges depending on the size of the section. The section would be prepared by drilling a series of 1–1/4 to 3–inch holes in a gridlike fashion throughout the section footprint. Grid spacing will vary from 2 to 6 feet based on location and concrete thickness. An explosive charge would be placed in each hole, wired to the detonator and covered. Each hole would contain 1/2 to 1 pound (lb) of explosive (no more than 1 lb of explosive would be used for each hole). Additionally, no more than 1 lb of explosives would be detonated within an 8 millisecond (ms) time period.

On average, there would be one blasting event per day. Each blast is expected to last no more than 6 seconds. Between 50 and 75 blasting events are estimated for each demolition phase. The duration for mechanical means of demolition of concrete, reinforcing steel and pile, and salvaging is anticipated to be 720 hours (six 10-hour days for 3 months) for Phase 1 and 840 hours (six 10-hour days for 3.5 months) for Phase 2. Therefore, using 75 blasts for six-second durations, each phase of demolition would include up to 450 seconds (7.5 minutes) of blasting over a 3 to 3.5 month period of time (Phase 1 and Phase 2, respectively).

Noise generated at the immediate blast source during dock demolition activities is anticipated to be no greater than 110 dBA in air. This sound level is based upon the estimated charge size and configuration discussed above. The impulse sound is expected to dissipate rapidly from the source and all noise generated from blasting activities will conform to the City of Anchorage Noise Control Ordinance (see Appendix B in Demolition Plan). The Anchorage Noise Control Ordinance allows 100, 10, and 1 impulses (blast events) to sound limits of 125, 135, and 145 dBA, respectively, during a 24-hour period. Section 6.2.2 of the demolition plan discusses the anticipated work durations.

As standard blasting contractor practice, prior to the commencement of blast demolition, a controlled test blast will be performed on a portion (approximately 1/8) of the first section to verify the blast design and to monitor ground vibration, air overpressure, and water overpressure. Three hydrophones would be used to measure water overpressures outside of the dike structure and three geophones would be used to measure air overpressure along the mainland. Data obtained from the test blast will be extrapolated to model a full section blast. If data from the test blast indicate a potential for noncompliance, the blast design would be modified and a new test blast would be performed. Data will also be collected during each section blast to verify conformance with all applicable sound and air overpressure requirements and to determine if demolition activities require modification. All blasting activities

would follow the procedures of an approved blasting plan, the applicable marine mammal harassment mitigation requirements, and the requirements of a health and safety plan outlining the specific requirements for notifying proper authorities, proper signage and safety equipment to be used, personal protective equipment, aircraft, vehicle and pedestrian control, and pre-blast communication. If any marine mammals are sighted within the area of the POA, blasting would be suspended (see Mitigation section); therefore, no marine mammals would be harassed from blasting.

After a portion of the concrete deck is fully removed from the steel support piles, an excavator with a bucket and thumb or shear attachment would break or cut and remove the piles to a point at least 10 feet below the design finish grade in the area of the existing dock. The removed portion of each pile would be salvaged for recycling and the remaining portion would be left in place and encapsulated in fill. For safety reasons, blasting would not occur at the same time as the mechanical salvaging or pile driving work.

Out-of-Water Demolition by Mechanical Means Only- Option 3

Option 3 is similar to Option 2, except that blasting would not be a means used for demolition. Option 3 is comprised of two phases: (1) construct a dike around the existing dock in the summer; and (2) demolish the dock in the winter. Total demolition activities for Phase 1 and Phase 2 would be anticipated to continue for the same time as Option 1 (i.e., 960 and 1,320 hours, respectively). Dike construction for Option 3 would follow the same process described in Option 2 above. All mechanical activities (e.g., chipping) would be done out-of-water with a 300 ft. land barrier between the dock and the water; therefore, this method of dock demolition is not likely to release noise into the marine environment above NMFS harassment threshold levels.

Other Activities

The following activities are not expected to harass marine mammals as explained later in this document (see Effects to Marine Mammals section) but are part of the MTRP. Public comments received during the 30-day **Federal Register** comment period for the 2008 IHA and the notice of receipt of application for LOAs addressed these activities and therefore they are described here.

Dredging

In-water construction dredging is performed within the footprint of the OCSP structure prior to pile driving to remove soft sediments and provide a sound foundation for the steel retaining structure and fill. In some areas, additional construction dredging may be completed as needed to improve conditions for pile driving associated with installation of OCSP. Dredged materials will be transported approximately 3,000 ft offshore to the authorized disposal site currently used by USACE for harbor maintenance dredging. Dredged areas will be filled with clean granular fill using a barge or land-based methods within approximately seven days of dredging to prevent in-fill of the dredged areas with soft sediments. Construction dredge equipment will typically be standard-size, barge mounted, clamshell or hydraulic dipper dredge, with tugboat support for maneuvering and placement, and another barge and tugboat to transport dredged material to the disposal site. Alternative equipment may include a cutter-head hopper dredge. In 2006, NMFS determined that dredging associated with the MTRP did not warrant an incidental take authorization provided the POA/MARAD follow certain operational procedures.

Harbor dredging for ship navigation and channel maintenance located outside the construction footprint is completed by separate federal action (by USACE). The USACE Alaska District is authorized by Congress with federal oversight to maintain navigable conditions and continuous ship access to the POA at a nominal depth of -35 Mean Lower Low Water (MLLW) (35 ft below elevation zero); harbor maintenance dredging occurs regularly during the ice free season on a daily basis. USACE has also been authorized by Congress to widen the harbor area during POA construction to coincide with interim ship movements, to accommodate navigation at added berths, and deepen the harbor to -45 MLLW to accommodate larger vessels with deeper drafts. The estimated number of construction dredging hours, days and amount of cubic yards (cy) moved per year can be found in Section 2 of the application. USACE harbor maintenance dredging, transitional dredging, and harbor deepening are separate federal actions and are not part of this rulemaking; however, NMFS did address this federal action as part of its effects analysis under the NEPA.

Placement of Fill Material

Approximately 9.5 million cy of suitably engineered and clean granular fill and common fill material would be placed behind vertical steel or rock-retaining features. The POA and MARAD, in cooperation with the adjacent Eglin Air Force Base (EAFB), would continue to use only certified clean government-furnished fill material from two borrow sites on EAFB. Some fill material may also be obtained from existing commercial sources as needed. Fill extraction, transport, off-loading, and final placement activities will be monitored and inspected to verify proper adherence to detailed specifications and permit requirements. Fill material is screened to ensure compliance with stringent specifications for grain size and samples are laboratory tested to ensure all material placed is contaminant-free and certified as fully suitable for the intended purpose. Fill extraction and transport operations will be ongoing throughout the five-year construction period.

Common fill is placed in de-watered conditions where and when possible. Off-road trucks and bulldozers will deposit and spread the fill material up to and behind the OCSP face wall. Some fill may be imported from other sources, transported over water, and placed in-water at the MTRP site by dump scows (barges capable of discharging fill material through the bottom of the vessel). Following placement of fill, a land-based vibratory probe, constructed from an H-pile, and a vibratory pile driving hammer will be used to densify deep soils. The probe is driven into the fill at evenly spaced locations to vibrate and consolidate deep fill. Fill material placed above elevation +30 ft will be compacted in layers while being placed using conventional sheepsfoot or vibratory compaction equipment. Compaction and consolidation equipment will be used intermittently. Large armor rock is placed in some areas for permanent erosion control. Liner rock will be placed on the temporary slopes exposed to tide and wave action at the end of interim construction phases for erosion protection. As with dredging, in 2006, NMFS determined that fill compaction and rock placement would not result in harassment to marine mammals if certain operational procedures were met; therefore, an incidental take authorization was not warranted.

Action Area

Cook Inlet is a large tidal estuary that flows into the Gulf of Alaska, is roughly 20,000 km2, has 1,350 km of coastline

(Rugh et al. 2000), and is generally divided into upper and lower regions by the East and West Forelands. Cook Inlet is comprised of large expanses of glacial flour deposits and extensive tidal mudflats and has an average depth of approximately 100 m. NMFS' Final Cook Inlet Beluga Whale Subsistence Harvest Supplemental Environmental Impact Statement (SEIS) provides a detailed description of Cook Inlet's climate, geology, water quality, and physical properties and is incorporated herein by reference. In summary, Cook Inlet is a seismically active region susceptible to earthquakes with magnitudes 6.0 to 8.8; has some of the highest tides in North America, which are the driving force of surface circulation; and contains substantial quantities of mineral resources, including coal, oil, and natural gas. During winter months, sea, beach, and river ice are dominant physical forces within Cook Inlet. In upper Cook Inlet, sea ice generally forms in October to November, developing through February or March.

Northern Cook Inlet bifurcates into Knik Arm to the north and Turnagain Arm to the east. Knik Arm is generally considered to begin at Point Woronzof, 7.4 km southwest of the POA. From Point Woronzof, Knik Arm extends more than 48 km in a north-northeasterly direction to the mouths of the Matanuska and Knik Rivers. Over 90 percent of Knik Arm remains undeveloped and where development is prevalent, it is relatively confined to the lower portion of Knik Arm. The primary concern for development, as stated in the NMFS 2008 Conservation Plan for the Cook Inlet Beluga Whale (Delphinapterus leucas) (herein after ''Conservation Plan''), is that it may restrict passage of beluga whales along Knik Arm to important feeding areas. The MTRP footprint is restricted to the eastern side of Knik Arm with the new dock extending approximately 400 m seaward of the current dock.

Point MacKenzie, is located on the west side of Knik Arm approximately 6.7 km from the POA. At Cairn Point, located just north of the POA, Knik Arm narrows to about 2.4 km before widening to as much as 8 km at the tidal flats northwest of Eagle Bay at the mouth of Eagle River. Cairn Point is the selected marine mammal monitoring site for an independent observer team to monitor marine mammals during the MTRP due to its elevation above construction activities and uninterrupted northern and southern view of Knik Arm. This monitoring station is located on EAFB; a long-term access agreement is in place with the military authorizing the station.

Knik Arm consists of narrow channels flanked by large shallow tidal flats composed of sand, mud, or gravel, making it a poor acoustic environment (i.e., sound does not propagate far). Tides are semidiurnal, with two unequal high and low tides per tidal day (tidal day = 24 hours 50 minutes). Because of Knik Arm's predominantly shallow depths and narrow widths, tides near Anchorage are greater than in the main body of Cook Inlet. The tides at Anchorage can range about 40 ft, with an extreme observed high water of +34.6 ft and an extreme observed low water of -6.4 ft MLLW (NOAA 2008). Beluga whale movement is strongly correlated with the tides. Maximum current speeds in Knik Arm, observed during spring ebb tide, exceed 7 knots (12 ft/second), some of the fastest in the world.

Approximately 60 percent of Knik Arm is exposed at MLLW. The intertidal areas of Knik Arm are mudflats, both vegetated and unvegetated, which primarily consist of fine, silt-size glacial flour. Freshwater sources often are glacially born waters, which carry high-suspended sediment loads, as well as a variety of metals such as zinc, barium, mercury, and cadmium. Surface waters in Cook Inlet typically carry high silt and sediment loads, particularly during summer, making Knik Arm an extremely silty, turbid waterbody with low visibility through the water column. The Matanuska and Knik Rivers contribute the majority of fresh water and suspended sediment into the Knik Arm during summer months. Smaller rivers and creeks also enter along the sides of Knik Arm. Ship Creek, stocked with salmon twice each summer, serves as an important recreational fishing resource. Ship Creek flows into Knik Arm through the Anchorage industrial area; the mouth is approximately 0.6 km south of the southern end of the MTRP footprint and abuts the Flint Hills railroad area where a sheet pile wall currently exists.

There are prevalent, shallow intertidal and subtidal habitats directly surrounding the POA. Habitat surveys completed to date indicate that the area immediately around the POA supports a wide diversity of marine and anadromous fish species and provides migration, rearing, and foraging habitat. Recent surveys indicate that shallow waters along the tidal flats of Knik Arm are used by all five species of Pacific salmon, saffron cod, and a variety of prey species such as eulachon and longfin smelt (Pentec, 2004a, 2004b, 2005a, 2005b; Moulton, 1997). Many of these species are prone to recreational and commercial sport fishing and serve as prey for larger fish and marine mammals.

Essential Fish Habitat (EFH) is located within the action area. EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The NMFS and the North Pacific Fishery Management Council identified EFH in upper Cook Inlet for anadromous Pacific salmon; however, no salmon species that would be adversely affected by the MTRP are listed under the ESA. Designated EFH present in the vicinity of the POA is for both juvenile and adult life stages of Pacific cod, walleye pollock, sculpins, and eulachon (also called hooligan and candlefish). In addition, all streams, lakes, ponds, wetlands, and other water bodies that currently support or historically supported anadromous fish species (e.g., salmon) are considered freshwater EFH. Marine EFH for salmon fisheries in Alaska include all estuarine and marine areas utilized by Pacific salmon of Alaska origin, extending from the influence of tidewater and tidally submerged habitats to the limits of the U.S. Exclusion Economic Zone (EEZ). Details of EFH and the life stage of these species can be found in at *http://www.fakr.noaa.gov/habitat/efh.htm*. The NMFS AKR Habitat Conservation Division provided numerous conservation mitigation recommendations during the USACE's permit scoping process authorizing MTRP construction activities. In addition, as required by the USACE permit, NMFS will be involved with all habitat related compensatory restoration and conservation projects (see Impacts to Habitat section).

Acoustic Environment

Sound dissipates more rapidly in shallow waters and over soft bottoms (sand and mud). Much of upper Cook Inlet is characterized by its shallow depth and sand/mud bottoms, thereby making it a poor acoustic environment. Strong currents and winds in Knik Arm elevate ambient sound level compared to other portions of Cook Inlet. The development of Anchorage, an industrialized area, further increases background levels near the POA from commercial and recreation vessels, commercial, recreational and military air traffic, and airborne noise related to urbanized areas. For purposes of this document, all sound levels in this notice are provided as root mean square (rms) values and referenced to 1 microPa, unless otherwise noted.

