Alaska District
U.S. Army Corps of Engineers

Environmental Resources Section

Public Notice

Date MAY 11 2015 Identification No. ER-15-05
Please refer to the identification number when replying.

Environmental Assessment and Finding of No Significant Impact
Operation and Maintenance Activities
St. Paul Harbor, St. Paul Island, Alaska

The U.S. Army Corps of Engineers (Corps) is proposing to conduct operation and maintenance activities to construct repairs to Federal navigation features at St. Paul Harbor, St. Paul Island, Alaska. Specifically, the Corps proposes to (1) make repairs to the 1,000-foot-long detached rubble mound breakwater, (2) repair the scour holes in the harbor's entrance channels and adjacent to rubble mound breakwaters, (3) dredge to project depth selected shoaled areas of the main and small boat harbor entrance channels, (4) dredge to project depth a sediment management area, and (5) dispose of dredged material.

Information on the proposed action and anticipated environmental effects are discussed in an environmental assessment (EA) and unsigned Finding of No Significant Impact (FONSI), which are available for public review and comment at the following Corps' website: http://www.poa.usace.army.mil. Click on the "Reports and Studies" button and look under "Documents Available for Review, Operations and Maintenance". The comment period will close 30 days from the date of this notice. All comments received on or before this date will become part of the official record. The FONSI will be signed upon review of comments received and resolution of significant concerns.

Please send electronic comments and requests for a hard copy of the EA/FONSI to Wayne.M.Crayton@usace.army.mil and send written comments to the following address:

U.S. Army Corps of Engineers, Alaska District
ATTN: CEPOA-PM-C-ER (Crayton)
P.O. Box 6898
Joint Base Elmendorf-Richardson, Alaska 99506-0898

No public meeting is scheduled for this action. If you believe a meeting should be held, please send a written request to the above address during the 30-day review period explaining why you believe a meeting is necessary.

Notice is also hereby given that the Corps will be applying for State Water Quality certification from the Alaska Department of Environmental Conservation (ADEC). ADEC may certify there is a reasonable assurance this proposed action and any discharge that might result will comply with the Clean Water Act, Alaska Water Quality Standards, and other applicable State laws. ADEC's certification may authorize a mixing zone and/or a short-term variance under 18 AAC 70. ADEC may also deny or waive certification.

Any person desiring to comment on this proposed action with respect to water quality certification may submit written comments to ADEC at the address below within 30 days from the date on this public notice.

Alaska Department of Environmental Conservation
WQM/401 Certification
555 Cordova Street
Anchorage, AK 99501-2617
Telephone: (907) 269-7564
FAX (907) 269-7508

Please contact Mr. Wayne Crayton of the Environmental Resources Section via his email address (Wayne.M.Crayton@usace.army.mil), phone (907-753-2656) or write to him at the Corps' address if you would like additional information concerning the proposed project.

Michael Noah
Chief, Environmental Resources Section

US Army Corps of Engineers
Alaska District

Operation and Maintenance Activities
Environmental Assessment and
Finding of No Significant Impact

Saint Paul Harbor
Saint Paul Island, Alaska

April 2015

Building Strong®

FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969 as amended, the Alaska District, U.S. Army Corps of Engineers (Corps) has assessed the environmental impacts of the following proposed Federal action:

Operation and Maintenance Activities
St. Paul Harbor
St. Paul Island, Alaska

The Corps conducts periodic field surveys of its navigation projects to identify any need for constructing repairs and/or maintenance dredging. Recent field surveys revealed the need to address hazards threatening the Federal navigation features at St. Paul Harbor. Specifically, the Corps proposes to: (1) construct repairs to the detached rubble mound breakwater, (2) construct scour hole protection in the main harbor and small boat harbor entrance channels and adjacent to rubble mound breakwaters, (3) dredge to authorized project depth selected shoaled areas of the main and small boat harbor entrance channels, (4) dredge to authorized project depth a sediment management area, and (5) place dredged material on uplands. The proposed actions are justified because St. Paul has become an important harbor-of-refuge for the bottom-fishing fleet in the Bering Sea and provides crucial economic support for this remote community. Without such actions, the structural integrity of the harbor's navigation features will be compromised, jeopardizing the harbor's continued functional and economic value to the bottom fish industry and island community. Navigational safety would likewise be degraded, increasing the risk of injury to mariners.

To comply with the National Environmental Policy Act and other Federal and State environmental laws and regulations, the Corps prepared an environmental assessment (EA), dated April 2015, to address the potential environmental impacts associated with the Corps' proposed action.

The primary environmental issues associated with the proposed action are the potential impacts associated with construction-related petroleum spills and the potential impacts on threatened and endangered species; marine mammals; essential fish habitat; water, sediment and air quality; benthic habitat and organisms; avifauna; and, historic and cultural resources. The major findings and conclusions include:

- The proposed action will have no effect on U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service listed or proposed-for-listing threatened or endangered species or destroy or adversely modify existing or proposed critical habitat, as St. Paul Harbor is not known to support the subject species or have any designated critical habitat.

- The proposed action is not expected to "take" migratory birds or any sea/shore birds inhabiting St. Paul Harbor or surrounding the Village Cove area.

- The proposed action will likely result in short-term alterations of essential fish habitat (EFH) for the following EFH species: walleye pollock, Pacific cod, yellowfin sole, rock sole, sculpins, red king crab, and blue king crab. Additional rocky-substrate EFH will be created when existing rubble mound breakwaters are reinforced with additional armor, base, and toe rock. Therefore, the proposed action may affect, but is not likely to adversely affect, EFH and EFH-managed species/species complexes for Bering Sea/Aleutian Islands Goundfish and Bering Sea/Aleutian Islands King and Tanner Crabs.

- The proposed action is within the boundaries of the Seal Island Historic District, a National Historic Landmark eligible for the National Register under Criterion A. The State of Alaska Historic Preservation Officer has concurred with the Corps' determination that the proposed action will result in no adverse effect to the Seal Island Historic District.

- The areas to be maintenance dredged are expected to be free of petroleum contamination because high-energy, long-shore processes continually transport clean sediment into Village Cove from contaminant–free areas outside Village Cove. In addition, the course-grained nature of the sediment to be dredged is not inclined to accumulate contaminants as fines and silt do. However, petroleum products are known to leak from and be washed off vessels into harbor waters.

The following mitigation measures are expected to avoid and minimize potential environmental consequences to the extent practicable and appropriate. The proposed action does not warrant compensatory mitigation measures, as the affected marine habitat is not in limited supply in the St. Paul Island area and the creation of additional subtidal, intertidal and supratidal rocky substrate (associated with scour hole and breakwater protection and repair) will provide more complex, diverse and high-value habitat for marine fishery resources.

1. No in-water work shall be conducted between September 1 and November 1 to avoid impacting (i.e. taking) juvenile fur seals and pups returning to Village Cove and the Salt Lagoon entrance channel.

2. Project vessels shall not travel within 3,000 feet of designated Steller sea lion critical habitat (haulouts or rookeries).

3. The Corps' contractor shall coordinate with the Tribal Government of Saint Paul Island to secure certification that their vessels are rat-free.

4. Project-related activities shall not use the Boulder Beach area to access work sites in order to avoid impacting (i.e. taking) least-auklets or their nesting habitat.

5. The Corps' contractor shall prepare an oil spill and prevention plan, in accordance with Federal, State of Alaska, and St. Paul Harbor requirements, and have it reviewed and approved by the Corps and St. Paul Harbormaster prior to commencing work.

6. Project vessels must be operated in compliance with State of Alaska marine vessel (air emissions) visibility standards (18 AAC 50.70).

7. Dredging operations shall not place dredged material in open water, and instead shall place all dredged material on St. Paul Island uplands.

8. The Corps and Alaska Department of Environment Conservation shall jointly prepare and implement a dredged material sampling plan for diesel range organics and metals so that contaminated dredged material, if found, is properly disposed of.

9. The USFWS's "Observer Protocols for Pile Driving, Dredging and Placement of Fill, dated August 7, 2012" shall be implemented to protect Northern sea otters and Steller's eiders from being adversely impacted from such activities.

10. The Corps' contractor shall take reasonable precautions, per 18 AAC 50.045(d), to prevent the generation of fugitive dust at its rock source and dredged material disposal sites.

The Corps has incorporated all appropriate and practicable measures to offset possible impacts caused by St. Paul Harbor O&M activities. The environmental impacts associated with the proposed action are expected to be short-term, with no long-term, significant or cumulative adverse impacts on the area's fish and wildlife resources. Therefore, the Corps has determined that: (1) the EA prepared for this action supports the conclusion that the proposed action at St. Paul Harbor does not constitute a major Federal action significantly affecting the quality of the human environment; (2) preparing an environmental impact statement is not necessary; and (3) signing a Finding of No Significant Impact is appropriate.

_____ _____

Christopher D. Lestochi
Colonel, Corps of Engineers
District Commander

Date

Operation and Maintenance Activities
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Environmental Assessment

1.0 INTRODUCTION

St. Paul Harbor is an existing U.S. Army Corps of Engineers, Alaska District (Corps) project in the Pribilof Islands, at St. Paul Island, Alaska (figure 1). The City of St. Paul occupies a narrow peninsula on the southern tip of the island. St. Paul Island is 47 miles north of St. George Island, 240 miles north of the Aleutian Islands, 300 miles west of the Alaska mainland, and 750 air miles west of Anchorage.

