respectively, may be taken by Level B harassment.

Based on the analysis contained herein on the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, NMFS finds that pile driving associated with the Dumbarton Bridge Seismic Retrofit Project will result in the incidental take of small numbers of marine mammals, by Level B harassment only, and that the total taking will have a negligible impact on the affected species or stocks. There are no relevant subsistence uses of marine mammals implicated by this action; therefore, no impacts to subsistence use will occur.

Endangered Species Act (ESA)

No ESA-listed marine mammals are known to occur within the action area; therefore, ESA consultation on issuance of the proposed IHA was not required. However, other ESA-listed species under NMFS' jurisdiction do occur within the action area.

On January 12, 2009, NMFS received a request from the Federal Highway Administration (FHWA) to initiate consultation under section 7 of the ESA on Caltrans' proposed Dumbarton Bridge Seismic Retrofit Project as ESA-listed fish are present within the action area. NMFS issued a Biological Opinion (BiOp) on Caltran's Dumbarton Bridge Seismic Retrofit Project on August, 10, 2009. The BiOp concluded that the proposed activities were not likely to jeopardize the continued existence of Central California Coast steelhead Distinct Population Segment (DPS) or North American green sturgeon DPS and are not likely to adversely modify or destroy critical habitat for CCC steelhead DPS.

National Environmental Policy Act (NEPA)

On September 2, 2009, Caltrans released an Environmental Assessment (EA) and Finding of No Significant Impact for the Dumbarton Bridge project. For purposes of issuing an IHA, NMFS found the environmental analysis on marine mammal impacts lacking and determined further NEPA analysis was necessary. In the proposed IHA **Federal Register** notice for this action, NMFS preliminary determined a Categorical Exclusion memo was appropriate for issuing an IHA for the specified activities. However, after further consideration, NMFS prepared an EA analyzing the effects of the authorized on the human environment. Based on the analyses in the EA, NMFS determined that issuance of the IHA would not significantly impact the quality of the human environment and that preparation of an environmental impact statement was not required.

Dated: March 12, 2010.

James H. Lecky,

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

[FR Doc. 2010–6252 Filed 3–19–10; 8:45 am]

BILLING CODE 3510–22–S

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XU03

Takes of Marine Mammals Incidental to Specified Activities; Manette Bridge Replacement in Bremerton, Washington

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

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

SUMMARY: NMFS has received an application from the Washington State Department of Transportation (WSDOT) for an Incidental Harassment Authorization (IHA) to take marine mammals, by harassment, incidental to construction and demolition activities related to the replacement of the Manette Bridge in Bremerton, Washington. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an IHA to WSDOT to incidentally harass, by Level B Harassment only, three species of marine mammals during the specified activity.

DATES: Comments and information must be received no later than April 21, 2010.

ADDRESSES: Comments on the application should be addressed to 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. The mailbox address for providing email comments is *0648–XU03@noaa.gov*. NMFS is not responsible for e-mail comments sent to addresses other than the one provided here. Comments sent via e-mail, including all attachments, must not exceed a 10–megabyte file size.

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

A copy of the application containing a list of the references used in this document may be obtained by writing to the address specified above, telephoning the contact listed below (see **FOR FURTHER INFORMATION CONTACT**), or visiting the internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm*. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Shane Guan, Office of Protected Resources, NMFS, (301) 713–2289, ext 137.

SUPPLEMENTARY INFORMATION:

Background

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

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

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the United States can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45–

day time limit for NMFS review of an application followed by a 30–day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

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].

Summary of Request

NMFS received an application on December 24, 2009, from WSDOT for the taking, by harassment, of marine mammals incidental to construction and demolition work related to the Manette Bridge replacement in Bremerton, Washington, starting in early June 2010.

The Manette Bridge is located within the Puget Sound of Washington State, at the outlet to the Port Washington Narrows. The Port Washington Narrows provides the only outlet from Dyes Inlet to Sinclair Inlet, and connection to the greater Puget Sound. The Manette Bridge is determined to be a functionally obsolete and structurally deficient bridge that requires replacement, and the WSDOT is planning to have it replaced. The proposed bridge replacement work includes the following activities:

- Construction of temporary work trestles, which involves steel pile installation using both vibratory and impact driving methods;
- Construction of new bridge piers, which involves excavation of benthic material;
- Barge anchoring and usage;
- Removal of existing bridge; and
- Removal of temporary work platforms.

Since marine mammal species and stocks in the proposed action area could be affected by the proposed bridge replacement activities, the WSDOT is seeking an IHA that would allow the incidental, but not intentional, take of marine mammals by Level B behavioral harassment during the construction of the new Manette Bridge and removal of the existing bridge. The WSDOT states that small numbers of three species of marine mammals could potentially be taken by pile driving or other construction activities associated with the bridge replacement work. However, with the proposed mitigation and monitoring measures, the numbers and levels of marine mammal takes would be reduced to the least amount practicable.

Description of the Specific Activity

The Manette Bridge was originally built in 1930. The bridge was constructed with five steel truss main spans on six concrete piers, elements which are still part of today's bridge. A 1949 contract replaced the original wooden deck and timber trusses in the outer spans with concrete and steel. The primary areas of structural deficiencies are in the concrete piers and the structural steel trusses, which are nearing 80 years old. The concrete in the foundations is in varying states of deterioration. Testing and analysis of concrete taken from the main piers by WSDOT from 1976 through 2003 determined that deterioration in the concrete has resulted from a process called Alkali Silica Reaction (ASR).

ASR causes deterioration of mortars and concretes due to the swelling of gel formed by the reaction of alkali in cement-based materials with reactive silica in aggregates in the presence of water. The swelling of the gel generates tensile stresses in the specimen resulting in expansion and cracks. There is no known way to mitigate and fully address the ASR problem in the concrete foundations of the six piers supporting the steel truss spans.

Overall, the WSDOT determined that the substructure components of the existing Manette Bridge are in poor condition at the main piers (built in 1930) and in satisfactory condition at the approach piers (built in 1949). Columns and pier walls at the main spans exhibit leaching cracks, rust stains, delaminations, soft concrete, and formwork holes. Exposed rebar is visible above and below the tidal zone, however mass marine growth prevents an exact detailing of this exposure.

The foundation is exposed at all piers in varying degrees. Main Piers 2 and 3 are in the worst condition with the original footing and seals now indeterminate from each other. At the corners, corroded remnants of rebar are visible where the footings have been rounded to an approximate 4–ft (1.22–m) radius. Several cofferdams have been constructed around the different piers to shore up soft concrete. Some undermining is occurring at these piers due to local scour conditions.

Contract repairs to the main concrete piers were completed in 1949 (Piers 4 and 6) and 1991 (Pier 5) and 1996 (Piers 4 and 6). These repairs attempted to encase the deteriorating concrete in the concrete foundations but were not effective since the core concrete with ASR continues to deteriorate.

In 1993, the WSDOT Bridge Engineer identified that the bridge superstructure (trusses and deck) could be rehabilitated to provide 20 or more years of additional service life. The cost to totally rehabilitate this bridge by: encasing and repairing all the concrete main piers; replacing corroded steel including rivets and connections; repainting the entire bridge and replacing the bridge deck could exceed 50–75% of the replacement costs. However, there are no practical means to restore or prevent further deterioration in the column and footing concrete. The condition of the reinforcing steel in the highly fractured substructure concrete is an added unknown. As a result of this assessment, the WSDOT determined that replacement of the bridge is warranted and necessary.

The proposed bridge replacement project would replace the structurally deficient and functionally obsolete Manette Bridge in the City of Bremerton with a new concrete bridge. The new Manette Bridge would be built parallel to, and immediately south of, the existing bridge with roadway connections to existing city street intersections on each end of the bridge. Construction of the project is proposed to begin in 2010 and continue for approximately 3 years.

The project would occur in three main phases. Construction sequence plan sheets are included in Appendix A of the WSDOT IHA application. First, the new bridge piers and central portion of the new bridge will be constructed. Second, the outermost spans of the existing bridge will be removed and the new bridge's outermost spans and abutments will be built. This work includes the completion of stormwater facilities for the new bridge. Finally, the remaining portions of the existing bridge will be demolished and removed. The construction elements associated with these phases are summarized below.

The construction of the new bridge would require the construction of new piers and demolition of existing piers, all of which include work below the mean lower low water (MLLW) mark. An estimated 3,900 cubic yards of concrete would be placed below the MLLW mark for the new bridge piers. Temporary work trestles would be built in Port Washington Narrows as part of this project to support both the construction of the new bridge and demolition of the existing bridge. This

also would include work below the MLLW mark. Barges would be used to transport and stage equipment and materials. They would be tethered with mooring lines and temporarily anchored buoys.