Underwater acoustical studies conducted in Knik Arm reveal that the area around the POA is a noisy

environment, with average ambient sound levels near or above 120 dB (Blackwell and Greene 2002; Blackwell 2005; URS 2007; Science Fishery Systems 2009). Tides and wind are the most influential in creating high ambient levels, with vessel and air traffic further increasing underwater sound levels. The lower range of broadband (10 to 10,000 Hertz [Hz]) background sound levels, in the absence of pile driving, obtained during underwater measurements at Port MacKenzie, ranged from 115 dB to 133 dB (Blackwell 2005). Background sound levels in the absence of pile driving measured during the 2007 acoustic study at the MTRP site resulted in most sound pressure levels (SPLs) exceeding 120 dB with a maximum of 135 dB (URS 2007). Finally, a number of background noise recordings (n=25) were made during the 2008 acoustic study at the POA. Measurements ranged from 120 to 150 dB with a mean of 124 dB (Scientific Fisheries Systems, 2009). These measurements were not devoid of industrial sounds from maritime operations or on-going USACE maintenance dredging but pile driving from construction was not underway at the time of the study. Background levels were highest during the rising tide and during strong winds, especially when high winds generated breaking waves. Scientific Fisheries Systems (2009) recorded many instances of high background noise levels when wind speeds were at or above 3m/sec. Based on these data, noise levels around the POA are consistently near or above 120 dB with variability strongly correlated to wind and tide.

Marine Mammals Affected by the MTRP

Marine mammals potentially affected by the MTRP are thoroughly described in the proposed and final **Federal Register** notices for the 2008 IHA (73 FR 14443, March 18, 2007 and 73 FR 41318, July 15, 2008, respectively) and NMFS' 2008 EA. In summary, Cook Inlet is utilized by several species of marine mammals; however, most of these are confined to the lower Inlet and would not be affected by the MTRP. In Knik Arm, the Cook Inlet beluga whale is by far the most abundant marine mammal, especially during the non-winter months. Harbor seals, harbor porpoise, and killer whales are also found in the Inlet but they do not display a regular presence in Knik Arm. While Steller's sea lions (Eumetopias jubatus) are present in lower Cook Inlet, sightings in upper Cook Inlet are rare and there has never been a sighting reported in Knik Arm. Since 1999, only 4 Steller's sea lions have been reported in upper Cook Inlet. Two Steller's sea lions were sighted at the mouth of the Susitna River in 1999 and two adults were near the same locating in 2005 (B. Mahoney, pers. comm, June 20, 2008). Therefore, Steller's sea lions are not anticipated to be affected by the MTRP and will not be considered further. If, by chance, a marine mammal not authorized to be harassed is seen around the construction area, shut down would be required so as to avoid unlawful take.

Beluga Whales

Status and Abundance

Beluga whales are circumpolar in distribution and occur in seasonally ice-covered arctic and subarctic waters. Beluga whales occur in marine waters around most of Alaska, except the Southeast panhandle region and the Aleutian Islands. This species comprises five distinct stocks: Beaufort Sea, eastern Chukchi Sea, eastern Bering Sea, Bristol Bay, and Cook Inlet (Hill and DeMaster, 1998). Of these, the Cook Inlet stock is the only stock that would be affected by the MTRP. This stock is considered to be the most isolated, based on the degree of genetic differentiation between it and the four other stocks (O=Corry-Crowe et al., 1997), suggesting the Alaska Peninsula may be an effective barrier to genetic exchange (Hobbs et al., 2006). Also supporting this find, is the lack of observations of beluga whales along the southern side of the Alaska Peninsula (Laidre et al., 2000). Murray and Fay (1979) postulated that this stock has been isolated for several thousand years, an idea which has since been corroborated by genetic data (O=Corry-Crowe et al., 1997).

The Cook Inlet beluga whale population has declined significantly over the years. Historical data suggest this population once numbered around 1,300 (Calkins 1989). NMFS systematic aerial surveys documented a decline in abundance of nearly 50 percent between 1994 (653 whales) and 2008 (375 whales). Aerial annual abundance surveys conducted each June/July from 1999 to 2008 have resulted in abundance estimates of 367, 435, 386, 313, 357, 366, 278, 302, 375, and 375 whales for each year, respectively (Hobbs et al., 2000; Rugh et. al., 2005; NMFS, unpubl. data). These estimates result in an overall decline of the population of 1.5 percent from 1999 to 2008 (note: 1999 was the first year beluga harvest was regulated).

The Cook Inlet beluga whale was proposed for listing as endangered under the ESA on April 20, 2007 (72 FR 19854). On October 22, 2008, NMFS issued a final rule listing this population as endangered under the ESA (73 FR 69219). This listing status became effective on December 22, 2008. Other major documents NMFS has recently produced on this species include the Conservation Plan and the Final Subsistence Harvest SEIS referenced earlier in this document. These documents can be found at *http://www.fakr.noaa.gov/protectedresources/whales/beluga.htm*.

Distribution

Beluga whales generally occur in shallow, coastal waters, and while some populations make long seasonal migrations, Cook Inlet beluga whales reside in Cook Inlet year round. Data from satellite tagged whales documented that beluga whales concentrate in the upper Inlet at rivers and bays in the summer and fall, with a tendency to disperse offshore and move to mid-Inlet waters in the winter. Local knowledge and other historical evidence show that prior to the 1990s belugas were regularly seen in central and lower Cook Inlet waters, both nearshore and offshore (Calkins, 1983; Huntington 2000; Rugh et al., 2000). However, since the mid 1990s, distribution during the summer is confined to the upper Inlet with no sightings in the mid and lower Inlet. This constriction is likely a function of a reduced population seeking the highest quality habitat that offers the most abundant prey, most favorable feeding topography, the best calving areas, and the best protection from killer whale predation.

From April through November whales concentrate at river mouths and tidal flat areas, moving in and out with the tides (Rugh et al., 2000). In Knik Arm, beluga whales generally are observed arriving in May and often use the area all summer, feeding on the various salmon runs and moving with the tides. There is more intensive use of Knik Arm in August and through the fall, coinciding with the coho run. During high tides, beluga whales are generally concentrated around prime feeding habitats (also known as ''hotspots'') in the upper reaches of the Arm, an area unaffected by the MTRP. They often retreat to the lower portion of Knik Arm during low tides gathering in Eagle Bay and elsewhere on the east side of Knik Arm (approximately 15 miles north of Anchorage) and sometimes in Goose Bay on the west side of Knik Arm (across from Eagle Bay). Beluga whales will often travel between these two areas (upper reaches of the Arm and the Bays) with the tide daily for a season

before traveling farther south past Anchorage and out of Knik Arm.

Prey availability likely has the strongest influence on the distribution and relative abundance of beluga whales in Cook Inlet (Moore et al., 2000). There is repeated use of several areas of the upper Inlet for summer and fall feeding by beluga whales. The primary ''hotspots'' for beluga feeding areas include the Big and Little Susitna Rivers, Eagle Bay to Eklutna River, Ivan Slough, Theodore River, Lewis River, and Chickaloon River and Bay. Only one hotspot, Eagle Bay to Eklutna River, is located in Knik Arm approximately 15 miles north of the POA. Many of these areas are also popular fishing locations for humans. Beluga whales exhibit high site fidelity and may persist in an area with fluctuating fish runs or may tolerate certain levels of disturbance from boats or other anthropogenic activities in order to feed.

Feeding

Beluga whales are opportunistic feeders known to prey on a wide variety of animals. They eat octopus, squid, crabs, shrimp, clams, mussels, snails, sandworms, and fish such as capelin, cod, herring, smelt, flounder, sole, sculpin, lamprey, lingcod and salmon (Perez 1990; Haley 1986; Klinkhart 1966). Natives also report that Cook Inlet beluga whales feed on freshwater fish: trout, whitefish, northern pike, and grayling (Huntington, 2000), and tomcod during the spring (Fay et al., 1984). While beluga whales feed on a variety of prey, they focus on specific species when they are seasonally abundant. Increased foraging success results in a thick blubber layer that provides both energy and thermal protection. Native hunters in Cook Inlet report that beluga whale blubber is thinner in early spring than later in the summer. This suggests that their spring feeding in upper Cook Inlet, principally on fat-rich fish such as eulachon and salmon, is very important to the energetics of these animals. According to the Conservation Plan, Knik Arm is an important feeding area for beluga whales during much of the summer and fall, especially upper Knik Arm. Whales ascend to upper Knik Arm on the flooding tide, feed on salmon, then fall back with the outgoing tide to hold in water off and north of the Port of Anchorage.

From late spring and throughout summer most beluga stomachs sampled contained Pacific salmon corresponding to the timing of fish runs in the area. Anadromous smolt and adult fish concentrate at river mouths and adjacent intertidal mudflats (Calkins 1989). Five Pacific salmon species: Chinook, pink, coho, sockeye, and chum spawn in rivers throughout Cook Inlet (Moulton 1997; Moore et al. 2000). Calkins (1989) recovered 13 salmon tags in the stomach of an adult beluga found dead in Turnagain Arm. Beluga hunters in Cook Inlet reported one whale having 19 adult Chinook salmon in its stomach (Huntington 2000). Salmon, overall, represent the highest percent frequency of occurrence of the prey species in Cook Inlet beluga stomachs. This suggests that their spring feeding in upper Cook Inlet, principally on fat-rich fish such as salmon and eulachon, is very important to the energetics of these animals.

In the fall, as anadromous fish runs begin to decline, beluga whales return to consume fish species found in nearshore bays and estuaries (e.g., cod and bottom fish). Bottom fish include Pacific staghorn sculpin, starry flounder, and yellowfin sole. Stomach samples from Cook Inlet belugas are not available for winter months (December through March), although dive data from belugas tagged with satellite transmitters suggest whales feed in deeper waters during winter (Hobbs et al. 2005), possibly on such prey species as flatfish, cod, sculpin, and pollock.

Hearing

Beluga whales are characterized as mid-frequency odontocetes but are able to hear an unusually wide range of frequencies, covering most natural and man-made sounds. The hearing frequency range of this species is believed to be between 40 Hz–150 kHz with keen hearing at 10–100 kHz. Above 100 kHz, sensitivity drops off rapidly (Au, 1993) and below 16 kHz the decrease in sensitivity is more gradual at approximately 10 dB per octave (White et al., 1978; Awbrey et al., 1988). Awbrey (1988) measured the low-frequency (i.e., octave intervals between 125 Hz and 8 kHz) underwater hearing sensitivity of three captive beluga whales in a quiet pool. At 8 kHz, the average hearing threshold of the three animals was 65 dB. Below 8 kHz, sensitivity decreased at approximately 11 dB per octave. At 125 Hz, the average hearing threshold was 120.6 dB (i.e., the received level had to be 120.6 dB in order for the whale to hear the 125 Hz sound). Average MTRP construction related noises range between 0.1 and 15 kHz (see Table 6–2 in application).

Habitat Classification

NMFS has characterized beluga whale habitats into three categories, Type I-III, based on use and biological importance as part of its conservation strategy in the Conservation Plan. This habitat designation has been slightly modified from the 2006 Draft Conservation Plan, which described four habitat type designations, and is described in the 2008 EA. Type I habitat encompasses all of Cook Inlet northeast of a line three miles southwest of the Beluga River across to Pt. Possession. These areas are full of shallow tidal flats, river mouths or estuarine areas, and are important foraging, calving and/or nursery habitats. These areas are also important for other biological needs, such as molting or predator avoidance. Type I habitat hosts a concentrated population of beluga whales from spring to fall. The POA and the city of Anchorage are encompassed within the southern boundary of Type I habitat. Type II habitat includes areas of less concentrated spring and summer use, but known fall and winter use. This habitat is based on dispersed fall and winter feeding and transit areas in waters where whales typically occur in smaller densities or deeper waters. Type III habitat encompasses the remaining portion of Cook Inlet where belugas are infrequently observed, and areas which are not identified as Type I or II.

Knik Arm, including the action area, fall into the Type I classification habitat; however, dedicated marine mammal monitoring survey reports and opportunistic sightings indicate that whales are using this lower portion of Knik Arm primarily as a passageway to discrete prime feeding area in the upper reaches of Knik Arm, with only opportunistic feeding observed. The primary ''hotspots'' for beluga whale feeding areas, as identified in the Conservation Plan, include the Big and Little Susitna Rivers, Eagle Bay to Eklutna River, Ivan Slough, Theodore River, Lewis River, and Chickaloon River and Bay. Of these, only one, Eagle Bay to Eklutna River, lie north of the POA. Beluga whales exhibit high site fidelity and may persist in an area with fluctuating fish runs or may tolerate certain levels of disturbance from boats or other anthropogenic activities in order to feed.

Harbor Seals

Harbor seals are not listed as ''depleted'' under the MMPA or listed as ''threatened'' or ''endangered'' under the Endangered Species Act. They are important upper-trophic marine predators that occupy a broad range in Alaska from approximately 130° W. to 172° E. (over 3,500 km east to west) and from 61° N. to 51° N. (over 1,000 km north to south). Currently, harbor seals in Alaska are divided into three stocks: Bering Sea, GOA, and Southeast Alaska.

While new genetic information has lead to a reassessment of this delineation, this has not been finalized. Harbor seals which could be affected by the MTRP belong to the GOA stock. Based on aerial GOA and Aleutian Islands surveys, in 1996 and 1999 respectively, the current abundance estimate for this stock is 45,975 (CV = 0.04) with a minimum population estimate of 44,453 (Angliss and Outlaw, 2006). Sources of anthropogenic caused mortality for this stock include interactions with fishing gear (mean annual mortality is approximately 24 animals), subsistence hunting (mean annual harvest from 2000–2004 equals 795), and, to a lesser degree, illegal intentional killing.

Harbor seals haul out on rocks, reefs, beaches, and drifting glacial ice, and feed in marine, estuarine, and occasionally fresh waters (Fisher, 1952; Bigg, 1969, 1981). In Alaska, commonly eaten prey include walleye, pollock, Pacific cod, capelin, eulachon, Pacific herring, salmon, octopus, and squid. They are generally non-migratory, with local movements associated with such factors as tides, weather, season, food availability, and reproduction; however, some long-distance movements have been recorded from tagged animals with juveniles traveling farther than adults (Lowry et al., 2001).