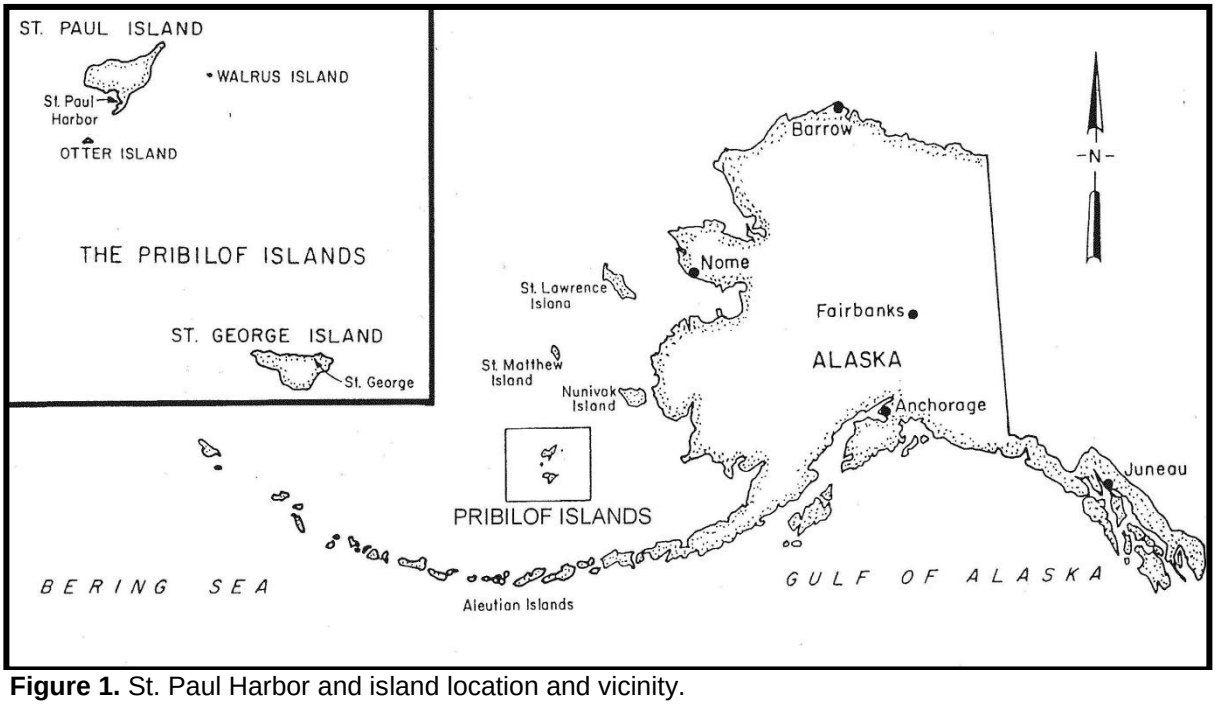


Figure 1. St. Paul Harbor and island location and vicinity.

St. Paul Harbor's development occurred in three general phases (Figure 2). Phase I, completed in 1990, included a 1,050-foot-long main breakwater, a 1,000-foot-long inner breakwater, a 2-acre turning basin at a depth of -18 feet mean lower low water (MLLW), a 700-foot-long dock, and a 6-acre mooring basin. Phase II, completed in 1996, addressed an unanticipated demand for harbor services and overtopping problems associated with the main breakwater. Construction during Phase II consisted of the following: (1) the depth of the entrance channel was increased to -30 feet MLLW; (2) a maneuvering basin was enlarged and dredged to -29 feet MLLW; (3) a +4-foot MLLW spending beach was constructed, and a sediment management area was established on the lee side of the 1,000-foot-long detached breakwater; (4) three offshore reefs 1,300 feet in length at -12 feet MLLW were constructed parallel to the main breakwater; and (5) the natural entrance channel to the Salt Lagoon was

realigned to restore the lagoon's water quality and biological productivity. Phase III, completed in 2010, involved: (1) construction of a small boat harbor, (2) an entrance channel dredged to -16.5 feet MLLW, (3) a maneuvering area dredged to -12 feet MLLW, and (4) the construction of wave protection/flow directing features, such as a 435-foot-long, +10 feet MLLW breakwater and a 530-foot-long, +10 feet MLLW circulation berm.

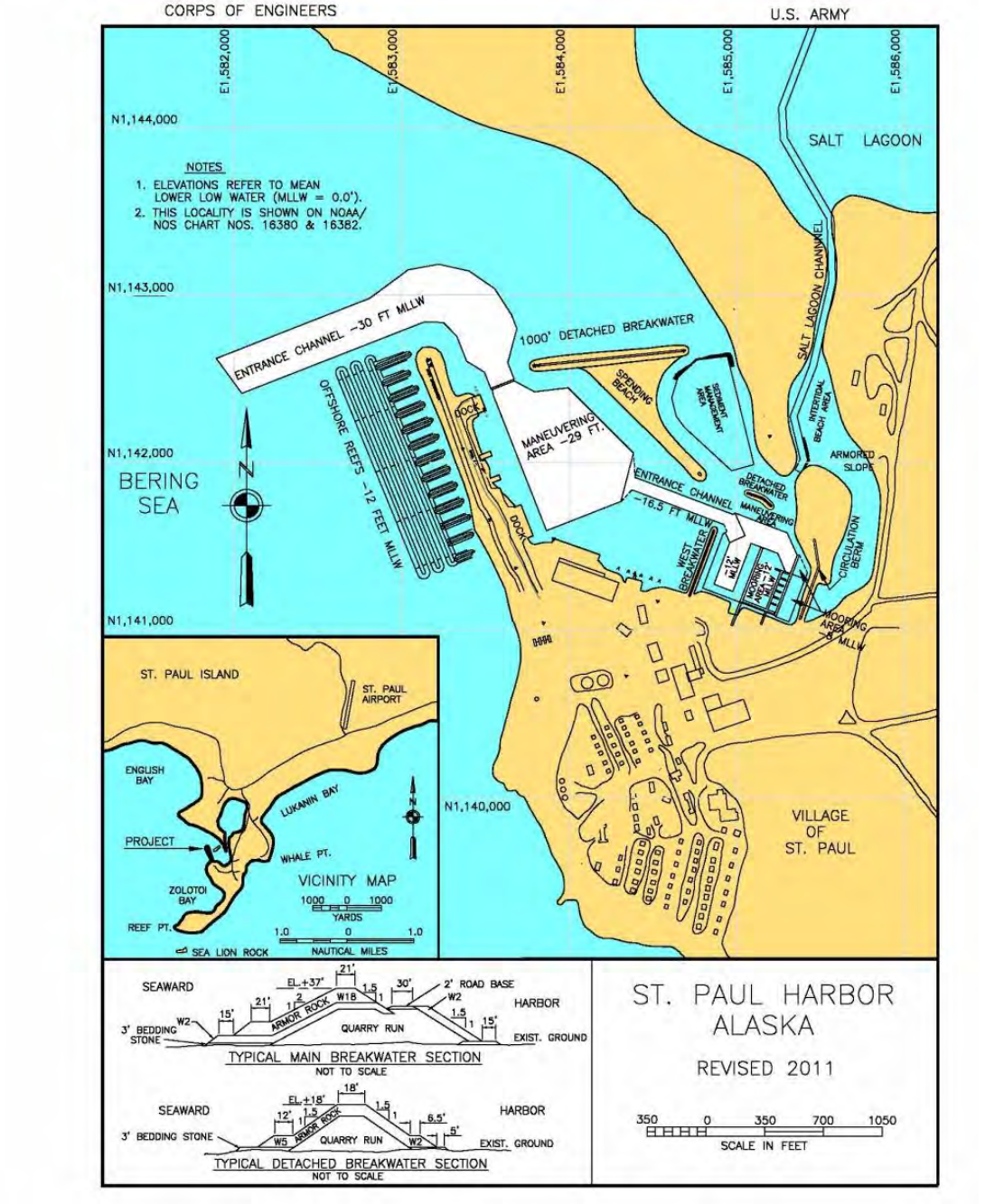


Figure 2. Navigation improvement features, St. Paul Harbor, Alaska.

2.0 PROBLEM IDENTIFICATION, PURPOSE AND NEED

The Corps conducts periodic field surveys of its navigation projects to identify any need for constructing repairs and/or maintenance dredging. Based on such field surveys between 1994 and 2014, St. Paul Harbor's navigation improvements have required some repairs and maintenance. In 1995, minor repairs were made to the main and detached breakwaters by placing armor stone at the damaged sites. In 2001 and 2002 scour holes were repaired behind the offshore reefs. Dredging the outer entrance channel occurred in 2003. Field surveys in 2006, 2011, and 2014 revealed the development of scour holes in the harbor's two entrance channels and adjacent to a rubble mound breakwater and shoaled-in areas.

The purpose of the proposed operation and maintenance (O&M) action is to address hazards threatening the Federal navigation features at St. Paul Harbor. Specifically, the Corps plans to: (1) construct repairs to the 1,000-foot-long detached rubble mound breakwater; (2) construct scour hole protection in the main harbor and small boat harbor entrance channels and adjacent to a detached rubble mound breakwater; (3) dredge to authorized project depth selected shoaled areas of the main and small boat harbor entrance channels, (4) dredge to authorized project depth a sediment management area, and (5) dispose of dredged material.

O&M actions are justified because St. Paul has become an important harbor-of-refuge for the bottom-fishing fleet in the Bering Sea and provides crucial economic support for this remote community. The harbor has fulfilled its intended purpose and more. Without such actions, the structural integrity of the harbor's navigation features would be compromised, therefore, jeopardizing the harbor's continued functional and economic value to the bottom fish industry and island community.

3.0 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The National Environmental Policy Act (NEPA) requires that decision-making proceed with full awareness of the environmental consequences that follow from a major Federal action, especially those consequences that could significantly and adversely affect the environment. Provisions for the Corps to comply with and implement NEPA are found in the Council of Environmental Quality Regulations (40 CFR Parts 1500-1508) and Corps-Civil Works Regulations (ER 200-2-2, 33 CFR 230). The Corps' environmental assessment (EA) process leads to determining whether an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI) should be prepared.

