piles of a similar size and diameter. The largest concrete piles that would be replaced will be 24 inches in diameter. Most of the piles to be replaced are less than 18 inches in diameter, and it is estimated that no more than 4 concrete piles with diameters 18 inches or greater will be replaced in a single year.

Existing piles will be removed with a vibratory hammer or by pulling with a choke chain. Piles that break during extraction will be cut off three feet below the mudline and the holes will be capped with clean sand. Most of the new piles will be installed using a vibratory hammer. However, some new pilings may need to be proofed with an impact hammer and, in some instances, it may be necessary to use an impact hammer for the entire installation.

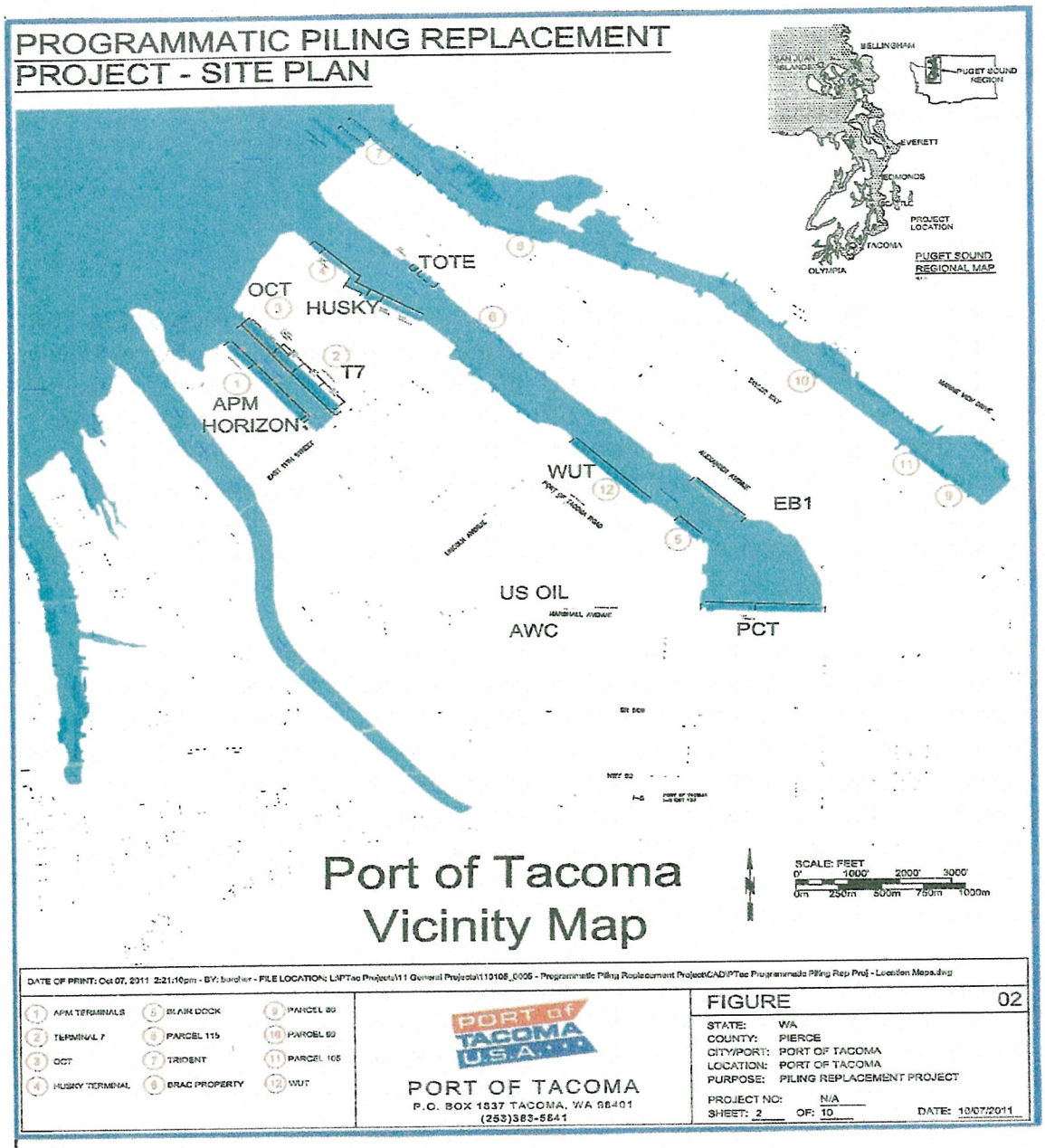

Figure 1. Piling Replacement Site Plan

Once the pile has been removed and the new pile installed, the overwater portions of the work will be completed. Chocks and whalers will be repaired as necessary to restore the fendering systems to their design capabilities. Pile caps, where present, will be repaired or replaced as necessary. Fender piles will have a rub strip of either ultra-high molecular weight or high-density polyethylene plastic lag-screwed to their outer faces to prevent frictional loss of treated wood during berthing operations. All of these activities will typically occur above the Mean Higher High Water (MHHW) mark.

Some of the conservation measures to reduce, eliminate, or minimize the effects of the proposed action to listed species and critical habitat are listed below:

- Pile removal and installation will be conducted during the approved in-water work window for Commencement Bay (July 16 to February 15 of each year).
- Upon advance notice, the Port will provide access to the work site to representatives from the U.S. Army Corps of Engineers (Corps), the U.S. Fish and Wildlife Service (Service), Washington Department of Ecology, and the Washington State Department of Fish and Wildlife during all hours when the proposed action is being conducted.
- No stockpiling or staging of materials will occur below the MHHW mark of any waterbody.
- All areas for fuel storage and refueling and servicing of construction equipment and vehicles will be located 150 ft from open water or wetlands, with the exception of refueling of barge derricks, which may need to be refueled and serviced while on the water.
- The Port will report annually to the Corps and the Service with a Port of Tacoma Piling Replacement Program Compliance Form (Appendix A) that includes the following information: 1) the number of piles replaced in each waterway, and 2) the linear feet in which piles were replaced in each waterway.
- Holes left when removing piles will be capped with clean sand. Any sand used as fill material will be washed and cleaned prior to being brought to the site, and will be obtained from an approved source.
- Only ACZA-treated wood will be used and treatment will comply with the Western Wood Preservers Institute best management practices.
- During removal of creosote-treated piles, containment booms and absorbent sausage booms (or other oil-absorbent fabric) will be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters. All accumulated debris will be collected daily and disposed of at an approved upland site.
- At least two oil-absorbing floating booms, appropriate for the size of the work area, will be available on site whenever heavy equipment operates within 150 ft of open water and there is a potential for hazardous materials to enter surface waters. The booms will be stored in a location that facilitates their immediate deployment in the event of a spill.

- Existing piles will either be 1) fully extracted or 2) cut 3 ft below the mud line. If piles cannot be fully extracted or cut below the mud line, they may be cut at or near the mudline and then driven to a depth of 3 feet below the mud line. The cutting of piles that have broken will take place utilizing a diver with a chainsaw.

Based on the information provided, we have concluded that effects to the federally listed bull trout, marbled murrelet and designated critical habitat for the bull trout would be insignificant or discountable. Therefore, we concur with your "may affect, not likely to adversely affect" determination for these species and bull trout critical habitat. Our conclusion is based on the following rationale.

Bull trout

The closest population of bull trout is in the Puyallup River, which empties into Commencement Bay on the west side of the industrial waterfront. Anadromous and fluvial bull trout use the lower reaches of the Puyallup, Carbon, and White Rivers for foraging and overwintering, while the anadromous form also uses Commencement Bay and nearshore marine areas of Puget Sound seasonally for foraging and to migrate between core areas. Bull trout use of marine areas is highest in the spring and they have been documented in Commencement Bay during the months of April, May, and June. The urban and industrial waterfront of Tacoma and the action area has been highly altered and does not provide good fish habitat, as is evident by the low numbers of native char that have been documented during sampling efforts by the Puyallup Tribe and others (Ratte and Salo 1985). However, bull trout likely pass through the action area to forage on juvenile salmonids, Pacific herring (*Clupea pallasi*), Pacific sand lance (*Ammodytes hexapterus*), and surf smelt (*Hypomesus pretiosus*) that use the nearshore areas of Commencement Bay, the Tacoma Narrows and Dalco Passage.

A number of conservation measures, including implementation of the approved in-water work window (July 16 to February 15), will greatly minimize the likelihood for exposure of bull trout to construction-related effects.

- Although the proposed action may result in increased turbidity during construction, impacts to water quality will be localized, short in duration, and will occur during the time of year when bull trout are least likely to be present. If they are present, the amount of turbidity generated is anticipated to be minimal due to the conservation measures that will be implemented. Therefore, direct effects to bull trout due to increased construction-related turbidity (pile replacement) are considered insignificant.
- In the "Agreement in Principle for Interim Criteria for Injury to Fish from Pile Driving" (Fisheries Hydroacoustic Working Group, 2008) the Federal Highway Administration and Federal Agencies, including the Service, identified threshold criteria where harm or injury to fish could occur. The dual criteria injury threshold established by the agencies gives an upper sound pressure level of 206 dB (re: 1μPa) peak and 187 dB (re: 1μPa·sec) accumulated sound exposure level (SEL) for fish weighing more than 2 grams. The SEL for fish weighing less than 2 grams is 183 dB (re: 1μPa·sec).

Data published by the Washington State Department of Transportation (WSDOT) and Caltrans indicates that impact installation of timber piles can produce underwater sound pressure levels up to 191 dB (re: 1μPa·sec) peak and 160 dB (re: 1μPa·sec) SEL (WSDOT 2012). Carlson et al. conducted hydroacoustic monitoring during impact installation of wood piles and found that impact installation of 12-inch diameter wood piles can result in Sound Pressure Levels (SPL) up to 195 dB_{peak}. The WSDOT data indicates that impact installation of 24 inch diameter concrete piles produces single strike sound pressure levels up to 192 dB (re: 1μPa·sec) peak and 174 dB (re: 1μPa·sec) SEL.

To consider the area potentially affected by underwater sound exceeding the established dual criteria injury threshold for the proposed project, the Corps used the practical spreading model for moving fish. In this analysis the Corps assumed: (1) a transmission loss constant of 15; (2) 400 strikes per day; and (3) reference sound data from WSDOT (2012) for single strikes of 24-inch concrete piles. To determine the area in which driving 24-inch concrete piles could exceed the dual criteria harm thresholds a value of 187 dB re: 1μPa peak was used for calculating the area. Although the analysis indicates that the 187 dB re: 1μPa accumulated SEL threshold for onset of physical injury would be exceeded within 250 ft of the pile driving site, we do not anticipate bull trout to be exposed due to the timing, location, short duration (less than five minutes per pile), and small area of effect.

Furthermore, the type and intensity of the underwater sounds produced depend on a variety of factors, including, but not limited to, the type and size of the pile, the firmness of the substrate and depth of water into which the pile is being driven, and the type and size of the pile-driving hammer. In general, driving steel piles with an impact hammer appears to generate pressure waves that are more harmful than those generated by impact-driving of concrete or wood piles, or by vibratory installation of any type of pile. SPLs associated with installation of concrete piles are characterized by a longer rise time than those of steel piles. Rise time appears to be an important factor in whether or not a sound pressure wave is likely to cause physical injury. To date, the Service is not aware of any situations where installation of concrete or wood piles has been shown to cause injury or mortality in aquatic organisms. As such, we do not expect that the SPLs associated with impact installation or proofing of concrete or wood piles to cause injury. The sound pressure waves from vibratory pile driving are much shallower and do not result in physical injury and less behavioral impacts. The sounds from vibratory pile drivers also differ in frequency and impulse energy which is the total energy content of the pressure wave. Most of the energy in the sounds produced by vibratory hammers are around 20 to 30 Hz, near the range of infrasound, which fish have been shown to avoid.

- The marine area that will be affected by the project is relatively small in relation to the overall available marine habitat in Puget Sound. The marine habitat and water quality within the action area, and specifically the Blair and Hylebos Waterways, are degraded. The action area is highly developed with overwater structures, armored shores, and contaminated sediments. The short-term elevated levels of turbidity and construction-related disturbance will not preclude use of the area by bull trout during or after project implementation.

- There are no documented Pacific herring, sand lance, or surf smelt spawning areas in the construction area and the project will not impact populations of salmonids or other prey resources. Therefore, indirect effects of the action on bull trout through their prey resources are considered discountable.

  Given the timing, location and implementation of conservation measures for this project, effects to bull trout associated with exposure to elevated underwater sound pressure levels generated by pile driving are considered insignificant.

The final rule identified nine primary constituent elements (PCEs) essential for the conservation of bull trout. Five of the PCEs are located within designated critical habitat. The proposed action has the potential to affect the following Primary Constituent Elements (PCE) of bull trout critical habitat:

- PCE #2: Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent or seasonal barriers.

  The proposed action may temporarily impact water quality as a result of suspended sediment or minor contaminant releases; however, impacts to the migratory corridor would be short-term and are not expected to measurably affect bull trout migration or movement through the area during or after construction. Periods of elevated levels of underwater sound during pile installation and removal would not preclude movement through the area or reduce the function of the migratory corridor. Furthermore, most of the project locations are in industrial waterways that are not linkages between core areas or corridors to the Puyallup River and have shown low presence of salmonids species. Therefore, effects to this PCE are considered to be insignificant.

- PCE #3: An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish. The proposed action may cause a short term reduction of benthic individuals that are prey for marine forage fish.

  Because the waterways in the Port presently do not support marine forage fish spawning habitat and are not a migratory corridor for juvenile salmonids, impacts to the food web are not expected to be measurable. Therefore, effects to this PCE are considered insignificant.

- PCE #4: Complex river, stream, lake, reservoir, and marine shoreline aquatic environments, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structures.

replacement sites are in areas where we do not anticipate marbled murrelets to be, the effects to foraging marbled murrelets associated with elevated sound levels are considered insignificant.

- The proposed action may result in the short term and localized re-suspension of minor amounts of sediment. However due to the relatively low concentrations and duration of exposure, the effects to marbled murrelets via their prey will not be measurable and are considered insignificant.

This concludes informal consultation pursuant to the regulations implementing the Endangered Species Act (50 CFR 402.13). This project should be re-analyzed if new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation. The project should also be re-analyzed if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation, and/or a new species is listed or critical habitat is designated that may be affected by this project.

If you have any questions regarding this consultation, please contact Shandra O'Haleck at (360) 753-9533 or Martha Jensen at (360) 753-9000, of this office.

Sincerely,

for Martha L. Jensen

Ken S. Berg, Manager
Washington Fish and Wildlife Office

Enclosure(s):

The proposed action does not include any activities that would alter marine shorelines in this area. The industrial area of the Port has been historically changed to support industrial facilities and does not presently contain complex shoreline features. Therefore, no effects are anticipated to this PCE.

- PCE #5: Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.

  The proposed action does not include any activities that would directly or indirectly alter water temperature. Therefore, no effects are anticipated to this PCE.

- PCE #8: Sufficient water quality and quantity such that normal reproduction, growth and survival are not inhibited.

While the proposed project has a slight potential to affect water quality through sediment releases, the effects will be localized and temporary and are not expected to measurably affect water quality. Therefore, overall effects to this PCE are considered insignificant.