The major haul-out sites for harbor seals are located in Lower Cook Inlet with the closest haul-out site to the POA approximately 40 kms (25 miles) south along Chickaloon Bay in the southern portion of Turnagain Arm. However, harbor seals are occasionally observed in Knik Arm and in the vicinity of the POA, primarily near the mouth of Ship Creek (NMML 2004; Rugh et al. 2004a, 2004b; LGL Alaska Research Associates, Inc. [LGL] Unpublished Data). From 2004–2005, 22 harbor seal sightings were reported over a 13-month period comprising 14,000 survey hours (LGL, unpubl data). From these surveys, it is estimated that harbor seals occur in a density of approximately 1.7 animals per month in Knik Arm. In 2008, only one harbor seal was sighted from July to November by dedicated NMFS approved marine mammal observers (MMOs).

Pinniped hearing is dependent upon the medium (i.e., air or water) in which they receive the sound. Most pinniped species have essentially flat audiograms from 1 kHz to 30 50 kHz with thresholds between 60 and 85 dB re 1 microPa (M hl, 1968; Kastak and Schusterman, 1995; review by Richardson et al., 1995; Terhune and Turnbull, 1995; Kastelein et al., 2005;). At frequencies below 1 kHz, thresholds increase with decreasing frequency (Kastak and Schusterman, 1998). For example, for a harbor seal, the 100–Hz threshold for hearing was 96 dB re 1 microPa (Kastak and Schusterman, 1995). Harbor seals' hearing thresholds in-water and in-air display the significant disparities between hearing capabilities with hearing 25 30 dB better underwater than in air (Kastak and Schusterman, 1994).

Harbor Porpoise

Harbor porpoises are not listed as ''depleted'' under the MMPA or listed as ''threatened'' or ''endangered'' under the Endangered Species Act. They are found within Cook Inlet but in low abundance, especially in Knik Arm. Currently, the population estimate for the Gulf of Alaska harbor porpoise stock is 41,854 with a minimum population estimate of 34,740 (Angliss and Outlaw, 2006). However, density of this species in Cook Inlet is only 7.2 per 1000 square kilometers (Dahlheim et al., 2000). The highest monthly count in upper Cook Inlet between April and October is 18 (Ramos et al., 2006). Interactions with fisheries and entanglement in gear is the prime anthropogenic cause of mortality for this stock (mean annual mortality of 67.8) (Angliss and Outlaw, 2006). Harbor porpoises are not killed for subsistence reasons.

Harbor porpoises have a wide hearing range and the highest upper-frequency limit of all odontocetes studied. They have a hearing range of 250 Hz–180 kHz with maximum sensitivity between 16–140 kHz. There is no available data on high frequency cetacean reactions to impulsive sounds (e.g., impact pile driving); however, numerous studies have been conducted in the field (Culik et al., 2001; Olesiuk et al., 2002; Johnston, 2002) and laboratory (Kastelein et al., 1995, 1997, 2000) for non-pulse sounds. The results of these studies demonstrate the harbor porpoise is quite sensitive to a wide range of human sounds at very low exposure levels: approximately 90- 120 dB re: 1 microPa. However, most of these studies involved acoustic harassment devices (e.g., pingers) in the range of 10 kHz which is 6–7 kHz greater than most industrial sounds, including pile driving.

Killer Whales

Killer whales in the Gulf of Alaska are divided into two ecotypes: resident and transient. Killer whales are relatively common in lower Cook Inlet (at least 100 sightings from 1975 to 2002), but in the upper Inlet, north of Kalgin Island, sightings are infrequent; 18 sightings have been reported from 1976–2003 with an average of 1 per year since the mid 1990s (Sheldon et al. 2003). Transient killer whales, the only ecotype sighted in Knik Arm, likely belong to the Gulf of Alaska, Aleutian Islands, Bering Sea Transient Stock. This stock is not listed as depleted under the MMPA or threatened or endangered under the ESA. Based on the 2006 NMFS stock assessment reports, the minimum population estimate for the Gulf of Alaska, Aleutian Islands, and Bering Sea transient stock of killer whales is 314 animals based on the count of individuals using photo-identification. Based on the rarity of killer whale sightings in Knik Arm, NMFS is proposing to authorize up to 5 take per year of this species.

Killer whales are considered the only natural predator of Cook Inlet beluga whales. Most observed killer whale/beluga interactions have occurred in the upper Inlet; however, these events appear to be random and are not considered an influential factor on beluga whale distribution (Hobbs et al., 2006). A decrease in killer whale prey comprised of seals and sea lions in the Gulf of Alaska could result in more killer whales moving from the southern portion of the Inlet to the northern portion in search of beluga prey.

The hearing of killer whales is well developed and this species exhibits complex underwater communication structure. They have hearing ranges of 0.05 to 100 kHz which is lower than many other odontocetes. Peak sensitivity is around 15 kHz. Interestingly, mammal-eating killer whales (i.e., transients) limit their vocal communication and often travel in silence. This is in contrast to the very vocal fish eating (i.e., resident) killer whale pods who are constantly vocalizing. The difference for this behavior is that fish do not possess the advanced hearing capabilities as the marine mammals, who can hear or eavesdrop on mammal eating killer whale calls and escape from being prey (Deecke et al. 2005).

Harassment Isopleth Calculations

In recent years, investigations into the role anthropogenic noise plays on impacting marine mammals (both behaviorally and physically) have increased dramatically. NMFS is in the process of developing guidelines for determining thresholds for acoustic harassment based on the best available science. In the interim, NMFS generally considers 180 and 190 dB as the level at which cetaceans and pinnipeds, respectively, could be subjected to Level A (injurious) harassment, and Level B (behavioral) harassment is considered to have occurred when marine mammals are exposed to pulsed sounds (e.g.,

impact pile driving) at or above 160 dB, but below injurious thresholds. For purposes of these proposed regulations, NMFS considers 125 dB to be the level at which Level B harassment from non-pulsed sounds (e.g., vibratory pile driving, chipping) could occur. The shift to 125 dB from the threshold of 120 dB used for the 2008 IHA is based on overwhelming evidence that noise levels around the POA are consistently near or above 120 dB due to wind and currents (Blackwell, 2005; URS, 2007; Scientific Fishery Systems, 2009), as described in the Acoustic Environment section of this document. In other words, a sound that is as loud as or below ambient/background levels is likely not discernable to marine mammals and therefore, is not likely to have the potential to harass a marine mammal.

The POA/MARAD's LOA application used preliminary ''worst-case'' measurements from the acoustic study to determine harassment level isopleths. In January 2009, NMFS received a report detailing the findings from the 2008 acoustical survey and supplemental information in response to NMFS' questions on the report in February 2009. After review of these documents, NMFS determined that the Level B harasssment isopleths identified in the application are not appropriate because NMFS' harassment thresholds, as described above, are based on rms values while the application identified isopleth distances based on peak values measured during impact pile driving and did not consider all measurements made during vibratory pile driving.

It is apparent that noise levels in lower Knik Arm around the POA are highly variable and strongly correlated with wind and tide. The 2008 survey collected sounds measurements over 14 days with varying results, both during and in absence of pile driving. The acoustic data were presented to NMFS in the following manner: (1) based on empirical measurements made at various locations during various types of pile driving, source levels were estimated; (2) from these estimated source levels, distances to the 180/190, 160, and 125 dB isopleths were calculated assuming a transmission loss of 20 log; and (3) background levels (in absence of pile driving) were provided from 25 recordings.

According to supplemental information provided by the POA/MARAD, the worst-case measured sound levels from impact pile driving was during face wall sheet pile installation. Sound levels measured 148 dB at 355m, which equals a source level of 200 dB (Table 2). Based on this source level and given a 20 log transmission loss, the 160 dB isopleth would be 97 m. However, due to variability between the 2007 study, which identified the 160 dB isopleth to be 350m, NMFS is proposing to maintain the 350m isopleth distance for impact pile driving as contained in the IHA as this is more conservative. For vibratory pile driving, NMFS considered the average estimated source level of 187 dB, as described in the 2008 acoustic report, to calulate the 125 dB isopleth at 1,300 m. This isopleth distance is augmented by Blackwell (2005) who found that pile driving sound levels at Port MacKenzie did not change significantly between the 1300 m (4265 feet) and 1900 m (6234 feet) stations, which suggests that beyond approximately 1300 m, background sounds contributed more to received levels than vibratory pile driving. According to the supplemental information provided by the POA/MARAD, the 2008 survey also found that at various distances from 1 to 4 km, recording devices failed to pick up vibratory pile driving noise. Therefore, NFMS considers the 1,300 m Level B harassment isopleth for vibratory pile driving to be appropriate.

TABLE 2—LEVEL A AND B HARASSMENT ISOPLETH DISTANCES BASED ON FINAL ACOUSTIC MONITORING DATA (SCIENTIFIC FISHERY SYSTEMS 2009)

Summary of Acoustic Measurements and Estimated Source Levels and Isopleth Distances

Description	Worst-Case Measured Level (dB rms)	Frequency Range (Hz)	Calculated Source Level	Calculated Distance to 190 dB rms (m)	Calculated Distance to 180 dB rms (m)	Calculated Distance to 160 dB rms (m)	Calculated Distance to 125 dB rms (m)
Sheet pile- face wall, average vibratory	N/A	100–4000	187 dB	N/A	<10m	N/A	1,300 m
Sheet pile- face wall, impact (deep hydrophone)	148 dB at 355m	8000–10,000	200 dB	3.1	9.7	97	N/A
Sheet pile- face wall, impact (shallow hydrophone)	157dB at 78m	10–200; 6,000	195 dB	1.8	5.7	57	N/A
Sheet pile- tail wall, vibratory	120dB at 107m	200–400	161 dB	N/A	N/A	1.1	60
Sheet pile- tail wall, impact	139 dB at 268m	2,000–7,000	188 dB	N/A	2.4	23.8	N/A
Wye pile, vibratory	139dB at 149m	2,500–4,000	182 dB	N/A	1.3	13.2	747
Wye pile, impact	148dB at 155m	8,000–10,000	195 dB	1.7	5.4	54.1	N/A
Temporary pipe pile, vibratory	144dB at 35m	200–4,500	175 dB	N/A	N/A	5.6	312
Hairpin, impact	143dB at 106m	Not available	183 dB	N/A	1.4	14.2	N/A

Take Calculations

As discussed above, monitoring of marine mammal presence, behavior, group composition, etc., specifically for the MTRP began in 2005 and will continue 1-year post construction. Surveys purposely began 2 years before in-water work to estimate frequency at which beluga whales use the area around the POA and for what biological function (e.g., traveling, feeding, etc.) pre-disturbance. From 2005–2007, theodolite tracking and grid cell mapping were used to track whales. This system allowed documentation of whale group location and movements on a coarse scale (500 by 500 m grids) allowing the number of belugas present within the MTRP footprint, within a 1 x 6 km2 area around the POA (defined as the nearshore area), as well as within the entire visible area, to be calculated. A detailed description of those results can be found in the **Federal Register** documents prepared for issuance of the IHA and the associated EA. In summary, beluga whales were sighted during all months the MTRP will be conducting in-water activities (April-November) but most frequently in the nearshore area (i.e., the nearshore area had the highest density of whales when compared to other visible parts of the Arm), around low tide, and during the months of August and September, coinciding with salmon runs. These data augment those of the Hobbs et al. (2005) satellite tag study.

To estimate the number of beluga whales taken by harassment level sounds from pile driving, the application uses the following parameters to calculate takes: (1) nearshore density data from the 2005–2007 POA surveys (Funk et al., 2005, Ramos et al., 2006, Cornick and Kendall 2007); (2) estimated pile driving hours per year (for both impact and vibratory driving); (3) harassment isopleth distances based on preliminary results from the 2008 acoustic study; and (4) proposed mitigation requirements (e.g., no pile driving 2 hours either side of low tide). That is, the estimated number of beluga whales that could potentially be exposed to noise levels above the NMFS thresholds is calculated by multiplying the average nearshore density per month by the number of hours pile driving per month and then multiplied by the area of noise exposure. A low-tide correction factor was then applied as impact pile driving would take place during this time. The numbers of beluga whales were rounded up to the nearest whole number per month. The tables outlining number of beluga whales taken by year and type of pile driving can be found in Chapter 6 of the application.

The area of noise exposure in km2 is calculated based upon the calculated harassment isopleth radii, as determined in the application, for each pile type and installation technique to the appropriate NMFS noise exposure threshold (160 dB for impact and 125 dB for vibratory pile driving). For simplification reasons, the calculated exposure area is equal to the area of a semi-circle (A = 3.14r2/2) radiating out from the pile location. However, this could be conservative as it assumes that noise from pile driving would radiate out spherically when, in fact, empirical measurements from the 2008 acoustic study indicate a directionality of noise propagation from pile driving (i.e., the loudest sound is straight out from the source, not up or down the Arm) (SFS, 2008).

According to the application, the calculated number of beluga whales that could be exposed to noise from in-water vibratory pile driving for each month was determined from preliminary acoustic data and ranges from 4 to 22 in 2009; 3 to 13 in 2010; 2 to 14 in 2011; 3 to 28 in 2012, 3 to 19 in 2013; and 1 to 3 in 2014. The total number for each year ranges from 10 in 2014 to 76 in 2012 (see Table 6.4 in application). In total, based on calculations in the application, 43 whales (11.8%) - 78 whales (21.4%) per year could potentially be taken by pile driving operations assuming the population remains stable. However, the take estimates in the application are an overestimate from the actual number of whales that will actually be exposed to harassment level noise for the following reasons: (1) sound from pile driving is likely directional and not spherical; (2) the number of beluga whales potentially passing through the exposure area is based on the highest nearshore density but assumes density is distributed evenly throughout the entire area of noise exposure; (3) the POA/MARD have, and will likely continue, to implement shut down procedures even when not required by regulations; and (4) isopleth distances in the application were based on peak values (NMFS threshold levels are based on rms values) and did not consider all recordings; therefore, they are much larger than NMFS determined harassment (see Harassment Isopleth Calculations). Taking these factors into account, the POA/MARAD are requesting and NMFS is proposing, to authorize the harassment of up to 34 beluga whales per year (9 percent), the current take level authorized in the 2008 IHA. Should the annual authorized take number be reached during the in-water work construction season, all pile driving and in-water chipping for demolition must be shut-down if a beluga whale is sighted approaching designated harassment or safety zones.