The footprint of the proposed approaches and abutments is primarily located within the existing bridge footprint. However, an additional 0.75 acre of land would be temporarily disturbed during construction and 0.15 acre of land would be permanently converted to roadway.

Work trestle construction would include pile driving and falsework bents. Conceptual work/demolition trestle plan sheets are included in Appendix B and D of the WSDOT IHA application.

The proposed project would construct 1.789 acre of new impervious surface (bridge and approaches) and would remove 1.133 acres of existing impervious surface, with a net increase of 0.656 acre. Runoff from the proposed project would be treated via the City of Bremerton stormwater facilities. In addition to treating the runoff from the new bridge, the stormwater system would treat runoff from an additional 0.81 acre of existing impervious surface, the stormwater from which is currently discharged untreated into Sinclair Inlet.

The following is a description of the sequence of anticipated work activities associated with the Manette Bridge replacement project.

1. Construction of Work Trestles and Falsework Towers

Separate work trestles would be constructed for the new bridge construction and existing bridge removal processes. The south trestles for access to the new bridge site would be constructed prior to the installation of the north trestles for bridge removal. The work trestles and associated falsework towers would be supported on steel pilings with diameters of 24 to 36 in. (0.61 to 0.91 m). The construction of the work trestles is estimated to take up to 9 months. The work trestles and falsework towers would be in place throughout the project duration, approximately 3 years.

The trestles would be located a few feet above the high water mark, with the exact height determined by the contractor and work site conditions. The trestles would be supported by steel girders attached to the piles and the deck would be composed of timbers. The new bridge construction work trestle would be supported by up to 360 piles and could cover an area of up to 40,000 ft^2 (3,716 m^2). The bridge removal work trestle will be supported by up to 170 piles and could cover an area of up to 15,900 ft^2 (1,477 m^2). Up to 12 additional piles may be used for project related moorage.

All piles would be installed using a vibratory hammer unless an impact hammer is needed to drive a pile through consolidated material or meet bearing. Currently, pile driving is scheduled to occur July 1 to August 20, 2010, and October 6, 2010, to January 31, 2011, with an estimated 45 minutes per pile and 410 total hours of pile driving using a vibratory hammer. Pile driving activities would occur daily two hours after sunrise to two hours before sunset between April 1 and September 15, 2010. No pile driving will occur during nighttime hours.

Pile driving activities generate intense sound underwater, which could potentially impact marine mammal species in the project vicinity. For pile driving using an impact hammer, the driver consists of a heavy hydraulic hammer that falls by gravity to drive down the piling. Intense impulsive sounds with rapid rise time are generated with each hammer strike. Although each impulse is short (lasts for dozens of milliseconds), the sound pressure levels (SPLs) are extremely high and could exceed 200 dB re 1 microPa (peak) at 1 m. The source SPLs of impact pile driving depend on the size of the hammer, diameter of the piles to be driven, and substrate. For the impact hammer that would be used in the Manette Bridge replacement activities, the WSDOT used the data from the recent Washington State Ferries impact pile driving projects and showed that the source SPLs could be as high as 214 dB re 1 microPa (peak) at 1 m. Noises generated from impact pile driving are broadband (contains a wide spectrum of frequency) but major energy is concentrated between 200 1,000 Hz with less energy at higher frequencies.

Unlike pile driving using impact hammers, vibratory pile driving is achieved by means of a variable eccentric vibrator attached to the head of the pile. The installation process begins by placing a choker around the pile and lifting it into vertical position with the crane. The pile would then be lowered into position and set in place at the mudline. The pile would be held steady while the vibratory hammer installs the pile to the required tip elevation. Measured noise levels for similar projects conducted by the California Department of Transportation (CALTRANS) and WSDOT show that source levels are around 180–195 dB re 1 µPa (peak) at 1 m. Since underwater SPLs are expressed in terms of decibel in reference to acoustic pressure of 1 µPa, the 19 dB difference between the source levels from impact pile driving (214 dB re 1 µPa) and vibratory pile driving (195 dB re 1 µPa) translates into more than three times the difference in acoustic pressure. Therefore, vibratory pile driving is much "quieter" than impact pile driving. However, because the transient sound produced by vibratory pile driving has a longer duration than impact pile driving pulses, it is arguable that a single batch of vibratory pile driving noise could contain more acoustic energy than a single impact hammer pulse in terms of sound exposure levels (SEL).

2. Barge Anchoring and Usage

Barges would be used extensively throughout the project duration to provide access to work areas, support machinery, deliver and stage materials, and as a collection surface for spoils, construction debris, and materials from demolition. The actual number and dimensions of barges to be used would be determined by the contractor and work site conditions. However, it is estimated that up to 6 barges would be used at one time. A typical barge dimension is approximately 290 ft (88.4 m) in length and 50 ft (15.2 m) in width. Typical barge draft is 4 to 8 ft (1.22 to 2.44 m) and typical freeboard is 3 to 6 ft (0.91 to 1.83 m). Barges would be used throughout the construction period, approximately 3 years.

During working hours, barges would be attached to mooring lines, the work trestles, or to other portions of the project area, depending on the construction and access needs. Up to 6 temporary buoys may be installed to moor barges during non-working hours. These buoys would be attached to one or more anchors, which may need to be driven, or excavated, due to hard ground and strong currents in the project area. If the contractor chooses to deploy a dynamic barge positioning system, it is expected that the hours the system is in use would coincide closely with pile driving activities.

Noise produced from a moored barge is not likely to be significant enough to affect marine mammals. However, if a dynamic positioning (DP) system is applied to stabilize the barge, sound generated by the DP system could be strong enough to adversely affect marine mammals in the vicinity. The intensity of the DP system would depend on the size of the vessel and the system output, nevertheless, its loudness is not likely to surpass that from vibratory pile driving at the same distances.

3. Construction of New Piers

Eight piers would support the new bridge, six in-water and two upland. The existing bridge has 13 piers, nine in-water and three upland. The total footprint of the piers would be 1,416 ft^2 (131.6 m^2). The footprint of the nine in-water piers supporting the existing bridge is 8,726 ft^2 (810.7 m^2).

Piers 1 and 8 are the bridge abutments and are located well above the mean high water line (MHW). Piers 2 through 7 are located below the MLLW line. The construction of the in-water piers (2 through 7) would take up to 18 months. The construction of the abutment piers (1 and 8) would occur during the bridge closure period (targeted duration of 3 months). The construction of each would include excavation of up to 3 shafts to support each pier, concrete pouring of each shaft, and construction of piers on top of new shafts.

Shaft casings would be installed and the shafts will be excavated using equipment positioned on the work trestles or barges.

To create a drilled shaft, a steel casing approximately 6 to 10 ft (1.8 to 3 m) in diameter is driven into the substrate using a vibratory hammer, and the material inside the casing is excavated using an auger or a clamshell dredge. During excavation a premixed bentonite or synthetic polymer slurry is sometimes added to stabilize the walls of the shaft. Spoils from shaft excavation would be placed in a large steel containment box located on a barge or on the work trestle for offsite transport. During the drilling, polymer slurry is typically placed into the hole to keep side walls of the shaft from caving.

After completion of the excavation, a steel reinforcing cage is placed into the hole to specified elevations. Concrete is then pumped into the hole using a tremie tube placed at the bottom of the excavation. As concrete is placed the tremie tube is raised but is maintained within the concrete. As the concrete is pumped into the hole, the slurry is displaced upward and removed from the top concrete using a vacuum hose. The slurry is pumped from the hole into large tanks located on the work trestle or on a barge, which is either recycled for use in the next shaft or transported off site. This procedure would be used on all shafts at each pier.

After shafts are completed, pre-cast concrete, stay-in-place forms would be stacked on top of the shafts up to the crossbeam elevation. A steel reinforcing cage would be placed inside the concrete forms and the columns would be filled with concrete. A pre-cast concrete crossbeam or a cast-in-place crossbeam, or some combination of both would be constructed on top of the columns. Girders would be fabricated off site and would be shipped to the site on barges. The girders would then be placed on the piers and falsework towers between piers 2 and 7.

After completion of the girder placement and casting of diaphragms connecting the girders, post-tensioning strands would be placed into ducts cast in the girders. The post-tensioning strands will then be stressed. The roadway deck would then be formed and cast between piers 2 and 7.