Marbled Murrelet

Marbled murrelets forage in the nearshore areas of the Puget Sound and have been documented off Browns Point. Based on the survey data, marbled murrelet densities in southern Puget Sound are much lower than other areas of the Sound and outer coast. Habitat conditions and foraging opportunities are poor in the industrial waterfront of Tacoma (including the action area) and marbled murrelets are not expected to spend much time in the vicinity of the commercial waterfront, especially during construction. Although marbled murrelets could be present in Commencement Bay at any time of year, effects to murrelets are considered insignificant or discountable because:

- There is no suitable marbled murrelet nesting habitat within 0.25 mile of the action area. Effects to nesting marbled murrelets are considered discountable because the project will not affect suitable nesting habitat or generate sound above ambient background levels in forested areas that could be used by marbled murrelets for nesting.
- Because there are little or no good foraging opportunities in the industrial waterways and noise and vessel traffic is high in and along the heavily developed waterfront, it is extremely unlikely that marbled murrelets would be present in the project areas.
- Driving concrete and wood piles of the size and type used in the proposed project may produce sound pressure levels that could disturb marbled murrelets. However, most of the project locations are in areas where elevated sound levels would not extend into Commencement Bay or areas where marbled murrelets may be foraging (Figure 1). Because the duration of pile driving is relatively short and the locations of the pile

Literature Cited

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Washington State Department of Transportation (WSDOT0 2012). Pile diameters /single strike sound levels. Available at: http://www.wsdot.wa.gov/NR/rdonlyres/A3B6FF43-DC7B-4D98-9228-C8764635587A/0/BA_PileDiameterNoiseLevels.pdf

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, Washington 98115

Refer to NMFS No:
2012/00218

July 12, 2012

Michelle Walker
Chief, Regulatory Branch
U.S. Army Corps of Engineers, Seattle District
CENSW-OD-RG
Post Office Box 3755
Seattle, Washington 98124-3755

Re: Endangered Species Act Section 7 Concurrence Letter and Magnuson-Stevens Essential Fish Habitat Response for the Port of Tacoma Pile Replacement Programmatic, Commencement Bay, COE No. NWS-2011-00218-WRD, (Pierce County, Washington, Fourth Field HUC 17110019 Puget Sound)

Dear Ms. Walker

On January 26, 2012 the National Marine Fisheries Service (NMFS) received a request from the U.S. Army Corps of Engineers (COE) for a written concurrence that the proposed multi-year replacement of piles at the Port of Tacoma (Port) is not likely to adversely affect (NLAA) the species and critical habitat listed in Table 1. This consultation is conducted under section 7(a)(2) of the ESA of 1973, as amended (16 U.S.C. 1531, et seq.), and its implementing regulations, 50 CFR Part 402. NMFS initiated consultation on January 30, 2012. This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.[1]

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Act (MSA), including conservation measures and any determination that you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.[2] In this case, NMFS concluded that the action would not adversely affect EFH. Thus, consultation under the MSA is not required for this action.

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[1] Memorandum from D. Robert Lohn, Regional Administrator, to ESA consultation biologists (guidance on informal consultation and preparation of letters of concurrence) (January 30, 2006).

[2] Memorandum from William T. Hogarth, Acting Administrator for Fisheries, to Regional Administrators (national finding for use of Endangered Species Act section 7 consultation process to complete essential fish habitat consultations) (February 28, 2001).

This letter is in compliance with section 515 of the Treasury and General Government Appropriations Act of 2001 (Data Quality Act) (44 U.S.C. 3504 (d) (1) and 3516), and underwent pre-dissemination review using standards for utility, integrity and objectivity.

Table 1. Federal Register notices for final rules that list threatened and endangered species, designate CHs, or apply protective regulations to listed species considered in this consultation.

Species & [Service Jurisdiction]	ESU or DPS	Listing Status	Listing Status Reaffirmed	Critical Habitat	Protective Regulations
Chinook salmon (*Oncorhynchus tshawytscha*) [NMFS]	Puget Sound	6/28/05 70 FR 37160 Threatened	8/15/11 76FR50448 Threatened	9/02/05 70 FR 52630	6/28/05 70 FR 37160
steelhead (*O. mykiss*) [NMFS]	Puget Sound	5/11/07 72FR26722 Threatened	8/15/11 76FR50448 Threatened	In development	9/25/08 73 FR 55451
yelloweye rockfish (*Sebastes ruberrimus*) [NMFS]	PS/Georgian Basins	4/28/2010 72 FR 2276 Threatened	Not applicable	In development	In development
canary rockfish (*S. pinniger*) [NMFS]	PS/Georgian Basins	4/28/2010 72 FR 2276 Threatened	Not applicable	In development	In development
bocaccio (*S. paucispinus*) [NMFS]	PS/Georgian Basins	4/28/2010 72 FR 2276 Endangered	Not applicable	In development	Not applicable to endangered listings, ESA Section 9 applies
killer whales (*Orcinus orca*) [NMFS]	Southern Resident	11/18/05 70 FR 69903 Endangered	3/8/11	11/29/2006 71 FR 69054	Not applicable to endangered listings; ESA Section 9 applies
Steller sea lion *(Eumetopias jubatus)* [NMFS]	Eastern DPS	11/26/90 55 FR 49204 Threatened	5/05/97 62 FR 24345	Not applicable	3/05/08 73 FR 11872
humpback whale (*Megaptera novaeangliae*) [NMFS]		12/02/70 35 FR 18319 Endangered		Not applicable	ESA section 9 applies

Consultation History

The US Army Corps of Engineers (COE) submitted a Biological Evaluation (BE) and Memorandum for Services to the National Marine Fisheries Service (NMFS) for the project referenced above on January 26, 2012. A meeting between the Port and the NMFS was held on February 27, 2012 where additional information was requested concerning sound analysis for marine mammals. Additional information was received on April 6, 2012, and April 13, 2012.

A complete record of this consultation is on file at the Washington State Habitat Office in Lacey, Washington.

Description of the Proposed Action and the Action Area

The Port is proposing to conduct pile replacement activities over five years at 12 wharf/dock structures located in the Sitcum, Blair, and Hylebos waterways, and in the inner marine waters of Commencement Bay in Tacoma, Washington (Figure 1). The proposed project includes the replacement of up to 200 damaged or broken fender and/or structural piling annually as needed, along with associated pile caps, chocks, and whalers. Eleven of the 12 facilities where pile replacement will be conducted are located within the Sitcum, Blair, and Hylebos waterways, which are busy industrial shipping channels. One additional site, the Trident facility, is located within the waters of Commencement Bay at the mouth of the Hylebos Waterway.

The piles being replaced include a combination of load-bearing structural piles and fender piles. Most of the piles are wood treated with creosote or ammoniacal copper zinc arsenate (ACZA), but some are concrete. Both types of wood piling will be replaced with ACZA-treated wooden piling of a similar size and diameter. Concrete piling will be replaced with concrete piling of a similar size and diameter. The largest concrete piling to be replaced will be 24 inches in diameter. Most of the pilings to be replaced are less than 18 inches in diameter, and it is estimated that no more than 4 concrete pilings with diameters 18 inches or greater will be replaced in a single year.

Pilings will be removed with a vibratory hammer or by pulling with a choke chain. Pilings that break during extraction will be cut off three feet below the mudline and capped with clean sand. Most new pilings will be installed with a vibratory hammer. However, some new pilings may need to be proofed with an impact hammer and, in some instances, it may be necessary to use an impact hammer for the entire installation.

Once the pile has been removed and the new pile installed, the overwater portions of the work will be completed. Chocks and whalers will be repaired as necessary to restore the fendering systems to their design capabilities. Pile caps, where present, will be repaired or replaced as necessary. Fender pilings will have a rub strip of either ultra-high molecular weight (UHMW) or high-density polyethylene (HDPE) plastic lag-screwed to their outer faces to prevent frictional loss of treated wood during berthing operations. All of these activities will typically occur above the OHWM of the waterways.

Some of the conservation measures to reduce, eliminate, or minimize the effects of the proposed action to listed species or habitat are listed below.

- Pile removal and installation will be conducted during the approved in-water work window for Commencement Bay (July 16–February 14 of each year).
- Upon advance notice, the Port will provide access to the work site to representatives from the COE, the Services, Washington Department of Ecology, and Washington State Department of Fish and Wildlife during all hours when the proposed action is being conducted.
- No stockpiling or staging of materials will occur below the mean higher high water mark of any waterbody.

- All areas for fuel storage and refueling and servicing of construction equipment and vehicles will be located 150 feet from open water or wetlands, with the exception of refueling of barge derricks, which may need to be refueled and serviced while in the water.
- The Port will report annually to the COE and the Services with a Compliance Form (appendix) that includes the following information: 1) the number of piles replaced in each waterway, and 2) the linear feet in which piles were replaced in each waterway.
- . Holes left when removing piling will be capped with clean sand. Any sand used as fill material will be washed and cleaned prior to being brought to the site, and will be obtained from a commercial source that is operating within compliance with the ESA.
- Only ACZA-treated wood will be used and treatment will comply with the Western Wood Preservers Institute BMPs.
- During removal of creosote-treated piles, containment booms and absorbent sausage booms (or other oil-absorbent fabric) will be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters. All accumulated debris will be collected daily and disposed of at an approved upland site.
- At least two oil-absorbing floating booms, appropriate for the size of the work area, will be available on site whenever heavy equipment operates within 150 feet of open water and there is a potential for hazardous materials to enter surface waters. The booms will be stored in a location that facilitates their immediate deployment in the event of a spill.
- Existing piles will either be 1) fully extracted or 2) cut 3 feet below the mudline. If piles cannot be fully extracted or cut below the mudline, they may be cut at or near the mudline and then driven to a depth of 3 feet below the mudline.
- Work performed in or within 25 feet of an existing or previously designated Superfund site, or Washington State Model Toxics Control Act (MTCA) site, will follow BMPs established by the EPA during CERCLA coordination or Ecology during MTCA.

A marine mammal monitoring plan will be implemented between October 1 and February 14 at sites 1-4 and site 7 (see Figure 1) during pile installation and removal activities to avoid impacts to ESA-listed marine mammals.

The action area is located in the industrial portion of Commencement Bay and encompasses three waterways; the Sitcum, Blair, and Hylebos. There is little to no aquatic vegetation in the project area. The shoreline in the action area is bulkheaded, covered with industrial over water structures, and has been dredged to achieve navigational depths.

The action area encompasses a radius of 4,642 meters (or 2.8 miles) from the pile driving location to account for any possible sound effects from pile driving to marine mammals. This is the maximum area where in-water noise will be elevated above the disturbance threshold level for marine mammals. The area of potential effect from underwater noise to fish created by pile driving is substantially smaller (15 meters or 45 feet) and is therefore contained within this action area.

Effects of the Action

For purposes of the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is NLAA listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial.[3] Beneficial effects are contemporaneous positive effects without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

The effects of the proposed action are reasonably likely to include temporarily impaired water quality within the action area, including temporarily elevated turbidity levels and temporarily elevated underwater noise levels during pile removal and installation. Construction would take place between July 16 and February 15 when ESA species are least likely to be in the area.

[3] U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1998. Endangered Species Act consultation handbook: procedures for conducting section 7 consultations and conferences. March. Final. P. 3-12.

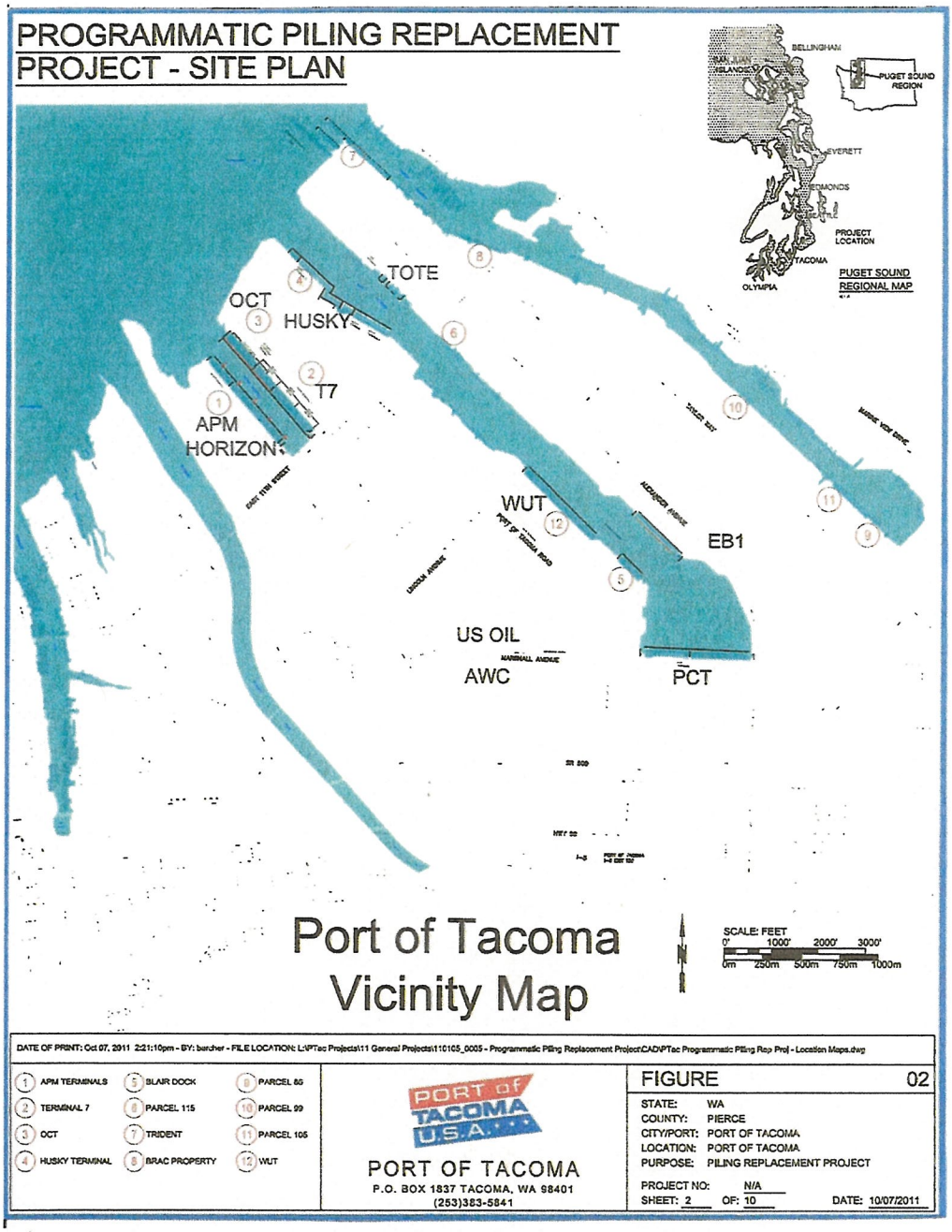

Figure 1. Port of Tacoma Pile Replacement Site Plan

Puget Sound Chinook, Steelhead, and Rockfish

Turbidity and suspended sediments

Pile driving and removal, and associated vessel use (barge mounted pile driver) can alter water quality conditions that could elicit short-term, localized, and temporary behavioral effects in juveniles. In the absence of data on the specific effects of suspended sediments on rockfish, potentially harmful effects associated with elevated suspended sediments can be assumed to be

similar to salmonids, which are among the most sensitive species for which effects from suspended sediments have been evaluated in estuarine dependent species (Wilber and Clarke 2001). No difference in the response to suspended sediments is anticipated among PS Chinook or PS steelhead.

The effects of suspended sediment on fish increases in severity with suspended sediment concentration and exposure time and can progressively include behavioral avoidance and/or disorientation, physiological stress (e.g., coughing), gill abrasion, and death—at extremely high concentrations. Studies show that salmonids have an ability to detect and distinguish turbidity and other water quality gradients (Quinn 1988, Simenstad 1988), and that larger juvenile salmonids are more tolerant to suspended sediment than smaller juveniles (Servizi and Martens 1991). To this end, Newcombe and Jensen (1996) analyzed numerous reports on documented fish responses to suspended sediment in streams and estuaries, and developed a 14-point 'scale of ill effects' algorithm based on sediment concentration and duration of exposure. NMFS has used this model to gauge the potential for ill effects from suspended sediment exposure in Section 7 ESA consultations, by assuming certain exposure durations and concentrations as available from the literature or from past project monitoring. If the model projects a score of 5 or less on the Newcombe and Jensen scale (i.e., Total Suspended Solids (TSS) exposure may lead to an avoidance response with possible short term reduction in feeding [level 4] and minor physiological stress for [level 5]), then NMFS considers such exposures insignificant and within the environmental baseline of exposure typically experienced by the species.

Few data exist regarding the temporary increase in suspended sediment associated with pile removal or pile driving. Indeed, NMFS could find no data relating to suspended sediment concentrations generated from impact pile driving. To estimate the magnitude of suspended sediment associated with pile driving, NMFS reviewed results from a vibratory pile removal project near the mouth of Jimmycomelately Creek in Sequim Bay (Weston Solutions 2006). In that study, total suspended solid (TSS) concentrations associated with activation of the vibratory hammer to loosen the pile from the substrate ranged from 13 to 42 milligrams per liter (mg/L) and averaged 25 mg/L. During the pile driving, elevated levels of TSS averaging 40 mg/L were recorded near the pile and 26 mg/L at the sensor located 16 to 33 feet from the pile. Concentrations during extraction ranged from 20 to 82.9 mg/L, and were sometimes visible in the water column as a 10- to 16-foot diameter plume that extended at least 15 to 20 feet from the actual pulling event. Although concentrations decreased after pile extraction, the time interval was unavailable due to tug movement as soon as the pile cleared the water's surface.