Given that other marine mammals potentially affected by the POA's MTRP (i.e., harbor seals, harbor porpoise, and killer whales) are only sporadically sighted in lower Knik Arm, no calculated take estimates were derived. Based on scientific and anecdotal sighting data, NMFS is proposing to authorize the harassment of up to 20 harbor seals, 20 harbor porpoises, and 5 killer whales per year. These takes represent essentially 0 percent of harbor seals and harbor porpoises as the population sizes of these affected stocks are 45,975 and 34,740, respectively. The taking of 5 killer whales represent 1.5% of the population of killer whales potentially found in upper Cook Inlet which has a stock size of 314 individuals. These proposed takes represent small numbers relative to the affected species and stocks.

Impacts to Marine Mammals

In general, noise associated with coastal development has the potential to harass marine mammals present around the specific action area. Marine mammals use sound for vital life functions, and introducing sound into their environment could be disrupting to those behaviors. Sound (hearing and vocalization/echolocation) serves four main functions for odontocetes (toothed whales and dolphins). These include: (1) providing information about their environment; (2) communication; (3) enabling remote detection of prey; and (4) enabling detection of predators. Pinnipeds also use sound for these functions except they can not echolocate like odontocetes and therefore rely on sight and vibrassae for prey detection and information about their environment. The distances to which sounds are audible depend on source level and frequency, ambient noise levels, physical habitat characteristics (e.g., water temperature, depth, substrate type), and sensitivity of the receptor (Richardson et al., 1995). Impacts to marine mammals exposed to loud sounds include possible mortality (either directly from the noise or indirectly based on the reaction to the noise), injury and/or disturbance ranging from severe (e.g., permanent abandonment of vital habitat) to mild (e.g., startle). As stated, pile driving and in-water chipping (for demolition of the existing dock) could cause behavioral harassment; however, physical injury is not anticipated due to the nature of the

operations and mitigation measures (see Mitigation section). No Level A harassment (injury) or mortality is expected to occur.

Hearing Impairment and Other Physical Effects

Temporary or permanent hearing impairment is a possibility when marine mammals are exposed to very loud sounds. As stated previously, NMFS considers the Level A in-water harassment threshold to be 180/190 dB for cetaceans and pinnipeds, respectively. The threshold for Level B harassment from pulsed noise (e.g, impact pile driving) is 160 dB and, specific to the MTRP, 125 dB from non-pulsed noise (e.g., vibratory pile driving, chipping).

Several aspects of the planned monitoring and mitigation measures for the MTRP are designed to detect marine mammals occurring near pile driving and demolition activities, and to avoid exposing them to sound that could potentially cause hearing impairment (e.g., mandatory shut down zones) and minimize disturbance (e.g., shut down if allocated takes used, for large groups and groups with calves). In addition, marine mammals will be given a chance to leave the area during ''soft start'' and ''ramp-up'' procedures to avoid exposure to full energy pile driving. In those cases, the avoidance responses of the animals themselves will reduce or eliminate any possibility of hearing impairment. Hearing impairment is measured in two forms: temporary threshold shift and permanent threshold shift.

Permanent Threshold Shift (PTS)

When permanent threshold shift (PTS) occurs, there is physical damage to the sound receptors in the ear. In some cases, there can be total or partial deafness, whereas in other cases, the animal has an impaired ability to hear sounds in specific frequency ranges. PTS consists of non-recoverable physical damage to the sound receptors in the ear and is therefore classified as Level A harassment (injury) under the MMPA. There are no empirical data for onset of PTS in any marine mammal; therefore, PTS-onset must be estimated from temporary threshold shifts (TTS)-onset measurements and from the rate of TTS growth with increasing exposure levels above the level eliciting TTS-onset. PTS is presumed to be likely if the hearing threshold is reduced by 40 dB (i.e., 40 dB of TTS) (Southall et al., 2007). PTS has never been measured in marine mammals despite some hearing threshold studies exposing beluga whales to pulses up to 208 dB (Finneran et al., 2002), 28 dB louder than NMFS' current Level A harassment threshold. Based on TTS studies (discussed below), proposed mitigation measures, and source levels for the MTRP, NMFS does not expect that marine mammals will be exposed to levels that could elicit PTS (i.e., no Level A harassment is anticipated).

Temporary Threshold Shift (TTS)

Temporary (auditory) threshold shift (TTS) is a slight, recoverable loss of hearing sensitivity. TTS is the mildest form of hearing impairment that can occur during exposure to a loud sound (Kryter, 1985). The course and time of recovery generally depend on the amount of exposure to noise and the amount of shift incurred (Natchigall et al., 2003). Generally, the greater the threshold shift, the longer the recovery period (Mills et al., 1979). Southall et al. (2007) considers a 6 dB TTS (i.e., baseline thresholds are elevated by 6 dB) sufficient to be recognized as an unequivocal deviation and thus a sufficient definition of TTS-onset. Auditory fatigue (i.e., TTS) in mid-frequency cetaceans has been measured after exposure to tones, impulsive sounds, and octave-band noise. Because it is non-injurious, NMFS considers TTS as Level B harassment that is mediated by physiological effects on the auditory system; however, NMFS does not consider onset TTS to be the lowest level at which Level B Harassment may occur.

While experiencing TTS, the hearing threshold rises and a sound must be louder in order to be heard. TTS can last from minutes or hours to (in cases of strong TTS) days. For sound exposures at or somewhat above the TTS-onset threshold, hearing sensitivity recovers rapidly after exposure to the noise ends. Few data on sound levels and durations necessary to elicit mild TTS have been obtained for marine mammals. For toothed whales exposed to single short pulses, the TTS threshold appears to be, to a first approximation, a function of the energy content of the pulse (Finneran et al., 2002).

Laboratory experiments investigating TTS onset for belugas have been conducted for both pulse and non-pulse sounds. Finneran et al. (2000) exposed a trained captive beluga whale to a single pulse from an explosion simulator. No TTS threshold shifts were observed at the highest received exposure levels (approximately 199 dB; 179 dB re 1 μPa2–s [SEL]); however, amplitudes at frequencies below 1 kHz were not produced accurately to represent predictions for the explosions. Another study was done using seismic waterguns with a single acoustic pulse (Finneran et al., 2002). Measured TTS was 7 and 6 dB in the beluga at 0.4 and 30 kHz, respectively, after exposure to intense single pulses at approximately 208 dB (186 dB re 1 microPa2–s [SEL]). Schludt et al. (2000) demonstrated temporary shifts in masked hearing thresholds for belugas occurring generally between 192 and 201 dB (192–201 dB re 1 μPa2–s [SEL]) after exposure to intense, non-pulse, 1–s tones at 3, 10, and 20 kHz. TTS onset occurred at mean sound exposure level of 195 dB (195 dB re 1 microPa2- s [SEL]). At 0.4 kHz, no subjects exhibited shifts after exposures up to SPLs of 193 dB (195 dB re 1 microPa2- s [SEL]). Natchigall et al. (2003) measured TTS averaging 11 dB when exposed to sounds with a 7.5 kHz center frequency. No shifts were obtained at 165 dB or 171 dB (198 to 200 re 1 microPa2–s [SEL]), but when a fatiguing noise at 179 dB was presented, the animal showed the first TTS of 10.4 dB above baseline. Full auditory recovery occurred within 45 minutes following noise exposure. To date, no studies relating TTS onset to pile driving sounds have been conducted for any cetacean species.

Because noise from pile driving would not be a one-time exposure, as with most human development and exploration activities, a time component must be incorporated into any effects analysis. Experiments with marine mammals show a nearly linear relationship between sound exposure level and duration of exposure: the longer an animal is exposed, the lower the level required to produce TTS (Kastak & Schusterman, 1999; Schlundt et al., 2000; Nachtigall et al., 2003). Beluga whales could be exposed to vibratory pile driving noise lasting from less than 1 minute up to approximately 3 minutes or up to 20 minutes for impact driving (averaging 1.5 minutes for vibratory and 6 minutes for impact pile driving). The hammers must then be re-set creating, at a minimum, a 1–15 minute break. Using auditory evoked potentials (AEP) methods, Natchigall et al. (2004) repeated his 2003 study and found TTS of approximately 4 to 8 dB following nearly 50 minutes of exposure to the same frequency noise (center frequency 7.5 kHz) at 160 dB (193–195 dB re 1 microPa2–s [SEL]). TTS recovery occurred within minutes or tens of minutes. Based on data from the aforementioned studies, the fact that pile driving would only occur for a short intervals of time, and animals would not be exposed to sound levels at or above 180 dB due to proposed mitigation, NMFS anticipates that TTS, if it does occur, would not last more

than a few minutes and would likely not result in impacts to vital life functions such as communication and foraging.

Demolition Effects

Demolition of the existing dock will require use of mechanical equipment such as hydraulic chipping hammers (in-water or out-of-water) and possibly the use of explosives (out-of-water only). The POA/MARAD have submitted a demolition plan outlining three options, as described above, for dock removal and proposed mitigation for each (available on the NMFS Permits website). Because the chosen method will not be decided until 2010, all three options, with associated mitigation, are included in the proposed rulemaking.

Mechanical means of removing the dock is a component in all three options. The POA/MARAD have indicated that if the in-water dock demolition method is chosen (Option 1), it will likely occur during the winter, when beluga whales are least abundant, or in summer, but not in both seasons. Information on noise levels associated with the use of chipping hammers is currently not available for the unique waters of Knik Arm; however, the chipping hammer operates at 19% less horsepower than the vibratory hammers used during pile driving. Therefore, it can be assumed that sound transmission from this activity is less than that of pile driving. In addition, because of the considerable structural mass of concrete that the vibrations would pass through prior to reaching the water, the energy is expected to attenuate to a minimal level. Due to the lack of empirical acoustic propagation data, the POA/MARAD have requested, and NMFS is proposing, to implement the same harassment and safety radii as vibratory pile driving. Based on this precautionary approach, considering the chipping hammer works at 19 percent reduced energy and the concrete will absorb some sound, NMFS has preliminarily determined that marine mammals would not be exposed to levels inducing Level A harassment and behavioral harassment would be minimized, if not eliminated, due to implementing a 200 m shut-down zone.

Option 2 in the demolition plan involves blasting, albeit out-of-water. Because no in-water blasting is proposed, applying NMFS' harassment threshold criteria for this activity is not appropriate. Instead, the POA/MARAD and NMFS have considered sound transmission through the water's surface from out-of-water detonations.

Little information is available for over-water sound levels from explosives near shore (out-of-water); however, two studies conducted by the California Department of Transportation (Caltrans) have measured in-water sound transmission resulting from out-of-water blasting.

In 2003, Caltrans collected measurements of underwater SPLs during out-of-water controlled blasting operations as part of the construction of bridge pier footings on Yerba Buena Island for the San Francisco Oakland Bay Bridge, East Span Seismic Safety Project (Caltrans, 2004). In-water SPLs were measured during out-of-water blasts for two different piers approximately, from the centerline, 80 m (262 ft) and 30 m (98 ft) from the shoreline. Results varied at each pier for each blast; however, in general, SPLs measured at 10- 20 m ranged from 170 to 183 dB (based on a 35 millisecond (msec) time constant) for the pier 80 m from the shoreline and 177 to 198 dB [189 to 212 dB(peak)] for the pier 30 m from shore. It should be noted that rms SPLss reported using the 35–msec time constant was found to be 3–5 dB higher than ''true'' rms SPL measured over the duration of the impulse, which is about 1 to 2 seconds in duration; therefore, the SPLs provided above should be considered conservative. Data from blasting events at both piers indicated that underwater SPLs appeared to increase as blasting was conducted at lower elevations; putting the blast closer to the water.

Dewatered cofferdams represent the most effective way of reducing construction/ demolition created noise into the water column because all operations are completely decoupled from the surrounding water column. The POA/MARAD would create a dike which acts like a cofferdam as in the Caltrans project. The out-of-water blasting at the POA would occur 91m (300 ft) from shore and the blasts would be confined (unlike Caltrans); therefore, sound levels in water would likely be similar or less than the results from the Caltrans pier located 80m from the shoreline but likely not greater. Based on Caltran results, no Level A harassment is likely to occur and the POA/MARAD have agreed, as suggested by NMFS, to not conduct any blasting if any marine mammal, is within visible range of the POA. MMOs would begin scanning for marine mammals thirty minutes prior to detonation with high power binoculars and the naked eye. Should any marine mammal be sighted, blasting will be delayed. Therefore, NMFS anticipates no harassment from out-of-water blasting will occur.

Non-auditory Physiological Effects

Non-auditory physiological effects or injuries that theoretically might occur in marine mammals exposed to strong underwater sound include stress, neurological effects, bubble formation, resonance effects, and other types of organ or tissue damage. Due to proposed mitigation measures (e.g., mandatory shut downs) marine mammals would not be exposed to sound at or above 180 dB and likely less than that as sound studies indicate the 180/190 dB threshold is approximately 0–20 m from pile driving and NMFS is proposing a 200m shut down zone. Therefore, it is not expected that severe physiological effects from exposure to sound would be expected; however, a hormonal stress response is possible. Romano et al. (2004) demonstrated that belugas exposed to seismic water gun and (or) single pure tones (SPLs up to 201 dB) resembling sonar pings showed increased stress hormone levels of norepinephrine, epinephrine, and dopamine. While RLs would not be as strong as the ones in that study, a stress response would not be unexpected. Studies have also demonstrated that reactions of animals to sounds could result in physical injury. It has recently been reported that stranded deep diving marine mammals displayed physical attributes similar to the bends (e.g., in vivo gas bubble formation) (Ferndandez et al., 2005, 2006). Marine mammals may experience these symptoms if surfacing rapidly from deep dives in response to loud sounds. However, because Knik Arm is a shallow water estuary, marine mammals found there are not considered deep divers, and due to proposed mitigation measures, non-auditory physiological impacts, other than stress, are not expected.

Several aspects of the planned monitoring and mitigation measures for the MTRP are designed to detect marine mammals occurring near pile driving and to avoid the chance of them being exposed to sound levels which could result in injury or mortality (see Mitigation section). NMFS does not expect Level A harassment to occur.