The following EA/FONSI and EIS documents have been prepared by and for previous Corps navigation projects at St. Paul (see section 10.0 for complete reference citations):

- 1982. St. Paul Harbor, Final Feasibility Report and Environmental Impact Statement. Re: the construction and maintenance of a main breakwater and an entrance channel and maneuvering area.
- 1988. St. Paul Island Harbor, Environmental Assessment. Re: the construction of a secondary, detached breakwater.

- 1996. St. Paul Harbor Improvements, Interim Feasibility Report and Environmental Assessment. Re: dredging the entrance channel and maneuvering basin deeper, constructing a spending beach on the lee side of a detached breakwater, and constructing three offshore reefs parallel to the main breakwater.
- 1998. St. Paul Harbor Improvements, Salt Lagoon Entrance Channel. Environmental Assessment and Finding of No Significant Impact. Re: constructing features designed to restore Salt Lagoon's full tidal exchange to its condition prior to the construction of the harbor's breakwaters and reconstructing tidal flats.
- 2002. St. Paul Small Boat Harbor, Emergency Breakwater Repair and Disposal of Dredged Material. Environmental Assessment and Finding of No Significant Impact. Re: the construction of a small boat harbor within the confines of existing breakwaters, the on-going emergency action for the protection of the existing main breakwater and related infrastructure, and the disposal of dredged material.
- 2006. St. Paul Harbor, General Reevaluation Report Environmental Assessment and Finding of No Significant Impact

Unlike the aforementioned listed NEPA documents, this NEPA document specifically addresses the potential environmental impacts associated with a wide variety of proposed O&M activities at St. Paul Harbor.

4.0 PROPOSED O&M ACTIVITIES AND ALTERNATIVES

The Corps proposes to perform the following O&M activities at the St. Paul Harbor (figure 3):

- Repair detached breakwater.
- Provide protection of the detached breakwater from an adjacent scour hole.
- Provide protection of the main breakwater from an adjacent scour hole.
- Provide protection of the small boat harbor, west breakwater from an adjacent scour hole.
- Dredge and dispose of dredged material from the main entrance channel.
- Dredge and dispose of dredged material from the sediment management area.
- Dredge and dispose of dredged material from the small boat harbor entrance channel.

4.1 Alternatives

The discontinuation of O&M activities at St. Paul Harbor (i.e. No Action) is the only alternative to the federally authorized O&M activities being considered. Discussed, however, are alternatives associated with methods for repairing scour holes and breakwaters and for dredging and disposing of dredged material.

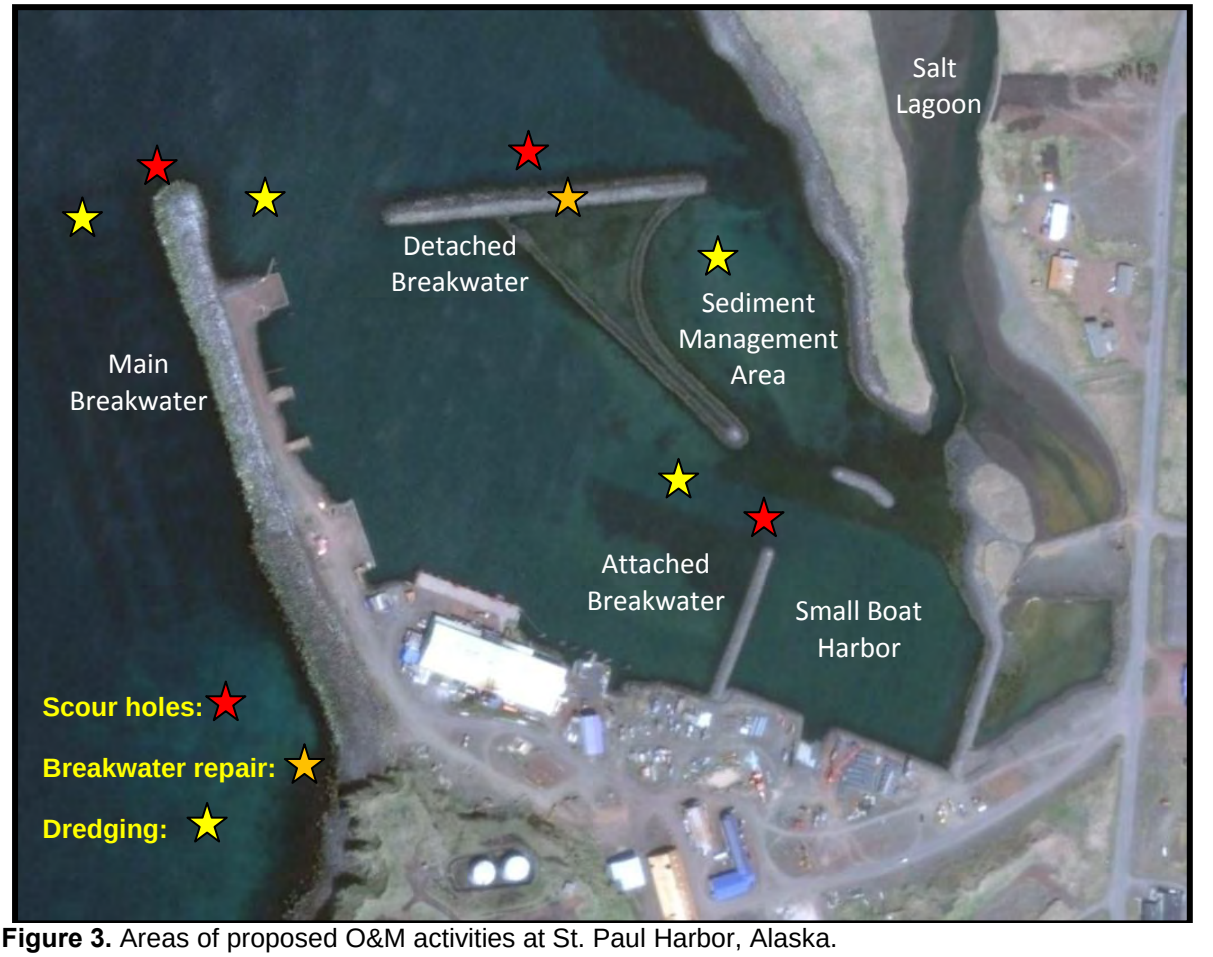


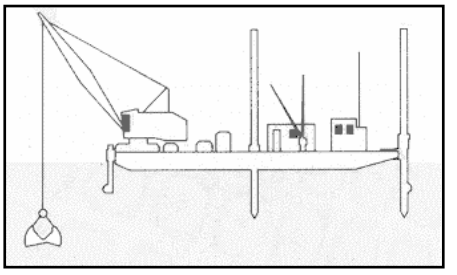
Figure 3. Areas of proposed O&M activities at St. Paul Harbor, Alaska.

4.1.1 No Action

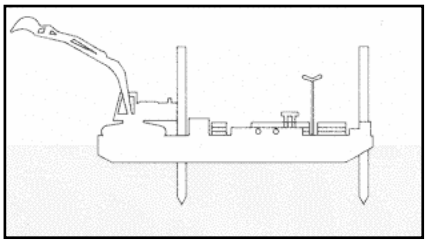
The Corps would discontinue O&M activities at St. Paul Harbor and no longer budget and/or allocate funds to maintain the federally-authorized navigation features at St. Paul Harbor within its designated limits.

4.1.2 Dredging Methods

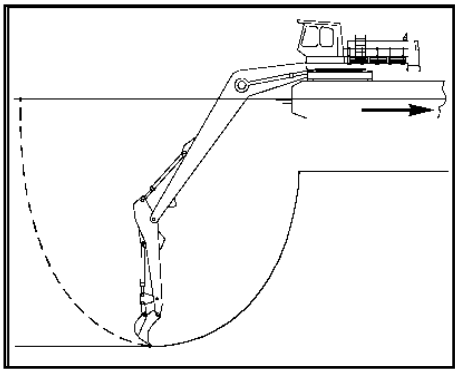
There are two basic approaches to dredging: mechanical and hydraulic. Mechanical dredging involves removing sediment with machinery, usually with a bucket of some kind (figure 4). The most common types are an excavator or clamshell bucket. Barge mounted machinery must load material into a hopper barge where the material would dewater. The dewatered material would then be transported to land where it would be offloaded into trucks and hauled to a disposal site.



Grab dredge



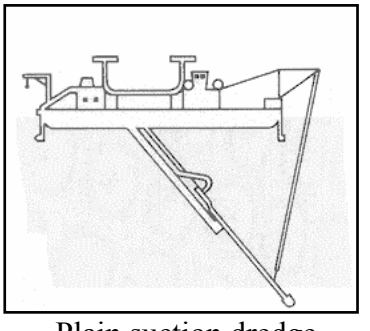
Dipper and backhoe dredge



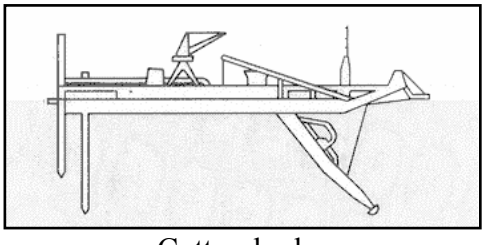
Backhoe dredge

Figure 4. Examples of mechanical dredges.

Hydraulic dredging includes the use of a pump, usually barge mounted, to move material in a slurry via pipeline (figure 5). The pipeline normally discharges its contents into a dewatering area where sediments would settle out and clean water would discharge. Settled-out and dewatered material would then be loaded into trucks and hauled to a disposal site.



Plain suction dredge



Cutter dredge

Figure 5. Examples of hydraulic dredges.