To consider how the TSS generated from impact pile removal and placement within Commencement Bay might affect PS Chinook salmon, PS steelhead and rockfish larvae NMFS used the Weston (2006) data as an estimate for the range of expected TSS and the Newcombe and Jensen (1996) 'scale of ill effects' to determine likely associated biological responses. For an exposure duration of up to fifteen hours and an increase in TSS over background of up to 90 mg/L, the calculated severity of ill effect for juvenile salmon does not exceed a response of minor physiological stress [level5] (increased in rate of coughing, increased respiration rate). The maximum increase in TSS reported in Weston Solutions (2006) is 83 mg/L. These data illustrate that the duration and concentration of TSS from the proposed action will be below levels that would be reasonably likely to result in take. Further, any elevations in turbidity and TSS

generated by the impact pile driving will be localized, short-term and similar to the variations that occur normally within the environmental baseline of the marine nearshore—which is regularly subject to strong winds and currents that generate suspended sediments. Thus, juvenile Chinook salmon, steelhead, and rockfish larvae likely encounter similar suspended sediment concentrations and turbidity levels within the environmental baseline to which they are regularly exposed.

In summary, the low level increase in suspended sediments, small action area, and expected return to pre-construction conditions shortly following the cessation of activity renders the effects of the increased TSS on PS Chinook, PS steelhead and ESA-listed rockfish larvae insignificant.

Underwater Sound

Little information is available on the effects of underwater sound on rockfish (Hastings and Popper 2005). However, all fish with swimbladders, which includes rockfish and salmonids, are potentially affected by underwater sound, which can cause barotrauma and associated injuries at high levels. In the "Agreement in Principle for Interim Criteria for Injury to Fish from Pile Driving" (Fisheries Hydroacoustic Working Group, 2008) the Federal Highway Administration and Federal Agencies including NMFS agreed upon threshold criteria where harm or injury to fish may occur. The dual criteria injury threshold established by the Agencies gives an upper sound pressure level of 206 dB (re: 1μPa) peak and 187 dB (re: 1μPa·sec) accumulated sound exposure level (SEL) for all listed fish weighing more than 2 grams. The SEL for listed fish weighing less than 2 grams is 183 dB (re: 1μPa·sec).

Data published by the Washington State Department of Transportation (WSDOT) and Caltrans indicates that impact installation of timber piles can produce underwater sound pressure levels up to 191 dB (re: 1μPa·sec) peak and 160 dB (re: 1μPa·sec) SEL (WSDOT 2012). Carlson et al. conducted hydroacoustic monitoring during impact installation of wood piles and found that impact installation of 12-inch diameter wood piles can result in SPLs up to 195 dB_{peak}. The WSDOT data indicates that impact installation of 24 inch diameter concrete piles produces single strike sound pressure levels up to 188 dB (re: 1μPa·sec) peak and 166 dB (re: 1μPa·sec) SEL.

To consider the area potentially affected by underwater sound exceeding the established dual criteria injury threshold for the proposed project, the Corps used the practical spreading model for moving fish. In this analysis the Corps assumed: (1) a transmission loss constant of 15; (2) 400 strikes per day; and (3) reference sound data from WSDOT (2012) for single strikes of 24-inch concrete piles. To determine the area in which driving 24-inch concrete piles could exceed the dual criteria harm thresholds a value of 187 dB re: 1μPa peak for adult fish was used for calculating the area because it is unlikely that juveniles would be in the area during construction. Although the analysis indicates that the 187 dB re: 1μPa accumulated SEL threshold for onset of physical injury would be exceeded within 45 feet of the pile driving site, we do not anticipate adult Chinook, steelhead, or rockfish to be exposed to potentially harmful sound levels due to the timing, location, short duration (less than five minutes per pile), and small area of effect. The industrial waterways do not support habitat for rockfish. Adult ESA-listed salmon species are

unlikely to utilize the waterways during their migration to spawning grounds in the upper reaches of the Puyallup River and no pile driving would be covered under this programmatic in the river. Further, in the unlikely event of waterway use by adult salmonids, fish of this size and swimming ability have the capacity to rapidly move out of the small zone of potential injury from underwater noise without increasing their potential for take from other mechanisms (e.g., predation).

Furthermore, the type and intensity of the underwater sounds produced depends on a variety of factors, including, but not limited to, the type and size of the pile, the firmness of the substrate and depth of water into which the pile is being driven, and the type and size of the pile-driving hammer. In general, driving steel piles with an impact hammer appears to generate pressure waves that are more harmful than those generated by impact-driving of concrete or wood piles, or by vibratory installation of any type of pile. SPLs associated with installation of concrete piles are characterized by a longer rise time than those of steel piles. Rise time appears to be an important factor in whether or not a sound pressure wave is likely to cause physical injury. To date, the NMFS is not aware of any situations where installation of concrete or wood piles has been shown to cause injury or mortality in aquatic organisms. As such, we do not expect that the SPLs associated with impact installation or proofing of concrete or wood piles to cause injury. The sound pressure waves from vibratory pile driving are much shallower and do not result in physical injury and less behavioral impacts. The sounds from vibratory pile drivers also differ in frequency and impulse energy which is the total energy content of the pressure wave. Most of the energy in the sounds produced by vibratory hammers are around 20 to 30 Hz, near the range of infrasound, which fish have been shown to avoid.

Given the timing, location and implementation of conservation measures for this project, effects to ESA-listed PS Chinook salmon, PS steelhead, and/or PS-Georgia Basin rockfish larvae associated with exposure to elevated underwater sound pressure levels generated by pile driving are considered insignificant.

Southern Resident Killer Whales

The final rule listing Southern Resident killer whales as endangered identified several potential factors that may have contributed to their decline or may be limiting recovery. These include: quantity and quality of prey, toxic chemicals which accumulate in top predators, and disturbance from sound and vessel traffic. The rule also identified oil spills as a potential risk factor for this species. The final recovery plan includes more information on these potential threats to SR killer whales (73 FR 4176).

Southern Resident killer whales spend considerable time in the Georgia Basin from late spring to early autumn, with concentrated activity in the inland waters of Washington State around the San Juan Islands, and then move south into Puget Sound in early autumn. While these are seasonal patterns, Southern Resident killer whales have the potential to occur throughout their range (from Central California north to the Queen Charlotte Islands) at any time during the year.

The Whale Museum manages a long-term database of SR killer whale sightings and geospatial locations in inland waters of Washington.

A review of this dataset from the years 1990 to 2008 indicates that SR killer whales may occur near the project vicinity (both in Commencement Bay and adjacent waters) during the months that in-water activities are proposed (Table 2).

Table 2. SR Killer Whale Sightings near the Project Vicinity.

MONTH	NUMBER OF DAYS SIGHTED[1]
July	1
August	2
September	1
October	12
November	11
December	35
January	17
February	2

[1] Unique sighting days during the work window from 1990 to 2008.

SR killer whales may be disturbed by sound pressure generated by in-water construction activities. The NMFS is currently developing comprehensive guidance on sound levels likely to cause injury and behavioral disruption in the context of the Marine Mammal Protection Act. Until formal guidance is available, NMFS uses conservative thresholds of sound pressure levels from broad band sounds that cause behavioral disturbance (160 dB rms (re: 1μPa) for impulse sound and 120 dB rms (re: 1μPa) for continuous sound) and injury (180 dB rms (re: 1μPa) for whales and 190 dB rms (re: 1μPa) for pinnipeds) (70 FR 1871).

Based on these conservative thresholds, the proposed pile installations will produce sound pressure levels that could disturb SR killer whales if they are present. Five sites have been identified as having potential to have sound levels above the disturbance threshold for marine mammals extend into Commencement Bay. These five sites are the APM Terminal, Terminal 7, Olympic Container Terminal (OCT), Husky Container Terminal, and Trident piers 24 and 25 (sites 1-4 and site 7 on Figure 1). For those five sites, the applicant has proposed to implement a marine mammal monitoring plan for this project during the portion of the in-water work window when ESA-listed marine mammals are likely to be present in the action area (October 1 to February 14). Under the plan, the applicant will monitor an area from the piling site out to the 120dB isopleth (4,642 meter radius or until land) because this is the maximum area where in-water noise will be elevated above the disturbance threshold level for marine mammals, and will not start work, or will cease work, if ESA-listed marine mammals are sighted in the monitored area.

Pile installation or removal will not initiate or will temporarily suspend if ESA-listed marine mammals are detected within the monitoring area. The monitoring plan makes it extremely unlikely, and therefore discountable, that Southern Resident killer whales will be exposed to sound pressure levels that could cause disturbance during project construction.

Vessels associated with the proposed construction are primarily tug/barges, which are slow moving, follow a predictable course, do not target whales, and should be easily detected by SR killer whales. Vessel strikes are extremely unlikely and any potential encounters with SR killer whales are expected to be sporadic and transitory in nature. Most of the sound pressure produced by a tug towing a loaded barge is expected to be below the level of peak hearing sensitivity for SR killer whales. When in motion, sound pressure levels from the tug will be transient and are therefore expected to be below background levels a short distance from any one location. Thus, tug/barge sound is unlikely to mask acoustic signals of biological significance to SR killer whales. The proposed action is not likely to adversely affect Chinook salmon (primary prey of SR killer whales) as discussed above and is not anticipated to have a measurable effect on prey quality.

Steller sea lions

Steller sea lions in Washington are from the eastern Distinct Populations Segment (DPS). For the past 25 to 30 years, the eastern DPS has grown steadily at about 3 percent per year. The final revised recovery plan (73 FR 11872) identifies no threats to the continued recovery of the eastern DPS. On April 18, 2012, NMFS issued a proposed rule to remove the eastern DPS of Steller sea lions from the List of Endangered and Threatened Wildlife (77 FR 23209). Nevertheless, NMFS evaluates whether the proposed action has the potential to affect Steller sea lions.

Steller sea lions can occur in Washington waters throughout the year; however, there are no breeding rookeries in Washington. Occurrence in inland waters of Washington is limited to primarily male and sub-adult Steller sea lions in fall, winter and spring months. Steller sea lions haul out in a variety of locations in coastal and inland waters of Washington. The closest Steller sea lion haulout is approximately 10 miles south of the action area near Days Island.

Steller sea lions are likely to occur in Puget Soundwaters during the in-water work window from October through February. In the event that Steller sea lions are present in the action area, implementation of the above referenced marine mammal monitoring plan makes it extremely unlikely, and therefore discountable, that Steller sea lions will be exposed to sound pressure levels that could cause disturbance. The proposed action is not likely to adversely affect salmonid prey as discussed above and is not anticipated to have a measurable effect on prey quality.

Humpback whales

The humpback whale was listed as endangered under the ESA on December 2, 1970 (35 FR 18319). The eastern North Pacific Stock, which includes humpback whales in the waters of Washington State, is generally located along coastal Central America during winter/spring, and migrates to the coast of California north to southern British Columbia during the summer. Although in recent years humpback whales have been sighted in the inside waters of Washington on a few occasions, including within Puget Sound (primarily during fall; Falcone et al. 2005), they are more common in coastal waters and remain extremely rare within the Puget Sound and have not been observed in or near industrial waterways.

As humpback whales are extremely unlikely to be present near the project; the potential for disturbance from pile driving and vessel activity to the species is considered discountable. In the unlikely event that humpback whales were in the vicinity of the project, implementation of the above referenced marine mammal monitoring plan also makes it extremely unlikely, and therefore discountable, that humpback whales will be exposed to sound pressure levels that could cause disturbance, as discussed above.

Critical Habitat Determination

Puget Sound Chinook Critical Habitat Determination

The NMFS designated critical habitat for the PS Chinook salmon Evolutionary Significant Unit (ESU) on September 2, 2005 (70 FR 52630). The primary constituent element (PCE) for the PS Chinook salmon ESU critical habitat in this action area is:

Nearshore marine areas free of obstruction and excessive predation with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation, and natural cover such as submerged and overhanging large wood, aquatic vegetation, etc.

Designated critical habitat boundaries within the action area for the proposed project include areas contiguous with the shoreline from the line of extreme high water out to a depth of 98 feet relative to mean lower low water. The NMFS analyzed the potential impacts of the project on this PCE and determined that the potential effects will be insignificant or discountable because:

1. The project will not result in a barrier to migration through the marine area as the proposed pile replacement is located within industrial areas that are not on the migration path to or from the Puyallup River. Effects to migratory habitat are expected to be discountable.

2. The proposed construction will not significantly alter the food base within the action area. Macro-invertebrate production and fish prey species will continue to be available from the surrounding habitat in the immediate area. In addition, no forage fish spawning is documented in the project area. Therefore, the project is not likely to reduce the abundance of prey species, and any effects would be insignificant.

3. While the proposed project has a slight potential to remobilize sediment during construction and alter water quality for several hours, the effects are expected to be local and temporary and not measurably affect water quality, and therefore, the effects are insignificant. In addition, any removal of existing treated wood is expected to improve long-term water quality in the immediate area.

Therefore, NMFS concurs with your "may affect, but not likely to adversely modify" determination for critical habitat for PS Chinook salmon.

Southern Resident Killer Whale Critical Habitat

Critical habitat includes approximately 2,560 square miles of Puget Sound, excluding areas with water less than 20 feet deep relative to extreme high water. The PCEs for SR killer whale critical habitat are:

> (1) Water quality to support growth and development; (2) prey species of sufficient quantity, quality, and availability to support individual growth, reproduction and development, as well as overall population growth; and (3) passage conditions to allow for migration, resting, and foraging.

The proposed project is not expected to have a measureable effect on water quality, but removal of treated wood piles will eliminate chemical leaching in the future. The low level increase in suspended sediments and turbidity as described above are not expected to affect SR killer whales or affect the water quality PCE, and the proposed conservation measures will ensure that the project does not result in contaminant releases. As described above the action is not likely to adversely affect salmonids, therefore, NMFS does not anticipate effects on quality or quantity of prey species in the action area, which includes designated critical habitat of SR killer whales. Additionally, the potential for vessels or sound from the proposed pile driving to interfere with SR killer whale passage is expected to be insignificant or discountable (i.e., any vessel disturbance will be short-term and localized with no lasting effects, and marine mammal monitoring will ensure disturbance does not occur).

Conclusion

Based on the above analyses, the NMFS concludes that all effects of the proposed action are NLAA for the subject ESA-listed species identified and the species-specific critical habitats as designated under the ESA.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the Federal agency, or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Please direct questions regarding this letter to Jeff Fisher of the Lacey, Washington Habitat office at (360)534-9342 or jeff.fisher@noaa.gov.

Sincerely,

William W. Stelle, Jr.
Regional Administrator

cc: Olivia Romano, COE

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FINAL
Water Quality Monitoring and Protection Plan (WQMPP)

Port of Tacoma Programmatic Pile Repair and Replacement Project (NWS-2011-0089-WRD renewal, WQC #TBD)

Prepared by

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PURPOSE

The Water Quality Monitoring and Protection Plan (WQMPP) will be used to identify and track the performance of Best Management Practices (BMPs) used during in-water work within the project limits of the Port of Tacoma's (Port) Programmatic Pile Repair and Replacement project. This Ecology-approved programmatic WQMPP is the minimum standard for the Contractor to follow. Proposed monitoring that is not covered in this WQMPP and has not already undergone Ecology review must be approved by Ecology prior to starting in-water work. Ecology requires a 45-60-day review period for additional site-specific WQMPPs.

This WQMPP includes a monitoring schedule that identifies the appropriate parameters to be monitored, locations, monitoring and sampling procedures, and frequency.

OBJECTIVES

This WQMPP will:

- Identify appropriate BMPs for use while performing work under this WQC.
- Document the performance of BMPs used within waters of the state we are working in through water quality monitoring and sampling.
- Determine if Water Quality Standards are being met at the edge of the point of compliance.
- Help to ensure compliance with the conditions of the Section 401 Water Quality Certification (401) while conducting construction activities below the (OHWM).

Any changes to monitoring must be approved by Ecology prior to making the changes.

GENERAL PROJECT DESCRIPTION

Load-bearing and fender piling need to be replaced periodically due to damage caused by impacts from ships when they are berthed against the piling or pier faces, or through the actions of marine borers or other natural events. Load-bearing and fender piling will be replaced on an as-needed basis to maintain the function and structural integrity of the various docks and marginal wharves within the Port. Most piles will be treated wood (creosote or ACZA); however, some may be concrete. Concrete piles will be replaced with concrete piles and timber-treated piles will be replaced with ACZA-treated timber piles that have undergone the appropriate best practices for use in water. The replacement piles will be of similar diameter to the damaged piles. Without replacement of damaged piles, the docks and piers will quickly degrade to the point they are no longer functional, or are dangerous to human health and safety. Annual maintenance is required to maintain their function and structural integrity.