Behavioral Effects

Behavioral responses of marine mammals to noise are highly variable and depend on a suite of internal and external factors which in turn results in varying degrees of significance (NRC, 2003; Southall et al., 2007). Internal factors include: (1) individual hearing sensitivity, activity pattern, and motivational and behavioral state (e.g., feeding, traveling) at the time it recieves the stimulus; (2) past exposure of the

animal to the noise, which may lead to habituation or sensitization; (3) individual noise tolerance; and (4) demographic factors such as age, sex, and presence of dependent offspring. External factors include: (1) non-acoustic characteristics of the sound source (e.g., if it is moving or stationary); (2) environmental variables (e.g., substrate) which influence sound transmission; and (3) habitat characteristics and location (e.g., open ocean vs. confined area). The marine mammal species or stock that could be most affected from the MTRP is the beluga whale. There are no consistent observed threshold levels at which beluga whales, and marine mammals in general, respond to an introduced sound. Beluga whale responses to sound stimuli have been noted to be highly dependent upon behavioral state and motivation to remain or leave an area. Few field studies involving stationary industrial sounds have been conducted on beluga whales. Reactions of belugas in those studies varied. For example, in Awbrey and Stewart (1983) (as summarized in Southall et al., 2007), recordings of noise from SEDCO 708 drilling platform (non-pulse) were projected underwater at a source level of 163 dB. Beluga whales less than 1.5 km from the source usually reacted to onset of the noise by swimming away (RLs approximately 115.4 dB). In two instances groups of whales that were at least 3.5 km from the noise source when playback started continued to approach (RLs approximately 109.8 dB). One group approached within 300 m (RLs approximately 125.8 dB) before all or part turned back. The other group submerged and passed within 15m of the projector (RL approximately 145.3 dB). Richardson et al. (1990), as summarized in Southall et al., 2007, played back drilling platform sounds (source level: 163 dB) while approximately 100 belugas were in the area of several hundred to meters to several hundred kilometers. No obvious reactions were noted; however, moderate changes in behavior from three groups swimming within 200 m of the sound projector were observed.

TTS experiments have also documented behavioral responses by trained belugas. These responses included reluctance to return to experimental stations when exposed to watergun pulse sounds projected 4.5m from the subject at approximately 185.3 dB (171 dB re 1 μPa2–s [SEL]) (Finneran et al., 2002) and behavioral changes when exposed to sounds from the explosion simulator at approximately 200 dB (177 dB re 1 μPa2–s [SEL]) (Finneran et al., 2000). In a non-pulse exposure experiment (i.e., 1 s tones), belugas displayed altered behavior when exposed to 180 196 dB (180–196 dB re 1 μPa2–s [SEL]) (Schlundt et al., 2000).

Masking of whale calls or other sounds potentially relevant to whale vital functions may occur. Southall et al. (2007) defines auditory masking as the partial or complete reduction in the audibility of signals due to the presence of interfering noise with the degree of masking depending on the spectral, temporal, and spatial relationships between signals and masking noise as well as the respective received levels. Masking occurs when the background noise is elevated to a level which reduces an animal's ability to detect relevant sounds. Belugas are known to increase their levels of vocalization as a function of background noise by increasing call repetition and amplitude, shift to higher frequencies, and change structure of call content (Lesage et al., 1999; Scheifele et al., 2005; McIwem, 2006). Another adaptive method to combat masking was demonstrated in a beluga whale which reflected its sonar signal off the water surface to ensonify to an object on which it was trained to echolocate (Au et al., 1987). Due to the low frequencies of construction noise, intermittent nature of pile driving, and the ability of belugas to adapt vocally to increased background noise, it is anticipated that masking, and therefore interruption of behaviors such as feeding and communication, will be minimized.

Many marine mammals, including beluga whales, perform vital functions (e.g., feeding, resting, traveling, socializing) on a diel (i.e., 24 hr) cycle. Repeated or sustained disruption of these functions is more likely to have a demonstrable impact than a single exposure (Southall et al., 2007). However, it is possible that marine mammals exposed to repetitious construction sounds from the proposed construction activities will become habituated and tolerant after initial exposure to these sounds, as demonstrated by beluga vessel tolerance (Richardson et al., 1995, Blackwell and Green, 2002). Habituation is found to be common in marine mammals faced with introduced sounds into their environment. For example, bowhead whales (Balaena mysticetus) have continued to use pathways where drilling ships are working (RLs: 131 dB) so that they can continue their eastward migration (Richardson et al., 1991). In addition, harbor porpoise, dolphins, and seals have become habituated to acoustic harassment deterrent devices such as pingers and ''seal bombs'' after repeated exposure (Mate and Harvey, 1987; Cox et al., 2001).

The monitoring program implemented by the POA/MARAD, with guidance and approval from NMFS, is designed to determine acute behavioral reactions of marine mammals in response to MTRP activities as well as implement shut down mitigation measures. To do this, marine mammal observers (MMOs) are stationed at the Port of Anchorage near pile driving operations to make observations and call to hammer operators of presence of marine mammals and if shut down is required. From July to November 2008, MMOs were on site all days in-water pile driving occurred (6–7 days per week). Reports indicate that 431 beluga whales (231 adults, 101 juveniles, 43 calves, 56 unknown age) and 1 harbor seal were sighted by MMOs stationed at the POA from July- November 2008. Of the 431 whales sighted, 267 entered into the harassment or safety zone; however, pile driving was not always taking place due to either non-mandatory, early shut-down or in-water pile driving not being conducted. This trend of using the east side of Knik Arm is consistent with marine mammal survey reports from 2005–2007. The POA/MARAD have consistently shut down operations if whales were sighted within or approaching the POA; therefore, only 8 beluga whales have entered into the designated harassment zones when pile driving was actually occurring. Traveling was the most common behavior detected followed by possibly feeding and resting/milling, also augmenting data collected from 2005–2007.

Out of 59 group sightings totaling 431 beluga whales, only 3 groups demonstrated an observed change in behavior. On all 3 occasions, the group split in two due to presence of a barge or a boat. Beluga whales were not observed to change swim speeds and while heading sometime did change, this could not be attributed directly to pile driving.

In addition to the goals above, the monitoring plan is designed to determine how this multi-year project is affecting beluga whale abundance and habitat use in this area in the long term. In accordance with conditions in the current IHA and the POA/MARAD's USACE 404(b) Permit, an independent MMO team is located atop Cairn Point and reports on (1) the frequency at which beluga whales are present in the MTRP footprint; (2) habitat use, behavior, direction of travel, and group composition; and (3) observed reactions or changes in behavior of marine

mammals in response to in-water activities occurring at the time of sighting. This team is present eight hours per day/four days per week, during two tide cycles per observation day and will continue through the MTRP and 1-year post construction. Marine mammal monitoring around the POA began in 2004 for the Knik Arm Crossing Project and continued into 2005 through the present for the MTRP. This scientific monitoring program will continue until 1–yr post completion of the new POA terminal. To investigate possible impacts other than acute behavioral changes, data from the 2008 monitoring reports gathered by the scientific monitoring team were averaged with the total whales sighted per hour from 2004–2006 for August and September and 2004–2007 for October and November. For all months, except October, the average number of whales sighted per hour was higher when the 2008 data were added. While the October average in 2008 was higher than 2005 and 2006, it was not higher than 2004 and 2007. Overall sighting rate by .09 whales/hour when compared to those two years. Additionally, the monitoring reports from MMOs on-site (i.e., those that implement mitigation shut-down procedures) consistently reported that whales did not change behavior when pile driving was occurring. Whales were often reported to be swimming at slow or normal speeds and behaviors were categorized, from the most common, as traveling, suspected feeding, or milling. The final monitoring report summarizing sightings from both MMOs stationed at the POA and the independent observer team at Cairn Point from July to November can be found on the NMFS Permits website (see **ADDRESSES**).

There were no available data on beluga whale responses to pile driving before in-water pile driving began for the MTRP; therefore, NMFS used the best available science which investigated similar sounds involving mid frequency cetaceans to assess potential impacts to beluga whales when exposed to pile driving during its impacts analysis for issuance of the IHA in 2008. In general, scientific literature suggests the following reactions are the most common in such cases: altered headings, increased swimming rates, changes in dive, surfacing, respiration, and feeding patterns, and changes in vocalizations. NMFS acknowledges these reactions are possible; however, also notes that, to date, all monitoring reports show no apparent behavioral reaction of Cook Inlet beluga whales to pile driving. There could be a number of reasons for this, including, but not limited to: (1) Cook Inlet beluga whales have demonstrated a tolerance to commercial vessel traffic and industrialization around the POA and therefore, may simply be habituated to such noise; (2) Cook Inlet is a naturally noisy environment due to strong winds and tides; (3) pile driving is intermittent in nature and a stationary source which may alleviate stress and reactions; and (4) the mitigation measures set by NMFS and implemented by the POA/MARAD are appropriate and effective to minimize harassment. The POA/MARAD are currently undertaking a study to investigate the vocal repertoire of beluga whales in response to pile driving as changes in vocalization patterns can not be determined from sighting data. Opportunistic sightings reports (often reported by tug/vessel crew, POA workers, and the public) and those from MMOs under the current IHA describe accounts of beluga whales vocalizing around tugs/barges as it resonates through the hulls, swimming near and around ships, and feeding around working vessels/newly filled land. While animals will be exposed to greater than background noise levels from pile driving, background sound levels in Knik Arm are already higher than most other marine and estuarine systems due to strong currents and eddies, recreational vessel traffic, and commercial shipping traffic entering and leaving the POA (Blackwell and Greene, 2002; Scientific Fishery Systems, 2008). Again, to date, all monitoring reports indicate no change in frequency, habitat use, or behavior of whales exposed to pile driving activities.

As in the 2008 IHA, NMFS is proposing to implement the following mitigation measure into regulations to ensure that exposure to pile driving does not result in decreased reproductive success or survivorship: shut down if a beluga whale calf or group with a calf is sighted approaching or within the harassment isopleths. Scientific literature suggests that mammal calves are believed to be more susceptible to anthropogenic stressors (e.g., noise) than adults. Frankel and Clark (1998) investigated the relative importance of natural factors such as demographic composition of humpback whale pods in response to low frequency (75Hz with a 30Hz bandwidth) M-sequenced source signal transmitted from a 4–element hydrophone array (elements were placed at depths of 10, 20, 40, and 80m). They determined that two natural variables, the number of adults in a pod and the presence of a calf, had the greatest effect upon whale behavior in response to playbacks. Pods with calves had higher blow rates, longer times at the surface, and a higher ratio of time at the surface to time submerged. The presence of a calf; however, did not affect whale speed, whale bearings, or relative orientation to the playback vessel. While no data on the vocal responses of beluga whales mother/calf pairs in response to anthropogenic sound are available, Van Parijs and Corkeron (2001) determined that Indo-Pacific humpback dolphin mother/calf pairs increased vocal behaviors when vessel passed with 1.5 m more than groups without calves. The authors concluded that mother/calf pairs appear to be more disturbed than animals of other social/age classes and that mother/calf pairs exhibit an increased need to establish vocal contact after such disturbance. McIwem (2006) suggested that pile driving operations should be avoided when bottlenose dolphins are calving as lactating females and young calves are likely to be particularly vulnerable to such sound. Based on these studies, NMFS has determined that the aforementioned mitigation measure will further ensure a negligible impact on beluga whales.There is no evidence to suggest that construction or other maritime activities (shipping, maintenance dredging) at the POA are affecting beluga whale use as evidenced by their relatively consistent seasonal abundance, use patterns, including the presence of calves in the area since 2004 (Funk et al., 2005; Ramos et al. 2006; Markowitz and McGuire, 2007; Cornick and Kendall, 2008; Cornick and Saxon-Kendall, 2009; ICRC, 2009). Monitoring reports indicate that beluga whales are primarily transiting through the POA area while opportunistically foraging, and POA/MARAD construction activities are not blocking this transit or displacing belugas from Knik Arm. Furthermore, NMFS does not anticipate that more serious effects (e.g., neurological effects, organ/tissue damage) would occur. Proposed mitigation measures would require shut down if a marine mammal is seen approaching within 200m of the pile driver or chipping hammer. Given that the 180 and 190 dB isopleths are within 20m, NMFS considers this shut down zone more than adequate to eliminate chance of physiological impairments. In addition, there is no evidence of injuries occurring in marine mammals exposed to sound from pile driving and there have been no direct studies of the potential for pile driving to elicit any of those effects. Therefore, no Level A

harassment (injury) is expected nor would any be authorized. For these and the other reasons listed above, the MTRP is expected to have a negligible impact on Cook Inlet beluga whales.

Impacts to Other Marine Mammals

Harbor seals, harbor porpoise, and killer whales could also potentially be impacted from the MTRP; however, these species rarely occur in upper Cook Inlet, hence exposure to harassment level sounds from the MTRP would be minimal and therefore have a negligible impact. If present, hauled out harbor seals may flush into the water from in-air noise, disturbing their resting and warming behaviors. In addition, some may be displaced or alter dive patterns if in water during pile driving. However, reactions may be minimized by the fact that seals in the area haul out in the presence of other anthropengic noise (e.g., aircraft/shipping/vehicular traffic, crane operations, etc.) and are likely habituated to noise around the POA. Blackwell et al., 2004 investigated disturbance to hauled-out ringed seals during pile driving at Northstar Island. Unweighted peak and rms SPLs and SELs in air were 112 dB re 20 mPa2–s and 96 dB re 20 mPa2–s, and 90 dB re 20 mPa2–s, respectively. During 55 hrs of observation, 23 observed seals exhibited little or no reaction to any industrial noise except approaching Bell 212 helicopters. Ringed seals swam in open water near the island throughout construction activities and as close as 46 m from the pipe-driving operation. It is hypothesized that the seals around Northstar Island were habituated to industrial sounds.

Harbor porpoise and killer whale behavioral reactions would likely be similar to those discussed in published literature (e.g., change in direction, diving behavior, etc.). Harbor porpoises have specialized hearing in higher frequency ranges outside of most industrial sounds; therefore, noise in lower frequency ranges must be louder in order to be heard. However, while construction will emit low frequency sounds outside of harbor porpoise peak sensitivity range, these animals have elicited behavioral responses to simulated wind turbine noise, also outside peak sensitivity range (max. Energy between 30–800 Hz; spectral density source levels of 128 dB at 80 and 160Hz) (Koschinski et al., 2003). During this study, animals were sighted at greater ranges during playbacks of simulated wind turbine noise and observed animals more frequently used echolocation signals. NMFS has determined that similar reactions may occur; however, due to the low abundance and rare occurrence of harbor porpoise and killer whales in Knik Arm and the intermittent nature of pile driving, any impacts from noise on their behavior is expected to be minimal and therefore negligible.

