



BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XC863

Taking of Marine Mammals Incidental to Specified Activities: Mukilteo Ferry Terminal Construction Work

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

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

SUMMARY: NMFS has received a request from the Washington State Department of Transportation (WSDOT) Ferries Division (WSF) for an authorization to take small numbers of eight species of marine mammals, by Level B harassment, incidental to proposed construction activities at the Mukilteo Multimodal Ferry Terminal in Mukilteo, Snohomish County, Washington. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an authorization to WSDOT to incidentally take, by harassment, small numbers of marine mammals for a period of 1 year.

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

ADDRESSES: Comments on the application should be addressed to Michael Payne, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The

mailbox address for providing email comments is itp.guan@noaa.gov. NMFS is not responsible for e-mail comments sent to addresses other than the one provided here. Comments sent via e-mail, including all attachments, must not exceed a 25-megabyte file size.

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

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

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

SUPPLEMENTARY INFORMATION:

Background

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

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

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

Summary of Request

On August 30, 2013, WSF submitted a request to NOAA requesting an IHA for the possible harassment of small numbers of eight marine mammal species incidental to construction work associated with the Mukilteo Ferry Terminal replacement project in Mukilteo, Snohomish County, Washington. The new terminal will be located to the east of the existing location at the site of the former U.S. Department of Defense Fuel Supply

Point facility, known as the Tank Farm property, which includes a large pier extending into Possession Sound (Figure 1-3 of the WSF IHA application). Completion of the entire project will occur over 4 consecutive years. WSF plans to submit an IHA request for each consecutive year of construction. The current IHA application is for the first year of construction, which is limited to removing the Tank Farm Pier.

After receiving NMFS comment, on October 17, 2013, WSF submitted a revised IHA application. The action discussed in this document is based on WSF's October 17, 2013, IHA application. NMFS is proposing to authorize the Level B harassment of the following marine mammal species: harbor seal, California sea lion, Steller sea lion, harbor porpoise, Dall's porpoise, killer whale, gray whale, and humpback whale.

Description of the Specified Activity

The Mukilteo Tank Farm Pier, which has not been used for fuel transfers since the late 1970s, covers approximately 138,080 ft² (3.17 acres) over-water and contains approximately 3,900 12-inch diameter creosote-treated piles. Demolition of the pier will remove approximately 7,300 tons of creosote-treated timber from the aquatic environment. Demolition will take approximately ten months over two in-water work windows. Removal of the pier will occur from land and from a barge containing a derrick, crane and other necessary equipment.

Piles will be removed with a vibratory hammer or by direct pull using a chain wrapped around the pile. The crane operator will take measures to reduce turbidity, such as vibrating the pile slightly to break the bond between the pile and surrounding soil, and removing the pile slowly; or if using direct pull, keep the rate at which piles are removed low enough to meet regulatory turbidity limit requirements. If piles are so deteriorated

they cannot be removed using either the vibratory or direct pull method, the operator will use a clamshell to pull the piles from below the mudline, or cut at or just below the mudline (up to one foot) using a hydraulic saw.

Pile removal and demolition of creosote-treated timber elements of the Tank Farm Pier will take place between July 15 and February 15. All work will occur in water depths between 0 and -30 feet mean lower-low water.

The first year of construction activities for the Mukilteo Multimodal Project is limited to removing the Tank Farm Pier. The noise produced by the proposed vibratory pile extraction may impact marine mammals. Direct pull and clamshell removal are not expected to exceed noise levels that would harm or harass marine mammals. These extraction methods are described below.

Vibratory Hammer Removal

Vibratory hammer extraction is a common method for removing timber piling. A vibratory hammer is suspended by cable from a crane and derrick, and positioned on the top of a pile. The pile is then unseated from the sediments by engaging the hammer, creating a vibration that loosens the sediments binding the pile, and then slowly lifting up on the hammer with the aid of the crane. Once unseated, the crane continues to raise the hammer and pulls 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. Vibratory removal will take approximately 10 to 15 minutes per pile, depending on sediment conditions.

Direct Pull and Clamshell Removal

Older timber pilings are particularly prone to breaking at the mudline because of damage from marine borers and vessel impacts. In some cases, removal with a vibratory hammer is not possible if the pile is too fragile to withstand the hammer force. Broken or damaged piles may be removed by wrapping the piles with a cable and pulling them directly from the sediment with a crane. If the piles break below the waterline, the pile stubs will be removed with a clamshell bucket, a hinged steel apparatus that operates like a set of steel jaws. The bucket will be lowered from a crane and the jaws will grasp the pile stub as the crane pulled up. The broken piling and stubs will be loaded onto the barge for off-site disposal. Clamshell removal will be used only if necessary, as it will produce temporary, localized turbidity impacts. Turbidity will be kept within required regulatory limits. Direct pull and clamshell removal do not produce noise that could impact marine mammals.

Underwater Noise Levels

The project includes vibratory removal of 12-inch timber piles. Based on in-water measurements at the WSF Port Townsend Ferry Terminal (Laughlin 2011a), removal of 12-inch timber piles generated 149 to 152 decibels (dB) root mean square (rms) in reference to 1 microPa (re 1 μ Pa) with an overall average rms sound pressure level (SPL) of 150 dB (rms) re 1 μ Pa measured at 16 meters. A worst-case noise level for vibratory removal of 12-inch timber piles will be 152 dB (rms) re 1 μ Pa at 16 meters.

Under current NMFS guidelines, the “exclusion zone” for marine mammal exposure to noise sources is customarily defined as the area within which received sound levels are ≥ 180 dB (rms) re 1 μ Pa for cetaceans and ≥ 190 dB (rms) re 1 μ Pa for pinnipeds. These safety criteria are based on an assumption that SPL received at levels lower than

these will not injure these animals or impair their hearing abilities, but that at higher levels might have some such effects. Disturbance or behavioral effects to marine mammals from underwater sound may occur after exposure to sound at distances greater than the exclusion zones (Richardson et al. 1995). Currently, NMFS uses 160 dB (rms) re 1 μ Pa as the threshold for Level B behavioral harassment from impulses noise, and 120 dB (rms) re 1 μ Pa for Level B behavioral harassment from non-impulse noise.

For the WSF's proposed Tank Farm Pier pile removal project, since the source level from vibratory pile removal is estimated at 152 dB (rms) re 1 μ Pa, there will be no exclusion zone for marine mammals. The sounds generated from vibratory pile removal are non-impulse noises, therefore the zone of influence (ZOI) for marine mammal behavioral harassment would be where received level falls to 120 dB (rms) re 1 μ Pa. However, since the ambient noise level at the vicinity of the proposed project area is between 122 to 124 dB re 1 μ Pa, depending on marine mammal functional hearing groups (Laughlin 2011b), the received level of 120 dB re 1 μ Pa would be below the ambient level. Therefore, for this proposed project, 122 dB re 1 μ Pa is used as the threshold for Level B behavioral harassment.

Using the practical geometrical spreading loss model for underwater sound propagation, it is estimated that the radius of the ZOI is approximately 1,600 m from the source.