The following activities will occur below the OHWM and/or over the following surface waters:

- Work may be conducted from a developed, upland location (e.g., pier deck), or from a barge (e.g., spud barge). Equipment on the barge may include a derrick crane, long-reach excavator fitted with a claw or vibratory head, and/or a storage area for the new and/or derelict piles. Barge operations are addressed in the BMP section.
- Old piling typically will be removed by vibratory hammer; however, some may be removed by pulling with a choke chain.

- New piling will be installed using a vibratory hammer, and may be proofed with an impact hammer. In some instances, it may be necessary to use an impact hammer for the full installation.
- Chocks and whalers will be repaired and/or replaced as necessary to restore the fender system to its design capabilities. Pile caps will be repaired/replaced as necessary.
- Fender piling will be covered on the outer face with a rub strip that is lag-screwed to the piles to prevent frictional loss of treated wood during ship berthing.
- All activities will occur at/below the OHWM within the Blair, Hylebos and Sitcum Waterways, with the exception of the repairs to chocks, whalers and pile caps, which typically occur above the OHWM.

WATER QUALITY STANDARDS FOR SURFACE WATERS

This project is located at the Port of Tacoma, located in WRIA 10, doing work in the Blair, Hylebos and Sitcum Waterways.

The Water Quality Standards applicable to these sites per Washington Administrative Code (WAC) 173-201A-210(1)(e) are as follows:

- Turbidity will not exceed
    - 10 NTUs over background when the background is 50 NTUs or less; or
    - A 20-percent increase in turbidity when the background is more than 50 NTUs.
    - The water quality standard for turbidity will need to be met at the compliance boundary at the edge of the authorized mixing zone for construction activities. The turbidity water quality standard includes an allowed 150-foot mixing zone that extends out from the point of the in-water activity (WAC 173-201A-210(1)(e)(i)).
- pH will be monitored only during concrete pile replacement activities if wet concrete comes into contact with waters of the U.S. There is no area of mixing for pH. pH will be within the range of 6.5 to 9.0 with a human-caused variation within the above range of less than 0.5 units. (WAC 173-201A-210(1)(f)).
- Oil and Grease- No Visible Sheen

IN-WATER WORK CONDUCTED IN KNOWN OR POTENTIALLY CONTAMINATED SITES

Pile replacement activities covered under the Port's permits are generally managed the same as a known (CERCLA) or potentially contaminated site; however, turbidity monitoring in known (CERCLA) or potentially contaminated sites will be initially conducted using a turbidity meter. These areas include:

- Pier 3 (Husky) – Site 4 on the JARPA figures
- WUT – Site 5 on the JARPA figures
- Trident – Site 11 on the JARPA figures
- Parcel 99 (Arkema) – Site 13 on the JARPA figures

In addition to the sites listed above, the EPA and the Puyallup Tribe will be notified a minimum of 60 days prior to the start of in-water work at the two following sites on the Hylebos Waterway:

- Parcel 86 – Site 14 on the JARPA figures

- Parcel 105 – Site 15 on the JARPA figures

During this notification period, the EPA may recommend and/or require additional or different BMPs depending on site conditions. Based on the recommendations, the Port will modify the BMPs for the site-specific work accordingly.

See the Sampling Protocol section for detailed description of turbidity monitoring in the CERCLA or potentially contaminated sites.

BMPS FOR IN-WATER/OVER-WATER ACTIVITIES

The Port will implement BMPs in accordance with EPA Region 10 Best Management Practices for Piling Removal and Placement in Washington State to reduce, eliminate, or minimize the effects of the proposed action on the aquatic environment. The BMPs listed below may be modified by the EPA during the 60-day notification period for the sites listed above, based on coordination and site-specific conditions. BMPs for all Port sites include, but are not limited to:

- Only the piling requiring replacement will be replaced.
- The work will be completed within the footprint of the existing structure and no expansion of the structure is proposed.
- Replacement piles will be wood piles no greater than 18 inches in diameter, and concrete piles no greater than 24 inches in diameter.
- Pile removal and installation will be conducted during daylight hours.
- When possible, removal of pile will occur during low tide conditions for best visibility. This is to reduce the potential for breaking the pile, and to increase the chance of retrieval if piles are broken during extraction.
- Typically, no more than 6-8 piling will be replaced in a single day, and work hours are generally limited to a standard work day.
- The piling will be removed slowly to minimize turbidity in the water column and reduce sediment disturbance.
- Piling that has been removed will be moved expeditiously into a containment area for processing and disposal.
- Piling will not be twisted, bent or otherwise deformed during the removal process.
- Piling will not be shaken, hosed-off, stripped or scraped, or any other action intended to clean or remove material from the piling. Sediment associated with removed piling will not be returned to the waterway.
- Vibratory extraction is the preferred method of pile removal.
- Work will be confined to within a floating containment boom. A small boat will be available at all times during pile replacement activities to manage the boom and capture debris.
- Work below the OHWM will occur during the WDFW-approved in-water work window (July 15 – February 14) when salmonids are unlikely to be present.
- The work will comply with the water quality restrictions imposed by the Washington Department of Ecology.
- Contractors will be required to prepare a Spill Prevention, Control and Countermeasures (SPCC) plan. The SPCC plan will describe how the contractor will store all fuels and hazardous

substances that may be onsite during construction. It will include procedures that the contractor will follow in the event of a spill, and will require the contractor to have spill response equipment onsite in the event a spill does occur. The plan will also include emergency phone numbers and contacts that will be made in the event of a spill.

- No petroleum products, hydraulic fluids, chemicals or any other polluting substances shall be allowed to enter waters of the U.S.
- Equipment will be checked for drips or leaks, and shall be maintained and stored properly.
- Once pile replacement activity is complete, all temporary work structures, devices, equipment, materials man-made debris and wastes from the project will be completely removed from the work area.
- Temporary floating work platforms and/or booms will not disturb eelgrass, kelp, and/or intertidal wetland vascular plants.
- Piles will not be placed in or adjacent to vegetated shallows, wetlands, special aquatic sites, or within sites designated by WDFW as documented for suitable forage fish spawning.
- No piling will be installed in or within 25 feet of any eelgrass beds and barges will not anchor over any eelgrass beds.
- If a barge is used, it will not ground out or rest on the substrate, or be staged over or within 25 feet of vegetated shallows (except where such vegetation is limited to State-designated noxious weeds).
- The bottom of any structure, vessel, watercraft grid, or watercraft lift will be at least 1 foot above the level of the substrate during all water levels.
- Containment areas on barges, piers and upland areas shall have continuous sidewalls and controls as necessary.
- There will be a designated containment area that can be covered during precipitation events (e.g., covered dumpster).
- No stockpiling or staging of materials will occur below the OHWM of the waterways.
- No piles will be associated with log raft booms.
- No installation or removal of sheet piling will occur.
- Only ACZA-treated wood will be used and treatment will comply with the Western Wood Preservers Institute BMPs.
- Existing piles will either be 1) fully extracted or 2) cut 3 feet below the mudline. If piles cannot be fully extracted or cut below the mudline, they may be cut at or near the mudline and then driven to a depth of 3 feet below the mudline. This BMP may be modified based on recommendations provided by EPA during the 60-day notification period.
- Holes left when removing piling will be capped with clean sand. Any sand used as fill material will be washed and cleaned prior to being brought to the site, and will be obtained from a commercial source that is operating within compliance with the ESA. This BMP may be modified based on recommendations provided by EPA during the 60-day notification period.
- During removal of creosote-treated piles, containment booms and oil-absorbent sausage booms (or other oil-absorbent fabric) will be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters.

- All accumulated debris (shavings, sawdust, woody debris, pile-associated sediment and adhered organisms) will be collected daily, contained onsite, and disposed of at an approved upland site.
- Removed creosote-treated piles will be disposed of in a manner that precludes their further use. Piles will be cut into manageable lengths (4 feet or less) for transport and disposal in an approved upland location that meets the liner and leachate standards contained in the Washington Administrative Code (WAC), Chapter 173-304, Minimum Functional Standards, and that complies with the ESA. No reuse of treated wood will occur.
- All treated wood will be contained during and after removal to preclude sediments and any impacted materials from entering the aquatic environment.
- Hydraulic water jets will not be used to remove or place piles.
- Equipment and vehicles will be stored in established staging areas when not in use (excluding cranes, which cannot be easily moved).
- Wet concrete will not be allowed to come into contact with surface water. During concrete repair work, forms will remain in place until concrete is cured.

SAMPLING PROTOCOL

Sampling Locations

Turbidity monitoring locations will be measured directly from the point of construction activity. Each site will have a point of compliance, an early detection point, and a background point identified; the monitoring locations will be identified in the field. Monitoring will be conducted at the following locations:

- Background monitoring location (at least 150 feet outside the area of influence prior to work)
    - This location will take into account previous and surrounding in-water activities. The background monitoring location may change due to tidal conditions (upgradient at the start of in-water work may become downgradient during in-work activities).
- Early detection monitoring locations (75 feet downstream/downgradient of the point of construction during work)
    - If turbidity is elevated at the early detection location, additional/different BMPs will be implemented to prevent actual exceedance. This applies to both visual and physical turbidity observations.
- Compliance monitoring locations (150 feet downstream/downgradient of the point of construction during work)
    - Turbidity that is observed as greater than background turbidity at or beyond the 150-foot-radius point of compliance from the area of construction activity is considered an exceedance of water quality standards. This applies to both visual and physical turbidity observations.

In addition to these locations, visual monitoring will be performed at the point of the active operation to monitor the effectiveness of the BMPs and for visible sheen and/or construction debris.

In the unlikely event wet concrete is observed to fall into a waterway, pH will be measured in the waterway in the immediate vicinity of the spilled concrete until it is confirmed that the pH is in compliance with the pH water quality standard.

Sampling Procedures

Water will be observed for the appropriate parameters, per the Monitoring Schedule below, following the equipment and sampling guidelines:

- CERCLA sites (Sites 4, 5, 11 and 13 on JARPA figures) will be physically monitored with a turbidity meter.
    - The first compliance sample for turbidity will be taken approximately 1 hour after the in-water activity starts. A minimum of two samples will be recorded during the in-water work activities.
    - If there are no turbidity exceedances within the first 5 days of sampling, the project will convert to the visual sampling protocols.
- Turbidity will be monitored visually at all sites.
    - The first compliance sample for turbidity will be taken approximately 1 hour after the in-water activity starts, unless there is a visual plume at the point of compliance prior to 1 hour.
- Oil and Grease is a continuous visual for a visible sheen on the water's surface.
- If turbidity appears to exceed the water quality criteria using visual methods, a turbidity meter will be employed no later than 1 hour after the observation. A background sample will be taken outside the area of influence and prior to the downstream or radius samples.
- In the unlikely event wet concrete is observed to fall into a waterway, pH will be measured with a pH meter. pH will be measured in the waterway in the immediate vicinity of the spilled concrete until it is confirmed that the pH is in compliance with the pH water quality standard. The water quality standard for pH is that pH must be between 6.5 and 9.0, with a variation of no more than 0.5 pH units within this range (WAC 173-201A-210(1)(f)).

Monitoring Contacts

Jenn Stebbings or other designated Port of Tacoma personnel will be responsible for providing Ecology with the necessary notifications and results of the monitoring per the frequency specified in the 401.

The Contractor will be responsible for conducting the 401 water quality monitoring; however, the Port of Tacoma will oversee water quality monitoring to ensure compliance with the WQC. The phone number to reach the Port of Tacoma office is 253-383-5841.

Monitoring Schedule

The following monitoring parameters will be observed during in-water work activities:

- Visual turbidity monitoring at all sites
- Physical turbidity monitoring using a turbidity meter initially at CERCLA sites (Sites 4, 5, 11 and 13 on JARPA figures)
- Sheen
- Construction debris in the water
- Distressed or dying fish
- Operation and effectiveness of BMPs

Monitoring Duration (Physical)

During work below the OHWM at CERCLA sites (Sites 4, 5, 11 and 13 on JARPA figures), the contractor will conduct physical turbidity monitoring with an approved turbidity meter. Physical

turbidity monitoring will be conducted before in-water work begins, one hour after in-water work begins, and a minimum of twice a day during in-water work activities. If no turbidity exceedance is observed for 5 days, physical turbidity monitoring can convert to visual turbidity monitoring.

Monitoring Duration (Visual)

During work below the OHWM, the contractor will conduct visual turbidity monitoring. Visual turbidity monitoring will occur continuously, and will be documented a minimum of twice a day during in-water work activities. Visual monitoring will occur for as long as the construction activity that has triggered monitoring is taking place.

Contingency Sampling

CERCLA Sites: If a water quality exceedance is documented at the point of compliance at a CERCLA site (Sites 4, 5, 11 and 13 on JARPA figures), field personnel will stop work. The source of the exceedance or impact will be identified and assessed, and corrective actions will be evaluated and implemented. Notification of the exceedance will be reported to the Ecology Federal Permit Manager/Coordinator within the time specified by the 401. Field personnel will implement operations modifications and/or additional/different BMPs to bring water quality back into compliance with the criteria. Physical turbidity sampling will occur until it is confirmed water quality is back in compliance with the criteria.

All Sites: If an exceedance of a water quality standard appears to occur during visual monitoring, a turbidity meter will be used to verify the results. The background turbidity level, the early detection location and the point of compliance location will all be sampled to verify the exceedance. If the exceedance is confirmed using the turbidity meter, field personnel will stop work and assess the source of the exceedance or impact, and corrective actions will be evaluated. Once the source has been identified, field personnel will implement operation modifications or other supplemental control measures or BMPs to bring water quality back into compliance with the criteria.

Once the control measures have been deemed effective, monitoring will continue every 4 hours using the turbidity meter during working hours until the water quality exceedances have been brought into compliance. Once compliance with water quality standards is achieved, the project shall return to its standard sampling schedule.

Non Compliance

If either visual and/or physical monitoring indicates that water quality standards have been exceeded, the required reporting will be initiated.

REPORTING

All water quality monitoring results (visual and physical) will be recorded on the monitoring form attached (Attachment A).

All sample results will be submitted to the Ecology Federal Permit Manager/Coordinator weekly, or per the frequency specified in the 401.

If visual or physical turbidity monitoring indicates an exceedance of water quality standards, notification shall be made to Ecology's Federal Permit Manager/Coordinator. CERCLA or potentially contaminated sites (Sites 4, 5, 11, 13, 14 and 15 on JARPA figures) will require notification within 2 hours of an exceedance; all other sites will require notification within 24 hours of an exceedance.

ATTACHMENTS

Attachment A – Sample Monitoring Results Reporting Form
Attachment B – Figures

FIGURE 01 - Vicinity Map

REFERENCE: NWS-2011-0089-WRD (renewal)
WQC: TBD
PROJECT: Programmatic Piling Repair
APPLICANT: Port of Tacoma
LOCATION: Tacoma, WA

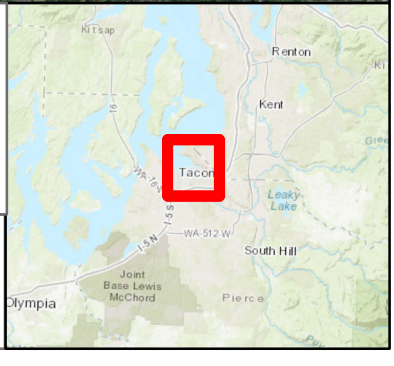
IN: Commencement Bay

NEAR: Tacoma

COUNTY: Pierce

STATE: Washington

ADJACENT LANDOWNERS:
1. City of Tacoma
2. City of Fife
3. WSDOT
4. Puyallup Tribe of Indians
5. Numerous Private Landowners



SHEET: 1 OF 2
DATE: 6/8/2018
AUTHOR: Brian Archer

0 0.5 0.75 1 1.25 Miles

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W E
S

Port of Tacoma
PO Box 1837 Tacoma, WA 98401 (253) 383-5841

Document Path: \\apps.portoftacoma.com\GISUserProjects\EnvironmentalI\Stebbings\2017_ProgPile_VicinityMap.mxd

Document Path: \\apps.portoftacoma.com\GISUserProjects\Environmental\Stebbings\Programmatic Pile\Figure 2_WQMP_example.mxd

FIGURE 02: EXAMPLE WATER QUALITY MONITORING LOCATIONS

REFERENCE: NWS-2011-0089-WRD (renewal)
WQC: #TBD
APPLICANT: PORT OF TACOMA

PROJECT: PROGRAMMATIC PILE REPLACEMENT WATER QUALITY MONITORING PLAN

SHEET 2 OF 2 **DATE: 6/8/2018**

Legend

- Pier
- Early Detection (75 ft)
- Compliance Monitoring (150 ft)
- Port Parcels
- ★ Point of Construction

0 200 400 600 800 Feet

N W E S

Port of Tacoma

Port of Tacoma Daily Turbidity Monitoring
In-Water Construction for Pile Repair and Replacement
ACOE Permit #: NWS-2011-0089-WRD ECY Order #: TBD

Date: _____ **Observer:** _____

Start of in-water work: _____ **CERCLA Site?** ☐ Yes ☐ No

End of in-water work: _____

Observation 1			
Time: _____	Turbidity visible within 150-foot radius of in-water work? ☐ Yes ☐ No	NTUs (CERCLA only)	Notes (work modifications, monitoring point, additional observations, etc.)