Noise levels and characteristics generated by coastal construction work related to excavation and drilling are not well studied. Studies on construction of offshore oil industry facilities in the Arctic provide some insights on the noise levels and characteristics from marine dredging. Dredging and drilling noises are broadband with most of their energy concentrated in the lower range of the frequency spectrum, between 20 1,000 Hz. Nevertheless, these noises are expected to be much lower than those from vibratory pile driving at source locations.

4. Installation of Girders and Decking

Girders and decking would be installed using the work trestles, falsework towers, and cranes deployed on work barges. The roadway deck would be made of concrete and would be poured in place. This work is expected to take 3 to 4 months. Noises from this session of work are similar to those mentioned above.

5. Reconfiguration of Abutments and Roadway Approaches

The existing bridge abutments would be removed, along with the associated retaining walls. New retaining walls and abutments would be constructed. These activities, and associated construction access would require the temporary disturbance of 0.75 acre of land, of which 0.15 acre are vegetated and permanent removal of 0.15 acre of vegetation. This work, all in upland areas, includes 2000 cubic yards of fill. Once the abutments are complete, the new bridge approach roadways will be constructed. Disturbed areas on the east shore of the Port Washington Narrows would be restored with a mix of native trees and shrubs including marine riparian vegetation and shoreline enhancement. Noises from this session of work are similar to those mentioned above associated with pier construction.

6. Demolition of Existing Bridge

The demolition of the existing bridge would occur in phases over a period of 18 months. After the central portion of the new bridge is constructed, the outermost spans and abutments of the existing bridge would be demolished. Once the new abutments and outer spans are constructed, the demolition of the remainder of the existing bridge will proceed. Conceptual demolition plan sheets are included in Appendix D of the WSDOT IHA application.

The bridge structure above the water line would be cut into manageable sections, using conventional concrete and metal cutting tools, or a wire saw, and placed on barges for transport to approved waste or recycling sites. The portions of the piers below the water line would be cut into pieces using a wire saw. All slurry from wire cutting operations above the water line would be contained and removed. All slurry from wire cutting operations below the water line would be dispersed by the current. Piers would be cut off at the ground level except for one, Pier 4. Pier 4 was built up to encapsulate original creosote treated timbers. Complete removal of the pier is not feasible and if it is cut at the ground level, many creosote treated timbers may be exposed. To minimize the risk of contamination, Pier 4 would be cut two feet above ground level.

No information is available regarding noises generated from bridge structure cutting. However, since the cutting for bridge structures would be done above the water line, noise transmitted into the water via the structure is not expected to be significant.

7. Removal of Falsework Towers and Work Trestles

Once the demolition of the existing bridge is complete, the falsework towers and work trestles would be removed. Decking and girders would be placed on barges for transportation off-site. Piles would be removed using vibratory hammers, based on barges. The removal of the falsework towers and work trestles is expected to occur over 4 to 6 months.

Vibratory extraction is a common method for removing steel piling. The pile is unseated from the sediments by engaging the hammer and slowly lifting up on the hammer with the aid of the crane. Once unseated, the crane would continue to raise the hammer and pull the pile from the sediment. When the pile is released from the sediment, the vibratory hammer is disengaged and the pile is pulled from the water and placed on a barge for transfer upland.

Noise levels and characteristics from pile extraction using a vibratory hammer are not well studied, however, the intensity of the noise is expected to be higher than the intensity of noise from pile installation using the same vibratory hammer.

The Manette Bridge Replacement project is scheduled to begin in June 2010 and continue for up to three years. No in-water activities will be planned between March 1 and June 14 in water bellow the ordinary high water line.

Description of Marine Mammals in the Area of the Specified Activity

Six marine mammal species/stocks occur in the area where the proposed Manette Bridge replacement work is planned. These six species/stocks are: Pacific harbor seal (*Phoca vitulina richardsi*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias ubatus*), transient and Southern Resident killer whales (*Orcinus orca*), and gray whale (*Eschrichtius robustus*). All these marine mammals have been observed in southern Puget Sound during certain periods of the year and may occur in Sinclair Inlet, Port Washington Narrows and Dyes Inlet, although direct observation in the vicinity of the Manette Bridge may not be documented. General information on these marine mammal species can be found in Caretta *et al.* (2007), which is available at the following URL: *http://www.nmfs.noaa.gov/pr/pdfs/sars/po2008.pdf*. Refer to that document for information on these species.

To further gather information on the occurrence of these marine mammal species in the vicinity of the proposed project area, the WSDOT contracted ten surveys between the months of July 2006 and January 2007. This time period was chosen for sampling because it represents the time period when most in-water work activities would occur. Two pinniped species and zero cetaceans were observed. Thirty four harbor seals, one California sea lion and one unidentified pinniped, likely a California sea lion, were observed over the six month period. In general, cetacean observations are infrequent in the Puget Sound (Calambokidis and Baird 1994, Jefferies 2007). During ten surveys for marine mammals in Sinclair Inlet and Port Washington Narrows between July 2006 and January 2007, no cetaceans were observed. No marine mammals were observed during two of the ten surveys. Detailed results of the surveys are provided in a final report, which is included in Appendix E of the WSDOT IHA application.

Additional information on these species, particularly in relation to their occurrence in the proposed project area, is provided below.

1. Harbor Seal

Three distinct harbor seal stocks occur along the west coast of the continental U.S., the Washington inland waters stock, Oregon/Washington coastal stock, and California stock (Caretta *et al.* 2009). The Washington inland waters stock of the Pacific harbor seal is distributed in inland waters including Hood Canal, Puget Sound, and the Strait of Juan de Fuca out to Cape Flattery (Caretta *et al.* 2007), and is expected to occur in the proposed project area.

Harbor seal is the most common pinniped and the only marine mammal species that breeds in the inland marine waters of Washington (Calambokidis and Baird 1994). Pupping and molting typically occurs between April and August.

Individual harbor seals are frequently observed in the Port Washington Narrows, Sinclair Inlet and Dyes Inlet. Harbor seals were observed during eight of ten surveys between July 2006 and January 2007. No more than six individuals were observed during any one survey period. There are no documented harbor seal haul-out areas within 3 miles (4.8 km) of the Manette Bridge. One harbor seal haul-out estimated at less than 100 animals is documented in Dyes Inlet west of the Manette Bridge. These animals must pass through the Port Washington Narrows to gain access to Sinclair Inlet and the greater Puget Sound basin.

In 1999, Jefferies *et al.* (2003) recorded a mean count of 9,550 harbor seals in Washington's inland marine waters. The estimated population for this stock is approximately 14,612 harbor seals with a correction factor to account for animals in the water which were missed during the aerial surveys (Calambokidis and Baird 1994; Carretta *et al.* 2009). From 1991 to 1996, counts of harbor seals in Washington State have increased at an annual rate of 10% (Jefferies *et al.* 1997). Harbor seals are not considered to be "depleted" under the MMPA or listed as "threatened" or "endangered" under the Endangered Species Act (ESA).

2. California Sea Lion

California sea lions occur throughout the Pacific Rim and are separated into three subspecies, of which only one occurs in western North America (Caretta *et al.* 2009). The subspecies is further separated into three stocks, the United States (US) stock, the Western Baja California stock and the Gulf of California stock (Caretta *et al.* 2009).

The U.S. stock of California sea lion is expected to occur in the vicinity of the proposed project area. They breed in California and southern Oregon between May and July, but not in Washington. Pupping occurs on the breeding ground, typically one month prior to mating. Sea lions are typically observed in Washington between August and April, after they have dispersed from breeding colonies.

There are no documented California sea lion haul outs within 3 miles (4.8 km) of the Manette Bridge. Two California sea lion haul-outs estimated at less than 10 animals are documented on bouys in Rich Passage approximately 4 miles (6.4 km) to the east. Individuals are infrequently observed in the Port Washington Narrows, Sinclair Inlet and Dyes Inlet. One California sea lion was observed during one of ten surveys between July 2006 and January 2007. An unidentified pinniped was also recorded during one survey and is believed to be a California sea lion, although positive identification was not possible.

Population estimates are calculated by conducting pup counts. Because California sea lions do not breed in Washington, accurate estimates of the non-breeding population in Washington do not exist. Estimates from the 1980s suggest the population size was just under 3,000 by the mid–1980s (Bigg 1985; Gearin *et al.* 1986). In the 1990s, the number of sea lions in Washington appears to have either stabilized or decreased (Gearin *et al.* 1988; Calambokidis and Baird 1994). The entire population of the US stock of California sea lion is estimated to be approximately 238,000 (Carretta *et al.* 2009). The California sea lions are not considered to be "depleted" under the MMPA or listed as "threatened" or "endangered" under the ESA.