Both mechanical and hydraulic dredges can be very practical and efficient depending on the material type, depth, and location of the material's destination. Hydraulic dredging is very cost effective if the sediment is being placed nearby and there is an area large enough to

dewater the slurry and return the clean water. Mechanical dredging is quick and accurate but is often limited to reach from the shoreline or barge.

The Corps projected in its February 2006 *St. Paul Harbor, General Reevaluation Report Environmental Assessment and Finding of No Significant Impact* (USACE, 2006) that about 28,000 cubic yards of dredged material (14,000 cubic yards at a 10-year interval) would be disposed of during a 20-year period. However, the Corps anticipates dredging approximately 85,000 cubic yards of material that is composed of well-to-poorly sorted sand/cobble, with less than 15 percent fines. Fines are characterized as sediments passing through a No. 230-mesh sieve. Because of its predominantly coarse-grained nature, the dredged material has little retention capacity for contaminants. However, because diesel fuel is heavily used and stored at the harbor, the Corps and Alaska Department of Conservation (ADEC) agree that a limited number of sediment samples should be collected and analyzed for diesel range organics (DRO) and metals to validate the assumption that sediment to be dredged meets ADEC sediment quality criteria (see Section 6.2.10 Water and Sediment Quality).

4.1.3 Dredged Material Disposal

The Corps uses a variety of options to dispose of dredged material, including placing sediment in open water, the near-shore environment, or for contaminated sediment, in a confined disposal facility. Dredged material also has beneficial use applications as well as disposal on uplands.

Several laws and regulations govern the process of oceanic disposal of dredged material. These statutes and regulations have been designed to protect the marine environment and human health**.** However, the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA) is the principal statute regulating all ocean disposal, including dredged material. Ocean disposal would require barging dredged material to an environmentally acceptable site and offloading it into the marine environment where it would settle on the ocean bottom.

The Corps considered dredged material open water disposal in its February 2006 *St. Paul Harbor, General Reevaluation Report Environmental Assessment and Finding of No Significant Impact* (USACE, 2006). Approximately 400,000 cubic yards of dredged material was proposed for disposal. Local, State and Federal resource agencies and commercial fisheries representatives collectively identified an environmentally acceptable disposal site on the north side of St. Paul Island, approximately 20 nautical miles (one way) from St. Paul Harbor.

CFR 40 Part 230, Clean Water Act, Section 404(b)(1) provides guidelines for specification of disposal sites for dredged or fill material in the near-shore environment/waters of the United States. Unless authorized, no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge that would have a less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. Similar to disposing of dredged material in the open ocean, dredged material would be placed on a barge, transported to a near-shore (albeit undefined) area, and bulldozed/placed off the barge into the intertidal/littoral zone.

A confined disposal facility (CDF) is generally associated with an area specifically designed for the containment of contaminated dredged material that provides control of potential releases of contaminants to the environment. CDFs are constructed on land, in water as islands or near-shore using the shoreline as one side of the containment facility.

The beneficial uses of dredged material include, but are not limited to: (1) creating wetland and island habitat, (2) providing material for beach nourishment and shoreline protection, and (3) providing fill for constructing uplands. The Corps recommended in its February 2006 *St. Paul Harbor, General Reevaluation Report Environmental Assessment and Finding of No Significant Impact* (USACE, 2006) that approximately 150,000 cubic yards be stockpiled for use by the non-Federal sponsor. The State of Alaska claims all material in the State-owned intertidal and subtidal areas; however, the City of St. Paul and the Alaska Department of Natural Resources (ADNR) agreed that the dredged material would be used for public purposes. The non-Federal sponsor has since developed the stockpile area near the small boat harbor as the services area for harbor operations and agreed that material from future maintenance dredging operations would have the option to stockpile dredged material on non-Federal sponsor property and make it available for public purposes.

When disposing of dredged sediment in open-water is unacceptable or when suitable open water disposal locations are not available, upland disposal is usually considered. If the sediment meets clean fill criteria, then disposal locations are only limited to areas outside sensitive hydrologic and biological areas such as wetlands, fishery habitat, and migratory bird nesting habitat. If the material does not meet the clean fill criteria, it may be placed at an upland site for disposal under an ADEC solid waste disposal permit.

The Corps believes the dredged material will have little retention capacity for contaminants because (1) the harbor has high-energy oceanographic processes that continually import clean sediments into the harbor basin and flush the harbor with each tidal exchange, (2) there are few contaminant sources in the harbor vicinity, and (3) the sediment is of a coarse-grained nature. However, as previously stated, the Corps and the ADEC have agreed that a limited number of sediment samples should be collected and analyzed for DRO to validate the assumption that the sediment to be dredged meets ADEC sediment quality criteria.

The City of St. Paul has identified the following sites on the island as potential areas for the disposal of dredged material (figure 6):

- Small Boat Harbor: Harbor Subdivision, Block 4, Lot 2A Lot 3 and Lot 4. Plat 2013-19. Corps permitted fill of old Salt Lagoon entrance channel for future commercial development. Property Owner TDX Corporation.
- Public Works Lot: North Lukanin Hills Subdivision, Block 3, Lot 2. Plat 2013-20. Fill lot for future development by City of St Paul. Property Owner City of Saint Paul. Quitclaim 2013-000460-0 9/24/13.
- Public Works Lot: Kaminista Subdivision, Tract A. Plat 2013-26. Fill lot for future development by City of St Paul. Property Owner City of Saint Paul. Quitclaim 2013-000468-0 9/24/13.

- Kaminista Quarry: Sec 13, T35S, R132W. No plat. Correct site location for "star" shown on scan. Working rock quarry. Subsurface owner Aleut Corporation, Surface owner TDX Corporation. Some excess rock excavation from original harbor construction stockpiled there.
- City Landfill: Ataqan Subdivision. Plat 2001-006. Current landfill and stockpiled dredged material from previous harbor phases. Future development and use of materials on future projects by City of St. Paul. Property Owner City of Saint Paul. Quitclaim Book 53 Page 442 6/29/2001.

Figure 6. Potential dredged material disposal sites identified by the City of St. Paul.

4.1.4 Rock Sources

The Corps' policy is not to designate rock sources for its civil works projects and O&M activities. The selected construction contractor is responsible for (1) identifying its rock source, (2) ensuring that the rock material meets all the specified engineering specifications, (3) following environmental protection measures and stipulations, and (4) submitting a Quarry Development Plan (QDP) to the Corps for review. QDPs that identify rock sources

from an operating commercial quarry are not expected to receive an extensive NEPA review by the Corps and State and Federal resource agencies. If the construction contractor chooses to open a new quarry site, including a reclaimed site, the Corps will prepare an amended environmental assessment, in concert with State and Federal resource agencies, to determine the environmental impacts associated with developing and operating the subject quarry and to identify environmental protection measures and mitigation measures. NOTE: Rock used by contractors to construct previous Corps projects at St. Paul has come from existing quarries at St. Paul Island's Kaminista Quarry, St. George Island, Nome, and the State of Washington.

4.1.5 Scour Holes Repair

Scour holes in St. Paul Harbor represent areas where oceanographic processes (e.g. storm events and strong currents) have scoured away enough bottom sediment adjacent to rubble mound breakwaters to jeopardize their structural integrity. A common solution is to fill the scour hole with stone or other suitable material to a designed depth that would not interfere with navigation. Other potentially useful countermeasures include installing prefabricated scour blankets/mattresses, constructing on-site rock-filled scour mattresses using local rock sources, and designing and constructing additional rubble mound toe protection features.

4.1.6 Breakwater Repair

The only option to repair the damaged section of the detached breakwater is to barge construction equipment and source rock to the site. Machinery would move onto the breakwater and remove the damaged top layer of armor rock, sorting out the undersized rock from the suitable armor rock for reuse. This step involves re-contouring the core rock under-layer and adding material as needed. Armor rock of proper size from the existing breakwater would be carefully placed over the core rock material, with more armor rock added as needed. Undersized rock taken off the existing breakwater may be placed at the toe of the breakwater as additional protection from scouring or hauled to an upland site.

4.2 Recommended Plan

The Corps has chosen to construct the necessary navigation repairs at the St. Paul Harbor. Choosing the No Action alternative would adversely affect Federal interests in maintaining an important harbor-of-refuge for the bottom-fishing fleet in the Bering Sea and a harbor that provides crucial economic support for the remote community of St. Paul.

The Corps believes it is not feasible to dredge the shoaled-in entrance channels and sediment management area with a hydraulic dredge, as the shoaled areas have material too large to be dredged hydraulically and no nearby areas are available for constructing a dredged material dewatering facility. Mechanical equipment is more suitable for dredging St. Paul Harbor's large cobble and coarse-grained sand sediment, which would be placed into a hopper barge and allowed to be dewatered. The barge would travel to a harbor dock where the dredged material would be offloaded into trucks and transported for disposal. The Corps has chosen to use one or more of the City of St. Paul's identified dredged material disposal sites, as the stockpiled dredged material would be available for beneficial use by the public.

Because of St. Paul Harbor's high-energy oceanic environment, the use of prefabricated scour blankets/mattresses would not provide the flexibility the Corps requires to respond quickly to ever-changing site conditions. Therefore, the Corps has chosen to repair the scour hole in the small boat harbor's entrance channel by placing suitably sized rock in the depressions to a height that will not adversely affect navigation, while still providing effective protection to the adjacent breakwater.