Impacts to Fish and Marine Mammal Habitat

The primary beluga whale habitat related concern for coastal development (not specific to the POA), as stated in the Conservation Plan, is restricting beluga whale passage along Knik Arm. The new dock face will extend approximately 400 ft from the current dock. No structures will be constructed which expand across the Arm or beyond the new dock location; therefore, it is not expected that beluga whales' access to the primary hotspots will be limited. To date, NMFS approved observers have reported that beluga whales continue to use areas within the MTRP footprint and are not behaviorally reacting to exposure to pile driving noise. Additionally, habitat use has remained unchanged. Pre-MTRP construction, marine mammal surveys along Knik Arm and pre in-water pile driving surveys report that traveling followed by opportunistic feeding were the primary beluga whale behaviors around the POA. Reports required under the 2008 IHA show the same trend in whale behavior. In addition, NMFS researchers observed beluga whales feeding off the newly filled North Backlands area further indicating that POA/MARAD expansion construction is not eliminating foraging opportunities. Based on these data and the fact MMOs are not observing acute behavioral reactions to pile driving, NMFS anticipates that beluga whales would not alter their behavior in a way that prevents them from entering and/or transiting throughout Knik Arm.

The primary aquatic habitat resource losses associated with the MTRP are the loss and degradation of intertidal and nearshore habitat, including essential fish habitat (EFH). Loss of habitat will adversely affect fish since the area to be filled is a nursery area, and placing fill in waters where fish are present can kill, injure, and isolate fish in the discharge area. Beluga whales' diet is primarily comprised of fish, therefore, this habitat loss could result in impacts to beluga whales. Fish habitats, including EFH, in upper Cook Inlet have not been studied comprehensively, but the studies completed to date indicate that the area immediately around the MTRP supports a wide diversity of marine and anadromous fish species, in particular providing migrating, rearing, and foraging habitat (Houghton et al., 2005). Intertidal and nearshore subtidal waters are used by juvenile and adult salmonids for refuge from the strong currents, as a migration corridor for adult salmonids, and as rearing and migratory habitat for several streams that drain into Knik Arm. Therefore, the elimination of this habitat and alteration of hydrology would adversely impact fish, especially juveniles and smolt taking refuge in the area to be filled; however, based on the following reasons, these changes are not likely to appreciably reduce prey availability to marine mammals, particularly beluga whales.

The project area is located approximately 2000 feet (609.4 m) north of the mouth of Ship Creek, a stocked creek, and the proposed action would remove most of the remaining intertidal and shallow subtidal waters north of the mouth to Cairn Point. If a decrease in fish abundance occurs to a certain degree, this could likely result in decreased foraging opportunities for belugas and increased beluga energy expenditure to find prey. However, juvenile chinook salmon sampled between Cairn Point and Point Woronzof were primarily of Ship Creek hatchery origin. Juvenile salmonids are reared at the hatchery for two years prior to release at the smolt stage. Smolts released from the hatchery are ready for out migration and it is believed that the smolts reside in the Ship Creek area for a limited period before migrating elsewhere in the Knik Arm and/or Cook Inlet estuaries. Because this creek is stocked, fish would be replenished from the hatchery. Furthermore, the area directly surrounding the Port is not considered a foraging hotspot, unlike the upper reaches of Knik Arm.

Further, design of the sheet pile wall may provide some refuge for fish which could enhance survival. The face of each sheet-pile cell is curved outward, creating a scalloped surface. Fender pile and fender-system structural components would protrude from the face of the sheet pile approximately eight feet, which would provide some limited fish refuge. In addition, the Port is evaluating various methods for constructing joint systems between OCSP cells that would provide open water areas along the face of the dock by leaving a space between the construction joints in the sheet pile wall. These breaks in the sheet pile wall profile would create alcoves with armor rock slopes of varying sizes and shapes that would provide refuge opportunities for salmonids. To offset direct habitat loss and degradation, the Port is required to carry out certain mitigation

procedures as condition in the Army Corps of Engineers' Permit No. POA–2003–502–N. For all construction seasons, including 2008, these include, but are not limited to: (1) no in water fill placement or pile driving activities shall occur within a one week period following smolt releases from the Ship Creek hatchery; (2) fill material shall consist of clean fill, free of unsuitable material (e.g., trash, debris, asphalt, etc.), and free of toxic pollutants; and (3) the Municipality of Anchorage, in collaboration with the Corps, would execute compensatory mitigation projects that will contribute toward offsetting the functional losses attributed to the Project. These projects would support salmon populations through restoration, enhancement, creation and/or preservation (listed in order of priority) of existing nearby estuarine and associated lower riparian habitats.

Public comments received on two **Federal Register** documents related to the MTRP- the proposed IHA issuance notice and notification of receipt for rulemaking/LOAs-identified concerns over other habitat related issues (i.e., pollution and increased dredging needs). NMFS analyzed these issues during its ''negligible impact'' determination decision process for the POA/MARAD's current IHA and the 2008 EA. This analysis is further supplemented here.

The Conservation Plan identifies pollution and dredging in relation to health and subsistence use of beluga whales. Exposure to pollution is a concern for many species which inhabit anthropogenically influenced areas. Pollutants may enter Cook Inlet via wastewater, runoff, and accidental petroleum and other product spills. The city of Anchorage and lower Knik Arm is the most highly industialized area of Cook Inlet; however, pollution levels in beluga whales are lower than those in other populations of beluga whales. As summarized in the Conservation Plan, beluga whale tissue samples have been analyzed for polychlorinated bipheny (PCBs), chlorinated pesticides (such as DDT), and heavy metals. PCBs and DDT may impair marine mammal health and reproductive abilities. Cook Inlet beluga whales had much lower concentrations of PCBs and DDT than Saint Lawrence river beluga whales and about 1/2 the concentration of those pollutants than other Arctic Alaska populations. Also examined were concentrations of various substances stored in the liver. Cadmium and mercury were lower in the Cook Inlet population than in the Arctic Alaska populations, while levels of methylmercury were similar to other Arctic Alaska populations. Copper levels were two to three times higher in the Cook Inlet animals than in the Arctic Alaska animals and similar to the Hudson Bay animals; however, the copper levels found in the livers of Cook Inlet belugas were not high enough to be a health issue (Becker et al., 2000).

As a result of POA expansion, dredging needs are altered from the current nominal depth of -35 ft MLLW to -45 ft MLLW and therefore NMFS has analyzed the potential for impact to marine mammals from this change in dredging needs in addition to POA/MARAD operated construction dredging. The Conservation Plan states that direct chemical analysis of dredging sediments found that compounds such as pesticides, PCBs, and petroleum hydrocarbons in Cook Inlet were well below detection limits while levels of arsenic, barium, chromium, and lead were well below management levels. Other compounds such as cadmium, mercury, and silver were not detected at all. In addition, hydrological models indicate that, overall, the POA expansion appears to have less potential for sedimentation than the existing port since the MTRP moves the dock face out into deeper water and into a higher flow regime area (Erbesole and Raad, 2004) leading to a possible decrease in dredging needs.

The POA/MARAD continue to operate under applicable federal, state, and local environmental laws and is conducting the port expansion process in the same manner. The POA/MARAD have obtained a USACE 404/10 Permit (August 2005/2007), Alaska Department of Environmental Conservation/Division of Water Quality Section 104 Permit (July 21, 2006), and Alaska Department of Natural Resources/Coastal Management Program Final Consistency Concurrence (July 7, 2006). These permits and concurrences were issued pertaining to water quality and other natural resources. In particular, the USACE permit contains numerous mitigation measures related to preventing and minimizing impact to wetlands and aquatic and aviary organisms from general development activities such as discharge, fill, and gravel extraction as well as establishes requirements to compensate for resources losses important to the human and aquatic environment. Many of these mitigation measures and conditions were suggested by NMFS, the EPA, US. Fish and Wildlife Service and other environmental agencies early in the MTRP's developmental stage.

Impacts to Subsistence Hunting

The subsistence beluga harvest transcends the nutritional and economic value of the whale and is an integral part of the cultural identity of the region's Alaska Native communities. Inedible parts of the whale provide Native artisans with materials for cultural handicrafts, and the hunting itself perpetuates Native traditions by transmitting traditional skills and knowledge to younger generations (NOAA 2007). However, due to dramatic decreases in Cook Inlet beluga whale populations, on May 21, 1999, a temporary moratorium on beluga whale harvest was set in place in 1999 (Public Law No. 106–31, section 3022, 113 Statute [Stat.] 57, 100) from such date until October 1, 2000. This moratorium was extended indefinitely on December 21, 2000 (Public Law No. 106–553, section 1(a) (2), 114 Stat. 2762). NMFS has entered into a co-management agreement for beluga whale subsistence harvest. No hunt has been conducted since 2005 and on October 15, 2008, NMFS published final regulations establishing long-term limits on the maximum number of Cook Inlet beluga whales that may be taken by Alaska Natives for subsistence and handicraft purposes (73 FR 60976). These rules effectively state that no harvest will be conducted until 2012, at which time the possibility of a harvest will be re-evaluated based on beluga whale population trends.

NMFS anticipates that any harassment to marine mammals, including Cook Inlet beluga whales, would be short-term and be limited to changes in behavior and mild stress responses. NMFS does not anticipate that the authorized taking of affected species or stocks will result in changes in reproduction, survival, or longevity rates, impact population levels, or result in changes in distribution. Therefore, NMFS has preliminarily determined that the proposed regulations will not have an unmitigable adverse impact on the availability of marine mammal stocks for subsistence uses.

Mitigation

A goal of the Conservation Plan is to mitigate effects of anthropogenic activities, including noise and habitat degradation. The POA/MARAD's USACE permit contains numerous mitigation measures to reduce impacts on natural resources. MMPA authorizations also mitigate for impacts to marine mammals and habitat, mainly in the form of noise and exposure mitigation. Noise mitigation has been considered to safeguard marine

mammals and may fulfill two tasks: First, to avoid physical damage and death to marine animals; second, to avoid or reduce disturbance to marine animals and maintain the significance of an impact area for marine animals (Nehls et al., 2007). Mitigation measures in the current IHA would be in effect for regulations; however, the harassment zone for vibratory pile driving would extend to the 125 dB isopleth instead of the 120 dB isopleth. This small change is justified by the acoustic studies which reports that background levels in Knik Arm around the POA are consistently above 120d B and, even in absence of pile driving, it was difficult to obtain measurements at 120 dB across the Arm (see Acoustic Environment).

NMFS recommended numerous mitigation measures during the scoping process for issuance of the POA/MARAD's USACE permit. These conditions were incorporated into that permit. During the 2008 IHA application process, NMFS Permits Division added further conditions requiring pile driving shut down if beluga whale calves were sighted or if groups comprising 5 or more whales were sighted to minimize harassment potential and ensure that the MTRP would have a negligible impact on Cook Inlet beluga whales. NMFS requires monthly monitoring reports to ensure that pile driving activities are not resulting in behavioral reactions beyond those anticipated and requires reports from the scientific monitoring team atop Cairn Point to monitor for long term impact. These mitigation, monitoring, and reporting requirements support NMFS' negligible impact determination. For regulations, the proposed mitigation measures are as follows:

Scheduling of Construction Activities During Low Use Period of Beluga Whales Around the POA-Tidal Restrictions

Tides have been shown to be an important physical characteristic in determining beluga movement within Knik Arm. Most beluga whales are expected to be foraging well north of the POA during the flood and high tide. However, these northern areas are exposed during the ebb and low tide; therefore, animals move south toward Eagle Bay and sometimes as far south as the Knik Arm entrance to avoid being stranded on mudflats. Based on the beluga whale monitoring studies conducted at the POA since 2005, beluga whale sightings often varied significantly with tide height at and around the POA (Funk et al., 2005, Ramos et al., 2005, Markowitz and McGuire, 2007). Beluga whales were most often sighted during the period around low tide and, as the tide flooded, they typically moved into the upper reaches of the Arm. Opportunistic sighting data also support that highest beluga whale use near the POA is around low tide (NMFS, unpubl. data).

Due to this tidally influenced habitat use, impact pile driving, excluding work when the entire pile is out of the water due to shoreline elevation or tidal stage, shall not occur within two hours of either side of each low tide (i.e., from two hours before low tide until two hours after low tide). For example, if low tide is at 1 p.m., impact pile driving will not occur from 11 a.m. to 3 p.m. Vibratory pile driving will be allowed to commence/continue during this time because its characteristics (non-pulse sound type and lower source level) are expected to elicit less overt behavioral reactions.

Establishment of pile driving safety zones and shut-down requirements

NMFS acknowledges that shut-down of reduced energy vibratory pile driving during the ''stabbing'' phase of sheet pile installation may not be practicable due to concerns the sheet pile may break free and result in a safety and navigational hazard. Therefore, the following shut-down requirements apply to all pile driving except during the ''stabbing'' phase of the installation process.

Safety Zones

In 2008, the POA/MARAD contracted an outside company to determine reliable estimates of distances for 190 (pinniped Level A (injury) threshold), 180 (cetacean Level A threshold), 160 (impact pile driving Level B harassment threshold) and 125 dB (vibratory pile driving Level B harassment threshold) isopleths. Based on NMFS' analysis of the acoustic data, it has been determined that these isopleth distances are 10; 20; 350; and 1,300 m, respectively. Although the 190 and 180 dB isopleths are within 20m for both types of pile driving, NMFS is establishing a conservative 200m mandatory shut-down safety zone which would require the POA/MARAD to shut-down anytime a marine mammal enters this zone.

Shut-Down for Large Groups

To reduce the chance of the POA/MARAD reaching or exceeding authorized take and to minimize harassment to beluga whales, if a group of more than five beluga whales is sighted within the relevant Level B harassment isopleth, shut-down is required.