3. Steller Sea Lion

Steller sea lion occur along the north Pacific Rim with the population center in the Gulf of Alaska and the Aleutian Island chain. This species is separated into two stocks, the eastern and western stocks. The Eastern stock ranges from southeast Alaska south to California (Loughlin *et al.* 1984). The Eastern stock breeds in Alaska, British Columbia, Oregon and California, but does not have breeding rookeries in Washington. Breeding typically occurs from May to July. Pupping occurs within days of returning to the breeding colony.

Individuals, especially adult males and juveniles, disperse widely and travel great distances outside of the

breeding season, including waters off and within Washington State. Individual Steller sea lions typically return to breeding grounds in May, although in 2007 and 2008 two to six individual Steller sea lions remained all summer near Nisqually (southern Puget Sound near Olympia) on the Toliva Shoals and Nisqually buoys. There was also one Steller sea lion observed at Point Defiance (near Tacoma, Washington) in July 2008. Furthermore, reports of Steller sea lions on the North Vashon, Manchester and Bainbridge Island bouys increased in winter 2007 - 2008 and spring 2008 although there are no estimates of individual numbers for these reports (WSDOT, 2009). According to Jefferies (2008) there are also records from the 1990's of 200 - 300 Steller sea lions using Navy floats at the Fox Island Acoustic Range. The majority of Steller sea lions are observed in the north Puget Sound and Strait of Juan de Fuca, although Steller sea lions are regularly observed at three haulout sites in central and southern Puget Sound. The nearest site, Shilshole Bay, is on the east side of the Puget Sound, adjacent to the city of Seattle approximately 12 miles (19.3 km) from the Manette Bridge.

Population estimates are calculated by conducting pup counts. Because Steller sea lions do not breed in Washington, accurate estimates of the non-breeding population in Washington do not exist. Using the most recent 2005 pup counts from aerial surveys across the range of the eastern stock, the total population of the eastern stock of Steller sea lion is estimated to be between 46,000 and 58,000 (Pitcher *et al.* 2007; Angliss and Allen 2009). The eastern stock of Steller sea lion is listed as "threatened" under the ESA, and is designated as a "depleted" stock under the MMPA.

4. Gray Whale

The North Pacific gray whale stock is divided into two distinct stocks: the eastern North Pacific and western North Pacific stocks (Rice *et al.* 1984; Angliss and Allen 2009). The eastern North Pacific stock ranges from Alaska, where they summer, to Baja California, where they migrate to calve in the winter.

Gray whales occur frequently off the coast of Washington during their southerly migration in November and December, and northern migration from March through May (Rugh *et al.* 2001, Rice *et al.* 1984). Gray whales are observed in Washington inland waters regularly between the months of January and September, with peaks between March and May. The average tenure within Washington inland waters is 47 days and the longest stay was 112 days (Cascadia Research Collective, unpub. report). Gray whales are reported in Sinclair Inlet, Port Washington Narrows or Dyes Inlet during migration. Between 2001 and 2007, gray whale sightings were reported during three of the years (Orca Network 2007). Reports occurred in April 2002, February, March and May 2005, and March and April 2007. The May 2005 observation was a stranding mortality at the Kitsap Naval Base in Bremerton (Orca Network 2007).

Systematic counts of the eastern North Pacific gray whales have been conducted by shore-based observers during their southbound migration along the central California coast. The most recent abundance estimate is based on counts made during the 2001–02 seasons. Based on the data, the abundance estimate for this stock of gray whale is 18,178 individuals (Angliss and Allen 2009). The eastern North Pacific gray whale was removed from the ESA-list in 1994, due to steady increases in population abundance. Therefore, it is not considered "endangered" or "threatened" under the ESA.

5. Killer Whale

Two distinct forms, or ecotypes, of killer whales "residents" and "transients" are found in the greater Puget Sound. These two ecotypes are different populations of killer whales that vary in morphology, ecology, behavior, and genetics. Both ecotypes of killer whales are not known to intermix with one another.

Resident Killer Whales are noticeably different from both transient and offshore forms. The dorsal fin is rounded at the tip and falcate (curved and tapering). Resident whales have a variety of saddle patch pigmentations with five different patterns recognized. They've been sighted from California to Alaska. Resident whales primarily eat fish.

The "resident" population that could occur in the proposed project area is the Southern Resident killer whale (SRKW). This population contains three pods (or stable family-related groups) J pod, K pod, and L pod and is considered a stock under the MMPA. Their range during the spring, summer, and fall includes the inland waterways of Puget Sound, Strait of Juan de Fuca, and Southern Georgia Strait. Their occurrence in the coastal waters off Oregon, Washington, Vancouver Island, and more recently off the coast of central California in the south and off the Queen Charlotte Islands to the north has been documented. Little is known about the winter movements and range of the Southern Resident stock. Resident killer whales feed exclusively on fish such as salmon (Calambokidis and Baird 1994).

Southern resident killer whale presence is possible but unlikely in the proposed project area. They were last seen in the vicinity of the proposed project area in 1997. Nineteen members of L pod (subpod L–25) arrived on October 21, 1997 and stayed in Dyes Inlet for 30 days (WSDOT 2009). A fall chum run has been suggested as the reason for the extended stay. The only access to Sinclair Inlet is to the north (Agate Passage) or south (Rich Passage) of Bainbridge Island.

The Southern Resident killer whale population is currently estimated at about 86 whales (Carretta *et al.* 2009), a decline from its estimated historical level of about 200 during the mid- to late 1800s. Beginning in about 1967, the live-capture fishery for oceanarium display removed an estimated 47 whales and caused an immediate decline in SRKW numbers. The population fell an estimated 30% to about 67 whales by 1971. By 2003, the population increased to 83 whales. Due to its small population size, NMFS listed this segment of the population as endangered under the Endangered Species Act (ESA). This population is also listed as depleted under the MMPA.

Transient killer whales occur throughout the eastern North Pacific, primarily in coastal waters. Individual transient killer whales have been documented as traveling great distances, reflecting a large home range. The dorsal fin of transient whales tends to be more erect (straighter at the tip) than those of resident whales. Saddle patch pigmentation of transient killer whales is restricted to two patterns. Pod structure is small (e.g., fewer than 10 whales) and dynamic in nature. Transient killer whales feed exclusively on other marine mammals such as dolphins, sea lions, and seals.

The transient killer whale population that could occur in the proposed project area is the West Coast transient stock. It is a trans-boundary stock, which includes killer whales from British Columbia. The presence of this killer whale population in the south Puget Sound is considered rare. In 2008, there were only two reports of transient orca whales in the south Puget Sound. One of these reports occurred in January just east of Maury Island and the other report of transients occurred in August in the Tacoma narrows (WSDOT 2009).

Preliminary analysis of photographic data results in a minimum of 314 killer whales belonging to the West Coast transient stock (Angliss and Allen

2009). This number is also considered the minimum population estimate of the population since no correction factor is available to provide a best estimate of the population. At present, reliable data on trends in population abundance for the West Coast transient stock of killer whales are unavailable (Angliss and Allen 2009). This stock of killer whale is not designated as "depleted" under the MMPA nor is it listed under the ESA.

Potential Effects on Marine Mammals and Their Habitat

Anticipated impacts resulting from the Manette Bridge Replacement project include disturbance from increased human presence and marine traffic if marine mammals are in the vicinity of the proposed project area, Level B harassment by noises generated from the construction work such as pile driving and dredging activities, and the effect of the new bridge and stormwater system on water quality.

1. Impacts from Anthropogenic Noise

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

Measured source levels from impact pile driving can be as high as 214 dB re 1 μPa^2 1 m. Although no marine mammals have been shown to experience TTS or PTS as a result of being exposed to pile driving activities, experiments on a bottlenose dolphin (Tursiops truncates) and beluga whale (Delphinapterus leucas) showed that exposure to a single watergun impulse at a received level of 207 kPa (or 30 psi) peak-to-peak (p-p), which is equivalent to 228 dB re 1 µPa (p-p), resulted in a 7 and 6 dB TTS in the beluga whale at 0.4 and 30 kHz, respectively. Thresholds returned to within 2 dB of the pre-exposure level within 4 minutes of the exposure (Finneran *et al.* 2002). No TTS was observed in the bottlenose dolphin. Although the source level of pile driving from one hammer strike is expected to be much lower than the single watergun impulse cited here, animals being exposed for a prolonged period to repeated hammer strikes could received more noise exposure in terms of SEL than from the single watergun impulse (estimated at 188 dB re 1 μPa^2–s) in the aforementioned experiment (Finneran *et al.* 2002).