However, the Corps has decided to follow a different approach to address the potential navigation hazards posed by the main harbor's entrance channel scour hole and the scour hole adjacent to the detached breakwater. A change in approach was required because (1) recent hydrologic surveys of the subject scour holes indicate that they are not increasing in size and in some areas, have decreased in depth, (2) the Corps could not guarantee that filling the main entrance channel scour hole depression would not pose a threat to navigation, (3) shallow depths in proximity to the detached breakwater prevent placing scour protection material from a barge, and (4) both sites are too exposed to St. Paul Island's high-energy wave environment, making working from a barge not safe or practical. Therefore, the Corps has decided not to fill the scour hole depressions. Instead, the Corps has decided that the base of the main breakwater and detached breakwater sections closest to the scour hole depressions would be adequately protected by reinforcing the base with additional toe rock. Additional quarry rock would be required to reinforce the toe of the main breakwater. For the detached breakwater, existing armor rock that meets specifications would be reused and supplemented with quarry rock. Armor rock that does not meet specifications would be removed during repairs and placed at the toe for scour protection. The Corps plans to survey the depth and area of each scour hole before construction. Based on the survey results, the Corps would determine whether the aforementioned scour protection measures were still warranted and practical, and if so, final rock quantities needed for reinforcing the toe of the breakwaters would be calculated.

In summary, the Corps proposes to (figure 7):

- Reuse as much as 9,000 cubic yards of existing armor rock and supplement with new armor rock, to construct detached breakwater repairs. Approximately 5,000 cubic yards of detached breakwater rock not suitable for reuse would be placed at the toe of the breakwater, providing additional protection from the adjacent scour hole.
- Construct main breakwater scour hole protection by placing 15,700 cubic yards of graded riprap at the toe of the main breakwater.
- Construct small boat harbor west breakwater scour hole protection using approximately 1,530 cubic yards of graded riprap.
- Mechanically dredge 51,300 cubic yards of cobble/coarse-grained material from the main entrance channel and place dredged material at one or more sites identified by the City of St. Paul.

Figure 7. Recommended plan: O&M activities, St. Paul Harbor, Alaska.

- Mechanically dredge 42,100 cubic yards of cobble/coarse-grained material from the Sediment Management Area and place the dredged material at one or more sites identified by the City of St. Paul.
- Mechanically dredge 315 cubic yards of cobble/coarse-grained material from the Small Boat Harbor entrance channel and place the dredged material at one or more sites identified by the City of St. Paul.

5.0 EXISTING CONDITIONS AND ENVIRONMENT

Collectively, the Corps' St. Paul Harbor NEPA reports have presented a comprehensive and copious amount of information describing St. Paul Island's existing conditions and environment. The Corps' February 2006 report, *St. Paul Harbor, General Reevaluation Report Environmental Assessment and Finding of No Significant Impact* (USACE, 2006), contains the most current information about the island's fish and wildlife resources, is incorporated by reference, and is available at the following Corps web site: http://www.poa.usace.army.mil/Library/ReportsandStudies.aspx, listed under the "Archived Published Documents" heading. The sections that follow summarize and update previously reported information about St. Paul Island's physical environment and biological resources of most concern.

5.1 Physical Setting

St. Paul is the northernmost and largest of the Pribilof Islands. The climate is maritime, resulting in considerable cloudiness, heavy fog, high humidity, and daily temperature fluctuations. Maritime influence in the Pribilofs keeps seasonal temperatures mild and daily variations to a minimum. Summertime temperatures are low, with the highest recorded temperature being 64 °F. Precipitation on St. Paul Island is minimal, with an average annual rainfall of about 24 inches. The island area has periods of high wind throughout the year. Frequent storms occur from October to April, often accompanied by gale-force winds to produce blizzard conditions.

Tide levels on St. Paul Island, referenced to mean lower low water, are:

Highest Tide (estimated)	+6.0
Mean Higher High Water	+3.2
Mean High Water	+3.0
Mean Sea Level)	+2.0
Mean Low Water	+1.0
Mean Lower Low Water	0.0
Lowest Tide (estimated)	-2.5

Currents within the harbor are dominated by storm surge and wave setup, and wave heights are greatly modified by the breakwaters and spending beaches. Wave energy enters through both the east and west harbor entrances, with the dominant energy entering through the west entrance (the navigation channel).

The combination of oceanographic processes and neighboring land use practices influence St. Paul Harbor's water quality. The area around the harbor contains fish processing facilities, fuel docks, support services for the commercial fishing industry, and the small boat harbor. The fish processors obtain their water from Village Cove and discharge their wastes through a pipeline where it daylights about 1,000 feet off shore at a water depth of -26 feet MLLW. Commercial fishing boats and users of the small boat harbor are potential sources of oil pollution via refueling operations, discharging oily bilge wastes, and outboard motor use. Fuel docks distribute diesel fuel only; no bunker fuel is available. To date, no minor-to-major fuel spills (i.e. less than 240 barrels to greater than 2,400 barrels) have occurred in St. Paul Harbor.

Tide-generated flow and wave driven currents through the harbor into and out of Salt Lagoon help to maintain St. Paul Harbor's water quality. Subsequently, St. Paul Harbor's waters are mostly exchanged in one tidal cycle. The dominant transport mechanism for the harbor's coarse sand and boulders sediment is the current generated by storm surges. Wave generated currents under more minor storm conditions are also capable of moving sand along the shoreline. Historically, sediment accumulation in the harbor has been limited, but when it did occur, the accumulations were in the Salt Lagoon entrance channel.

5.2 Biological Environment

St. Paul Island and its surrounding area support a wide variety of fish and wildlife resources and sensitive habitat (figure 8). The island's seas cliffs support large numbers of breeding seabirds and the surrounding marine waters support numerous species of marine mammals. The sections that follow describe those categories of fish and wildlife resources more likely to be impacted by the proposed O&M activities at St. Paul Harbor: subtidal benthic habitat, threatened and endangered species, marine mammals, avifauna, and essential fish habitat.

5.2.1 Subtidal Benthic Habitat

The quality of all subtidal areas within the proposed footprint of the proposed O&M activities have habitat previously altered by various navigation improvement projects, most recently by construction of the small boat harbor in 2010. Those areas where the entrance channel has shoaled in and where scour holes have developed are not likely to have well established benthic communities because of the high-energy oceanic processes that form them; i.e. the substrate is neither sedentary nor stable enough to allow dense communities of infauna to become established in such a short time. Those communities that somehow were capable of establishing themselves probably include polychaete worms, crustaceans (crabs and shrimp), and echinoderms. Communities of mollusk, however, would not have had enough time to reestablish themselves to any large degree.

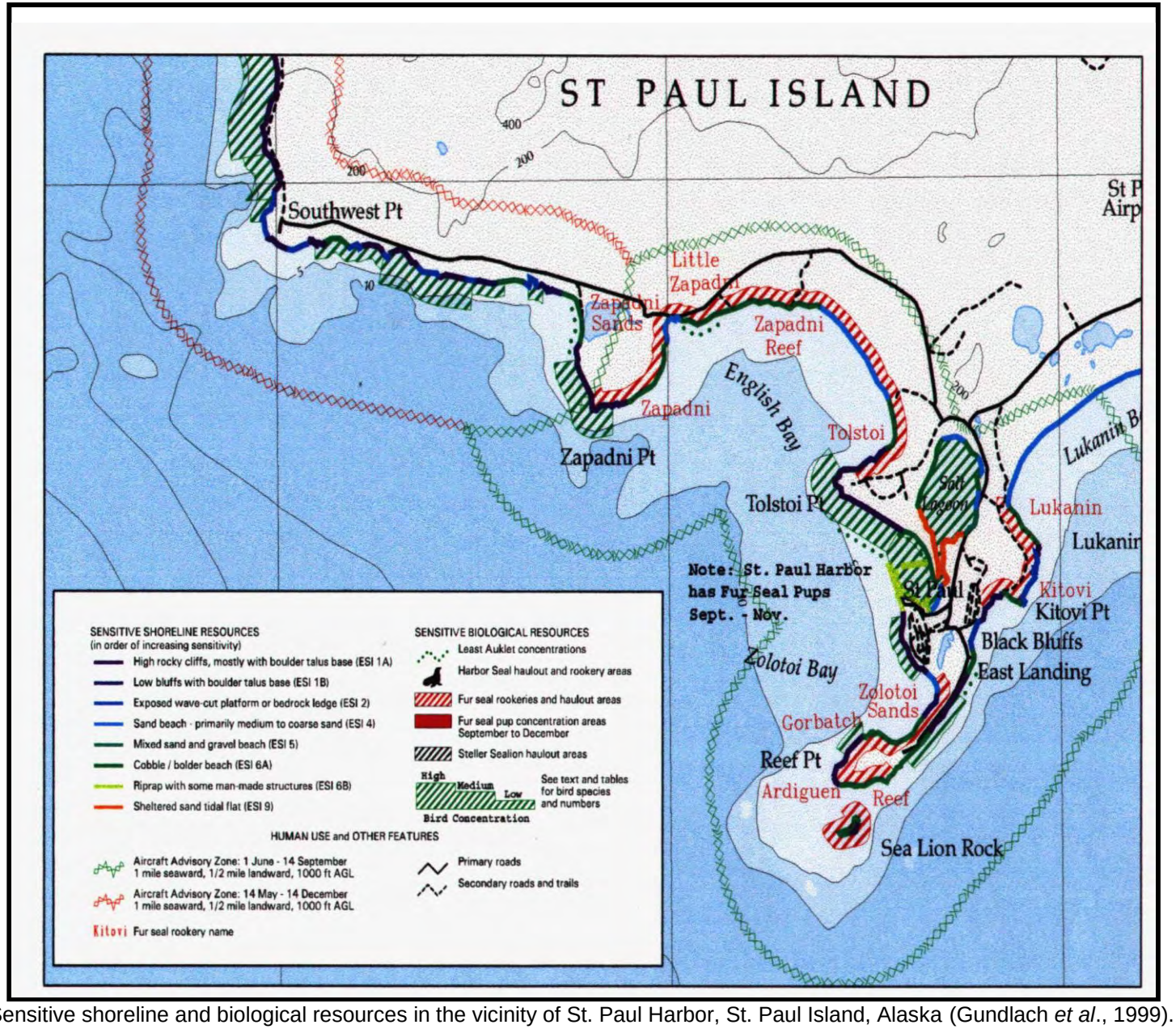


Figure 8. Sensitive shoreline and biological resources in the vicinity of St. Paul Harbor, St. Paul Island, Alaska (Gundlach *et al*., 1999).