Airborne Noise Levels

No unweighted in-air source level data is available for 12-inch timber pile removal. Unweighted in-air measurements of vibratory driving of a 30-inch steel pile collected during the 2010 WSF Coupeville Ferry Terminal Wingwalls Replacement

Project ranged from 95-97.8 dB (rms) re 1 20 μ Pa at 50 feet (Laughlin 2010). Removal of 12-inch timber pile will be assumed to be the same as 30-inch pile driving.

NMFS currently considers in-air noise behavioral disturbance thresholds of 90 dB (rms) re 20 μ Pa (unweighted) for harbor seals, and 100 dB (rms) re 20 μ Pa (unweighted) for all other pinnipeds.

Using the measurement of 97.8 dB (rms) at 50 feet, and attenuating at 6 dBA per doubling distance overwater, in-air noise from vibratory pile removal will attenuate to 90 dB (rms) re 20 μ Pa for harbor seal at approximately 123 ft (37 m), and to 100 dB (rms) re 20 μ Pa for sea lions at approximately 39 ft (12 m).

The closest documented harbor seal haul-outs are the Naval Station Everett floating security fence and the Port Gardner log booms (4.5 miles NE). The closest documented sea lion haul-outs are the Everett Harbor navigation buoys (3.0/3.5 miles NE).

Dates and Duration

The daily construction window for pile removal will begin no sooner than 30 minutes after sunrise to allow for initial marine mammal monitoring, and will end at sunset (or soon after), when visibility decreases to the point that effective marine mammal monitoring is not possible.

Vibratory pile removal will take approximately 10 to 15 minutes per pile. Assuming the worst case of 15 minutes per pile (with no direct pull or clamshell removal), removal of 3,900 piles will take and estimated 675-975 hours over 180 days of pile removal over two seasons. The estimate of 180 days provides for some shorter pile pulling days during winter, transition time to dig out broken piles, and removal of

decking. This proposed IHA would cover Year One only, with removal of 1,835 piles taking approximately 90 days. It is likely that the actual hours of vibratory pile removal will be less, as the duration assumes that every pile will be removed with a vibratory hammer. It is likely that many piles will require direct pull or clamshell removal, both of which are quicker than vibratory extraction. The construction work is expected to occur between September 1, 2014, and August 31, 2015.

Description of Marine Mammals in the Area of the Specified Activity

The marine mammal species under NMFS jurisdiction most likely to occur in the proposed construction area include Pacific harbor seal (*Phoca vitulina richardsi*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*P. dalli*), killer whale (*Orcinus orca*), gray whale (*Eschrichtius robustus*), and humpback whale (*Megaptera novaeangliae*).

General information on the marine mammal species found in California waters can be found in Caretta et al. (2013), which is available at the following URL: <http://www.nmfs.noaa.gov/pr/sars/pdf/po2012.pdf>. Refer to that document for information on these species. Specific information concerning these species in the vicinity of the proposed action area is provided below.

Harbor Seal

Harbor seals are members of the true seal family (Phocidae). For management purposes, differences in mean pupping date (Temte 1986), movement patterns (Jeffries 1985; Brown 1988), pollutant loads (Calambokidis et al. 1985), and fishery interactions have led to the recognition of three separate harbor seal stocks along the west coast of the continental U.S. (Boveng 1988). The three distinct stocks are: (1) inland waters of

Washington State (including Hood Canal, Puget Sound, Georgia Basin and the Strait of Juan de Fuca out to Cape Flattery), (2) outer coast of Oregon and Washington, and (3) California (Carretta et al. 2011).

The Washington Inland Waters stock (which includes Hood Canal, Puget Sound, Georgia Basin and the Strait of Juan de Fuca out to Cape Flattery) may be present near the project site. Popping seasons vary by geographic region. For the northern Puget Sound region, pups are born from late June through August (WDFW 2012). After October 1 all pups in the inland waters of Washington are weaned. Of the three pinniped species that commonly occur within the region of activity, harbor seals are the most numerous and the only one that breeds in the inland marine waters of Washington (Calambokidis and Baird 1994).

In 1999, Jeffries et al. (2003) recorded a mean count of 9,550 harbor seals in Washington's inland marine waters, and estimated the total population to be approximately 14,612 animals (including the Strait of Juan de Fuca). There are an estimated 32,000 harbor seals in Washington today, and their population appears to have stabilized (NMFS 2011a; Jeffries 2013).

Harbor seals are the most numerous marine mammal species in Puget Sound. Harbor seals are non-migratory; their local movements are associated with such factors as tides, weather, season, food availability and reproduction (Scheffer and Slipp 1944; Fisher 1952; Bigg 1969, 1981). They are not known to make extensive pelagic migrations, although some long-distance movements of tagged animals in Alaska (174 km) and along the U.S. west coast (up to 550 km) have been recorded (Pitcher and McAllister 1981; Brown and Mate 1983; Herder 1983).

Harbor seals haul out on rocks, reefs and beaches, and feed in marine, estuarine and occasionally fresh waters. Harbor seals display strong fidelity for haul-out sites (Pitcher and Calkins 1979; Pitcher and McAllister 1981). The closest documented harbor seal haul-out sites to the Tank Farm Pier are the Naval Station Everett floating security fence, and the Port Gardner log booms, both approximately 4.5 miles northeast of the project site. Harbor seals may also haul-out on undocumented sites in the area, such as beaches.

Since June 2012, Naval Station Everett personnel have been conducting counts of the number of harbor seals that use the in-water security fence floats as haul-outs. As of April 18, 2013, the highest count was 343 seals observed during one day in October 2012 (U.S. Navy 2013). The average number of seals hauled out for the 8 days of monitoring falling within the Tank Farm Pier removal work window (July 15 - February 15) was 117 (U.S. Navy 2013). However, given the distance from the haul-out to the Tank Farm Pier, the number of affected seals would be less.

Since 2007, the Everett Community College Ocean Research College Academy (ORCA) has conducted quarterly cruises that include monitoring stations within the ZOI. Marine mammal sightings data were collected during these cruises. During 24 cruises within the ZOI falling within the Tank Farm Pier removal window (July 15 - February 15), the highest count was 13 seals observed during one day in November of 2012. The average number of seals observed during these cruises was 2.4 (ORCA 2013).

According to the NMFS National Stranding Database (2007-2013), there were 7 confirmed harbor seal strandings within 0.5 miles of Tank Farm Pier (NMFS 2013b).

California Sea Lion

Washington California sea lions are part of the U.S. stock, which begins at the U.S./Mexico border and extends northward into Canada. The U.S. stock was estimated at 296,750 in the 2012 Stock Assessment Report (SAR) and may be at carrying capacity, although more data are needed to verify that determination (Carretta et al. 2013). Some 3,000 to 5,000 animals are estimated to move into northwest waters (both Washington and British Columbia) during the fall (September) and remain until the late spring (May) when most return to breeding rookeries in California and Mexico (Jeffries et al. 2000). Peak counts of over 1,000 animals have been made in Puget Sound (Jeffries et al. 2000).