However, in order for marine mammals to experience TTS or PTS, the animals have to be close enough to be exposed to high intensity noise levels for prolonged period of time. Current NMFS standards for preventing injury from PTS and TTS is to require shutdown or power-down of noise sources when a cetacean species is detected within the isopleths corresponding to SPL at received levels equal to or higher than 180 dB re 1 µPa (rms), or a pinniped species at 190 dB re 1 µPa (rms). Based on the best scientific information available, these SPLs are far below the threshold that could cause TTS or the onset of PTS. Certain mitigation measures proposed by the WSDOT, discussed below, can effectively prevent the onset of TS in marine mammals, by either reducing the source levels (using an air bubble curtain system) and by shut-down and power down procedures for pile driving.

In addition, chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital biological functions. Masking can interfere with detection of acoustic signals such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, like TS, marine mammals whose acoustical sensors or environment are being masked are also impaired from maximizing their performance fitness in survival and reproduction.

Masking occurs at the frequency band which the animals utilize. Therefore, since noise generated from the proposed bridge replacement activities, such as pile driving, vessel traffic, and dredging, is mostly concentrated at low frequency ranges, it may have less effect on high frequency echolocation sounds by killer whales. However, lower frequency man-made noises are more likely to affect detection of communication calls and other potentially important natural sounds such as surf and prey noise. It may also affect communication signals when they occur near the noise band and thus reduce the communication space of animals (e.g., Clark *et al.* 2009) and cause increased stress levels (e.g., Foote *et al.* 2004; Holt *et al.* 2009).

Unlike TS, masking impacts the species at population, community, or even ecosystem levels (instead of individual levels caused by TS). Masking affects both senders and receivers of the signals and has long-term chronic effects on marine mammal species and populations. Recent science suggests that low frequency ambient sound levels have increased by as much as 20 dB (more than 3 times in terms of SPL) in the world's ocean from pre-industrial periods, and most of these increases are from distant shipping (Hildebrand 2009). All anthropogenic noise sources, such as those from vessels traffic, pile driving, and dredging activities, contribute to the elevated ambient noise levels, thus intensify masking.

Nevertheless, the sum of noise from the proposed bridge replacement is confined in an area of inland waters that is bounded by landmass, therefore, the noise generated is not expected to contribute to increased ocean ambient noise.

Finally, exposure of marine mammals to certain sounds could lead to behavioral disturbance (Richardson *et al.* 1995), such as: changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities, changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping), avoidance of areas where noise sources are located, and/or flight responses (e.g., pinnipeds flushing into water from haulouts or rookeries).

The biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. However, the consequences of behavioral modification could be expected to be biologically significant if the change affects growth, survival, and reproduction. Some of these significant behavioral modifications include:

- Drastic change in diving/surfacing patterns (such as those thought to be causing beaked whale stranding due to exposure to military mid-frequency tactical sonar);
- Habitat abandonment due to loss of desirable acoustic environment; and
- Cease feeding or social interaction.

For example, at the Guerreo Negro Lagoon in Baja California, Mexico, which is one of the important breeding grounds for Pacific gray whales, shipping and dredging associated with a salt works may have induced gray

whales to abandon the area through most of the 1960s (Bryant *et al.* 1984). After these activities stopped, the lagoon was reoccupied, first by single whales and later by cow-calf pairs.

The onset of behavioral disturbance from anthropogenic noise depends on both external factors (characteristics of noise sources and their paths) and the receiving animals (hearing, motivation, experience, demography) and is also difficult to predict (Southall *et al.* 2007).

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

Currently NMFS uses 160 dB re 1 μPa at received level for impulse noises (such as impact pile driving) as the onset of marine mammal behavioral harassment, and 120 dB re 1 μPa for continued noises (vibratory pile driving and dredging).

As far as airborne noise is concerned, as mentioned before, the nearest pinniped haulout (harbor seal) is in Dyes Inlet, which is approximately 3 miles (4.8 km) west of the proposed project area. NMFS does not expect that airborne noise from pile driving would reach harassment levels at this distance.

2. Impacts from Presence of Human Activities

In addition to noise induced disturbances and harassment, the increased human presence and vessel traffic associated with the bridge replacement construction is also expected to have adverse impacts to marine mammals in the vicinity of the proposed project.

Some of the expected impacts could result from work trestles and barge anchoring. The construction and demolition work trestles would cover up to 55,900 square feet (5,193 m^2) of the Port Washington Narrows throughout the construction period, a duration of approximately three years, although neither trestle would be in place for that entire period. The size of these trestles has been reduced to the greatest extent practicable according to WSDOT. The demolition trestle would be installed during the in-water work window immediately prior to initiation of bridge demolition activities occurring from this trestle and both trestles would be removed as soon as practicable following the completion of construction and demolition activities. Barge anchoring would occur adjacent to the construction and demolition work trestles creating a passage the width of the shipping channel between the Port Washington Narrows and Sinclair Inlet. Killer whales, if they happen to be present in the vicinity of the area, could become confined by psychological barriers such as nets or low walls that they can physically cross, but for unknown reasons do not. Such was the case in 1994 in Barnes Lake near Ketchikan, Alaska, when 10 killer whales entered following salmon but then refused to leave until human intervention chased them out of the lake (Anonymous 1995; Bain 1995). In 1997, 19 members of the L pod of the Southern Resident killer whales entered Dyes Inlet near Bremerton, Washington, which is approximately 3 miles (4.8 km) west of the proposed project area and is surrounded by urban and residential development, and stayed there for nearly 30 days (Wiles 2004; NMFS 2008). The long length of residence of killer whales in this area was highly unusual and the reason is unclear, but may have been related to food abundance since it was coincidence to a strong run of chum salmon into Chico Creek between late October and November, or a reluctance by the whales to depart the inlet because of the physical presence of a bridge crossing the Port Washington Narrows and associated road noise (Wiles 2004; NMFS 2008). The work trestles and barges may present a similar situation that would discourage or prevent killer whales from exiting Dyes Inlet or Port Washington Narrows and returning to more open water if the whales happen to enter the inlet. However, as mentioned before, the occurrence of killer whales in the vicinity of proposed project area is not frequent.

3. Impacts from Water Quality

Marine mammals are especially vulnerable to contaminants because their apex trophic levels in the ecosystem promote bioaccumulation of contaminants. Water quality conditions will generally improve as a result of the construction of stormwater treatment facilities associated with the project. Currently, stormwater from the existing roadway and bridge is discharged, untreated, into the Port Washington Narrows. The WSDOT states that post project, all stormwater leaving the bridge would receive treatment by the city of Bremerton. Therefore, the impact from water quality is expected to be reduced as the result of the proposed bridge replacement project.

Proposed Mitigation Measures

In order to issue an incidental take authorization under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses.

For the proposed Manette Bridge replacement project, the WSDOT worked with NMFS and proposed the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity as a result of the construction activities.

1. Overall Construction Activities

The WSDOT states that all its construction is performed in accordance with the current WSDOT Standard Specifications for Road, Bridge, and Municipal Construction. Special Provisions contained in contracts are used in conjunction with, and supersede, any conflicting provisions of the Standard Specifications.

WSDOT activities are subject to state and local permit conditions. WSDOT states that it uses the best guidance available (e.g., best management practices and conservation measures) to accomplish the necessary work while avoiding and minimizing environmental impacts to the greatest extent possible.

The WSDOT contractor is expected to be responsible for the preparation of a Spill Prevention, Control, and Countermeasures plan to be used for the duration of the project. The plan would be submitted to the WSDOT Project Engineer prior to the commencement of any construction activities. A copy of the plan with any updates will be maintained at the work site by the contractor. A detailed discussion of the plan is provided in the WSDOT's IHA application.

2. Equipment Noise Standards

To mitigate noise levels and, therefore, impacts to marine mammals, all the construction equipment would comply with applicable equipment noise standards of the U.S. Environmental Protection Agency, and all construction equipment will have noise control devices no less effective than those provided on the original equipment.

3. Timing Windows

Timing restrictions are used to avoid construction activities that generate relatively intense underwater noises

(i.e., pile driving, dredging, and dynamic positioning) when ESA-listed species are most likely to be present. If an ESA-listed marine mammal species is detected in the vicinity of the project area, pile driving and dredging operations will be halted and stationing construction vessels will turn off dynamic positioning systems. WSDOT states that it will comply with all in-water timing restrictions as determined through the MMPA take authorization. Pile driving activities would only be conducted during daylight hours. If the safety zone (see below) is obscured by fog or poor lighting conditions, impact pile driving will not be initiated until the entire safety zone is visible. In addition, no in-water work would be conducted between March 1 and June 14 in water below the ordinary high water line.