Observation 2			
Time: _____	Turbidity visible within 150-foot radius of in-water work? ☐ Yes ☐ No	NTUs (CERCLA only)	Notes (work modifications, monitoring point, additional observations, etc.)

General description of weather, waterway conditions, circumstances affecting background turbidity, and work affecting turbidity throughout the day.

Water Quality Monitoring during In-Water Work Activities

Turbidity should NOT be visible more than 150 feet (radius) at any time during in-water work activities. If turbidity is visible, stop work and contact the Engineering Project Manager.

A minimum of two (2) observations must be recorded during active in-water work activity.

Recorded observations should be a minimum of 2 hours apart unless in-water work ceases before 2 hours have passed. If in-water work activity ends before 2 hours, record second observation at the end of the in-water work activity.

(For CERCLA sites only) In addition to visual observations of turbidity and requirements listed above, CERCLA sites must also have water quality measurements taken with an approved turbidimeter.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: July 23, 2018
Project End Date: March 09, 2021

Permit Number: 2016-6-119+02
FPA/Public Notice Number: N/A
Application ID: 7030

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Port of Tacoma ATTENTION: Jennifer Stebbings PO Box 1837 Tacoma, WA 98401-1837	

Project Name: Programmatic Piling Replacement and Repair Program

Project Description: Load-bearing and fender piling may be damaged by the impact of ships against the piling or the pier faces, or through the actions of marine borers, necessitating their replacement to prevent further damage to the pier. Without replacement of damaged pile, the docks and piers could quickly degrade to the point that they are no longer useful, or become dangerous to human health and safety. Annual maintenance is required and piling will be replaced on an as-needed basis to maintain the function and structural integrity of the various docks and marginal wharves within the Port of Tacoma (Port). The number and location of piling replaced annually is dependent upon the number damaged in the preceding year, and the locations of the damaged piling. Annualized replacement rates give an estimate of the annual replacement average, though the actual number may be higher or lower in a given year. The annualized replacement rates are included in the attached copy of the 2011 JARPA for the Port's programmatic pile program, previously approved by WDFW. As the numbers may vary from the annualized replacement rates, no more than 200 piles will be replaced in a single year under this application.

PROVISIONS

AUTHORIZED WORK TIMES

1. TIMING LIMITATION: To protect fish and shellfish habitats at the job site, work below the ordinary high water line must occur from July 16 and February 14 of any year.

2. APPROVED PLANS: Work must be accomplished per plans and specifications submitted with the application and approved by the Washington Department of Fish and Wildlife, entitled Programmatic Piling Replacement and Repair Program, dated 3/3/2016, except as modified by this Hydraulic Project Approval.

Approved actions covered by this permit are:
1. Replacement of up to 200 damaged or deteriorating piling annually in locations listed in the approved JARPA/Plans with new concrete, steel, untreated or ACZA-treated wood piling.

You must have a copy of these plans available on site during all phases of the project proposal.

NOTIFICATION

3. PRE- AND POST-CONSTRUCTION NOTIFICATION: You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by e-mail at HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946 at least three business days before starting work, and again within seven days after completing the work. The notification must include the permittee's name, project location, starting date

for work or date the work was completed, and the permit number. The Washington Department of Fish and Wildlife may conduct inspections during and after construction; however, the Washington Department of Fish and Wildlife will notify you or your agent before conducting the inspection.

4. FISH KILL/ WATER QUALITY PROBLEM NOTIFICATION: If a fish kill occurs or fish are observed in distress at the job site, immediately stop all activities causing harm. Immediately notify the Washington Department of Fish and Wildlife of the problem. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington Military Department Emergency Management Division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the Washington Department of Fish and Wildlife gives approval. The Washington Department of Fish and Wildlife may require additional measures to mitigate impacts.

STAGING, JOB SITE ACCESS AND EQUIPMENT

5. Establish the staging area (used for activities such as equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) in a location and manner that will prevent contaminants like petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

6. Clearly mark boundaries to establish the limit of work associated with site access and construction.

7. Confine the use of equipment to specific access and work corridor shown in the approved plans.

8. Check equipment daily for leaks and complete any required repairs before using the equipment in or near the water.

9. Lubricants composed of biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols are recommended for use in equipment operated in or near water.

10. Operate vessels during tidal elevations that are adequate to prevent grounding of the barge.

11. Do not deploy anchors or spuds in seagrass or kelp.

12. Maintain anchor cable tension, set and retrieve anchors vertically, and prevent mooring cables from dragging to avoid impacts to seagrass and kelp.

CONSTRUCTION-RELATED SEDIMENT, EROSION AND POLLUTION CONTAINMENT

13. Prevent contaminants from the project, such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials, from entering or leaching into waters of the state.

14. Use tarps or other methods to prevent treated wood, sawdust, trimmings, drill shavings and other debris from contacting the bed or waters of the state.

CONSTRUCTION MATERIALS

15. To prevent leaching, construct forms to contain any wet concrete. Place impervious material over any exposed wet concrete that will come in contact with waters of the state. Forms and impervious materials must remain in place until the concrete is cured.

16. Do not use wood treated with oil-type preservative (creosote, pentachlorophenol) in any hydraulic project. Wood treated with waterborne preservative chemicals (ACZA, ACQ) may be used if the Western Wood Preservers Institute has approved the waterborne chemical for use in the aquatic environment. The manufacturer must follow the Western Wood Preservers Institute guidelines and the best management practices to minimize the preservative migrating from treated wood into aquatic environments. To minimize leaching, wood treated with a preservative by someone other than a manufacturer must follow the field treating guidelines. These guidelines and best management practices are available at www.wwpinstitute.org.

PILE REMOVAL, DRIVING

17. Remove the existing piling and dispose of them in an upland area above extreme high tide waters.

18. As specified in the approved plans, the replacement pilings must be similarly sized (as removed) diameter steel, concrete, untreated or Chemonite (ACZA) treated wood pilings.

19. Attach rubbing strips made of ultra high molecular weight (UHMW) type plastic, or high density polyethylene (HDPE) type plastic to the replacement fender system. Do not use rubber tires for the fender system.

20. Fit all pilings with devices to prevent perching by fish-eating birds.

21. The use of both a vibratory and/or an impact hammer is authorized for piling installation under this Hydraulic Project Approval, however a vibratory driver is preferred.

22. Sound attenuation methods are required for the driving or proofing of steel piles with an impact hammer below the ordinary high water line. For impact driving of steel piles that exceed the following criteria, a bubble curtain or other Washington Department of Fish and Wildlife approved sound attenuation device must be used. The specific criteria include sound pressure levels of:
a) Greater than or equal to 206 dB (one micropascal squared per second) peak,
b) Greater than or equal to 187 dB (one micropascal squared per second) accumulated sound exposure level (SEL) for fish greater than or equal to 2 grams, and
c) Greater than or equal to 183 dB (one micropascal squared per second) (SEL) for fish less than 2 grams.
d) Install a bubble curtain around the pile during all driving operations to ensure proper sound attenuation. The bubble curtain must distribute air bubbles around 100 percent of the perimeter of the piling over the full length of the pile in the water column.

23. Use appropriate sound attenuation when driving or proofing steel piling with an impact hammer.
a. For driving or proofing steel piling, 10 inches in diameter or less, install a 6 inch thick wood block, plastic or rubber between the piling and the impact hammer during impact pile driving operations or install a pile sleeve or bubble curtain around the piling during impact pile driving operations that distributes air bubbles around 100% of the perimeter of the piling over the full depth of the water column.
b. For driving or proofing steel piling greater than 10 inches in diameter, install a bubble curtain around the pile during piling impact driving operations that distributes air bubbles around 100% of the perimeter of the piling over the full depth of the water column.

24. To avoid attracting fish to light at night, limit impact pile driving to daylight hours whenever feasible.

25. Piling removal:
a. Vibratory or water jet extraction is the preferred method of pile removal.
b. Place the piling on a construction barge or other dry storage site after the piling is removed. The piling must not be shaken, hosed off, left hanging to dry or any other action intended to clean or remove adhering material from the piling near waters of the state.
c. If a treated wood piling breaks during extraction, remove the stump from the water column by fully extracting. If the stump cannot be fully extracted, remove the remainder of the stump with a clamshell bucket, chain, or similar means, or cut it off three feet below the mudline. Cap all buried cut stumps and fill holes left by piling extraction with clean sand.
d. When removing creosote piling, containment booms and absorbent booms (or other oil absorbent fabric) must be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters as a result of construction activities to remove creosote pilings. All debris on the bed and accumulated in containments structures must be collected and disposed upland at an approved disposal site.

DEMOBILIZATION/CLEANUP

26. Remove all trash and unauthorized fill in the project area, including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, floating debris, and paper, that is waterward of the ordinary high water line and deposit upland.

27. Reshape beach area depressions created during project activities to preproject beach level upon project completion.

HYDRAULIC PROJECT APPROVAL

Issued Date: July 23, 2018
Project End Date: March 09, 2021
Permit Number: 2016-6-119+02
FPA/Public Notice Number: N/A
Application ID: 7030

28. Remove all debris or deleterious material resulting from construction from the beach area or bed and prevent from entering waters of the state.

29. Do not burn wood, trash, waste, or other deleterious materials waterward of the ordinary high water line.

NOTES

NOTE: Ordinary High Water Line is defined as 'the mark on the shores of all waters that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in ordinary years as to mark upon the soil or vegetation a character distinct from the abutting upland. Provided, that in any area where the ordinary high water line cannot be found, the ordinary high water line adjoining saltwater is the line of mean higher high water and the ordinary high water line adjoining fresh water is the elevation of the mean annual flood (Revised Code of Washington, RCW 77.55.011(16); Washington Administrative Code, WAC 220-660-030(108)).

LOCATION #1:	, , WA					
WORK START:	March 10, 2016			WORK END:	March 9, 2021	
WRIA		Waterbody:			Tributary to:	
1/4 SEC:	Section:	Township:	Range:	Latitude:	Longitude:	County:
						Pierce
Location #1 Driving Directions						

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

HYDRAULIC PROJECT APPROVAL

Issued Date: July 23, 2018
Project End Date: March 09, 2021

Permit Number: 2016-6-119+02
FPA/Public Notice Number: N/A
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Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day and/or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send your written request by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: July 23, 2018
Project End Date: March 09, 2021

Permit Number: 2016-6-119+02
FPA/Public Notice Number: N/A
Application ID: 7030

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

A. INFORMAL APPEALS: WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee may conduct an informal hearing or review and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: July 23, 2018
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Habitat Biologist
Matthew Curtis

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for Director
WDFW

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PORT OF TACOMA
MARINE MAMMAL MONITORING PLAN
FOR PROGRAMMATIC PILE REPLACEMENT ACTIVITIES

INTRODUCTION

The Port of Tacoma (Port) proposes to conduct pile replacement activities (the proposed action) at 12 wharf/dock structures located in the Sitcum, Blair, and Hylebos waterways and in inner Commencement Bay in Tacoma, Washington (Figure 1).

Figure 1 is an aerial photograph of the project vicinity and displays the action area for the proposed action, which has been established based on the extent of the zones of influence from the following components of the project (Temporary Effects Areas):

- Project Footprint (In-Water)
- Terrestrial Noise
- Underwater noise during impact pile installation (Impact Temporary Effect Area)
- Underwater noise during vibratory pile removal and installation (Vibratory Temporary Effect Area)

Noise levels during both impact pile installation and vibratory pile removal and/or installation could exceed the noise thresholds National Marine Fisheries Service (NMFS) has established for underwater disturbance of marine mammals within portions of the action area at each of the 12 sites. The Programmatic Biological Evaluation (PBE) prepared for this project states that a marine mammal monitoring plan will be implemented during pile removal or installation conducted between October 1 and February 14, to avoid impacts to orca (*Orcinus orca*), humpback whale (*Megaptera novaeangliae*), or Steller sea lions (*Eumatopius jubatus*). The areas in which monitoring is proposed in this plan is dependent upon the location and type of activity being conducted (vibratory removal and/or installation or impact installation). Some sites will not require monitoring.

DISCUSSION

In-Water Vibratory Pile Removal and Installation

The National Marine Fisheries Service (NMFS) has established an underwater noise disturbance threshold of 120 dB_{RMS} for non-impulse, continuous industrial noises for cetaceans and pinnipeds.[1] Noise levels during vibratory pile removal and installation would exceed this

[1] RMS=root mean square

threshold within a portion of the action area (Vibratory Temporary Effect Area) at each of the 12 sites.

The proposed action will consist of the removal and installation of up to 200 piles in each year of the program (July 16, 2012 to February 14, 2017). The proposed action will replace a combination of load-bearing structural piles and fender piles. Most of the piles are treated wood piles (including creosote-treated and ACZA-treated piles), but some are concrete. The proposed action will not install creosote-treated timber piling. ACZA-treated wood piling of a similar size and diameter will replace both creosote-treated and ACZA-treated wood piling. The largest timber piling to be replaced is 18 inches in diameter. Concrete piling of a similar size and diameter will replace concrete piling. The largest concrete piling that will be replaced is 24 inches in diameter. Most of the piling to be replaced is less than 18 inches in diameter. The proposed action will replace no more than an estimated 4 concrete piling with diameters 18 inches or greater in a single year.

There is little data available regarding underwater noise levels associated with vibratory removal or installation of 12- to 18-inch timber piles, or of 12-24-inch concrete piles. A review of existing literature including CALTRANS' Compendium of Pile Driving Data (Reyff 2007), and project specific data published by WSDOT (Laughlin 2007, 2011) indicate that 160 dB_{RMS} is an appropriate worst case estimate of the maximum sound levels likely to be produced during vibratory removal or installation of timber or concrete piles, for the following reasons.

- In 2010 WSDOT collected hydroacoustic data during vibratory pile removal at its Port Townsend Ferry Terminal (Laughlin 2011). The results of this monitoring indicated that average dB_{RMS} values during vibratory pile removal ranged between 149 and 152, with an overall average of 152 dB_{RMS}.

- WSDOT reports that, on average, vibratory noise levels are between 10 and 20 dB lower than those produced by impact pile driving (WSDOT 2011). Underwater noise from impact installation of 12-18" timber piles typically produces maximum underwater noise levels of 170 dB_{RMS}. Impact installation of concrete piles have been shown to produce a range of underwater sound levels (see below), but for purposes of this consultation have been assumed to not exceed 176 dB_{RMS}. If a 10-16 dB reduction is assumed, on average, the underwater noise would be expected to not exceed 160 dB_{RMS} during vibratory removal or installation of timber or concrete piles.

- Concrete and timber piles produce much lower underwater sound pressures than similarly sized steel piles (Reyff 2007). CALTRANS' Compendium of Pile Driving Data (Reyff 2007), provides information regarding vibratory installation of: 12-inch steel pipe

piles (150 dB_{RMS}), 12-inch steel pipe piles (155 dB_{RMS}), 24-inch AZ steel sheet pile (160 dB_{RMS}), and 36-inch steel pipe piles (170 dB_{RMS}). Given these sound pressure levels, it is safe to assume that the sound pressure levels associated with vibratory removal and/or installation of 12-18" timber piles or 12-24-inch concrete piles would not exceed 160 dB_{RMS} on average.

The following assumptions underlay the vibratory pile removal and installation noise attenuation analysis:

- Background in-water noise levels in the action area are not available, so the analysis used a marine mammal vibratory guideline threshold of 120 dB_{RMS}.
- A worst-case estimate of noise level from vibratory removal and installation of concrete and timber piles is 160 dB_{RMS}.
- Noise will attenuate at a rate of 4.5 dB per doubling distance.
- Sound will stop when it reaches the nearest land mass.

The distance at which 160 dB_{RMS} is expected to attenuate to 120 dB_{RMS} using the practical spreading loss model is approximately 2.8 miles. Figures 2-13 show the Vibratory Temporary Effect Area for each of the 12 sites.