California sea lions breed on islands off Baja Mexico and southern California with primarily males migrating to feed in the northern waters (Everitt et al. 1980). Females remain in the waters near their breeding rookeries off California and Mexico. All age classes of males are seasonally present in Washington waters (WDFW 2000).

California sea lions do not avoid areas with heavy or frequent human activity, but rather may approach certain areas to investigate. This species typically does not flush from a buoy or haulout if approached.

California sea lions were unknown in Puget Sound until approximately 1979 (Steiger and Calambokidis 1986). Everitt et al. (1980) reported the initial occurrence of large numbers at Port Gardner, Everett (northern Puget Sound) in the spring of 1979. The number of California sea lions using the Everett haul-out at that time numbered around 1,000. Similar sightings and increases in numbers were documented throughout the region after the initial sighting in 1979 (Steiger and Calambokidis 1986), including urbanized areas such as Elliot Bay near Seattle and heavily used areas of central Puget Sound (Gearin et al. 1986). In Washington, California sea lions use haul-out sites within

all inland water regions (WDFW 2000). The movement of California sea lions into Puget Sound could be an expansion in range of a growing population (Steiger and Calambokidis 1986).

The closest documented California sea lion haul-out sites to the Tank Farm Pier are the Everett Harbor navigation buoys (3.0/3.5 miles NE), and the Naval Station Everett floating security fence and Port Gardner log booms (both 4.5 miles NE).

Since June 2012, Naval Station Everett personnel have been conducting counts of the number of sea lions that use the in-water security fence floats as haul-outs. As of April 18, 2013, the highest count has been 123 California sea lions observed during one day in November 2012. The average number of California sea lions hauled out for the 8 days of monitoring falling within the Tank Farm Pier removal work window (July 15 - February 15) is 43 (U.S. Navy 2013). However, given the distance from the haul-out to the Tank Farm Pier, it is not expected that the same numbers would be present in the ZOI.

Since 2007, the Everett Community College ORCA has conducted quarterly cruises that include monitoring stations within the ZOI. Marine mammal sightings data were collected during these cruises. During 10 cruises within the ZOI falling within the Tank Farm Pier removal window (July 15 - February 15), the highest count was 6 California sea lions observed during one day in October of 2008. The average number of sea lions observed during these cruises was 2.8 (ORCA 2013).

According to the NMFS National Stranding Database (2007-2013), there was one confirmed California sea lion stranding within 0.5 miles of the Tank Farm Pier (NMFS 2013b).

Steller Sea Lion

The Eastern stock of Steller sea lion may be present near the project site. The eastern stock of Steller sea lions is estimated to be 52,847 individuals based on 2001 through 2009 pup counts (Allen and Angliss 2011). For Washington inland waters, Steller sea lion abundances vary seasonally with a minimum estimate of 1,000 to 2000 individuals present or passing through the Strait of Juan de Fuca in fall and winter months (WSDOT 2013).

Steller sea lion numbers in Washington State decline during the summer months, which correspond to the breeding season at Oregon and British Columbia rookeries (approximately late May to early June) and peak during the fall and winter months (WDFW 2000). A few Steller sea lions can be observed year-round in Puget Sound although most of the breeding age animals return to rookeries in the spring and summer (WSDOT 2013).

The Eastern Steller sea lions were listed as threatened under the Endangered Species Act (ESA). On October 23, 2013, NMFS removed the Eastern Steller sea lion from the ESA list as this stock is determined to have been recovered.

Breeding rookeries for the eastern stock are located along the California, Oregon, British Columbia, and southeast Alaska coasts, but not along the Washington coast or in inland Washington waters (Angliss and Outlaw 2007). Adult Steller sea lions congregate at rookeries in Oregon, California, and British Columbia for pupping and breeding from late May to early June (Gisiner 1985).

Steller sea lions primarily use haul-out sites on the outer coast of Washington and in the Strait of Juan de Fuca along Vancouver Island in British Columbia. Only sub-adults or non-breeding adults may be found in the inland waters of Washington (Pitcher

et al. 2007). However, the number of inland waters haul-out sites has increased in recent years.

Since June 2012, Naval Station Everett personnel have been conducting counts of the number of sea lions that use the in-water security fence floats as haul-outs. No Steller sea lions have been observed using the security barrier floats haul-out to date (U.S. Navy 2013).

Since 2007, the Everett Community College ORCA has conducted quarterly cruises that include monitoring stations within the ZOI. No Steller sea lions have been observed in the ZOI during these cruises (ORCA 2013).

The closest documented Steller Sea lion haul-outs to the Tank Farm Pier are the Orchard Rocks and Rich Passage buoys near S. Bainbridge Island (19 miles SW), and Craven Rock near Marrowstone Island (23 miles NW). Haul-outs are generally occupied from October through May, which overlaps with the in-water work window. Any Steller sea lions near the Tank Farm Pier would be transiting through the area.

There is no data available on the number of Steller sea lions that use the Orchard Rocks. Up to 12 Steller sea lions have been observed using the Craven Rock haul-out off of Marrowstone Island in northern Puget Sound (WSF 2010). However, given the distance from this haul-out to the Tank Farm Pier, it is not expected that the same numbers would be present in the ZOI.

According to the NMFS National Stranding Database (2007-2013), there were no Steller sea lion strandings in the area of the Tank Farm Pier (NMFS 2013b).

Harbor Porpoise

The Washington Inland Waters Stock of harbor porpoise may be found near the project site. The Washington Inland Waters Stock occurs in waters east of Cape Flattery (Strait of Juan de Fuca, San Juan Island Region, and Puget Sound).

The Washington Inland Waters Stock mean abundance estimate based on 2002 and 2003 aerial surveys conducted in the Strait of Juan de Fuca, San Juan Islands, Gulf Islands, and Strait of Georgia is 10,682 harbor porpoises (NMFS 2011d).

No harbor porpoises were observed within Puget Sound proper during comprehensive harbor porpoise surveys (Osmek et al. 1994) or Puget Sound Ambient Monitoring Program (PSAMP) surveys conducted in the 1990s (WDFW 2008). Declines were attributed to gill-net fishing, increased vessel activity, contaminants, and competition with Dall's porpoise.

However, populations appear to be rebounding with increased sightings in central Puget Sound (Carretta et al. 2007b) and southern Puget Sound (WDFW 2008). Recent systematic boat surveys of the main basin indicate that at least several hundred and possibly as many as low thousands of harbor porpoise are now present. While the reasons for this recolonization are unclear, it is possible that changing conditions outside of Puget Sound, as evidenced by a tripling of the population in the adjacent waters of the Strait of Juan de Fuca and San Juan Islands since the early 1990s, and the recent higher number of harbor porpoise mortalities in coastal waters of Oregon and Washington, may have played a role in encouraging harbor porpoise to explore and shift into areas like Puget Sound (Hanson et al. 2011).

Harbor porpoises are common in the Strait of Juan de Fuca and south into Admiralty Inlet, especially during the winter, and are becoming more common south of

Admiralty Inlet. Little information exists on harbor porpoise movements and stock structure near the Mukilteo area, although it is suspected that in some areas harbor porpoises migrate (based on seasonal shifts in distribution). For instance Hall (2004) found harbor porpoises off Canada's southern Vancouver Island to peak during late summer, while the Washington State Department of Fish and Wildlife's (WDFW) Puget Sound Ambient Monitoring Program (PSAMP) data show peaks in Washington waters to occur during the winter.