4. Establishment of Zones of Safety and Influence

For impact pile driving, the safety zones are defined as the areas where received SPLs from noise source exceed 180 dB re 1 μPa (rms) for cetaceans or 190 dB re 1 μPa (rms) for pinnipeds. Repeated and prolonged exposure to SPLs above these values may cause TTS to cetaceans and pinnipeds, respectively. The radii of the safety zones would be determined through empirical measurements of acoustic data. Prior to acquiring acoustic data, the safety zones shall be established based on the worst-case scenario measured from impact pile driving of 36–inch (0.91 m) steel pile conducted elsewhere, such as the Anacortes or Mukiteo ferry terminals. Acoustic measurements indicate that source levels are approximately 201 dB re 1 μPa (rms) at 10 m for both pile driving activities for Anacortes and Mukiteo ferry terminal constructions when the 36–inch (0.91 m) piles were hammered in (Laughlin 2007; Sexton 2007). Approximation of the received levels of 180 and 190 dB re 1 μPa (rms) by using an acoustic propagation spreading model between spherical and cylindrical propagation,

$TL = 15\log(R_{RL}/R_{SL})$,

where TL is the transmission loss (in dB), RRL is the distance at received levels (either 180 or 190 dB), and R_{SL} is the distance (10 m) at source level (201 dB). The results show that the distances for received levels 180 and 190 dB re 1 μPa (rms) are approximately 251 m and 54 m, respectively. NMFS expects that the modeled safety zones are reasonably conservative as the propagation model does not take into consideration other transmission loss factors such as sound absorption in the water column.

Once impact pile driving begins, NMFS requires that the contractor adjust the size of the safety zones based on actual measurements of SPLs at various distances to determine the most conservative (the largest) safety zones at which the received levels are 180 and 190 dB re 1 μPa (rms).

Since the source levels for vibratory pile driving are expected to be under 180 dB re 1 μPa (rms) at 10 m, no safety zones would be established for vibratory pile driving.

In addition, WSDOT and its contractor shall establish zones of influence (ZOIs) at received levels of 160 and 120 dB re 1 μPa (rms) for impulse noise (noise from impact pile driving) and non-impulse noise (such as noise from vibratory pile driving and dynamic positioning system), respectively. These SPLs are expected to cause Level B behavioral harassment to marine mammals. The model based approximation for the distance at 160 dB received level is 5,412 m from pile driving based on the most conservative measurements from the Anacortes or Mukiteo ferry terminal construction (201 dB re 1 μPa (rms) at 10 m; Laughlin 2007; Sexton 2007), using the same spreading model discussed above. Once impact pile driving starts, the contractor shall conduct empirical acoustic measurements to determine the most conservative distance (the largest distance from the pile) where the received levels begin to fall below 160 dB re 1 μPa (rms).

As far as non-pulse noises are concerned, for which the Level B behavioral harassment is set at a received level of 120 dB re 1 μPa, no simple modeling is available to approximate the distance (though direct calculation using the spreading model puts the 120 dB received level at 100 km, this simple approximation no longer works at this long distance due to range-dependent propagation involving complex sound propagation behavior that cannot be ignored). NMFS uses the empirical underwater acoustic measurements from vibratory pile driving of 42 48–inch (1.06 1.22 m) diameter piles at the San Francisco-Oakland Bay Bridge construction as a model and expects that the distance at a received level of 120 dB is less than 1,900 m from the pile (CALTRANS 2009). Likewise, WSDOT and its contractor shall conduct empirical acoustic measurements to determine the actual distance of 120 dB re 1 μPa (rms) from the pile.

All safety and influence zones shall be monitored for marine mammals prior to and during construction activities. Please refer to the Monitoring and Reporting Measures section for a detailed description of monitoring measures.

5. Shutdown Measures

To prevent marine mammals from exposure to intense sounds that could potentially lead to TTS (i.e., received levels above 180 dB and 190 dB re 1 μPa (rms) for cetaceans and pinnipeds, respectively), no impact pile driving shall be initiated when marine mammals are detected within these safety zones. In addition, during impact driving, when a marine mammal is detected within the respective safety zones or is about to enter the safety zones, impact pile driving shall be halted and shall not be resumed until the animal is seen to leave the safety zone on its own, or 30 minutes has elapsed until the animal is last seen.

WSDOT also agrees that pile driving and dredging activities would be suspended when ESA-listed marine mammals (Steller sea lion and killer whale) are detected within the zone of behavioral harassment (160 dB re 1 μPa for impulse sources and 120 dB re 1 μPa for non-impulse sources) and that all vessels' dynamic positioning systems would be turned off. Therefore, no take of ESA-listed marine mammal species or stocks is expected.

6. "Soft Start" Impact Pile Driving or Ramp-up

Although marine mammals will be protected from Level A harassment by establishment of an air-bubble curtain during impact pile driving and marine mammal observers monitoring a safety zone, monitoring may not be 100 percent effective at all times in locating marine mammals. Therefore, WSDOT proposes to use a 'soft-start' technique 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 pile driving reaches full energy.

For vibratory pile driving, the soft start requires contractors to initiate noise from vibratory hammers for 15 seconds at reduced energy followed by a one minute waiting period. The procedure will be repeated two additional times. If an impact hammer is used on a pile greater than 10 inches in diameter, 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. This should expose fewer animals to loud sounds both underwater and above water noise. This would also ensure that, although not expected, any

pinnipeds and cetaceans that are missed during safety zone monitoring will not be injured.

7. Sound Attenuation Measures

Specific to pile driving, the following mitigation measures are proposed by WSDOT to reduce impacts to marine mammals to the greatest extent practicable.

All steel piles would be installed using a vibratory hammer until an impact hammer is needed for bearing or if a pile encounters consolidated material. If vibratory installation is not possible due to the substrate, an impact pile driver would be used. An air bubble curtain(s) will be employed during impact installation of all steel piles. Detailed description and specification of the air bubble curtain system is provided in Appendix C of the WSDOT's IHA application.

WSDOT will provide bubble curtain performance criteria to the contractor, which include:

• Piling shall be completely engulfed in bubbles over the full depth of the water column at all times when an impact pile driver is in use.

• The lowest bubble ring shall be in contact with the mud line for the full circumference of the ring. The weights attached to the bottom ring shall ensure complete mud line contact. No parts of the ring or other objects shall prevent the full mud line contact.

• Bubblers shall be constructed of minimum 2–inch (5.1–cm) inside diameter aluminum pipe with 1/16–inch (0.16–cm) diameter bubble release holes in four rows with 3/4–inch (1.9–cm) spacing in the radial and axial directions. Bubblers shall be durable enough to withstand repeated deployment during pile driving and shall be constructed to facilitate underwater setup, knockdown, and reuse on the next pile.

• One or more compressors shall be provided to supply air in sufficient volume and pressure to self-purge water from the bubblers and maintain the required bubble flux for the duration of pile driving. Compressors shall be of a type that prevents the introduction of oil or fine oil mist by the compressed air into the water. If there is presence of oil film or sheen on the water surface in the vicinity of the operating bubbler, the contractor shall immediately stop work until the source of oil film or sheen is identified and corrected.

• The system shall provide a bubble flux of 3.0 cubic meters (m3) per minute per linear meter of pipe in each layer (32.91 cubic feet, or 0.93 m3, per minute per linear foot of pipe in each layer). The total volume of air per layer is the product of the bubble flux and the circumference of the ring:

Vt=3.0 m^3/min/m x Circum of the aeration ring in meters.

or

Vt=32.91 ft^3/min/ft x Circum of the aeration ring in meters.

• The bubble ring manifold shall incorporate a shut off valve, flow meter, and a throttling globe valve with a pressure gauge for each bubble ring supply.

• Prior to first use of the bubble curtain during pile driving, the fully-assembled system shall be test-operated to demonstrate proper function and to train personnel in the proper balancing of the air flow to the bubblers. The test shall also confirm the calculated pressures and flow rates at each manifold ring. The Contractor shall submit an inspection/performance report to WSDOT within 72 hours following the performance test.

• The WSDOT Office of Air Quality and Noise has prepared a noise monitoring plan for the Manette Bridge Replacement Project (Appendix H). To comply with the provisions of the plan, the State will conduct hydroacoustic monitoring during construction to evaluate in water noise levels.

8. Ensure Regulation Compliance

Finally, WSDOT policy and construction administration practice is to have a WSDOT inspector on site during construction. The role of the inspector is to ensure contract compliance. The inspector and the contractor each have a copy of the Contract Plans and Specifications on site and are aware of all requirements. The inspector is also trained in environmental provisions and compliance.