Shut-down for Calves

Marine mammal calves could be more susceptible to loud anthropogenic noise than juveniles or adults; therefore, presence of calves within any harassment isopleth will require shut-down. If a calf is sighted approaching or within any harassment zone, any type of pile driving will cease and not be resumed until the calf is confirmed to be out of the harassment zone and on a path away from such zone. If a calf or the group with a calf is not re-sighted within 15 minutes, pile driving may resume.

Heavy machinery shut-downs

For other in-water heavy machinery operations other than pile driving, if a marine mammal comes within 50 m of operations, they will cease and vessels will slow to a reduced speed while still maintaining control of the vessel and safe working conditions. Such operations include port operated dredges, water based dump-scows (barges capable of discharging material through the bottom), standard barges, tug boats to position and move barges, barge mounted hydraulic excavators or clamshell equipment used to place or remove material.

In-water pile driving and chipping weather delays

Adequate visibility is essential to beluga whale monitoring and determining take numbers. In-water pile driving will not occur when weather conditions restrict clear, visible detection of all waters within the Level B harassment zones or 200 m safety zone. Such conditions that can impair sightability and require in-water pile driving delays include, but are not limited to, fog and a rough sea state.

Exceedence of Take

If maximum authorized take is reached or exceeded for the year for any marine mammal species, any marine mammal entering into the Level B harassment isopleths will trigger mandatory shut-down.

Use of Impact Pile Driving

In-water piles will be driven with a vibratory hammer to the maximum extent possible (i.e., until a desired depth is achieved or to refusal) prior to using an impact hammer.

Soft Start to Pile Driving Activities

A ''soft start'' technique will be used at the beginning of each pile installation to allow any marine mammal that may be in the immediate area to leave before pile driving reaches full energy. The soft start requires contractors to initiate

noise from vibratory hammers for 15 seconds at reduced energy followed by 1-minute waiting period. The procedure will be repeated two additional times. If an impact hammer is used, contractors will be required to provide an initial set of three strikes from the impact hammer at 40 percent energy, followed by a one minute waiting period, then two subsequent 3 strike sets (NMFS, 2003). If any marine mammal is sighted within the 200 m safety zone prior to pile-driving, or during the soft start, the hammer operator (or other authorized individual) will delay pile-driving until the animal has moved outside the 200 m safety zone. Furthermore, if any marine mammal is sighted within or approaching a Level B harassment zone prior to beginning pile driving, operations will be delayed until the animals move outside the zone in order to minimize harassment. Pile-driving will resume only after a qualified observer determines that the marine mammal has moved outside the 200m safety or Level B harassment zone, or after 15 minutes have elapsed since the last sighting of the marine mammal within the safety zone.

Demolition Mitigation

Table 7–1 in the Demolition Plan outlines all mitigation measures for each proposed option as described in the Specified Activities section of this document. Should chipping in-water be the chosen method for demolition (i.e., Option 1), the POA/MARAD will abide by the safety and harassment radii established for vibratory pile driving, despite the chipping hammer working at 19 percent reduced energy than that of a vibratory hammer. Therefore, NMFS considers this harassment and safety zone to be conservative. Other mitigation including poor weather delays, large group shut-downs, calf shut-downs will also be implemented for in-water chipping. Marine mammal observers will begin searching for animals 30 minutes prior to the start of all in-water chipping operations.

If Option 2 is chosen, no blasting will occur if a marine mammal is located anywhere within any visible area around the Point. Although no blasting will occur in-water, no detonation will occur if a marine mammal is sighted anywhere within the visible area. As with pile driving and chipping, blasting will be delayed if weather does not allow for adequate sighting conditions. Starting one-half hour prior to each out-of-water blasting event, MMOs at the MTRP site will systematically scan the POA and Knik Arm waters as far as the eye can see, by unaided eyed and high-powered binoculars, for signs of marine mammals. If marine mammals are observed, blasting will be suspended and will not resume until the animal has left the view area or has not been re-sighted for 15 minutes.

For in-water heavy-machinery operations, including dike construction, in-water fill placement, crushing, shearing, marine vessel operation, and steel recovery, a safety zone of 50 m would be established. That is, if a marine mammal comes within 50 m of the machinery, operations cease and vessels slow to a reduced speed while still maintaining control of the vessel and safe working conditions to avoid physical injury.

Notification of Commencement and Marine Mammal Sightings

The POA/MARAD shall formally notify the NMFS' Permits Division and AKR prior to the seasonal commencement of pile driving and shall provide monthly monitoring reports of all marine mammal sightings once pile driving begins. The POA/MARAD shall continue the formalized marine-mammal sighting and notification procedure for all POA users, visitors, tenants, or contractors prior to and after construction activities. The notification procedure shall clearly identify roles and responsibilities for reporting all marine mammal sightings. The POA/MARAD will forward documentation of all reported marine mammal sightings to the NMFS.

Public Outreach

The POA/MARAD shall maintain whale-notification signage in the waterfront viewing areas near the Ship Creek public boat launch and within the secured port entrance that is visible to all POA users. This signage shall continue to provide information on the beluga whale notification procedures for reporting beluga whale sightings to the NMFS.

Proposed Monitoring

Marine mammal monitoring for mitigation implementation will be conducted by trained, dedicated observers at the POA during all times in-water pile driving is taking place and thirty minutes before pile driving commences to ensure no marine mammals are within the Level B harassment or shut down zones. All marine mammal sightings will be documented on NMFS approved marine mammal sighting sheets.

Marine Mammal Monitoring

Monitoring for marine mammals will take place concurrent with all pile driving activities and 30 minutes prior to pile driving commencement. One to two trained observer(s) will be placed at the POA at the best vantage point(s) practicable to monitor for marine mammals and will implement shut-down/delay procedures when applicable by calling for shut-down to the hammer operator. The observer(s) will have no other construction related tasks while conducting monitoring. Each observer will be properly trained in marine mammal species detection, identification and distance estimation and will be equipped with binoculars. At the time of each sighting, the pile hammer operator must be immediately notified that there are beluga whales in the area, their location and direction of travel, and if shut-down is necessary.

Prior to the start of seasonal pile driving activities, the POA/MARAD will require construction supervisors and crews, the marine mammal monitoring team, the acoustical monitoring team (described below), and all MTRP managers to attend a briefing on responsibilities of each party, defining chains of command, discussing communication procedures, providing overview of monitoring purposes, and reviewing operational procedures regarding beluga whales.

In addition to the POA/MARAD's trained marine mammal observers responsible for monitoring the harassment zones and implementing mitigation measures, an independent beluga whale monitoring team, consisting of one to two land based observers, shall report on (1) the frequency at which beluga whales are present in the project footprint; (2) habitat use, behavior, and group composition near the POA and correlate those data with construction activities; and (3) observed reactions of beluga whales in terms of behavior and movement during each sighting. It is likely that these observers will monitor for beluga whales 8 hours per day/ 4 days per week but scheduling may change. These observers will work in collaboration with the POA/MARAD to immediately communicate any presence of beluga whales or other marine mammals in the area prior to or during pile driving. The POA/MARAD will keep this monitoring team informed of all schedules for that day (e.g., beginning vibratory pile driving at 0900 for 2 hours) and any changes throughout the day.

Acoustic Monitoring

The POA/MARAD shall install hydrophones (or employ other effective methodologies to the maximum extent possible) necessary to detect and localize passing whales and to

determine the proportion of beluga whales missed from visual surveys. This study will be coordinated with NMFS and the independent beluga whale monitoring program to correlate construction and operationally generated noise exposures with beluga whale presence, absence, and any altered behavior observed during construction and operations.

Reporting

The POA/MARAD are responsible for submitting monthly marine mammal monitoring reports that include all POA observer marine mammal sightings sheets from the previous month and proposes to continue this requirement. The sighting sheets have been approved by NMFS and require the following details, if able to be determined: group size, group composition (i.e., adult, juvenile, calf); behavior, location at time of first sighting and last sighting; time of day first sighted, time last sighted; approach distance to pile driving hammer; and note if shut-down/delay occurred and for how long. If shut-down or delay is not implemented, an explanation of why will be provided (e.g., no in-water work, outside of harassment zone, entered harassment zone but shut-down restriction requirements not met (e.g., no beluga whale calves, small group, ''stabbing'' phase)). In addition, the report will note what type of pile driving and other activities were occurring at and during time of each sighting and location of each observer. The monthly report, due to NMFS OPR and AKR no later than the 10th of the following month, will include all sighting sheets from the previous two months. The independent beluga whale monitoring team shall supply their monthly reports to NMFS; however, a time frame for submitting these reports is not specified.

Adaptive Management

In accordance with 50 CFR 216.105(c), regulations for the proposed activity must be based on the best available information. As new information is developed, through monitoring, reporting, or research, the regulations may be modified, in whole or in part, after notice and opportunity for public review. NMFS has and will continue to conduct June/July aerial surveys to estimate Cook Inlet beluga whale population size. Should these surveys find a dramatic increase or decrease in population size, NMFS may amend the number of whales authorized to be taken appropriately.

If, during the effective dates of the regulations, new information is presented from monitoring, reporting, or research, regulations may be modified, in whole, or in part after notice and opportunity of public review, as allowed for in 50 CFR 216.105(c). In addition, LOAs shall be withdrawn or suspended if, after notice and opportunity for public comment, the Assistant Administrator finds, among other things, the taking allowed in having more than negligible impact on the species or stock or an unmitigable adverse impact on the availability of the species or stock for subsistence uses, as allowed for in 50 CFR 216.106(e). That is, should substantial changes in beluga whale population occur, or monitoring and reporting show that the MTRP is having more than a negligible impact on marine mammals, then NMFS reserves the right to modify regulations and/or withdrawal or suspend LOAs after public review.

Preliminary Determinations

Based on the proposed activity, implementing mitigation and monitoring (both visual and acoustical), the best scientific information available, and data contained in the POA/MARAD's monitoring reports submitted under the IHA, NMFS has preliminarily determined that the MTRP will have a negligible impact on affected marine mammals species or stocks and will not have an unmitigible adverse impact on their availability for taking for subsistence uses.

ESA

Since issuance of the 2008 IHA, Cook Inlet beluga whales have become listed as endangered under the ESA. In accordance with Section 7 of this Act, the POA/MARAD have requested formal consultation with NMFS. In addition, NMFS Permits Division has also requested consultation with NMFS Endangered Species Division for issuance of regulations which may adversely affect beluga whales. Consultation will be completed before NMFS issues final regulations.

NEPA

NMFS has, through NOAA Administrative Order (NAO) 216–6, established agency procedures for complying with NEPA and the implementing regulations issued by the Council on Environmental Quality. As previously discussed, NMFS prepared an EA for issuance of the 2008 IHA and the proposed regulations. The EA addresses both short and long term impacts from the duration of the construction and impacts from operations (e.g., increased commercial vessel traffic). However, because the POA/MARAD have supplied more information on take numbers, acoustic environment, and the demolition process, NMFS has prepared a draft supplemental EA to further analyze the impacts of the MTRP on affected marine mammal species. One comment received during the 30-day public comment period on the application suggested that NMFS defer publication of a proposed incidental take rule until it completes a supplemental EA. It is NMFS practice to complete all NEPA requirements before issuing regulations and will continue to do so. The draft supplemental EA will be available on the NMFS Permits website upon publication of this notice.

Request for Comments

NMFS is soliciting comments on its proposal to issue 5-year regulations and subsequent LOAs to allow the taking of marine mammals, including beluga whales, incidental to MTRP related activities. NMFS addressed public comments in its **Federal Register** Notice of Issuance (73 FR 41318, July 18, 2008) for the IHA and requests that these comments and responses be reviewed before submitting any additional comments. NMFS is particularly interesting in comments addressing the following topics: information addressing the potential effect of repeated exposure to construction noise or other stressful stimuli on marine mammal reproduction, recruitment, and survivorship rates; additional or alternative proposed mitigation measures; information regarding cetacean habituation to acoustic stimuli, and information on potential habitat impacts as it relates to marine mammals. In addition, NMFS requests comments on potential subsistence use impacts. Prior to submitting comments, NMFS recommends reviewing the POA/MARAD's LOA application, demolition plan, NMFS' 2008 EA and 2009 Draft SEA on the NMFS' Permits website (see ADDRESSES) and NMFS' response to public comments in the **Federal Register** Notice of Issuance for the 2008 IHA as those documents contain information relevant to this action.

Classification

Pursuant to the procedures established to implement section 6 of Executive Order 12866, the Office of Management and Budget has determined that this proposed rule is not significant. Pursuant to section 605(b) of the Regulatory Flexibility Act, the Chief Counsel for Regulation of the Department of Commerce has certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, would not

have a significant economic impact on a substantial number of small entities. Two entities will be subject to the requirements in the proposed rulemaking: the U.S. Department of Transportation Maritime Administration (MARAD) and the Port of Anchorage. The MARAD is an agency of the federal government, which is not a small governmental jurisdiction, small organization, or small business. The Port of Anchorage is owned by the Municipality of Anchorage, which, according to the U.S. Census Bureau, had an estimated population in 2007 of approximately 279,000. Therefore, it is not a small governmental jurisdiction, small organization, or small business.

List of Subjects in 50 CFR Part 217

Exports, Fish, Imports, Indians, Labeling, Marine mammals, Penalties, Reporting and recordkeeping requirements, Seafood, Transportation.

Dated: April 15, 2009

Samuel D. Rauch,

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

For reasons set forth in the preamble, NMFS proposes to amend 50 CFR Chapter II by adding Part 217 to read as follows:

PART 217—REGULATIONS GOVERNING THE TAKE OF MARINE MAMMALS INCIDENTAL TO SPECIFIED ACTIVITIES

Subparts A-T—[Reserved]

Subpart U—Taking of Marine Mammals Incidental to the Port of Anchorage Marine Terminal Redevelopment Project

Sec.

Authority: 16 U.S.C. 1361 *et seq.,* unless otherwise noted.

Subparts A-T—[Reserved]

Subpart U—Taking of Marine Mammals Incidental to the Port of Anchorage Marine Terminal Redevelopment Project

§ 217.200 Specified activity and specified geographical region.

(a) Regulations in this subpart apply only to the incidental taking of those marine mammals specified in § 217.202(b) by the Port of Anchorage and the U.S. Department Maritime Administration (MARAD), and those persons it authorizes to engage in in-water pile driving operations and in-water chipping at the Port of Anchorage, Alaska.