Hall (2004) found that the frequency of sighting of harbor porpoises decreased with increasing depth beyond 150 m with the highest numbers observed at water depths ranging from 61 to 100 m. Although harbor porpoises have been spotted in deep water, they tend to remain in shallower shelf waters (<150 m) where they are most often observed in small groups of one to eight animals (Baird 2003). Water depths within the Tank Farm Pier ZOI range from 0 to 192 m.

Since 2007, the Everett Community College ORCA has conducted quarterly cruises that include monitoring stations within the ZOI. No harbor porpoise have been observed within the ZOI during these cruises (ORCA 2013).

According to the NMFS National Stranding Database, there was one confirmed harbor porpoise stranding within 0.5 miles of the Tank Farm Pier from 2007 to 2013 (NMFS 2013b).

Dall's Porpoise

The California, Oregon, and Washington Stock of Dall's porpoise may be found near the project site. The most recent estimate of Dall's porpoise stock abundance is 42,000, based on 2005 and 2008 summer/autumn vessel-based line transect surveys of

California, Oregon, and Washington waters (Carretta et al. 2011). Within the inland waters of Washington and British Columbia, this species is most abundant in the Strait of Juan de Fuca east to the San Juan Islands. The most recent Washington's inland waters estimate is 900 animals (Calambokidis et al. 1997). Prior to the 1940s, Dall's porpoises were not reported in Puget Sound.

Dall's porpoises are migratory and appear to have predictable seasonal movements driven by changes in oceanographic conditions (Green et al. 1992, 1993), and are most abundant in Puget Sound during the winter (Nysewander et al. 2005; WDFW 2008). Despite their migrations, Dall's porpoises occur in all areas of inland Washington at all times of year (WSDOT 2013), but with different distributions throughout Puget Sound from winter to summer. The average winter group size is three animals (WDFW 2008).

Since 2007, the Everett Community College ORCA has conducted quarterly cruises that include monitoring stations within the ZOI. No Dall's porpoise have been observed within the ZOI during these cruises (ORCA 2013).

According to the NMFS National Stranding Database (2007-2013), there were no Dall's porpoise strandings in the area of the Tank Farm Pier (NMFS 2013b).

Killer Whale

The Eastern North Pacific Southern Resident (SR) and West Coast Transient stocks of killer whale may be found near the project site.

A. Southern Resident Stock

The Southern Residents live in three family groups known as the J, K and L pods. As of July 1, 2013, the stock collectively numbers 82 individuals: J pod has 26 members, K pod has 19 members, and L pod has 37 members (CWR 2013).

Southern Residents are documented in coastal waters ranging from central California to the Queen Charlotte Islands, British Columbia (NMFS 2008). They occur in all inland marine waters. SR killer whales generally spend more time in deeper water and only occasionally enter water less than 15 feet deep (Baird 2000). Distribution is strongly associated with areas of greatest salmon abundance, with heaviest foraging activity occurring over deep open water and in areas characterized by high-relief underwater topography, such as subsurface canyons, seamounts, ridges, and steep slopes (Wiles 2004).

Sightings compiled by the Orca Network from 1990-2013 show that SR killer whale occurs most frequently in the general area of the Tank Farm Pier in the fall and winter, and are far less common from April through September (Osborne 2008; Orca Network 2013). Since 2007, the Everett Community College ORCA has conducted quarterly cruises that include monitoring stations within the ZOI. No killer whales have been observed within the ZOI during these cruises (ORCA 2013).

Records from 1976 through 2013 document Southern Residents in the inland waters of Washington during the months of March through June and October through December, with the primary area of occurrence in inland waters north of Admiralty Inlet, located in north Puget Sound (Osborne 2008; Orca Network 2013).

Beginning in May or June and through the summer months, all three pods (J, K, and L) of Southern Residents are most often located in the protected inshore waters of

Haro Strait (west of San Juan Island), in the Strait of Juan de Fuca, and Georgia Strait near the Fraser River.

Historically, the J pod also occurred intermittently during this time in Puget Sound; however, records from 1997-2007 show that J pod did not enter Puget Sound south of the Strait of Juan de Fuca from approximately June through August (Osborne 2008).

In fall, all three pods occur in areas where migrating salmon are concentrated such as the mouth of the Fraser River. They may also enter areas in Puget Sound where migrating chum and Chinook salmon are concentrated (Osborne 1999). In the winter months, the K and L pods spend progressively less time in inland marine waters and depart for coastal waters in January or February. The J pod is most likely to appear year-round near the San Juan Islands, and in the fall/winter, in the lower Puget Sound and in Georgia Strait at the mouth of the Fraser River.

According to the NMFS National Stranding Database (2007-2013), there were no killer whale strandings in the area of the Tank Farm Pier (NMFS 2013b).

The SR killer whale stock was declared “depleted/strategic” under the MMPA in May 2003 (68 FR 31980). On November 18, 2005, the SR stock was listed as “endangered” under the ESA (70 FR 69903). On November 29, 2006, NMFS published a final rule designating critical habitat for the SR killer whale DPS. Both Puget Sound and the San Juan Islands are designated as core areas of critical habitat under the ESA, excluding areas less than 20 feet deep relative to extreme high water are not designated as

critical habitat (71 FR 69054). A final recovery plan for Southern Residents was published in January of 2008 (NMFS 2008).

B. West Coast Transient Stock

Transient killer whales generally occur in smaller (less than 10 individuals), less structured pods (NMFS 2013). According to the Center for Whale Research (CWR 2013), they tend to travel in small groups of one to five individuals, staying close to shorelines, often near seal rookeries when pups are being weaned.

The West Coast Transient stock, which includes individuals from California to southeastern Alaska, is estimated to have a minimum number of 354 (NMFS 2012b).

The West Coast Transient stock occurs in California, Oregon, Washington, British Columbia, and southeastern Alaskan waters. Within the inland waters, they may frequent areas near seal rookeries when pups are weaned (Baird and Dill 1995).

Sightings compiled by the Orca Network from 1990-2013 show that transient killer whale occurs most frequently in the general area of the Mukilteo Tank Farm Pier in the spring and summer, and are far less common from September through February (Orca Network 2013). However, transient killer whale occurrence is less predictable than SR killer whale occurrence, and they may be present at any time of the year. Since 2007, the Everett Community College ORCA has conducted quarterly cruises that include monitoring stations within the ZOI. No killer whales have been observed within the ZOI during these cruises (ORCA 2013).

Gray Whale

The Eastern North Pacific stock of gray whale may be found near the project site. The minimum population estimate of the Eastern North Pacific stock is 18,017 (Carretta et al. 2011).