The Port may collect site-specific, in-water noise background data before the start of the project to determine if the monitoring area can be reduced.

In-Water Impact Pile Installation

NMFS has established impact pile driving underwater noise injury thresholds of 180 dB_{RMS} for cetaceans and 190 dB_{RMS} for pinnipeds, and impact pile driving disturbance thresholds of 160 dB_{RMS} for both cetaceans and pinnipeds. Noise levels during impact pile installation are not expected to exceed the injury thresholds for either pinnipeds or cetaceans, but will likely temporarily exceed the disturbance threshold of 160 dB_{RMS} within a portion of the action area at each of the 12 sites (Impact Temporary Effect Area).

Data published by WSDOT indicates that impact installation of timber piles, irrespective of diameter, typically produces underwater noise levels as high as 180 dB_{Peak}, 170 dB_{RMS}, and 160 dB_{SEL} (WSDOT 2011). This same data indicates that impact installation of concrete piles, irrespective of diameter, typically produces single strike sound pressure levels of 192 dB_{Peak}, 176 dB_{RMS}, and 174 dB_{SEL} (WSDOT 2011). WSDOT has published project-specific data documenting significantly lower decibel levels (184 dB_{Peak}, 170 dB_{RMS}, and 159dB_{SEL}) during impact driving of 24-inch concrete piles. This analysis uses higher decibel levels for a conservative estimate of the extent of underwater noise.

The distance at which 176 dB_{RMS} is expected to attenuate to 160 dB_{RMS} using the practical spreading model is approximately 382 feet. Figures 2-13 show the Impact Temporary Effect Area for each of the 12 sites.

SPECIES PRESENCE

Orca, humpback whale, and Steller sea lions are not expected to be present within the Sitcum, Blair, or Hylebos waterways at any time, and are therefore unlikely to be exposed to elevated underwater noise associated with any pile removal or installation conducted at Parcels 86, 99, and 105 (sites 9, 10, and 11 on Figures 10, 11, and 12).

Additionally, pile removal or installation conducted at the Blair dock, Parcel 116, BRAC property, and the Washington United Terminal (WUT) (sites 5, 6, 8, and 12 on Figures 6, 7, 9, and 13) is only expected to elevate sound levels within Commencement Bay within a small area, where ESA-listed marine mammals are unlikely to be present, or within such a small area that the noise would be insignificant.

As presented in the PBE, orca, humpback whale, and Steller sea lion are unlikely to be present within Commencement Bay between July 16 and September 30, and pile removal and installation conducted during this time period would not be expected to affect any ESA-listed marine mammals (Osborne 2008; Mongillo 2012). Orcas are most commonly observed in Commencement Bay between approximately October and January, with the greatest potential for occurrence being the months of December and January (Osborne 2008). Humpback whales are sighted only occasionally in south Puget Sound, and are unlikely to occur within the waters of inner commencement Bay at any time of year. Similarly, Steller sea lions do not occur frequently in the inland waters of Washington, and occur only occasionally in the waters of Commencement Bay.

MONITORING SCHEDULE

Marine mammal monitoring will be implemented between October 1 and February 14 to avoid impacts to orca, humpback whale, or Steller sea lion as determined by the PBE prepared for this project. The monitoring will be implemented at the pile replacement activity-specific locations identified below under Monitoring Areas and as detailed below under Monitoring Protocol.

MONITORING AREAS (VIBRATORY & IMPACT PILE REPLACEMENT ACTIVITIES)

The sites at which vibratory pile removal and/or installation could potentially affect orca, humpback whale, or Steller sea lions are the APM Terminal, Terminal 7, Olympic Container Terminal (OCT), Husky Container Terminal and Trident piers 24 and 25 (sites 1-4 and 7 on Figures 2—5 and 8). Therefore, during any vibratory pile removal or installation conducted at these sites (sites 1-4 and 7 on Figures 2-5 and 8), the Vibratory Monitoring Area within the 120 dBRMS Vibratory Temporary Effect Area identified on the respective figures will be monitored and maintained as a marine mammal buffer area. Vibratory pile removal or installation will not commence or will be suspended temporarily if any orca, humpback whale, or Steller sea lion is present within the Vibratory Monitoring Area (i.e., marine mammal buffer) for the respective site at which vibratory pile replacement activities are being conducted (sites 1-4 and 7 on Figures 2-5 and 8).

The only site at which impact pile installation could potentially affect orca, humpback whale, or Steller sea lions is at Trident piers 24 and 25 (site 7 on Figure 8). Therefore, during any impact pile installation conducted at site 7, the respective Impact Monitoring Area within the 160 dBRMS Impact Temporary Effect Area identified on Figure 8 will be will be monitored and maintained as a marine mammal buffer area. Impact pile installation will not commence or will be suspended temporarily if any orca, humpback whale, or Steller sea lion is present within the site 7 (Figure 8) Impact Monitoring Area (i.e., marine mammal buffer).

The Port may collect site-specific in-water noise background data before the start of a pile replacement project, to determine if the monitoring areas can be reduced.

MONITORING PROTOCOL

The Port will conduct the following marine mammal monitoring activities during the timeframe indicated under the Monitoring Schedule above, and at the locations and during the activities described above under Monitoring Areas:

1. Qualified biologists or other trained marine mammal observers who meet the attached list of qualifications for marine mammal observers will be present on site at all times during pile

removal/driving activities per the Monitoring Schedule and at the Monitoring Areas described above.

2. Two observers will monitor the Vibratory Monitoring Area as required by the Monitoring Schedule and Monitoring Areas detailed above (October 1 to February 14, see above for respective sites and figures). The first observer will be in the vicinity of the proposed pile replacement activity. The second observer will be either at a land-based location or on a boat travelling within the area of vibratory impact. The most likely land based locations for the second observer would be either at a location on Browns Point, along Marine View Drive, or along the southwestern shoreline of Commencement Bay.
3. A single observer will monitor the Impact Monitoring Area as required by the Monitoring Schedule and Monitoring Areas detailed above (October 1 to February 14, site 7 only, Figure 8).
4. The observer(s) will use binoculars and visual observation to scan the waters within the respective Monitoring Area.
5. The observer(s) will scan the waters 20 minutes before the beginning of pile removal/driving activities and during all pile removal/driving activities. The observer(s) will notify the on-site operator in charge if Southern Resident orca, humpback whale, or Steller sea lion enter or are observed within the respective Monitoring Area 20 minutes prior to or during pile driving. The operator in charge will require the contractor to not begin or to cease work until the animal has moved outside of the Monitoring Area.

MINIMUM QUALIFICATIONS FOR MARINE MAMMAL OBSERVERS

1. Visual acuity in both eyes (correction is permissible) sufficient to discern moving targets at the water's surface and to estimate target size and distance. Use of binoculars may be necessary to identify the target correctly.
2. Advanced education in biological science, wildlife management, mammalogy, or related field (bachelor's degree or higher is preferred).
3. Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
4. Experience or training in the field identification of marine mammals (cetaceans and pinnipeds).
5. Sufficient training, orientation, or experience with the construction operation to preserve personal safety during observations.
6. 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.

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Laughlin, Jim. 2007. Underwater Sound Levels Associated With Driving Steel and Concrete Piles Near the Mukilteo Ferry Terminal. March 2007.

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Reyff, James. 2007. Compendium of Pile Driving Sound Data. Prepared for the California Department of Transportation, Sacramento, CA, by Illinworth & Rodkin, Petaluma, CA. September 27, 2007.

Washington State Department of Transportation (WSDOT). 2011. Biological Assessment Preparation – Advanced Training Manual Version 02-2011. February 2011.

PORT of TACOMA U.S.A.

Figure 1 - Action Area

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan

N
S

0 0.5 1 2 3 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

PORT of TACOMA U.S.A.

Figure 2 - Site 1

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
S

0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

PORT of TACOMA U.S.A.

Figure 3 - Site 2

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
S

0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

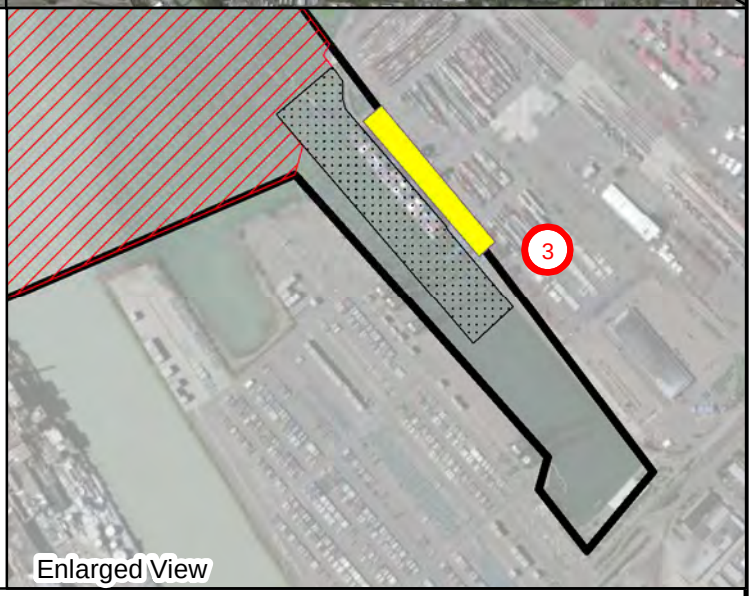

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Figure 4 - Site 3

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
S

0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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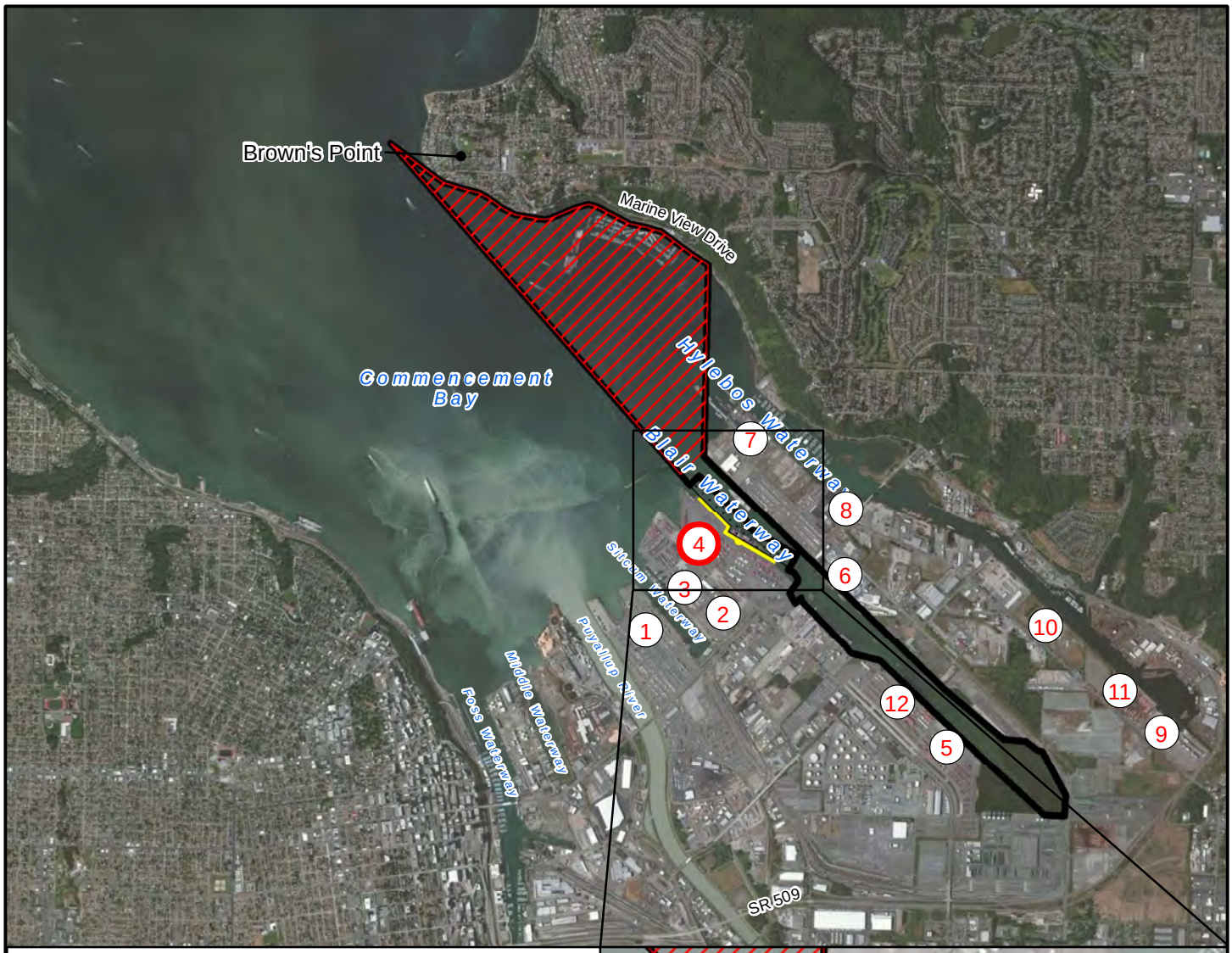

Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

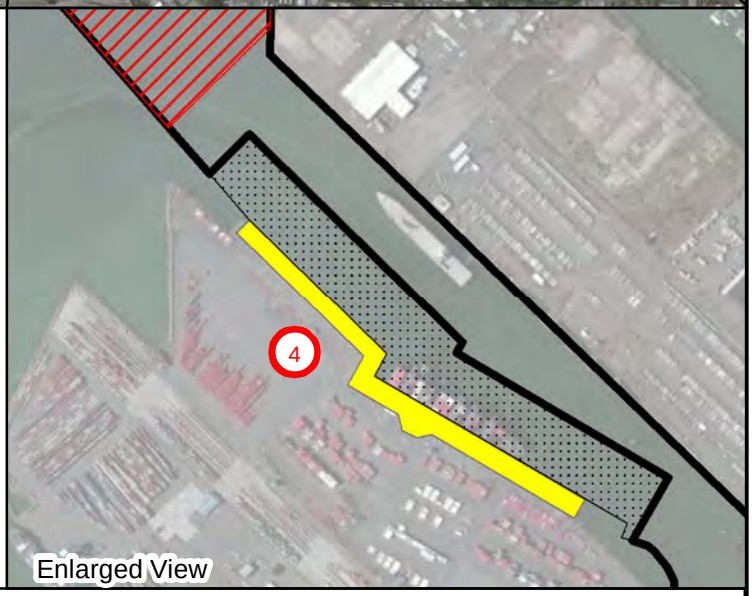

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Figure 5 - Site 4

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
S

0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

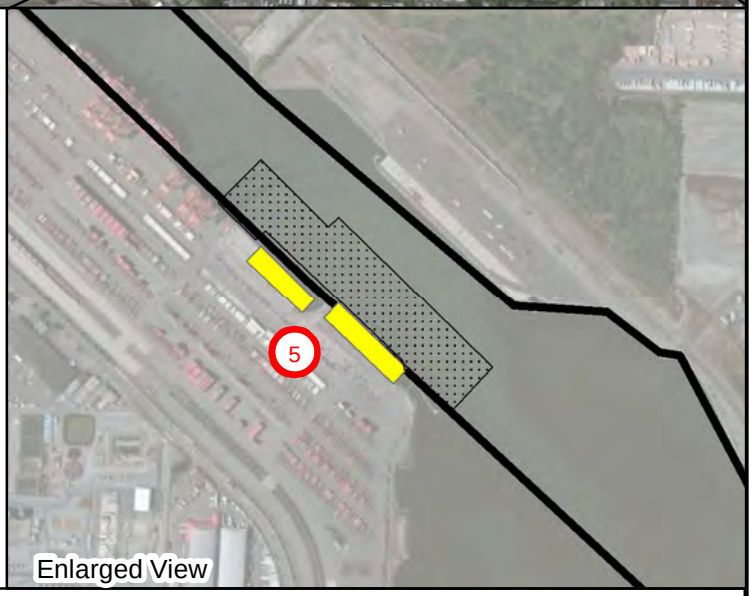
Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT



PORT of TACOMA U.S.A.

Figure 6 - Site 5

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
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0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

PORT of TACOMA U.S.A.