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

• the manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals

• the proven or likely efficacy of the specific measure to minimize adverse impacts as planned

• the practicability of the measure for applicant implementation, including consideration of personnel safety, practicality of implementation.

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

Proposed Monitoring and Reporting Measures

In order to issue an ITA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for IHAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present. The proposed monitoring and reporting measures for the Manette Bridge replacement project are provided below.

1. Marine Mammal Observers

WSDOT proposes that a minimum of two qualified and NMFS-approved marine mammal observers (MMOs) would be present on site at all times during steel pile driving. In order to be considered qualified, WSDOT lists the following requirements for prospective MMOs:

• Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance. MMOs shall use binoculars to correctly identify the target.

• Advanced education in biological science, wildlife management, mammalogy or related fields (Bachelors degree or higher is preferred).

• Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).

• Experience or training in the field identification of marine mammals (cetaceans and pinnipeds), including the identification of behaviors.

• Sufficient training, orientation or experience with the construction operation to provide for personal safety during observations.

• Writing skills sufficient to prepare a report of observations.

• Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

2. Marine Mammal Monitoring

WSDOT has developed a monitoring plan (Appendix G of the WSDOT IHA application) in conjunction with NMFS that will collect sighting data for each distinct marine mammal species observed during the proposed Manette Bridge replacement construction activities that generate intense underwater noise. These activities include, but are not limited to, impact and vibratory pile driving, use of dynamic positioning system by construction and supporting vessels, and sediment dredging. Marine mammal behavior, overall numbers of individuals observed, frequency of observation, and the time corresponding to the daily tidal cycle will also be included. An example of a marine mammal sighting form is included in Appendix I of the WSDOT's IHA application.

In addition, for impact pile driving, WSDOT proposes the following Marine Mammal Monitoring Plan and shut down procedures:

• At least two MMOs will be on site to monitor the safety and influence zones by using a range finder or hand held global positioning system (GPS) device. The zone will be monitored by driving a boat along and within the radius while visually scanning the area, and or monitoring from shore if there is a vantage point that will allow full observation of the zone.

• If the safety zone is obscured by fog or poor lighting conditions, pile driving will not be initiated until the entire safety zone is visible.

• The safety zone will be monitored for the presence of marine mammals for 30 minutes prior to impact pile driving, during pile driving, and 20 minutes after pile driving activities.

• No impact pile driving will be started if a marine mammal is detected within the respective safety zones. Pile driving may begin if a marine mammal is seen leaving the safety zone, or 30 minutes has elapsed since the marine mammal is last seen inside the safety zone.

• If marine mammals are observed, their location in relation to the safety and influence zones, and their reaction (if any) to pile driving activities will be documented.

• Monitoring of the safety zone will continue for 20 minutes following the completion of pile driving.

3. Reporting

WSDOT shall submit weekly marine mammal monitoring reports from the time when in-water construction activities are commenced to NMFS Office of Protected Resources (OPR). These weekly reports would include a summary of the previous week's monitoring activities and an estimate of the number of marine mammals that may have been disturbed as a result of in-water construction activities.

In addition, if an IHA is issued to WSDOT for the incidental take of marine mammals from the proposed Manette Bridge replacement project, WSDOT shall provide NMFS OPR with a draft final report within 90 days after the expiration of the IHA. This report should detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed due to the construction activities. If no comments are received from NMFS OPR within 30 days, the draft final report will be considered the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.

Estimated Take by Incidental Harassment

As mentioned earlier in this document, the potential effects to marine mammals from the proposed activities include disturbance from increased human presence and marine traffic and from noises generated from the construction work such as pile driving and dredging activities. The proposed mitigation measures of using air bubble curtain systems would prevent marine mammals from onset of TTS by impact pile driving and reduce Level B behavioral harassment due to the effective attenuation by the air bubble systems. Therefore, the following analyses focus on potential noise impacts that could cause Level B behavioral harassment, based on the WSDOT contracted surveys for the entire proposed project area (WSDOT 2009).

1. Harbor Seal

There are no harbor seal haulouts within 3 miles (4.8 km) of the project. The nearest haulout is in Dyes Inlet and animals must move through the Port Washington Narrows to access Sinclair Inlet and the greater Puget Sound. Individual harbor seals moving between Sinclair and Dyes Inlets would be exposed to project activities.

A total of 34 harbor seals were detected during ten surveys conducted during the same time of year pile driving will occur, between July and January. The age, sex and reproductive condition of the animals was not determined. For the proposed Manette Bridge replacement activities, it is reasonable to assume that similar numbers of animals would be encountered during an average 10–day period. WSDOT anticipates that for every day of construction activities, between 3 and 4 harbor seals may be encountered, although it is possible that some of these animals will be the same individuals. If in-water construction activities occur every day of the year (258 days between June 15 and February 28), approximately 877 harbor seals (or about 6% of the Washington inland waters stock of harbor seals) could be encountered in the vicinity of the proposed bridge replacement work. However, it is not likely that every harbor seal would be taken by Level B behavioral harassment since not every animal would be exposed to received levels above 160 dB re 1 μPa (rms) from an impulse source (such as impact pile driving) or above 120 dB re 1 μPa (rms) from a non-impulse source (such as vibratory pile driving or dredging). Likewise, not every single harbor seal would respond to the sight of human or vessel traffic in the vicinity of the project area. Therefore, the estimated number of 877 represents the upper-limit of the number of harbor seals that could be affected by Level B behavioral harassment as a result of exposure to Manette Bridge replacement related construction activities.

2. California Sea Lion

There are no California sea lion haulouts within three miles of the project. The nearest haulout is in Rich Passage, east of the Port Washington Narrows in more open water. Individual California sea lions moving between Sinclair and Dyes Inlets could be exposed to project activities.

A total of one, possibly two California sea lions were detected during ten surveys conducted during the same time of year pile driving would occur, between July and January. The age, sex and reproductive condition of the animals was not determined. For the proposed Manette Bridge replacement activities, it is reasonable to assume that similar numbers of animals would be encountered during an average 10–day period. WSDOT anticipates that for every 10 days of construction activities, between 1 and 2 California sea lions may be encountered, although it is possible that some of these animals will

be the same individuals. If in-water construction activities occur every day of the year (258 days between June 15 and February 28), up to 516 California sea lions (or about 0.2% of the US stock of California sea lions) could be encountered in the vicinity of the proposed bridge replacement work. However, it is not likely that every California sea lion would be taken by Level B behavioral harassment since not every animal would be exposed to received levels above 160 dB re 1 μPa (rms) from an impulse source (such as impact pile driving) or above 120 dB re 1 μPa (rms) from a non-impulse source (such as vibratory pile driving or dredging). Likewise, not every single California sea lion would respond to the sight of human or vessel traffic in the vicinity of the project area. Therefore, the estimated number of 516 represents the upper-limit of the number of harbor seals that could be affected by Level B behavioral harassment as a result of exposure to Manette Bridge replacement related construction activities.

3. Steller Sea Lion

As stated earlier, the nearest Steller sea lion haulout is approximately 12 miles (19.3 km) northeast of the proposed project area in Shilshole Bay on the east side of the Puget Sound, adjacent to the city of Seattle. No Steller sea lions were sighted during the ten surveys contracted by WSDOT, and NMFS considers it is very unlikely that a Steller sea lion would occur in the vicinity of the proposed project area. The implementation of the aforementioned mitigation measures, including halting all pile driving and dredging activities and turning off construction vessels' dynamic positioning systems when a Steller sea lion is detected about to enter the zone of influence (received levels at or above 160 dB re 1 μPa (rms) for impulse noise or 120 dB re 1 μPa (rms) for non-impulse noise). Therefore, NMFS does not believe Steller sea lion would be affected.

4. Killer Whale

Killer whales (southern resident) have been documented in the project vicinity once in the last ten years (WSDOT 2009). No killer whales were sighted during the ten surveys contracted by WSDOT, and NMFS considers it rare that a killer whale would occur in the vicinity of the proposed project area. The implementation of the aforementioned mitigation measures, including halting all pile driving and dredging activities and turning off construction vessels' dynamic positioning systems when a killer whale is detected about to enter the zone of influence (received levels at or above 160 dB re 1 μPa (rms) for impulse noise or 120 dB re 1 μPa (rms) for non-impulse noise). Therefore, NMFS does not believe killer whale would be affected.