Within Washington waters, gray whale sightings reported to Cascadia Research and the Whale Museum between 1990 and 1993 totaled over 1,100 (Calambokidis et al. 1994). Abundance estimates calculated for the small regional area between Oregon and southern Vancouver Island, including the San Juan Area and Puget Sound, suggest there were 137 to 153 individual gray whales from 2001 through 2003 (Calambokidis et al. 2004a). Forty-eight individual gray whales were observed in Puget Sound and Hood Canal in 2004 and 2005 (Calambokidis 2007).

Although typically seen during their annual migrations on the outer coast, a regular group of gray whales annually comes into the inland waters at Saratoga Passage and Port Susan (7.5 miles north) from March through May to feed on ghost shrimp (Weitkamp et al. 1992). During this time frame they are also seen in the Strait of Juan de Fuca, the San Juan Islands, and areas of Puget Sound, although the observations in Puget Sound are highly variable between years (Calambokidis et al. 1994). The average tenure within Washington inland waters is 47 days and the longest stay was 112 days (WSDOT 2013).

Sightings compiled by the Orca Network from 1990-2013 show that gray whales are most frequently in the general area of the Mukilteo Tank Farm Pier from January through May, and are far less common from June through September (Orca Network 2013). Since 2007, the Everett Community College ORCA has conducted quarterly

cruises that include monitoring stations within the ZOI. No gray whales have been observed within the ZOI during these cruises (ORCA 2013).

According to the NMFS National Stranding Database (2007-2013), there were no gray whale strandings in the area of the Tank Farm Pier (NMFS 2013b).

Humpback Whale

The California-Oregon-Washington (CA-OR-WA) stock of humpback whale may be found near the project site. The 2007/2008 estimate of 2,043 humpback whales is the best estimate for abundance for this stock (Carretta et al. 2011).

Historically, humpback whales were common in inland waters of Puget Sound and the San Juan Islands (Calambokidis et al. 2004b). In the early part of this century, there was a productive commercial hunt for humpbacks in Georgia Strait that was probably responsible for their long disappearance from local waters (Osborne et al. 1988). Commercial hunts ended in the 1960's. Since the mid-1990s, sightings in Puget Sound have increased.

This stock calves and mates in coastal Central America and Mexico and migrates up the coast from California to southern British Columbia in the summer and fall to feed (NMFS 1991; Marine Mammal Commission 2003; Carretta et al. 2007). Few humpback whales are seen in Puget Sound, but more frequent sightings occur in the Strait of Juan de Fuca and near the San Juan Islands. Most sightings are in spring and summer.

Sightings compiled by the Orca Network from 1990-2013 show that humpback whales are most frequently in the general area of the Tank Farm Pier from April through June, and are far less common from July to March (Orca Network 2013). Since 2007, the Everett Community College ORCA has conducted quarterly cruises that include

monitoring stations within the ZOI. No humpback whales have been observed within the ZOI during these cruises (ORCA 2013).

According to the NMFS National Stranding Database (2007-2013), there were no humpback whale strandings in the area of the Tank Farm Pier (NMFS 2013b).

Potential Effects of the Specified Activity on Marine Mammals

WSF and NMFS determined that open-water vibratory pile removal during the Mukilteo Tank Farm Pier Removal project has the potential to result in behavioral harassment of marine mammal species and stocks in the vicinity of the proposed activity.

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

As mentioned earlier in this document, under current NMFS guidelines, the received exposure level for Level A harassment is defined at ≥ 180 dB (rms) re 1 μ Pa for cetaceans and ≥ 190 dB (rms) re 1 μ Pa for pinnipeds. The measured source levels from vibratory removal of 12-inch timber piles are between 149 and 152 dB (rms) re 1 μ Pa at

16 m from the hammer (Laughlin 2011a). Therefore, the proposed Mukilteo Tank Farm Pier Removal construction project is not expected to cause Level A harassment or TTS to marine mammals.

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 (Clark et al. 2009). Masking can interfere with detection of acoustic signals such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired.

Masking occurs at the frequency band which the animals utilize. Therefore, since noise generated from in-water vibratory pile removal is mostly concentrated at low frequency ranges, it may have less effect on high frequency echolocation sounds by odontocetes (toothed 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 can potentially impact the species at population, community, or even ecosystem levels, as well as individual levels. Masking affects both senders and receivers of the signals and could have long-term chronic effects on marine mammal species and populations. Recent science suggests that low frequency ambient sound

levels 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 vessel traffic, pile driving, dredging, and dismantling existing bridge by mechanic means, contribute to the elevated ambient noise levels, thus intensify masking.

Nevertheless, the levels of noise from the proposed WSDOT construction activities are relatively low and are blocked by landmass southward. Therefore, the noise generated is not expected to contribute to increased ocean ambient noise. Due to shallow water depths near the ferry terminals, underwater sound propagation for low-frequency sound (which is the major noise source from pile driving) is expected to be poor.

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.

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 a prime habitat for marine mammals, nor is it considered an area frequented by marine mammals. Therefore, behavioral disturbances that could result from anthropogenic noise associated with WSDOT construction activities are expected to affect only a small number of marine mammals on an infrequent basis.

Currently NMFS uses 120 dB_{rms} re 1 μPa received level for non-impulse noises (such as vibratory pile driving, saw cutting, drilling, and dredging) for the onset of marine mammal Level B behavioral harassment. However, since the ambient noise level at the vicinity of the proposed project area is between 122 to 124 dB re 1 μPa, depending on marine mammal functional hearing groups (Laughlin 2011b), the received level of 120 dB re 1 μPa would be below the ambient level. Therefore, for this proposed project, 122 dB re 1 μPa is used as the threshold for Level B behavioral harassment. The distance to the 122 dB contour Level B acoustical harassment threshold due to vibratory pile removal extends a maximum of 1.6 km (1 mile).

Airborne noises can affect pinnipeds, especially resting seals hauled out on rocks or sand spits. The airborne 90 dB Level B threshold for hauled out harbor seals was estimated at 37 m (123 ft), and the airborne 100 dB Level B threshold for all other pinnipeds is estimated at 12 m (39 ft).

The closest documented harbor seal haul-out is the Naval Station Everett floating security fence, and the Port Gardner log booms, both approximately 4.5 miles to the northeast of the project site). The closest documented California sea lion haul out site are the Everett Harbor navigation buoys, located approximately 3 miles to the northeast of the project site. Disturbance from airborne noise will be limited to those animals moving on the surface through the immediate pier area, within approximately 37 m (123 ft) 12 m (39 ft) of vibratory pile removal.

Potential Effects on Marine Mammal Habitat

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

Potential Impacts on Prey Species

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

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

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

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

Water and Sediment Quality

Short-term turbidity is a water quality effect of most in-water work, including pile removal. WSF must comply with state water quality standards during these operations by limiting the extent of turbidity to the immediate project area.

Roni and Weitkamp (1996) monitored water quality parameters during a pier replacement project in Manchester, Washington. The study measured water quality before, during and after pile removal and driving. The study found that construction activity at the site had "little or no effect on dissolved oxygen, water temperature and

salinity”, and turbidity (measured in nephelometric turbidity units [NTU]) at all depths nearest the construction activity was typically less than 1 NTU higher than stations farther from the project area throughout construction.