Figure 7 - Site 6

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
S

0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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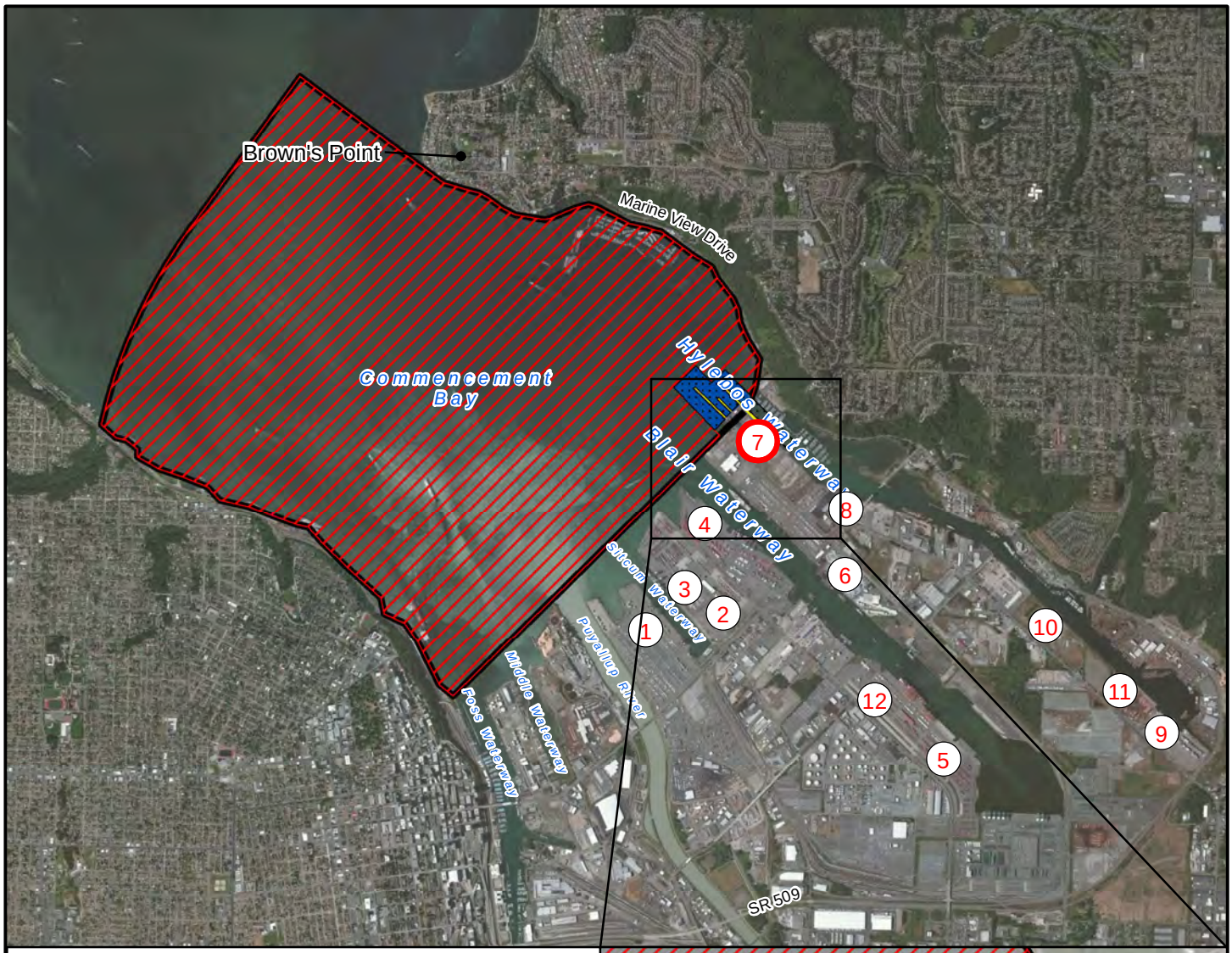

Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

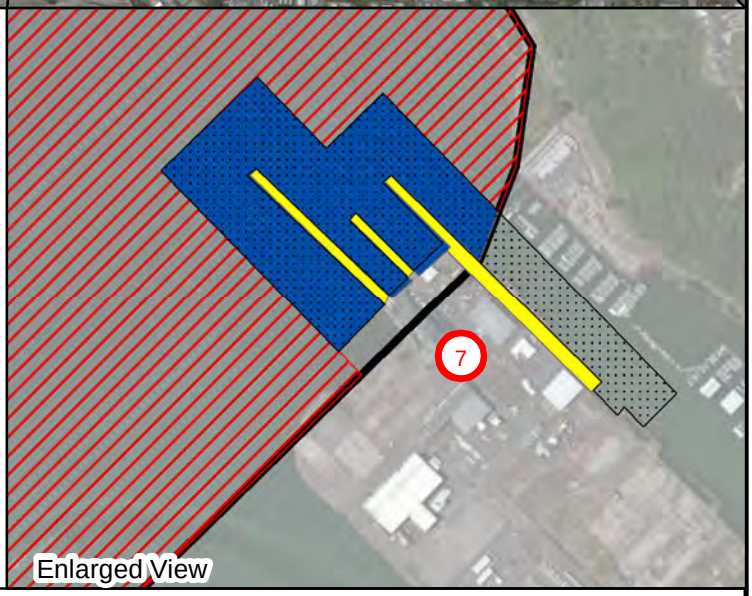

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Figure 8 - Site 7

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
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0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

PORT of TACOMA U.S.A.

Figure 9 - Site 8

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
S

0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

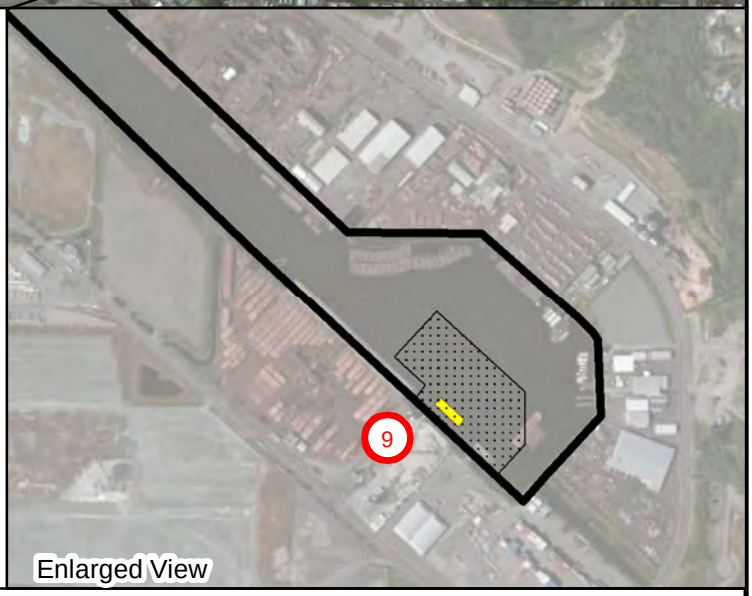
Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT



PORT of TACOMA U.S.A.

Figure 10 - Site 9

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
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0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

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Figure 11 - Site 10

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
S

0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT

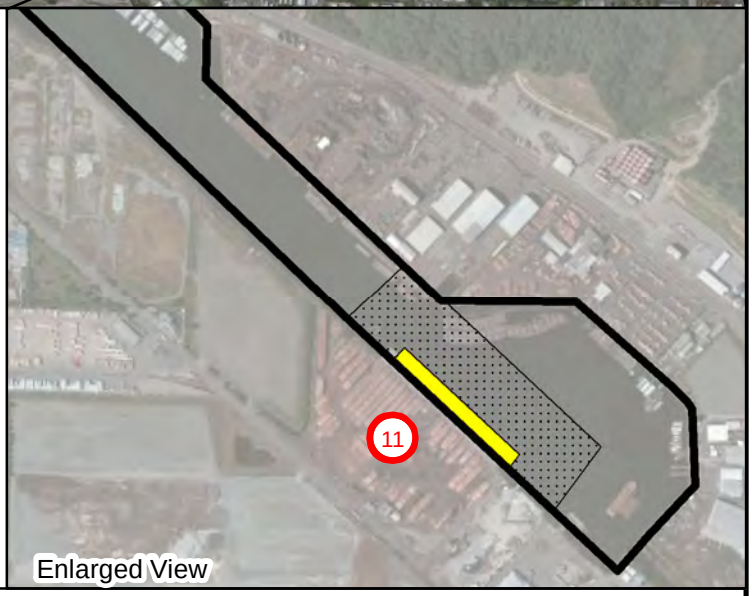

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Figure 12 - Site 11

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
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0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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Vibratory Temp. Effect Area (Removal/Installation)

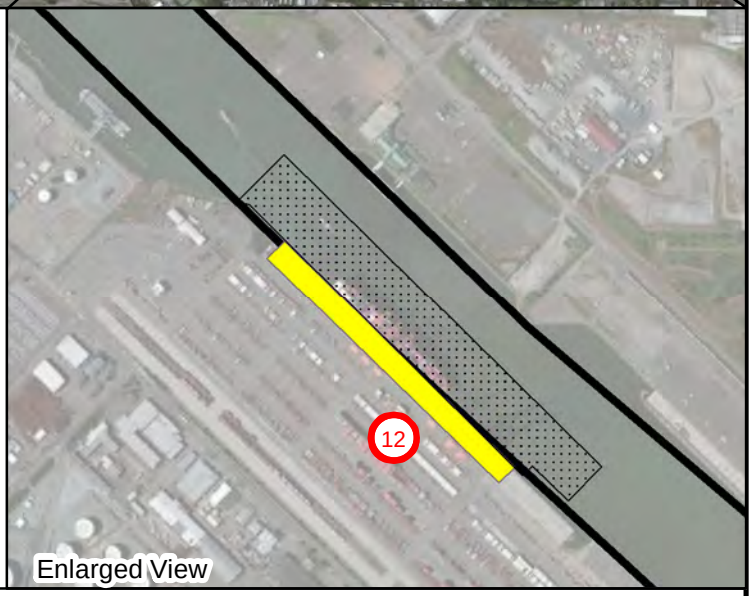
Vibratory Monitoring Area (Removal/Installation)

Impact Temp. Effect Area (Installation)

Impact Monitoring Area (Installation)

Site

1 APM TERMINALS
2 TERMINAL 7
3 OCT
4 HUSKY TERMINAL
5 BLAIR DOCK
6 PARCEL 115
7 TRIDENT
8 BRAC PROPERTY
9 PARCEL 86
10 PARCEL 99
11 PARCEL 105
12 WUT



PORT of TACOMA U.S.A.

Figure 13 - Site 12

Programmatic Piling Repair Project - Biological Evaluation
Appendix C: Marine Mammal Monitoring Plan
Temporary Effect and Monitoring Areas

N
S

0 0.25 0.5 1 1.5 Miles

Source: Pierce County GIS (2011)

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City of Tacoma
Planning and Development Services

January 3, 2014

Mark Rettmann
Port of Tacoma
P.O. Box 1837
Tacoma, WA 98401-1837 *also via electronic mail*

RE: Port of Tacoma Programmatic Piling Repair and Maintenance
Shoreline Substantial Development Permit Exemption
File No. SHR2013-40000215154

Dear Mr. Rettmann:

We have received and reviewed the JARPA and application letter for the above-noted proposal for the routine repair, maintenance, and replacement of piling at 12 sites throughout the Port of Tacoma over the next five years (see Attachment "A"). This request requires a Shoreline Substantial Development Permit Exemption and Critical Area Review pursuant to *Tacoma Shoreline Master Program* (*TSMP*) Chapter 2.3.3 as allowed per WAC 173-27-040 2(b). The *TSMP* allows that exemptions are typically valid for one year from issuance; however, longer periods may be allowed based upon the specifics of the proposal (Chapter 2.3.4).

Proposal

The specific request is for the repair and/or replacement of up to 200 damaged or broken fender and structural pile at the twelve identified sites. This would include pile caps, chokes, and whalers along with the piling itself. The purpose of the project is to maintain the integrity of existing pier, wharf, and fendering systems at Port properties, in support of water-dependent port and industrial activities as allowed in the "S-10" Shoreline District – Port Industrial.

As you have stated in the JARPA, the work will be conducted as follows:

- All work will occur within the authorized in-water work window;
- Pile removal BMPs may include the following:
  - Use of debris boom around the work area
  - Use of an absorbent boom
  - Cutting or driving broken pile below the mudline;
- Wood piling may be replaced with approved treated wood piling. All treated wood replacement piling will undergo required BMPs for treatment prior to placement in water;
- Concrete piling will be replaced with concrete piling which may be driven using a wood pillow atop;
- All fender piling will have an approved plastic rub strip fastened to the exposed face to prevent frictional losses of treated wood due to vessel movement;
- The contractor will have a spill containment kit on site; and
- No alteration of the existing bank/shoreline is proposed, nor will there be any dredging or filling associated with this project

Site Description (General)

The sites are located within the "S-10" Shoreline District - Port Industrial and the "S-13" Shoreline District - Marine Waters of the State. The intent of the "S-10" is to allow the continued development of the Port industrial Area, with an increase in the intensity of development and a greater emphasis on terminal facilities within the City. The intent of the "S-13" is to maintain these water bodies for the use by the public for navigation, commerce and recreation purposes and to manage in-water structures in a consistent manner throughout the City's shorelines. All sites are currently developed with water-dependent port and industrial uses, including shipping terminals.

The sites all include work within the required 50-foot marine buffer per *TSMP* 6.4.3, and therefore require Critical Areas review. The proposal and historic permitting records were reviewed by Karla Kluge, Senior Environmental Specialist, for compliance with the provisions of the *TSMP* for critical areas within the shoreline. Ms. Kluge has concluded that the request meets the requirements for a repair and maintenance exemption. Ms. Kluge's technical memorandum is included as Attachment "B" to this letter; conditions and advisory comments have been included herein.

Shoreline Substantial Development Permit Exemption

Repair and maintenance actions associated with existing structures and developments including acts to prevent a decline, lapse, or cessation from a lawfully established condition are listed as exempt from a Substantial Development Permit according to the *Tacoma Shoreline Master Program* (*TSMP*) Chapter 2.3.3. Section 2.3.3(1) notes "an exemption from the Substantial Development Permit requirements does not constitute an exemption from the policies and use regulations of the Shoreline Management Act (*SMA*), the provisions of this Master Program (*TSMP*), and other applicable City, state, or federal permit requirements".

Shoreline Management Act – RCW 90.58.020 sets forth the policy and priorities of the *SMA*. Within this section, development priority is allowed for Port uses, with an emphasis on best management practices to protect environmental functions of the shorelines. Given that the purpose of the proposal is to preserve established Port activities, and that all BMPs for repair and replacement will be followed, the request is in compliance with the stated goals and policies of the *SMA*.

TSMP – The Master Program sets forth allowed uses for the "S-10" District in Chapters 6.1, 7.6, and 9.12. Port activities – including shipping terminals – and the maintenance and repair thereof are allowed development activities within that district. Work within the "S-13" District is allowed in conjunction with permitted uses and activities at the upland locations. The applicant will meet all requirements of the *TSMP* and will pursue all required permits prior to starting work.

Other Permits – WAC 197-11-800(3) allows for SEPA exemptions for repair and replacement of existing development. This includes repair or replacement of piling, provided all other codes are complied with. The City of Tacoma will require building permits for some of the proposed work; you will need to obtain permits as necessary. Further, work will require permits from state and federal agencies; permitting is the responsibility of the applicant. You have indicated that you will comply with all other permitting requirements.

Conditions and Advisory Notes

The proposed activities are consistent with the applicable regulations, plans, and policies of the City of Tacoma. Furthermore, the Shoreline Management Act (*SMA*) allows certain activities to be exempt from the Shoreline Substantial Development Permit requirements. Based on the above findings, the proposed exemption to the City's Shoreline Substantial Development Permit requirement is consistent with the policies of the *SMA*, the policies and implementing

regulations of the *TSMP* and with the criteria set forth in the *WAC* and *RCW* for the authorization of such permits.

1. Replacement pilings shall be replaced on a one-to-one ratio with replacement pilings of the same or smaller diameter.
2. The applicant shall follow all proposed installation and construction methods and best management practices for minimizing unintended impacts during the repair and maintenance of the dock while installing and removing the piles. No construction materials or debris shall be allowed to enter the Waters of the State.
3. Construction material or debris shall be promptly removed and disposed of in an appropriate upland location.
4. All work must be completed within the approved in-water work window designated by the Washington State Department of Fish and Wildlife (WDFW).
5. The applicant shall notify the City of Tacoma and pertinent state or federal agencies should an unexpected spill of fuel or other chemical into the waterway.
6. Prior to issuance of construction permits, a copy of all permits required by or approvals provided by Washington State Department of Fish and Wildlife (WDFW), Department of Ecology (DOE), and U.S. Army Corps of Engineers (USACE) shall be provided to the City.
7. This exemption shall be valid for a period not to exceed five years from the date of issuance. Should the Shoreline Master Program be revised prior to the completion of this project, additional review may be required.