§ 217.201 Effective dates.

Regulations in this subpart are effective from July 15, 2009, through July 14, 2014.

§ 217.202 Permissible methods of taking.

(a) Under Letters of Authorization issued pursuant to § 216.106 and 217.207 of this chapter, the Port of Anchorage and MARAD, and persons under their authority, may incidentally, but not intentionally, take marine mammals by harassment, within the area described in § 217.200, provided the activity is in compliance with all terms, conditions, and requirements of these regulations and the appropriate Letter of Authorization.

(b) The taking of marine mammals under a Letter of Authorization is limited to the incidental take, by Level B harassment only, of the following species under the activities identified in § 217.200(a): Cook Inlet beluga whales (*Delphinapterus leucas*), harbor seals (*Phoca vitulina*), harbor porpoises (*Phocoena phocoena*), and killer whales (*Orcinus orca*).

§ 217.203 Prohibitions.

Notwithstanding takings contemplated in § 217.202(b) and authorized by a Letter of Authorization issued under §§ 216.106 and 217.207 of this chapter, no person in connection with the activities described in § 217.200 may:

(a) Take any marine mammal not specified in § 217.202(b);

(b) Take any marine mammal specified in § 217.202(b) other than by incidental, unintentional Level B harassment;

(c) Take a marine mammal specified in § 217.202(b) if such taking results in more than a negligible impact on the species or stocks of such marine mammal; or

(d) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or a Letter of Authorization issued under §§ 216.106 and 217.207 of this chapter.

§ 217.204 Mitigation.

(a) When conducting operations identified in § 217.200(a), the mitigation measures contained in the Letter of Authorization issued under §§ 216.106 and 217.207 of this chapter must be implemented. These mitigation measures are:

(1) Through monitoring described under § 217.205, the Holder of a Letter of Authorization will ensure that no marine mammal is subjected to a SPL of 180 dB re: 1 microPa or greater. If a marine mammal is detected within or approaching 200m prior to in-water pile driving or chipping, those operations shall be immediately delayed or suspended until the marine mammal moves outside these designated zones or the animal is not detected within 15 minutes of the last sighting.

(2) If a beluga whale is detected within or approaching the area subjected to SPLs at or above 160 dB prior to in-water impact pile driving, operations shall be delayed or suspended until the whale moves outside these designated zones or the animal is not detected within 15 minutes of the last sighting.

(3) If a beluga whale is detected within or approaching the area subjected to SPLs at or above 125 dB prior to in-water vibratory pile driving or chipping, operations shall be delayed or suspended until the whale moves outside these designated zones or the animal is not detected within 15 minutes of the last sighting.

(4) A ''soft start'' technique shall be used at the beginning of each day's in-water pile driving activities or if pile driving has ceased for more than one hour to allow any marine mammal that may be in the immediate area to leave before piling driving reaches full energy. For vibratory hammers, the soft start requires the holder of the Letter of Authorization to initiate noise from the hammers for 15 seconds at reduced energy followed by 1-minute waiting period and repeat the procedure two additional times. If an impact hammer is used, the soft start requires an initial set of three strikes from the impact hammer at 40 percent energy, followed by a one minute waiting period, then two subsequent 3 strike sets.

(5) In-water pile driving or chipping shall not occur when conditions restrict clear, visible detection of all waters within harassment zones. Such conditions that can impair sightability include, but are not limited to, fog and rough sea state.

(6) In-water impact pile driving shall not occur during the period from two hours before low tide until two hours after low tide.

(7) The following measures apply to all in-water pile driving, except during the ''stabbing'' phase, and all in-water chipping associated with demolition of the existing dock:

(i) No in-water pile driving (impact or vibratory) or chipping shall occur if any marine mammal is located within 200m of the hammer in any direction. If any marine mammal is sighted within or approaching this 200m safety zone, pile-driving or chipping must be suspended until the animal has moved outside the 200m safety zone or the animal is not resighted within 15 minutes.

(ii) If a group of more than 5 beluga whales is sighted within the Level B harassment isopleths, in-water pile driving or chipping shall cease. If the group is not re-sighted within 15 minutes, pile driving or chipping may resume.

(iii) If a beluga whale calf or group with a calf is sighted within or approaching a harassment zone, in-water pile driving and chipping shall cease and shall not be resumed until the calf or group is confirmed to be outside of the harassment zone and moving along a trajectory away from such zone. If the calf or group with a calf is not re-sighted within 15 minutes, pile driving or chipping may resume.

(8) If maximum authorized take is reached or exceeded, any marine mammal entering into the harassment or safety isopleths will trigger mandatory in-water pile driving shut down.

(9) For Port of Anchorage operated in-water heavy machinery work other than pile driving or chipping (i.e., dredging, dump scowles, tug boats used to move barges, barge mounted hydraulic excavators, or clamshell equipment used to place or remove material), if a marine mammal comes within 50 m, those operations will cease and vessels will reduce to the slowest speed practicable while still maintaining control of the vessel and safe working conditions.

(10) In the event the Port of Anchorage conducts out-of-water blasting, detonation of charges will be delayed if a marine mammal is detected anywhere within a visible distance from the detonation site.

(11) Additional mitigation measures as contained in a Letter of Authorization.

(b) [Reserved]

§ 217.205 Requirements for monitoring and reporting.

(a) The Holder of a Letter of Authorization issued pursuant to §§ 216.106 and 217.207 of this chapter for activities described in § 217.200(a) is required to cooperate with NMFS, and any other Federal, state or local agency with authority to monitor the impacts of the activity on marine mammals. Unless specified otherwise in the Letter of Authorization, the Holder of the Letter of Authorization must notify the Administrator, Alaska Region, NMFS, by letter, e-mail, or telephone, at least 2 weeks prior to commencement of seasonal activities and dock demolition possibly involving the taking of marine mammals. If the activity identified in § 217.200(a) is thought to have resulted in the mortality or injury of any marine mammals or in any take of marine mammals not identified in § 217.202(b), the Holder of the Letter of Authorization must notify the Director, Office of Protected Resources, NMFS, or designee, by e-mail or telephone (301–713–2289), within 24 hours of the discovery of the injured or dead animal.

(b) The Holder of a Letters of Authorization must designate qualified, on-site individuals approved in advance by NMFS, as specified in the Letter of Authorization, to:

(1) Conduct visual marine mammal monitoring at the Port of Anchorage beginning 30 minutes prior to and during all in-water pile driving or chipping and out-of-water blasting.

(2) Record the following information on NMFS-approved marine mammal sighting sheets whenever a marine mammal is detected:

(i) Date and time of initial sighting to end of sighting, tidal stage, and weather conditions (including Beaufort Sea State);

(ii) Species, number, group composition (i.e., age class), initial and closest distance to pile driving hammer, and behavior (e.g., activity, group cohesiveness, direction and speed of travel, etc.) of animals throughout duration of sighting;

(iii) Any discrete behavioral reactions to in-water work;

(iv) The number (by species) of marine mammals that have been taken;

(v) Pile driving, chipping, or out of water blasting activities occurring at the time of sighting and if and why shut down was or was not implemented.

(3) Employ a marine mammal monitoring team separate from the on-site marine mammal observers (MMOs), to characterize beluga whale abundance, movements, behavior, and habitat use around the Port of Anchorage and observe, analyze, and document potential changes in behavior in response to in-water construction work. This monitoring team is not required to be present during all in-water pile driving operations but will continue monitoring one-year post in-water construction. The on-site MMOs and this marine mammal monitoring team shall remain in contact to alert each other to marine mammal presence when both teams are working.

(c) The Holder of a Letters of Authorization must conduct additional monitoring as required under an annual Letter of Authorization.

(d) The Holder of a Letter of Authorization shall submit a monthly report to NMFS' Headquarters Permits, Education and Conservation Division and the Alaska Region, Anchorage for all months in-water pile driving or chipping takes place. This report must contain the information listed in paragraph (b)(2) of this section.

(e) An annual report must be submitted at the time of application for renewal of the Letter of Authorization.

(f) A final report must be submitted at least 180 days prior to expiration of these regulations. This report will:

(1) Summarize the activities undertaken and the results reported in all previous reports;

(2) Assess the impacts to marine mammals from the port expansion project; and

(3) Assess the cumulative impacts on marine mammals.

§ 217.206 Applications for Letters of Authorization.

(a) To incidentally take marine mammals pursuant to these regulations, the U.S. citizen (as defined by § 216.103) conducting the activity identified in § 217.200(a) (the Port of Anchorage and MARAD) must apply for and obtain either an initial Letter of Authorization in accordance with § 217.207 or a renewal under § 217.208.

(b) The application must be submitted to NMFS at least 60 days before the expiration of the initial or current Letter of Authorization.

(c) Applications for a Letter of Authorization and for renewals of Letters of Authorization must include the following:

(1) Name of the U.S. citizen requesting the authorization,

(2) The date(s), duration, and the specified geographic region where the activities specified in § 217.200 will occur; and

(3) The most current population estimate of Cook Inlet beluga whales and the estimated percentage of marine mammal populations potentially affected for the 12-month period of

effectiveness of the Letter of Authorization;

(4) A summary of take levels, monitoring efforts and findings at the Port of Anchorage to date.

(d) The National Marine Fisheries Service will review an application for a Letter of Authorization in accordance with § 217.206 and, if adequate and complete, issue a Letter of Authorization.

§ 217.207 Letters of Authorization.

(a) A Letter of Authorization, unless suspended or revoked, will be valid for a period of time not to exceed the period of validity of this subpart, but must be renewed annually subject to annual renewal conditions in § 217.208.

(b) Each Letter of Authorization will set forth:

(1) Permissible methods of incidental taking; and

(2) Requirements for mitigation, monitoring and reporting, including, but not limited to, means of effecting the least practicable adverse impact on the species, its habitat, and on the availability of the species for subsistence uses.

(c) Issuance and renewal of the Letter of Authorization will be based on a determination that the total number of marine mammals taken by the activity as a whole will have no more than a negligible impact on the affected species or stock of marine mammal(s), and that the total taking will not have an unmitigable adverse impact on the availability of species or stocks of marine mammals for taking for subsistence uses.

(d) Notice of issuance or denial of an application for a Letter of Authorization will be published in the **Federal Register** within 30 days of a determination.

§ 217.208 Renewal of Letters of Authorization.

(a) A Letter of Authorization issued under § 216.106 and § 217.207 of this chapter for the activity identified in § 217.200(a) will be renewed annually upon:

(1) Notification to NMFS that the activity described in the application submitted under § 217.206 will be undertaken and that there will not be a substantial modification to the described work, mitigation or monitoring undertaken during the upcoming 12 months;

(2) Timely receipt of the monitoring reports required under § 217.205(d) and (e), and the Letter of Authorization issued under § 217.207, which has been reviewed and accepted by NMFS; and

(3) A determination by NMFS that the mitigation, monitoring and reporting measures required under §§ 217.204 and 217.205 and the Letter of Authorization issued under §§ 216.106 and 217.207 of this chapter, were undertaken and will be undertaken during the upcoming annual period of validity of a renewed Letter of Authorization; and

(4) A determination by NMFS that the number of marine mammals taken during the period of the Letter of Authorization will be small, that the total taking of marine mammals by the activities specified in § 217.200(a), as a whole will have no more than a negligible impact on the species or stock of affected marine mammal(s), and that the total taking will not have an unmitigable adverse impact on the availability of species or stocks of marine mammals for subsistence uses.

(b) If a request for a renewal of a Letter of Authorization issued under §§ 216.106 and 217.208 of this chapter indicates that a substantial modification to the described work, mitigation or monitoring undertaken during the upcoming season will occur, NMFS will provide the public a period of 30 days for review and comment on the request.

(c) Notice of issuance or denial of a renewal of a Letter of Authorization will be published in the **Federal Register** within 30 days of a determination.

§ 217.209 Modifications of Letters of Authorization.

(a) Except as provided in paragraph (b) of this section, no substantive modification (including withdrawal or suspension) to the Letter of Authorization by NMFS, issued pursuant to §§ 216.106 and 217.207 of this chapter and subject to the provisions of this subpart, shall be made until after notification and an opportunity for public comment has been provided. For purposes of this paragraph, a renewal of a Letter of Authorization under § 217.208, without modification (except for the period of validity), is not considered a substantive modification.

(b) If the Assistant Administrator determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in § 217.202(b), a Letter of Authorization issued pursuant to §§ 216.106 and 217.207 of this chapter may be substantively modified without prior notification and an opportunity for public comment. Notification will be published in the **Federal Register** within 30 days subsequent to the action.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 223 and 224

[Docket No. 080229341–9330–02]

RIN 0648–XF89

Endangered and Threatened Wildlife and Plants: Proposed Endangered, Threatened, and Not Warranted Status for Distinct Population Segments of Rockfish in Puget Sound

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

ACTION: Proposed rule; 12–month petition finding; request for comments.

SUMMARY: We, the NMFS, have completed Endangered Species Act (ESA) status reviews for five species of rockfish (*Sebastes* spp.) occurring in Puget Sound, Washington, in response to a petition submitted by Mr. Sam Wright of Olympia, Washington, to list these species in Puget Sound as threatened or endangered species. We reviewed best available scientific and commercial information on the status of these five stocks and considered whether they are in danger of extinction throughout all or a significant portion of their ranges, or are likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges. For bocaccio (*S. paucispinis*), we have determined that the members of this species in the Georgia Basin are a distinct population segment (DPS) and are endangered throughout all of their range. We propose to list this bocaccio DPS as endangered. We have determined that yelloweye rockfish (*S. ruberrimus*) and canary rockfish (*S. pinniger*) in the Georgia Basin are DPSs and are likely to become endangered within the foreseeable future throughout all of their range. We propose to list the Georgia Basin DPSs of yelloweye and canary rockfish as threatened. We determined that populations of greenstriped rockfish (S. elongatus) and redstripe rockfish (*S. proriger*) occurring in Puget Sound Proper are DPSs but are not in danger of extinction throughout all or a significant portion of their ranges or likely to become so in the foreseeable future. We find that listing the greenstriped rockfish Puget Sound Proper DPS and the redstripe rockfish Puget Sound Proper DPS is not warranted at this time.

Any protective regulations determined to be necessary and