5. Gray Whale

Individual gray whales have been observed near the project area in four of the last eight years (WSDOT 2009). No gray whales were sighted during the ten surveys contracted by WSDOT, and NMFS considers it rare that a gray whale would occur in the vicinity of the proposed project area. Most grays whales spend winters in their breeding/calving grounds around Baja California and summers in feeding grounds around Bering Sea and the Arctic. The few gray whales that occur in the vicinity of the proposed project area are likely the ones visiting the area on their north-south migration route. Based on past occurrence of gray whales in the area and using conservative probability estimate, NMFS considers that no more than 2 individuals of gray whales (0.01% of the Eastern North Pacific gray whale population) would be exposed to underwater construction noise SPL that could cause Level B behavioral harassment annually as a result of the proposed Manette Bridge replacement project.

Negligible Impact and Small Numbers Analysis and Determination

Pursuant to NMFS' regulations implementing the MMPA, an applicant is required to estimate the number of animals that will be "taken" by the specified activities (i.e., takes by harassment only, or takes by harassment, injury, and/or death). This estimate informs the analysis that NMFS must perform to determine whether the activity will have a "negligible impact" on the species or stock. Level B (behavioral) harassment occurs at the level of the individual(s) and does not assume any resulting population-level consequences, though there are known avenues through which behavioral disturbance of individuals can result in population-level effects. A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (i.e., population-level effects). An estimate of the number of Level B harassment takes alone is not enough information on which to base an impact determination.

In addition to considering estimates of the number of marine mammals that might be "taken" through behavioral harassment, NMFS considers other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A takes, the number of estimated mortalities, and effects on habitat.

The WSDOT's specified activities have been described based on best estimates of the planned Manette Bridge replacement project within the proposed project area. Some of the noises that would be generated as a result of the proposed bridge replacement project, such as impact pile driving, are high intensity. However, WSDOT plans to use vibratory pile driving and to avoid using impact pile driving as much as possible, therefore eliminating the intense impulses that could cause TTS to marine mammals when repeatedly exposed in close proximity. In addition, WSDOT indicates that if impact pile driving is to be conducted, an air bubble curtain system would be used to attenuate the noise level. Furthermore, shutdown of pile driving would be implemented when a marine mammal is spotted within the 180 dB and 190 dB re 1 μPa (rms) safety zones for cetaceans and pinnipeds, respectively. Therefore, NMFS does not expect that any animals would receive Level A (including injury) harassment or Level B TTS from being exposed to intense construction noise.

Animals exposed to construction noise associated with the proposed bridge replacement work would be limited to Level B behavioral harassment only, i.e., the exposure of received levels for impulse noise between 160 and 180 dB re 1 μPa (rms) (from impact pile driving) and for non-impulse noise between 120 and 180 dB re 1 μPa (rms) (from vibratory pile driving, dredging, and dynamic positioning of construction vessels). In addition, the potential behavioral responses from exposed animals are expected to be localized and short in duration. The modeled 160 dB isopleths from impact pile driving is 5,412 m from the pile, and the estimated 120 dB isopleths from vibratory pile driving is approximately 1,900 m from the pile. However, the actual zone of influence from impact pile driving is expected to be much smaller due to other sound attenuation factors not considered in the spreading model. Furthermore, although in-water construction activities are expected to be conducted everyday during daylight hours between June 15 and February 28, the total duration for pile driving is expected to be approximately 410 hours, or 41 working days based on 10 hours of daylight for

each working day. WSDOT also plans to use barge anchoring instead of dynamic positioning systems for construction vessels, thus further reducing noise input into the water column. Therefore, the underwater noise impacts from the proposed Manette Bridge replacement construction is expected to have a low level of noise intensity, and be of short duration and localized. These low intensity, localized, and short-term noise exposures, when received at distances of Level B behavioral harassment (i.e., 160 dB re 1 μPa (rms) from impulse sources and 120 dB re 1 μPa (rms) from non-impulse sources), are expected to cause brief startle reactions or short-term behavioral modification by the animals. These brief reactions and behavioral changes are expected to disappear when the exposures cease. Therefore, these levels of received underwater construction noise from the proposed Manette Bridge replacement project are not expected to affect marine mammal annual rates of recruitment or survival.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed mitigation and monitoring measures, NMFS preliminarily finds that the Manette Bridge replacement project will result in the incidental take of small numbers of Pacific harbor seals, California sea lions, and gray whales by Level B harassment only, and that the total taking from harassment will have a negligible impact on the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by this action.

Endangered Species Act (ESA)

There are two marine mammal species and two fish species that are listed as endangered or threatened under the ESA with confirmed or possible occurrence in the study area: Eastern North Pacific Southern Resident killer whale, Eastern U.S. Steller sea lion, Chinook salmon, and steelhead trout. Under section 7 of the ESA, the Federal Highway Administration (FHWA) and WSDOT have consulted with NMFS Northwest Regional Office (NWRO) on the proposed Manette Bridge replacement project. In a memo issued with its August 3, 2009, Biological Opinions, NMFS NWRO stated that the proposed bridge replacement may effect, but is not likely to adversely affect the listed marine mammal species and stocks.

The proposed issuance of an IHA to WSDOT constitutes an agency action that authorizes an activity that may affect ESA-listed species and, therefore, is subject to section 7 of the ESA. Moreover, as the effects of the activities on listed marine mammals and salmonids were analyzed during a formal consultation between the FHWA and NMFS, and as the underlying action has not changed from that considered in the consultation, the discussion of effects that are contained in the Biological Opinion and accompanying memo issued to the FHWA on August 3, 2009, pertains also to this action. In conclusion, NMFS has determined that issuance of an IHA for this activity would not lead to any effects to listed species apart from those that were considered in the consultation on FHWA's action.

National Environmental Policy Act (NEPA)

NMFS is in the process of preparing an Environmental Assessment (EA) for the take of marine mammals incidental to the Manette Bridge replacement construction activities, and will make a final NEPA determination before issuing a final IHA.

Dated: March 16, 2010.

James H. Lecky,

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

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DEPARTMENT OF DEFENSE

Department of the Air Force

U.S. Air Force Scientific Advisory Board Notice of Meeting

AGENCY: Department of the Air Force, U.S. Air Force Scientific Advisory Board.

ACTION: Meeting notice.

SUMMARY: Under the provisions of the Federal Advisory Committee Act of 1972 (5 U.S.C., Appendix, as amended), the Government in the Sunshine Act of 1976 (5 U.S.C. 552b, as amended), and 41 CFR 102–3.150, the Department of Defense announces that the United States Air Force Scientific Advisory Board (SAB) meeting will take place on Tuesday, April 13th, 2010, at the 11th Air Force Headquarters Building, 10480 22d Street, Elmendorf Air Force Base, Alaska, 99506. The meeting will be from 8 a.m.–12:15 p.m.

The purpose of the meeting is to hold the SAB quarterly meeting to review ongoing classified FY10 studies, assess pre-decisional study material, and conduct classified discussions on Elmendorf Air Force Base missions and how capabilities are used in the field; this knowledge will be applied to current and future studies.

Pursuant to 5 U.S.C. 552b, as amended, and 41 CFR 102–3.155, the Administrative Assistant of the Air Force, in consultation with the Office of the Air Force General Counsel, has determined in writing that the public interest requires that all sessions of the United States Air Force Scientific Advisory Board meeting be closed to the public because they will be concerned with classified information and matters covered by sections 5 U.S.C. 552b(c)(1) and (4).

Any member of the public wishing to provide input to the United States Air Force Scientific Advisory Board should submit a written statement in accordance with 41 CFR 102–3.140(c) and section 10(a)(3) of the Federal Advisory Committee Act and the procedures described in this paragraph. Written statements can be submitted to the Designated Federal Officer at the address detailed below at any time. Statements being submitted in response to the agenda mentioned in this notice must be received by the Designated Federal Officer at the address listed below at least five calendar days prior to the meeting which is the subject of this notice. Written statements received after this date may not be provided to or considered by the United States Air Force Scientific Advisory Board until its next meeting. The Designated Federal Officer will review all timely submissions with the United States Air Force Scientific Advisory Board Chairperson and ensure they are provided to members of the United States Air Force Scientific Advisory Board before the meeting that is the subject of this notice.

FOR FURTHER INFORMATION CONTACT: The United States Air Force Scientific Advisory Board Executive Director and Designated Federal Officer, Lt Col Anthony M. Mitchell, 301–981–7135, United States Air Force Scientific Advisory Board, 1602 California Ave., Ste. #251, Andrews AFB, MD 20762, *anthonym.mitchell@pentagon.af.mil.*

Bao-Anh Trinh, YA–3,

Air Force Federal Register Liaison Officer.

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