Advisory Notes

1. This permit is only applicable to the proposed project as described above and based upon the information submitted by the applicant. Modifications to this proposal and future activities or development within the regulated buffers may be subject to further review and additional permits as required in accordance with the *TMSP*.
2. The applicant must obtain other approvals prior to construction as required by other local, state and federal agencies. The City of Tacoma is not the only reviewing agency with jurisdiction over the project area. The Army Corps of Engineers and State Department of Fish and Wildlife have requirements regarding work within regulated waters that may be applicable to the project.

This letter of exemption is being issued per the provisions of the *Tacoma Shoreline Master Program* to comply with the requirements of *WAC* 173-27-040 and *WAC* 173-27-050. Should you have any further questions or requests please do not hesitate to contact me at 253-591-5121.

Sincerely,

Shirley Schultz
Principal Planner

cc via electronic mail:
Planning and Development Services, Peter Huffman, Reuben McKnight, Karla Kluge
Washington Department of Ecology, Shorelands & Environmental Assistance Program, Alex Callender, SWRO, P.O. Box 47775, Olympia, WA 98504-7775 (acal461@ecy.wa.gov)
Washington Department of Fish and Wildlife, Leonard Machut, 450 Port Orchard Boulevard, Suite 290, Port Orchard, WA 98366 (Leonard.Machut@dfw.wa.gov)
U.S. Army Corps of Engineers, Attn: Regulatory Branch, CENWS-OD-RG ATTN: Lori Lull, P.O. Box C-3755, Seattle, WA 98124 (Lori.C.Lull@usace.army.mil)
U.S. Fish & Wildlife Service, Attn: Judy Lantor, 510 Desmond Drive SE #102, Lacey, WA 98503 (judy_lantor@fws.gov)

Attachment "A" – Pile Repair/Replacement Sites

Parcel Number	Address	Waterway	Project Site	Critical Areas reviewed under permit number
2275200610	1001 Port of Tacoma Rd	Blair	Husky Terminal	SHR2010-40000151874
0321353016 **0321353014**	1815 Port of Tacoma Rd	Blair	Blair Dock	SHR2008-40000122326 SHR2009-40000127732
0321354035	2940 E Alexander Ave	Blair	Blair Dock (Additional Site 5) WUT	SHR2010-40000156509
2275200633	710 Port of Tacoma Rd 2209 East 11th Street	Sitcum	Terminal 7 & OCT	WET2010-40000141569 WET2010-40000138380
0321351053	2901 Taylor Way	Hylebos	Parcel 99	SHR2008-40000114953
0321364024	3701 Taylor Way	Hylebos	Parcel 86	WET2008-40000125347
5000350013	300 E Alexander Ave	Hylebos	Trident	SHR2009-40000130175
2275200292	1110 E Alexander Ave	Blair	Parcel 115	SHR2009-40000130175
2275200502	1001 E Alexander Ave	Hylebos	BRAC	SHR2010-40000156509
2275200620 **8950000061**	1901 E 11th Street 1002 Milwaukee Way	Sitcum	APM Terminals	SHR2010-40000156509
0321362046	3401 Taylor Way	Hylebos	Parcel 105	WET2010-4000146808

City of Tacoma
Planning and Development Services

Technical Memorandum

TO: Shirley Schultz, Principal Planner

FROM: Karla Kluge, Senior Environmental Specialist

SUBJECT: **Port of Tacoma Programmatic Piling Repair and Maintenance Shoreline Substantial Development Permit Exemption File No. SHR2013-40000215154**

DATE: January 2, 2013

Project Description

The applicant has applied for a Shoreline Substantial Development Permit Exemption for support piling maintenance and repair. The applicant is requesting an annual maintenance exemption to replace up to 200 damaged or broken fender and structural piling. This exemption will cover the pile, pile caps, chokes, and whalers at 12 wharf/dock facilities. An exemption previously issued included 11 sites. An additional site at the Blair Dock (site 5) is also included under this request.

Note: An identical exemption request was previously analyzed by the City's Environmental Specialist, Misty Blair. A new Shoreline Master Program and Code (TSMP) was recently adopted and approved by the Department of Ecology necessitating an updated review and analysis under the recently approved TSMP. This Technical Memorandum contains similar information contained within the previous analysis and was prepared in collaboration with Ms. Blair.

The applicant asserts that this maintenance project is necessary to maintain the structural integrity of the pier, wharf or fendering system the piling supports. The subject sites are located along the Blair, Hylebos and Sitcum Waterways within the S-10 Shoreline District. The subject sites are currently used by Port of Tacoma or their various tenants in a commercial capacity. As described by the applicant, the pier/wharf/dock structures are located on the following parcels:

Parcel Number	Address	Waterway	Project Site	Critical Areas reviewed under permit number
2275200610	1001 Port of Tacoma Rd	Blair	Husky Terminal	SHR2010-40000151874
0321353016 **0321353014**	1815 Port of Tacoma Rd	Blair	Blair Dock	SHR2008-40000122326 SHR2009-40000127732
0321354035	2940 E Alexander Ave	Blair	Blair Dock (Additional Site 5) WUT	SHR2010-40000156509
2275200633	710 Port of Tacoma Rd 2209 East 11th Street	Sitcum	Terminal 7 & OCT	WET2010-40000141569 WET2010-40000138380
0321351053	2901 Taylor Way	Hylebos	Parcel 99	SHR2008-40000114953
0321364024	3701 Taylor Way	Hylebos	Parcel 86	WET2008-40000125347

5000350013	300 E Alexander Ave	Hylebos	Trident	SHR2009-40000130175
2275200292	1110 E Alexander Ave	Blair	Parcel 115	SHR2009-40000130175
2275200502	1001 E Alexander Ave	Hylebos	BRAC	SHR2010-40000156509
2275200620 **8950000061**	1901 E 11th Street 1002 Milwaukee Way	Sitcum	APM Terminals	SHR2010-40000156509
0321362046	3401 Taylor Way	Hylebos	Parcel 105	WET2010-4000146808

As described by the applicant, this project will utilize the following precautions and should have no negative impact on the FWHCA or the associated marine buffer:

- All work will occur within the authorized in-water work window
- Pile removal BMPs may include the following:
    - Use of debris boom around the work area
    - Use of an absorbent boom
    - Cutting or driving broken pile below the mudline
- Wood piling maybe replaced with approved treated wood piling. All treated wood replacement piling will undergo required BMPs for treatment prior to placement in water
- Concrete piling will be replaced with concrete piling which may be driven using a wood pillow atop
- All fender piling will have an approved plastic rub strip fastened to the exposed face to prevent frictional losses of treated wood due to vessel movement
- The contractor will have a spill containment kit on site
- No alteration of the existing bank/shoreline is proposed, nor will there be any dredging or filling associated with this project

Documents provided to the City

The applicant submitted the following reports and supporting documents:

- Shoreline Substantial Development Permit Exemption (SHR2011-400000158452) and Critical Areas Preservation Ordinance Exemption (WET2011-40000160132)
- Original JARPA with Plan/Figures
- Exemption Request Letter dated December 23, 2013

Findings

1. The following Shoreline and Critical Areas permit files and previous Wetland/Stream/FWHCA site reviews and information are applicable to this exemption request:

   SHR2000-00033, SHR2005-40000061724, SHR2008-40000114953, SHR2008-40000122326, WET2008-40000125347, SHR2009-40000127732, SHR2009-40000130175, WET2010-40000138380, SHR2010-40000146808, SHR2010-40000151874, WET2010-40000141569 and SHR2010-40000156509.

2. These sites are developed and the proposal will not increase this intensity or create additional permanent impacts. This maintenance and repair work is taking place water-ward of the Ordinary High Water Mark (OHWM). The shoreline itself is armored with existing concrete bulkheads, rip rap or other protective measures along

the shore. As described by the applicant these facilities contain a total of approximately 20,000 piling, therefore the proposal is for an annual replacement of 1% of the total pile. This seems to be a reasonable estimation of the needed annual replacement rate for facilities of this size. In addition, these wharfs, docks, and piers are utilized for industrial shipping needs and subject to damage from impacts of marine vessels and/or floating debris as well as typical deterioration.

3. The applicant identified the following listed threatened and endangered species as occurring within the vicinity of the project area: Chinook salmon, steelhead, bull trout, marbled murrelet, bald eagles, stellar sea lion, and orca. Additionally the applicant identified that rockfish may be present further out in Commencement Bay. The applicant goes on to state that no priority habitats are present within the project area and the proposed work is extremely unlikely to impact any priority species.

Applicable Tacoma Shoreline Master Program and Code (TSMP)

4. The parcels referenced above are located within the S-10 Port Industrial Area Shoreline District and the S-13 Marine Waters of the State.

5. The intent of the S-10 Port Industrial Area Shoreline District is to allow the continued development of the Port industrial Area, with an increase in the intensity of development and a greater emphasis on terminal facilities within the City.

6. The intent of the S-13 Marine Waters of the State Shoreline District is to maintain these water bodies for the use by the public for navigation, commerce and recreation purposes and to manage in-water structures in a consistent manner throughout the City's shorelines.

7. *TSMP 6.4.3* requires a 50-foot marine buffer for S-10 Port Industrial Area Shoreline District.

8. *Under TSMP 2.1, proposed actions that would alter designated critical areas or their buffers, as established by the Program (TSMP Section 6.4) shall be reviewed for compliance with the provisions of this program. An applicable critical area report and/or mitigation plan and/or habitat management plan shall be prepared consistent with the requirements of TSMP Section 2.4.2 and submitted as part of the development application or request for statement of exemption. The critical area review shall be conducted and processed in conjunction with the highest threshold of review that is applicable to the primary development proposed*

9. *Under TSMP 2.3.2 Exemptions from a Substantial Development Permit. All uses within shoreline jurisdiction must be consistent with the regulations of this Master Program whether or not they require a shoreline Substantial Development Permit. An exemption from the Substantial Development Permit requirements does not constitute an exemption from the policies and use regulations of the Shoreline Management Act, the provisions of this Master Program, and other applicable City, state, or federal permit requirements.*

10. *Under TSMP 2.3.4 Letter of Exemption, Exempt activities related to any of the following shall not be conducted until a letter of exemption has been obtained from the Director or designated signatory; dredging, flood control works, in-water*

structures, archaeological or historic site alteration, clearing and ground disturbing activities such as filling or excavation, docks, shore stabilization, or activities deemed to be located within a critical area or buffer.

11. *Under TSMP 2.3.3 (WAC173-27-040 (2)(b)(b)) Normal maintenance or repair of existing structures or developments, including damage by accident, fire or elements. "Normal maintenance" includes those usual acts to prevent a decline, lapse, or cessation from a lawfully established condition. "Normal repair" means to restore a development to a state comparable to its original condition, including but not limited to its size, shape, configuration, location and external appearance, within a reasonable period after decay or partial destruction, except where repair causes substantial adverse effects to shoreline resource or environment. Replacement of a structure or development may be authorized as repair where such replacement is the common method of repair for the type of structure or development and the replacement structure or development is comparable to the original structure or development including but not limited to its size, shape, configuration, location and external appearance and the replacement does not cause substantial adverse effects to shoreline resources or environment*.

12. *Under TMSP 6.4.4 Fish and Wildlife Habitat Conservation Areas (FWHCA's), lands containing priority habitats and species and critical saltwater habitats are classified as Fish and Wildlife Habitat Conservation Areas.*

13. *Under TMSP 6.4.4 FWHCA standards, Whenever activities are proposed within or adjacent to a habitat conservation area with which state or federally endangered, threatened, or sensitive species have a primary association, such area shall be protected through the application of protection measures in accordance with a critical area report and habitat management plan prepared by a qualified professional and approved by the City. And, under TMSP 2.4.2, the Director shall determine whether these reports are necessary based upon the activities associated with the project.*

Conclusions

14. The Blair, Hylebos and Sitcum Waterways are considered FWHCAs and as such are provided a 50 foot buffer per *TSMP 6.4.3*. In this case, the FWHCA and its buffer that are located within the shoreline district are eligible for the maintenance and repair exemption from the Shoreline Substantial Development Permit.

15. The new pile placement will occur as a pile for pile replacement and impacts will be temporary and limited during the active construction. Impacts that may occur will be unavailability of habitat due to noise and turbidity in the work zone. No permanent adverse impacts are anticipated. No new additional structures are proposed, and there is no expansion or increase to the water dependent use.

16. Species listed under the Endangered Species Act that may occur within the vicinity of the project include Puget Sound Chinook salmon (*Onchorhynchus tshawaytscha*), Coastal-Puget Sound bull trout (*Salvelinus confluentus*), Puget Sound Steelhead trout (*O. mykiss*), Stellar Sea Lion (*Eumetopias jubatus*), Southern Resident Killer Whale (*Orcinus orca*), Humpback whale (*Megaptera novaeangliae*) , Leatherback Sea turtle (*Dermochelys coriacea*), Bocaccio (*Sebastes paucispinis*), Canary rockfish *S. pinniger*), and Yelloweye rockfish (*S. ruberrimus*).

17. Species that may be temporarily affected due to noise and turbidity include the Harbor Seal, Bald Eagle, Coho Salmon, Chum Salmon, and Pink Salmon.

18. The project site lies within an identified FEMA floodplain area (Commencement Bay); however, no vegetation removal or increase in impervious surface is proposed. Project impacts are being avoided and minimized; therefore no additional floodplain mitigation is required.

19. The applicant argues that the characteristic uses of the water body will not be adversely affected by the proposed project. All work within Commencement Bay will occur during in-water work windows approved by the Army Corps of Engineers, U.S. Fish and Wildlife Service, NOAA Fisheries, and Washington Department of Fish and Wildlife to avoid and minimize impacts on essential and designated habitats as well as fish, marine mammals, and avian species utilizing the coastal environment. Increases in water column turbidity caused by suspended sediments during pile removal and driving will be localized and temporary.

20. The project will not result in any permanent loss of habitat and will not compromise the fish and wildlife habitat conservation area or buffer functions; therefore no compensatory mitigation is required.

21. (*WAC*) 173-27-040(2)(b) exempts "Normal maintenance or repair of existing structures or developments, including damage by accident, fire or elements." Furthermore, (*WAC*) 173-27-040(2)(b) exempts "Replacement of a structure or development … where such replacement is the common method of repair for the type of structure or development … and the replacement does not cause substantial adverse effects to shoreline resources or environment." These repairs are considered typical and will conform to the size, shape, configuration, location and general appearance of the existing structures. The project (as described above) is generally consistent with the Shoreline Substantial Development Permit Exemption requirements.

22. Based on the above findings, the proposed programmatic proposal to remove and replace pilings over five years is consistent with the policies of the *Tacoma Master Shoreline Program.* The proposal, as described by the applicant, is not likely to cause substantial adverse impacts to the shoreline. Therefore, if properly conditioned, this project can be approved without the need for a Shoreline Substantial Development Permit.

Conditions

1. Replacement pilings shall be replaced on a one-to-one ratio with replacement pilings of the same or smaller diameter.

2. The applicant shall follow all proposed installation and construction methods and best management practices for minimizing unintended impacts during the repair and maintenance of the dock while installing and removing the piles. No construction materials or debris shall be allowed to enter the Waters of the State.

3. Construction material or debris shall be promptly removed and disposed of in an appropriate upland location.

4. All work must be completed within the approved in-water work window designated by the Washington State Department of Fish and Wildlife (WDFW).

5. The applicant shall notify the City of Tacoma and pertinent state or federal agencies should an unexpected spill of fuel or other chemical into the waterway.

6. Prior to issuance of construction permits, a copy of all permits required by or approvals provided by Washington State Department of Fish and Wildlife (WDFW), Department of Ecology (DOE), and U.S. Army Corps of Engineers (USACE) shall be provided to the City.

7. This exemption shall be valid for a period not to exceed five years from the date of issuance. Should the Shoreline Master Program be revised prior to the completion of this project, additional review may be required.

Advisory Notes

1. This permit is only applicable to the proposed project as described above and based upon the information submitted by the applicant. Modifications to this proposal and future activities or development within the regulated buffers may be subject to further review and additional permits as required in accordance with the *TMSP*.

2. The applicant must obtain other approvals prior to construction as required by other local, state and federal agencies. The City of Tacoma is not the only reviewing agency with jurisdiction over the project area. The Army Corps of Engineers and State Department of Fish and Wildlife have requirements regarding work within regulated waters that may be applicable to the project.