5.2.2 Threatened and Endangered Species

The following Endangered Species Act (ESA) threatened and endangered species have reported ranges and/or critical habitat within the vicinity of St. Paul Island:

USFWS-managed species
(http://ecos.fws.gov/tess_public/reports/species-listed-by-state-report?state=AK&status=listed)

- Short-tailed albatross (*Phoebastrai(=diomedea) albatrus*): Endangered
  No critical habitat rules have been published.
- Steller's eider (*Polysticia stelleri*), Alaska breeding population: Threatened
  Designated critical habitat does not exist in the St. Paul Harbor area.
  May be present in small to moderate numbers near the Pribilofs in winter and spring.
- Spectacled eider (*Somateria fischeri*): Threatened
  May be present in small numbers near the Pribilofs during the mid-to-late winter.
  Designated critical habitat does not exist in the St. Paul Harbor area.
- Northern sea otter (*Enhydralutris kenyoni*), Southwest Alaska Distinct Population Segment: Threatened
  Designated critical habitat does not exist in the St. Paul Harbor area.
- Eskimo curlew (*Numenius borealis*): Endangered
  No critical habitat rules have been published.

National Marine Fisheries Service (NMFS)-managed species.
(http://www.nmfs.noaa.gov/pr/species/esa/)

- Steller Sea Lion (*Eumetopias jubatus*) Western Distinct Population Segment: Endangered
  Critical Habitat: Northeast Point and Sea Lion Rock. A 20-nautical-mile critical habitat aquatic zone surrounds St. Paul Island, and some 10 miles northeast of St. Paul is a rookery on Walrus Island.
- Humpback Whale (*Megaptera novaeangliae*): Endangered
  No critical habitat has been promulgated by the NMFS for this species.
- North Pacific Right Whale (*Eubalaena japonica*): Endangered
  Critical habitat does not exist around St. Paul Harbor.
- Western North Pacific Gray Whale (*Eschrichtius robustus*): Endangered
  No critical habitat has been promulgated by the NMFS for this species.
- Fin Whale (*Balaenoptera physalus*): Endangered
  No critical habitat has been promulgated by the NMFS for this species.
- Sperm Whale (*Physeter catodon* (=*macrocephalus*)]: Endangered
  No critical habitat has been promulgated by the NMFS for this species.

An Alaska Federal court vacated a NMFS rule declaring a population (Beringia Distinct Population Segment) of bearded seals (*Erignathus barbatus*) in the state as "threatened" under the ESA. Should the ruling be successfully appealed (albeit undefined as to if and/or when), the Corps would have to include the species in future St. Paul Harbor Section 7 consultations.

5.2.3 Marine Mammals

All marine mammals are protected under the Marine Mammal Protection Act (MMPA); some marine mammals may also be designated as "depleted" under the MMPA. Non-ESA marine mammals having St. Paul Island within their range are listed below (http://www.nmfs.noaa.gov/pr/species/mammals):

- Harbor seal (*Phoca* vitulina)
- Ringed seal (*Phoca hispida*)
- Spotted seal (*Phoca largha*)
- Dall's porpoise (*Phocoenoides dalli*)
- Harbor purpose (*Phocoena phocoena*)
- Pacific walrus (*Odobenus rosmarus divergens*)
- Northern fur seal (*Callorhinus ursinus*): Pribilof Island/Eastern Pacific stock, Depleted

The Northern fur seal was afforded protection in United States waters under the Fur Seal Treaty of 1911 and was designated as "depleted" under the MMPA in 1986. The NMFS issued a "Conservation Plan for the Eastern Pacific Stock of Northern Fur Seals" in 2007. The conservation plan focuses on identifying and lessening impacts from human related threats such as marine debris and incidental take in commercial fishing gear.

Co-management agreements of Northern fur seals with the tribal governments of St. Paul and St. George (Pribilof Islands), especially regarding subsistence harvest, are another aspect of NMFS's conservation plan. Through this arrangement, the United States and tribal governments are implementing programs that promote full utilization of edible and inedible parts of Northern fur seals, promote community outreach and education efforts, monitor shorelines and rookeries through the Island Sentinel Program, and monitor and remove marine debris. The tribal governments of St. Paul and St. George also maintain and repair research infrastructure on fur seal rookeries.

The Northern fur seal has habitat close to the Corps' project area. Although no fur seal rookeries or haul-out areas exist within the project area, fur seal pups and juveniles are known to occupy areas around the Salt Lagoon outlet beginning in late-August into December (figure 8).

Male fur seals establish territories early in the breeding season in May. Female fur seals arrive around mid-June to early July and give birth to one pup. The peak of pupping is usually in early July. During the breeding season, females alternate between feeding at sea and nursing on shore. While females are foraging, pups congregate into "puppy pods." Pups are weaned at 4 to 5 months (late October-early November). When the breeding season ends, animals travel south and remain "pelagic" for the winter migration period (from October-November to May-June).

5.2.4 Avifauna

Avifauna is a collective term for all birds in a particular region, in this case, St. Paul Island. No fewer than 287 species of birds have been recorded on the island. Eleven species return to the Pribilof Islands annually to nest and rear young. Salt Lagoon, the only salt estuary in the Bering Sea, is important habitat for migrating sandpipers and turnstones as well as migratory Eurasian species. Harlequin ducks are present year round and frequent the Salt Lagoon entrance channel. Several small ponds near Salt Lagoon occasionally harbor small numbers of waterfowl, including northern pintail, mallards, and green-winged teal.

A least auklet colony of several thousand birds extends the length of Village Cove's Boulder Beach in proximity to the Corps' project area (figure 8). Nearly half of the auklets on Boulder Beach use the beach enclosed by the detached breakwaters and harbor.

St. Paul Island, like all of the Pribilof Islands, is part of the Alaska Maritime National Wildlife Refuge. Its seabird cliffs were purchased in 1982 for inclusion in the refuge. The island has also been designated as an Important Bird Area (IBA). An IBA is an area internationally recognized as being globally important habitat for the conservation of bird populations. In the U.S. the program is administered by the National Audubon Society.

5.2.5 Essential Fish Habitat Resources

Essential fish habitat (EFH) means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Any Federal agency taking an action that could adversely affect EFH by reducing the quantity or quality of habitat must coordinate with the NMFS to identify impacts and steps for conserving the habitat and reducing the impact of the action.

Seven fish species have EFH in Village Cove: walleye pollock, Pacific cod, yellowfin sole, rock sole, sculpin, red king crab and blue king crab (table 1). No freshwater EFH (anadromous waters) exist in the Corps' project area. Village Cove's water depths range from 12 to 32 feet, which fall into EFH's "life history requirements" category of "1-50 meters water depth." Village Cove also has the "sand/gravel substrate, life history requirement" for supporting different life stages.

Table 1. Essential fish habitat in and around the St. Paul Island Harbor. (A-adult, J-juvenile, LJ-late juvenile, M-mature, E-egg, EJ-egg and juvenile, L-larvae) (USACE, 2006).

Species	Life Stage	Known Concentrations	Present	Location						Substrate					Present at Village Cove
				Intertidal	1 - 50 m	50 - 100 M	>100 M	Bay/Esturine	Not Known	Mud/Clay/Silt	Sand/Gravel	> Cobble	Not Applicable	Vegetation	
Walleye Pollock	A	X					X								X
	J		X		X	X	X								
	L		X				X								
	E		X				X								
Pacific Cod	A	X			X	X	X			X	X				X
	LJ	X			X	X	X			X	X				
Yellowfin Sole	A	X		X	X	X	X	X			X				X
	LJ	X			X	X	X	X			X				
Greenland Turbot	A		X				X			X	X				
	LJ		X		X	X	X			X	X				
Arrowtooth Flounder	A		X		X	X	X	X		X	X				
	LJ		X		X	X	X			X	X				
Rock Sole	A	X			X	X	X				X				X
	LJ	X			X	X	X	X			X				
Alaska Plaice	A	X			X	X				X	X				
	J	X			X	X				X	X				
Sculpins	A		X	X	X	X	X			X	X				X
	J		X	X	X	X	X								X
Skates	A		X			X	X								
	J		X			X	X								
Red King Crab	M		X		X	X	X			X	X	X			
	LJ		X	X	X	X	X			X	X	X			
	EJ		X	X	X	X	X								
	L		X												X
	E		X	X	X	X	X	X		X	X	X			
Blue King Crab	M	X			X	X	X			X	X	X			
	LJ	X			X	X	X			X	X	X			
	EJ		X	X	X	X									X
	L		X							X	X	X			X
	E	X			X	X									X
Tanner Crab	M	X			X	X	X			X	X	X			
	LJ	X			X	X	X			X	X	X			
	EJ		X		X	X	X			X	X	X			
	L		X												
	E	X			X	X	X			X	X	X			
Snow Crab	M	X			X	X	X			X	X	X			
	LJ	X			X	X	X			X	X	X			
	EJ		X		X	X	X			X	X	X			
	L		X												
	E	X			X	X	X			X	X	X			

- Walleye pollock: adults more likely in deeper water outside Village Cove but juveniles likely use the area pelagically and feed on the bottom.

- Pacific cod: adults more likely in deeper water outside Village Cove but late juveniles likely use the area pelagically and feed on the bottom.