Similar results were recorded during pile removal operations at two WSF ferry facilities. At the Friday Harbor terminal, localized turbidity levels within the regulatory compliance radius of 150 feet (from three timber pile removal events) were generally less than 0.5 NTU higher than background levels and never exceeded 1 NTU. At the Eagle Harbor maintenance facility, within 150 feet, local turbidity levels (from removal of timber and steel piles) did not exceed 0.2 NTU above background levels (WSF 2012). In general, turbidity associated with pile installation is localized to about a 25-foot radius around the pile (Everitt et al. 1980).

Cetaceans are not expected to be close enough to the Tank Farm Pier to experience turbidity, and any pinnipeds will be transiting the area and could avoid localized turbidity. Therefore, the impact from increased turbidity levels is expected to be discountable to marine mammals.

Removal of the Tank Farm Pier will result in 3,900 creosote-treated piles (~7,300 tons) removed from the marine environment. This will result in temporary and localized sediment re-suspension of some of the contaminants associated with creosote, such as polycyclic aromatic hydrocarbons.

However, the removal of the creosote-treated wood piles from the marine environment will result in a long-term improvement in water and sediment quality, meeting the goals of WSF’s Creosote Removal Initiative started in 2000. The net impact

is a benefit to marine organisms, especially toothed whales and pinnipeds that are high on the food chain and bioaccumulate these toxins.

This is especially a concern for long-lived species that spend much of their life in Puget Sound, such as Southern Resident killer whales (NMFS 2008).

Potential Impacts on Availability of Affected Species or Stock for Taking for Subsistence Uses

No subsistence harvest of marine mammals occur in the proposed action area.

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 Mukilteo Tank Farm Pier removal project, WSF proposed the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity. These mitigation measures would be employed during all pile removal activities at the Mukilteo Tank Farm Pier. WSF has informed NMFS that any mitigation measures required by the IHA would be imposed upon contracting parties, through the Contract Plans and Specifications, and contractors.

Since the measured source levels (at 16 m) of the vibratory hammer involved in pile removal are below NMFS current thresholds for Level A takes, i.e., below 180 dB re 1 μ Pa (rms), no exclusion zone would be established, and there would be no required

power-down and shutdown measures. In addition, as mentioned previously, the ambient noise level at the proposed work site is approximately 122 dB re 1 μ Pa, WSF would establish and monitor a zone of influence (ZOI) where the received level falls to this ambient noise level.

One major mitigation measure for WSDOT's proposed pile removal activities at the Mukilteo Tank Farm Pier is ramping up, or soft start, of vibratory pile hammers. The purpose of this procedure is to reduce the startling behavior of marine mammals in the vicinity of the proposed construction activity from sudden loud noise.

Soft start requires contractors to initiate noise from vibratory hammers for 15 seconds at reduced energy followed by a 1-minute waiting period. The procedure will be repeated two additional times. Each day, WSF will use the soft-start technique at the beginning of pile removal, or if pile removal has ceased for more than one hour.

To ensure that marine mammal takes will not exceed the authorized levels, monitoring for marine mammal presence will take place 30 minutes before, during and 30 minutes after pile driving to ensure that marine mammals takes will not exceed the authorized levels.

If the number of any allotted marine mammal takes (see Estimated Take by Incidental Harassment section below) reaches the limit under the IHA (if issued), WSDOT would implement shutdown and power down measures if such species/stock of animal approaches the Level B harassment zone.

Especially, to ensure that the Level B takes of Southern Resident killer whales (SRKW) does not exceed 5% of its population, shutdown measures will be taken when

SRKW approach the ZOI during vibratory pile removal. Pile removal will not resume until the SRKW exit the ZOI.

If killer whale approach the ZOI during vibratory pile removal, and it is unknown whether they are SRKW or transient, it shall be assumed they are SRKW and work will be paused until the whales exit the ZOI.

If SRKW enter the ZOI undetected, up to 4 ‘unintentional’ Level B harassment takes will be allowed. Work will be paused until the SRKW exit the ZOI to avoid further Level B harassment take.

Furthermore, the contractor shall regularly check fuel hoses, oil drums, oil or fuel transfers valves, fittings, etc. for leaks, and shall maintain and store materials properly to prevent spills.

Proposed Monitoring and Reporting

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 ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

Proposed Monitoring Measures

The monitoring plan proposed by WSDOT can be found in its IHA application. The plan may be modified or supplemented based on comments or new information

received from the public during the public comment period. A summary of the primary components of the plan follows.

(1) Marine Mammal Monitoring Coordination

WSF would conduct briefings with the construction supervisors and the crew, and marine mammal observer(s) prior to the start of pier removal to discuss marine mammal monitoring protocol and requirement to halt work.

Prior to the start of pile driving, the Orca Network and/or Center for Whale Research would be contacted to find out the location of the nearest marine mammal sightings. The Orca Sightings Network consists of a list of over 600 (and growing) residents, scientists, and government agency personnel in the U.S. and Canada. Sightings are called or emailed into the Orca Network and immediately distributed to other sighting networks including: the Northwest Fisheries Science Center of NMFS, the Center for Whale Research, Cascadia Research, the Whale Museum Hotline and the British Columbia Sightings Network.

Sightings information collected by the Orca Network includes detection by hydrophone. The SeaSound Remote Sensing Network is a system of interconnected hydrophones installed in the marine environment of Haro Strait (west side of San Juan Island) to study orca communication, in-water noise, bottomfish ecology and local climatic conditions. A hydrophone at the Port Townsend Marine Science Center measures average in-water sound levels and automatically detects unusual sounds. These passive acoustic devices allow researchers to hear when different marine mammals come into the region. This acoustic network, combined with the volunteer (incidental) visual

sighting network allows researchers to document presence and location of various marine mammal species.

With this level of coordination in the region of activity, WSF would be able to get real-time information on the presence or absence of whales before starting any pile removal or driving.

(2) Protected Species Observers (PSOs)

WSDOT will employ qualified PSOs to monitor the 120 dB_{rms} re 1 μPa for marine mammals. Qualifications for marine mammal observers include:

- 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. Use of binoculars will be necessary to correctly identify the target.
- Experience or training in the field identification of marine mammals (cetaceans and pinnipeds).
- Sufficient training, orientation or experience with the construction operation to provide for personal safety during 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.
- Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
- Writing skills sufficient to prepare a report of observations that would include such information as the number and type of marine mammals observed; the

behavior of marine mammals in the project area during construction, dates and times when observations were conducted; dates and times when in-water construction activities were conducted; and dates and times when marine mammals were present at or within the defined ZOI; dates and times when pile removal was paused due to the presence of marine mammals.

(3) Monitoring Protocols

PSOs would be present on site at all times during pile removal. Marine mammal behavior, overall numbers of individuals observed, frequency of observation, and the time corresponding to the daily tidal cycle would be recorded.

WSF proposes the following methodology to estimate marine mammals that were taken as a result of the proposed Mukilteo Multimodal Tank Farm Pier removal project:

- During vibratory pile removal, two land-based biologists will monitor the area from the best observation points available. If weather conditions prevent adequate land-based observations, boat-based monitoring may be implemented.
- To verify the required monitoring distance, the vibratory Level B behavioral harassment ZOI will be determined by using a range finder or hand-held global positioning system device.
- The vibratory Level B acoustical harassment ZOI will be monitored for the presence of marine mammals 30 minutes before, during, and 30 minutes after any pile removal activity.