- Yellowfin sole: adults and late juveniles exhibit a benthic lifestyle in Village Cove, where they spawn and feed on the bottom.

- Rock sole: adults and late juveniles exhibit a benthic lifestyle in Village Cove, where they spawn and feed on the bottom.

- Sculpin: adults and late juveniles inhabit a wide range of habitats but are mainly associated with a benthic lifestyle and a sandy/rocky substrate, which Village Cove has.

- Red king crab: Shallow inshore areas (less than 50 meters) support mating and molting individuals. Larvae generally occupy the upper 30 meters of the water column. Village Cove's shallow depth (5 meters and less) is poor habitat for supporting red crab life stages.

- Blue king crab: Shallow inshore areas (less than 50 meters) support mating and molting individuals. Larvae generally occupy the upper 30 meters of the water column. Village Cove's shallow depth (5 meters and less) is poor habitat for supporting red crab life stages.

No NMFS-designated "Habitat Areas of Particular Concern (HAPC)" are within or in proximity to the Corps' project area. HAPCs are discrete subsets of EFH that provide extremely important ecological functions or are especially vulnerable to degradation.

No NMFS-designated "EFH Area(s) Protected from Fishing" (EAPF) are within or in proximity to the Corps' project area. An EAPF is an area in which the NMFS and the regional fishery management council have used EFH provisions, established in Section 303(a)(7) of the Magnuson-Stevens Fishery Conservation and Management Act, to prevent or mitigate adverse effects from fishing on EFH.

5.3 Historic and Cultural Environment

St. Paul Island has the largest Aleut community in the United States, one of the U.S. government's officially recognized Native American tribal entities of Alaska. The City of St. Paul was incorporated in 1971 under the laws of the State of Alaska, and its current population is approximately 500 people. The city limits consist of the entirety of St. Paul Island and three geographical miles beyond the island into the Bering Sea. The island is accessible only by sea and air, with most equipment, supplies, and freight arriving by vessels from Seattle, Washington or Dutch Harbor, Alaska. The local offices for the Tanadgusix Village Corporation, the Aleut Community of St. Paul Island, Trident (an onshore fish processing plant), the National Weather Service Station, and the National Oceanic and Atmospheric Administration are located in the city.

Dwindling fur seal populations and provisions in international fur seal treaties prompted the Federal government to suspend commercial sealing at St. George in 1972 and at St. Paul in 1984. The primary economy on St. Paul then shifted to fishing and tourism, along with investments made by the village corporation, founded under the Alaska Native Claims Settlement Act (ANCSA). Harbor improvements continued at St. Paul in an effort to develop a fishing service industry, yielding primarily Opilio crab and halibut, both of which are processed on the island.

Examination of the Alaska Historic Resources Survey (AHRS) database revealed one National Historic Landmark within the project area of potential effect (APE): the Seal Island Historic District (XPI-002). The Seal Island Historic District met the requirements of eligibility Criterion A, that is, it is associated with events that made a significant contribution to the broad patterns of history. No known prehistoric sites are identified within the project's APE. XPI-002 is identified as being a rookery for fur seals and part of the historic fur seal hunting grounds. XPI-002 includes the beaches of St. Paul and St. George islands. The National Historic Landmark is historically significant because of its association with historic Aleut subsistence practices and because of its association with the historic Russian, British, French, Spanish, and American fur hunting trade. Subsistence fur seal harvesting by Alaska Natives takes place to this day; however, quotas are strongly regulated.

6.0 ENVIRONMENTAL CONSEQUENCES

The proposed O&M activities would occur in St. Paul Harbor's Village Cove area where previously constructed navigation improvement projects (e.g. construction of breakwaters, a spending beach and circulation berm, and dredging entrance channels and a mooring area) have occurred. The navigation projects have collectively included the preparation of an EIS in 1982 for the original main breakwater project and preparing numerous EAs and FONSIs between 1995 and 2006 for subsequent harbor improvements, which included constructing the small boat harbor in 2010. Existing harbor operations include managing the small boat harbor, the commercial fishing industry, dockside activities, fish processing facilities, and fuel docks.

The Corps used a broad approach to evaluate the potential impacts of the aforementioned navigation projects because of the projects' large scope of construction activities, large project footprints, and the potential to cause adverse and sometimes significant impacts to the environment. Comparatively, the scope of the proposed O&M activities is much smaller and confined to existing structures/navigation features. This EA, therefore, used a narrower approach to evaluate the potential impacts of the proposed O&M activities on fish and wildlife resources of primary concern and other pertinent elements (socio-economic and cultural resources; water, air, and sediment quality; oil spills, etc.).

6.1 No Action

The impacts of not performing O&M activities at St. Paul Island would not be immediately apparent but would increase in severity over a period of several years. Unless the State of Alaska and/or local interests step in to take responsibility, the harbor would gradually deteriorate in usefulness, resulting in adverse social and economic impacts in the area. Navigational safety would likewise be degraded, increasing the risk of injury to mariners. Ultimately, the no-action alternative would negate the beneficial derivatives of the harbor and sizable Federal investment in the project.

Environmentally, if not maintained, the mitigation features constructed to facilitate the Salt Lagoon's flushing action (e.g. sediment management area and small detached breakwater), would deteriorate, and over time, the lagoon's fish and wildlife resources would be adversely

impacted by a degradation in water quality. However, no O&M activities in St. Paul Harbor would totally avoid impacting benthic habitat within areas proposed for maintenance dredging, fur seals transiting through the area, breakwater-related EFH, and other resources discussed in the sections that follow.

6.2 Recommended Plan

6.2.1 Subtidal Benthic Habitat

Proposed maintenance dredging activities in the main entrance channel would remove approximately 52,000 cubic yards of shoaled-in sediment, affecting 6.6 acres (288,000 square feet) of benthic habitat. Approximately 42,000 cubic yards of accumulated material, affecting 4.6 acres (199,000 square feet) of benthic habitat, would be dredged out of the sediment management area. A smaller amount (315 cubic yards) of shoaled-in sediment, covering 0.1acre (4,500 square feet), would be dredged from the small boat harbor entrance channel. Approximately 1.1 acres (48,250 square feet) of benthic habitat at the toe of the main breakwater would receive 15,700 cubic yards of graded riprap as protection from an adjacent developing scour hole. Approximately 0.3 acre (13,100 square feet) of benthic habitat in a scour hole adjacent to the small boat harbor's west breakwater would be filled with 1,530 cubic yards of graded riprap.

All 12.7 acres of the subtidal benthic habitat proposed for maintenance dredging, scour hole repair, and breakwater repair are in areas previously impacted by similar activities. Originally, undisturbed benthic habitat was unavoidably lost when various harbor navigation features began to be constructed in the 1980s. The Corps reports that between 1998 and 2002, local interests have dredged approximately 200,000 cubic yards from Village Cove. The resultant benthic habitat quality has probably decreased since then due to physical changes in circulation and sedimentation patterns.

The benthic infauna and epifauna in the areas to be maintenance dredged are accustomed to an extensive amount of loose shifting sediment; however, dredging would mechanically and unavoidably cause mortalities. The Corps believes that within 4 years, a similar benthic community would become established in the dredged areas, although maybe not with the same distribution or abundance. Benthic communities, especially epifauna species, would quickly replace soft-substrate-associated benthic communities where armor, base, and/or toe rock is placed on soft-substrate within a scour hole and at the base of breakwaters.

6.2.2 Threatened and Endangered Species

ESA threatened and endangered species coordination occurred with the USFWS and NMFS for the proposed O&M activities in St. Paul Harbor (See Appendix B – Agency Coordination).

Although several species of endangered whales are present in the Bering Sea, none are known to inhabit the near shore waters of Village Cove. The threatened Steller sea lion hauls out on Walrus Island, some 10 nautical miles northeast of St. Paul Island. Steller sea lion critical habitat (50 CFR 226.202) includes a 20-nautical-mile buffer zone around all major haul outs and rookeries, as well as associated terrestrial, air and aquatic zones, and three

large offshore foraging areas. St. Paul Island is within the 20-nautical-mile buffer zone around Walrus Island. According to the St. Paul Harbormaster (personal communication, Jason Merculief), Steller sea lions and Northern sea otters do not inhabit Village Cove; however, in reportedly rare circumstances, a Steller sea lion has been observed feeding in the harbor area among transiting vessels.

Endangered Steller's eiders have been observed in the Pribilof Islands area but no sightings of the species have been recorded in the Village Cove area. The short-tailed albatross and Eskimo curlew ranges include the Pribilof Islands but, as the Steller's eider, no individuals have been reported in the Village Cove area. The USFWS's "Observer Protocols for Pile Driving, Dredging and Placement of Fill, dated August 7, 2012" provides procedures for protecting Northern sea otters and Steller's eiders from being adversely impacted from such activities.

The Corps has determined that its O&M activities at St. Paul Island Harbor would have no effect on USFWS and NMFS listed or proposed-for-listing threatened or endangered species (See Section 5.2.2 and Appendix B – Agency Coordination), or destroy or adversely modify existing or proposed critical habitat, as the Corps' action area (i.e. Village Cove) is not inhabited by the subject species or has any designated critical habitat.

6.2.3 Marine Mammals

Marine mammal coordination occurred with the NMFS for the proposed O&M activities in St. Paul Harbor (See Appendix B – Agency Coordination). No USFWS non-ESA-managed marine mammals occur in St. Paul Harbor. Any marine mammals in the Village Cove area could be temporarily and indirectly disturbed due to construction-generated turbidity, construction vessel traffic, and construction noise; however, the potential impacts are not expected to produce any long-term harm because marine mammals have the ability to avoid such perturbations.