- Monitoring will be continuous unless the contractor takes a significant break, in which case, monitoring will be required 30 minutes prior to restarting pile removal.
- If marine mammals are observed, their location within the ZOI, and their reaction (if any) to pile-driving activities will be documented.

NMFS has reviewed the WSF's proposed marine mammal monitoring protocol, and has preliminarily determined the applicant's monitoring program is adequate, particularly as it relates to assessing the level of taking or impacts to affected species. The land-based PSO is expected to be positioned in a location that will maximize his/her ability to detect marine mammals and will also utilize binoculars to improve detection rates.

Proposed Reporting Measures

WSF would provide NMFS with a draft monitoring report within 90 days of the conclusion of the proposed construction work. This report will detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed.

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

Estimated Take by Incidental Harassment

As mentioned earlier in this document, a worst-case scenario for Year One piling removal assumes that it may take 516 hours over 90 days in Year One to remove 1,835 piles. The actual number of hours is expected to be less.

Also, as described earlier, for non-impulse noise, NMFS uses 120 dB re 1 μ Pa (rms) as the threshold for Level B behavioral harassment. However, the underwater ambient noise measurements conducted at the proposed project site indicate that the nominal noise level is around 122 dB re 1 μ Pa. Therefore, the distance to the 122 dB (ambient level) contour is used for Level B behavioral harassment. The distance to the 122 dB contour Level B acoustical harassment threshold due to vibratory pile removal extends a maximum of 1.6 km (1 mile), and determines the ZOI. The ZOI would be monitored during pile removal to estimate actual harassment take of marine mammals.

Airborne noises can affect pinnipeds, especially resting seals hauled out on rocks or sand spits. The airborne 90 dB Level B threshold for hauled out harbor seals was estimated at 37 m (123 ft), and the airborne 100 dB Level B threshold for all other pinnipeds is estimated at 12 m (39 ft).

The closest documented harbor seal haul-out is the Naval Station Everett floating security fence, and the Port Gardner log booms, both approximately 4.5 miles to the northeast of the project site). The closest documented California sea lion haul out site are the Everett Harbor navigation buoys, located approximately 3 miles to the northeast of the project site. In-air disturbance will be limited to those animals moving on the surface through the immediate pier area, within approximately 37 m (123 ft) 12 m (39 ft) of vibratory pile removal.

Incidental take for each species is estimated by determining the likelihood of a marine mammal being present within a ZOI during active pile removal. Expected marine mammal presence is determined by past observations and general abundance near the Tank Farm Pier during the construction window. Typically, potential take is estimated by multiplying the area of the ZOI by the local animal density. This provides an estimate of the number of animals that might occupy the ZOI at any given moment. However, there are no density estimates for any Puget Sound population of marine mammal. As a result, the take requests were estimated using local marine mammal data sets (e.g., Orca Network, state and federal agencies), opinions from state and federal agencies, and observations from Navy biologists.

Based on the estimates, approximately 1,170 Pacific harbor seals, 540 California sea lions, 180 Steller sea lions, 720 harbor porpoises, 270 Dall’s porpoises, 39 killer whales (35 transient, 4 Southern Resident killer whales), 70 gray whales, and 28 humpback whales could be exposed to received sound levels above 122 dB re 1 μ Pa (rms) from the proposed Mukilteo Multimodal Project Tank Farm Pier removal project. A summary of the estimated takes is presented in Table 3.

Table 3. Estimated numbers of marine mammals that may be exposed to received pile removal levels above 122 dB re 1 μ Pa (rms)

| Species | Estimated marine mammal takes | Percentage |
|---------------------------------|-------------------------------|------------|
| Pacific harbor seal | 1,170 | 4.0% |
| California sea lion | 540 | 0.2% |
| Steller sea lion | 180 | 0.3% |
| Harbor porpoise | 720 | 7.0% |
| Dall’s porpoise | 270 | 0.6% |
| Killer whale, transient | 35 | 9.8% |
| Killer whale, Southern Resident | 4 | 5.0% |
| Gray whale | 70 | 0.4% |
| Humpback whale | 20 | 1.0% |

The requested takes represent 4.0% of the Inland Washington stock harbor seals (estimated at 32,000), 0.2% of the U.S. stock California sea lion (estimated at 296,750), 0.3% of the eastern stock Steller sea lion (estimated at 52,847), 7.0% of the Washington Inland Water stock harbor porpoise (estimated at 10,682), 0.6% of the California, Oregon, and Washington stock Dall's porpoise (estimated at 42,000), 9.8% of the West Coast transient killer whale (estimated at 354), 5.0% of Southern Resident killer whale (estimated at 82), 0.4% of the Eastern North Pacific stock gray whale (estimated at 18,017), and 1.0% of the Eastern North Pacific stock humpback whale (estimated at 2,043).

Negligible Impact and Small Numbers Analysis and Preliminary 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 WSF's proposed Mukilteo Tank Farm Pier removal project would conduct vibratory pile removal activities. Elevated underwater noises are expected to be generated as a result of pile removal. However, noise levels from the machinery and activities are not expected to reach to the level that may cause TTS, injury (PTS included), or mortality to marine mammals. Therefore, NMFS does not expect that any animals would experience Level A (including injury) harassment or Level B harassment in the form of TTS from being exposed to in-water pile driving and pile removal associated with WSF construction project.

Based on long-term marine mammal monitoring and studies in the vicinity of the proposed construction areas, it is estimated that approximately 1,170 Pacific harbor seals, 540 California sea lions, 180 Steller sea lions, 720 harbor porpoises, 270 Dall's porpoises, 39 killer whales (35 transient, 4 Southern Resident killer whales), 70 gray whales, and 20 humpback whales could be exposed to received noise levels above 122 dB_{rms} re 1 μPa from the proposed construction work at the Mukilteo Multimodal Ferry Terminal. These numbers represent approximately 0.2% - 9.8% of the stocks and populations of these species that could be affected by Level B behavioral harassment. As mentioned earlier in this document, the worst case scenario for the proposed pile removal work would only take a total of 516 hours over 90 days.

In addition, these low intensity, localized, and short-term noise exposures may cause brief startle reactions or short-term behavioral modification by the animals. These

reactions and behavioral changes are expected to subside quickly when the exposures cease. Additionally, no important feeding and/or reproductive areas for marine mammals are known to be near the proposed action area. Therefore, the take resulting from the proposed Mukilteo Tank Farm Pier removal project is not reasonably expected to, and is not reasonably likely to, adversely affect the marine mammal species or stocks through effects on annual rates of recruitment or survival. The maximum estimated 122 dB isopleths from vibratory pile driving is approximately 1.6 km from the pile before being blocked by landmass.

The closest documented harbor seal haul-out is the Naval Station Everett floating security fence, and the Port Gardner log booms, both approximately 4.5 miles to the northeast of the proposed project area. The closest documented California sea lion haul-out sites are the Everett Harbor navigation buoys, located approximately 3 miles to the northeast of the project site. However, it is estimated that airborne noise from vibratory pile removal would fall below 90 dB and 100 dB re 1 20 μ Pa at 37 m and 12 m from the pile, respectively. Therefore, pinnipeds hauled out in the vicinity of the project area will not be affected.

For the reasons discussed in this document, NMFS has preliminarily determined that the vibratory pile removal associated with the Mukilteo Tank Farm Pier Removal Project would result, at worst, in the Level B harassment of small numbers of eight marine mammal species that inhabit or visit the area. While behavioral modifications, including temporarily vacating the area around the project site, may be made by these species to avoid the resultant visual and acoustic disturbance, the availability of alternate areas within Washington coastal waters and haul-out sites has led NMFS to preliminarily

determine that this action will have a negligible impact on these species in the vicinity of the proposed project area.

In addition, no take by TTS, Level A harassment (injury) or death is anticipated and harassment takes should be at the lowest level practicable due to incorporation of the mitigation and monitoring measures mentioned previously in this document.

Proposed Incidental Harassment Authorization

This section contains a draft of the IHA itself. The wording contained in this section is proposed for inclusion in the IHA (if issued).

1. This Authorization is valid from September 1, 2014, through August 31, 2015.
2. This Authorization is valid only for activities associated with in-water construction work at the Mukilteo Multimodal Ferry Terminals in the State of Washington.
3. (a) The species authorized for incidental harassment takings, Level B harassment only, are: Pacific harbor seal (*Phoca vitulina richardsi*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*Phocoenoides dalli*), transient and Southern Resident killer whales (*Orcinus orca*), gray whale (*Eschrichtius robustus*), and humpback whale (*Megaptera novaeangliae*).
- (b) The authorization for taking by harassment is limited to the following acoustic sources and from the following activities:
 - (i) Vibratory pile removal; and
 - (ii) Work associated with pile removal activities.

(c) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the Northwest Regional Administrator (206-526-6150), National Marine Fisheries Service (NMFS) and the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at (301) 427-8401, or his designee (301-427-8418).

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

5. Prohibitions

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

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

6. Mitigation

(a) Ramp Up (Soft Start):

Vibratory hammer for pile removal and pile driving shall be initiated at reduced power for 15 seconds with a 1 minute interval, and be repeated with this procedure for an additional two times.

(b) Marine Mammal Monitoring:

Monitoring for marine mammal presence shall take place 30 minutes before, during and 30 minutes after pile driving.

(c) Power Down and Shutdown Measures

(i) WSF shall implement shutdown measures if southern resident killer whales (SRKW) are sighted within the vicinity of the project area and are approaching the Level B harassment zone (zone of influence, or ZOI) during in-water construction activities.

(ii) If a killer whale approaches the ZOI during pile driving or removal, and it is unknown whether it is a SRKW or a transient killer whale, it shall be assumed to be a SRKW and WSF shall implement the shutdown measure identified in 6(c)(i).

(iii) If a SRKW enters the ZOI undetected, in-water pile driving or pile removal shall be suspended until the SRKW exits the ZOI to avoid further level B harassment.

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

7. Monitoring:

(a) Protected Species Observers: WSF shall employ qualified protected species observers (PSOs) to monitor the 122 dB_{rms} re 1 μPa (nominal ambient level) zone of influence (ZOI) for marine mammals. Qualifications for marine mammal observers include:

(i) 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. Use of binoculars will be required to correctly identify the target.

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

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

(iv) 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.

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

(vi) Writing skills sufficient to prepare a report of observations that would include such information as the number and type of marine mammals observed; the behavior of marine mammals in the project area during construction, dates and times when observations were conducted; dates and times when in-water construction activities were conducted; and dates and times when marine mammals were present at or within the defined ZOI.

(b) Monitoring Protocols: PSOs shall be present on site at all times during pile removal.

(i) During vibratory pile removal, two land-based biologists will monitor the area from the best observation points available. If weather conditions prevent adequate land-based observations, boat-based monitoring shall be implemented.

(ii) The vibratory Level B acoustical harassment ZOI shall be monitored for the presence of marine mammals 30 minutes before, during, and 30 minutes after any pile removal activity.

(iii) Monitoring shall be continuous unless the contractor takes a significant break, in which case, monitoring shall be required 30 minutes prior to restarting pile removal.

(iv) A range finder or hand-held global positioning system device shall be used to ensure that the 122 dB_{rms} re 1 µPa Level B behavioral harassment ZOI is monitored.

(v) If marine mammals are observed, the following information will be documented:

- (A) Species of observed marine mammals;
- (B) Number of observed marine mammal individuals;
- (C) Behavioral of observed marine mammals;
- (D) Location within the ZOI; and
- (E) Animals' reaction (if any) to pile-driving activities

8. Reporting:

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

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

(c) In the unanticipated event that the construction activities clearly cause the take of a marine mammal in a manner prohibited by this Authorization (if issued), such as an injury, serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), WSF shall immediately cease all operations and immediately report the incident to the Supervisor of Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, and the Northwest Regional Stranding Coordinators. The report must include the following information:

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

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with WSF to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. WSF may not resume their activities until notified by NMFS via letter, email, or telephone.

(d) In the event that WSF discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is

relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), WSF will immediately report the incident to the Supervisor of the Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, and the Northwest Regional Stranding Coordinators. The report must include the same information identified above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with WSF to determine whether modifications in the activities are appropriate.

(e) In the event that WSF discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), WSF shall report the incident to the Supervisor of the Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, NMFS, and the Northwest Regional Stranding Coordinators, within 24 hours of the discovery. WSF shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. WSF can continue its operations under such a case.

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

10. A copy of this Authorization and the Incidental Take Statement must be in the possession of each contractor who performs the construction work at Mukilteo Multimodal Ferry Terminals.

11. WSF is required to comply with the Terms and Conditions of the Incidental Take Statement corresponding to NMFS' Biological Opinion.

National Environmental Policy Act (NEPA)

NMFS is currently preparing an Environmental Assessment, pursuant to NEPA, to determine whether or not the issuance of the proposed IHA may have a significant effect on the human environment. This analysis will be completed prior to the issuance or denial of the IHA.

Endangered Species Act (ESA)

The humpback whale and Southern Resident stock of killer whale are the only marine mammal species currently listed under the ESA that could occur in the vicinity of WSF's proposed construction projects. NMFS' Permits and Conservation Division has initiated consultation with NMFS' Protected Resources Division under section 7 of the ESA on the issuance of an IHA to WSF under section 101(a)(5)(D) of the MMPA for this activity. Consultation will be concluded prior to a determination on the issuance of an IHA.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to authorize the take of marine mammals incidental to WSF's Mukilteo Tank Farm Pier removal project, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: November 27, 2013

Donna S. Wieting,
Director,
Office of Protected Resources,
National Marine Fisheries Service.

[FR Doc. 2013-28905 Filed 12/02/2013 at 8:45 am; Publication Date: 12/03/2013]