Two marine mammals (harbor and fur seals) regularly occur in the Village Cove area and are commonly exposed to harbor-related activities. The St. Paul Harbormaster (personal communication, Jason Merculief) reports approximately four harbor seals inhabit the harbor area year round and swim among transiting fishing boats and other vessels. St. Paul Island's northern fur seal population, designated as "depleted" under the MMPA, regularly transits through Village Cove and Salt Lagoon entrance channel areas between late August and October when juvenile fur seals and pups return to haul out on the coast. Unless the Corps concludes its O&M activities before juvenile fur seals and pups arrive in late August, a MMPA-related "harassment take" (take) violation would likely occur.

Take is defined under the MMPA as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. 1362) and further defined by regulation (50 CFR 216.3) as "to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. The MMPA, with certain exceptions permitted by NMFS and USFWS, allows the take of marine mammals in U.S. waters.

Under the 1994 Amendments to the MMPA, harassment is statutorily defined as any act of pursuit, torment, or annoyance that has the potential to: (1) unintentionally injure a marine mammal or marine mammal stock in the wild (Level A Harassment); or, (2) has the potential to unintentionally disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B Harassment).

Under Section 109 of the MMPA, the NMFS has an official government-to-government relationship between and agreement with the Tribal Government of St. Paul (TGSNP) regarding the management of marine mammals (including northern fur seals) taken and used for subsistence purposes by Alaskan Natives. Thus, the NMFS is obligated to consult and involve the TGSNP regarding matters such as the Corps' O&M activities at the harbor that may affect the local marine mammal populations.

The Corps believes that its O&M activities would be conducted over two or more construction seasons and could be successfully conducted each construction year outside the late-August/September 1 – November 1 timeframe. However, if the Corps believes it necessary to perform O&M activities within the subject timeframe, three options exist:

Option 1: Develop a fur seal monitoring program with the NMFS so that a temporary shutdown of O&M activities would occur until such time a fur seal(s) exits a predetermined exclusion zone for a specified time period.

Option 2: Apply for an incidental harassment authorization from NMFS, which if granted, would permit the Corps to unintentionally take, via harassment, a predetermined number of fur seals.

Option 3: Proceed with the subject O&M activities within the late-August/September 1 – November 1 timeframe, hoping to avoid a MMPA-related take of fur seals.

6.2.4 Avifauna

No O&M activities would occur on Village Cove's Boulder Beach where half the least auklet population resides; however, vessel activity and noise associated with dredging the sediment management area has the potential to sporadically disturb the nearby colony. The Corps' does not, however, expect any of its operations to take migratory birds or any sea/shore birds inhabiting St. Paul Harbor or surrounding Village Cove area. Per 50 CFR 10.12, take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.

6.2.5 Essential Fish Habitat Assessment

Maintenance dredging-generated turbidity would have a short-term impact on Village Cove's EFH, as plumes of suspended sediment would temporarily displace individuals from using affected open water areas and as settleable solids accumulate on benthic habitat. The EFH substrate remaining after dredging would be the same type of EFH substrate dredged. After

dredging, therefore, adjacent benthic communities of similar composition, distribution, and abundance would be capable of expanding into the affected area.

Approximately 62,000 cubic yards of rock, used to protect St. Paul Harbor's rubble mound breakwaters from developing scour holes, would replace approximately 1.5 acres of "sand and gravel EFH" which is not in limited supply in Village Cove or nearby subtidal areas. The additional rocky-substrate would provide additional protective habitat for juvenile and larval EFH species and other fishery resources (e.g. invertebrates), as well as provide points of attachment for marine algae and kelp.

Vessels associated with the Corps' O&M activities use fuels and lubricants and are potential sources of spills into Village Cove's EFH environment. The Corps' contractor would be required to prepare a spill prevention and response plan and have appropriate spill response materials at the work site.

Overall, the Corps' O&M activities at St. Paul Harbor would result in alterations of EFH for the following species: walleye Pollock, Pacific cod, yellowfin sole, rock sole, sculpin, red king crab, and blue king crab. Rocky EFH substrate would replace soft-bottom EFH substrate when existing rubble mound breakwaters are reinforced with additional armor, base, and toe rock. Therefore, the Corps believes that its project may affect, but is not likely to adversely affect, EFH and EFH-managed species/species complexes for Bering Sea/Aleutian Islands Groundfish and Bering Sea/Aleutian Islands king and Tanner crabs.

6.2.6 Historic and Cultural Environment

The Corps' proposed O&M activities are occurring in areas already heavily used and disturbed by past construction of the existing breakwater and associated harbor facilities. Potential borrow sites on the island have been used for past harbor construction activities and are utilized by the community of St. Paul outside this proposed project's undertaking. The Corps' project is within the boundaries of XPI-002, a National Historic Landmark eligible for the National Register under Criterion A. The undertaking is taking place in an area already on the NHL that is heavily modified by dredging and tidal action, heavily built up by existing dock and harbor facilities constructed in 2002, and includes existing roads and barrow source locations.

The Corps has determined that the proposed project's actions would not further diminish the property's location, design, setting, materials, workmanship, feeling, or association as the undertaking would take place on previously modified and disturbed surfaces. Following 36 CFR 800.4(d)(1), the Corps has sought and received the State of Alaska Preservation Officer's concurrence in its determination, i.e., the Corp's proposed St. Paul Harbor O&M activities would result in no adverse effect to XPI-002. This assessment is based on past harbor improvement work within the same "area of potential effect" and is consistent with previous assessments and concurrences concerning past construction and navigational improvements at the St. Paul Harbor (See Appendix B – Agency Coordination).

The Corps does not believe that noise from construction activities would result in deflection of subsistence resources such as marine mammals, fish, and waterfowl from traditional hunting and harvesting areas, as the harbor area and Village Cove are not known for such use.

6.2.7 Invasive Species

The Pribilof Islands are rat free. Introducing rats to St. Paul Island would cause severe adverse impacts to seabird populations throughout the island. Rats are capable of climbing seabird nesting cliffs, destroying the nests, and eating the eggs. Rats could also maneuver through the small voids on the Village Cove boulder spit where least auklets nest. There could be a potential for rats to enter St. Paul via vessels transporting construction equipment to the island.

In 2013, the USFWS provided the Aleut Community of St. Paul Island a Tribal Wildlife Grant to fund the Invasive Rodent Prevention Program on St. Paul and Pribilof Islands. The City of St. Paul maintains rat prevention stations throughout the harbor and other areas on the island (airport, landfill, etc.). St. Paul's harbormaster has authority to refuse entrance to any vessel known or suspected to have rats onboard. The port's "rat-free harbor ordinance" also bans rat-infested ships from coming closer than 3 miles to the harbor.

6.2.8 Air Quality

The Alaska Department of Environmental Conservation's Air Quality Program (18 AAC 50, Air Quality Control, as amended through February 28, 2015) protects the Alaska environment by ensuring that air emissions from a variety of sources in the state do not create unhealthy air. To identify an area by its air quality, all geographic areas in the state are designated by the Federal administrator as "attainment," "nonattainment," or "unclassifiable." An area is designated as being in "attainment" for a particular air pollutant if its air quality does not exceed the ambient air quality standard for that air pollutant. If air quality exceeds the ambient standard for a particular air pollutant, then that area is designated as being in "nonattainment" for that air pollutant. If there is insufficient information to classify an area as being in attainment or nonattainment for a particular air pollutant, then the area is designated "unclassifiable" for that air pollutant. St. Paul Harbor is not currently in a nonattainment area or maintenance area for air quality control under the Clean Air Act.

The Alaska Air Quality Control Plan addresses the Federal rules for protection of visibility specifically related to regional haze. These Federal rules were adopted to fulfill requirements of Section 169(b) of the Clean Air Act, which has as its purpose to protect and improve visibility at specified Federal land units identified as Class I Areas. The Bering Sea Wilderness Area, located on St. Lawrence Island, is a Class I Area located approximately 200 nautical miles north of St. Paul Island.

Marine vessel visibility emission standards are established in 18 AAC 50.70, which state, "Within three miles of the Alaska coastline, visible emissions, excluding condensed water vapor, may not reduce visibility through the exhaust effluent of a marine vessel by more than 20 percent." However, there are exceptions for when vessels are berthed, anchored, weighing anchor, casting off, maneuvering, or making fast to the shore.

6.2.9 Oil Spills

The U.S. Coast Guard, Office of Investigation and Analysis (http://www.uscg.mil/history/missions/marinesafety/docs/NotableSpills1989-2011.pdf) did not report any notable oil spills near St. Paul Harbor since their record keeping began in 1989. The nearest notable spills occurred at St. Matthew Island (1989), Unalaska (2004), Adak (2010) and in the Bering Sea (2011). However, St. Paul Island's harbor does contribute to oil pollution via refueling operations, discharging oily bilge wastes, outboard motor operations, and maintaining and operating power-generating machinery. Even with strict enforcement of stringent spill prevention regulations, accidental fuel spills occur, as evidenced by visible oil sheens.

Fish and wildlife resources in proximity to Village Cove, because of their interdependence with the marine environment, may — during a project-related oil spill that affects offshore or coastal areas — contact oil on the water surface and/or along shorelines or tide lands. The number of individuals and species affected depends on several variables, such as the location and size of the spill, the characteristics of the oil, weather and water conditions, types of habitats affected, and the time of year the spill occurs. The *Wildlife Protection Guidelines: Pribilof Islands* guide provides primary, secondary, and tertiary response strategies for St. Paul Island oil spills and focuses on two principal wildlife resources: migratory birds and the Northern fur seal. The guidelines also address measures to help ensure that overall response activities are implemented in a manner that minimizes adverse effects to wildlife, such as the prevention of unnecessary or illegal disturbance to sensitive species and habitats.

The boat harbor and adjacent Salt Lagoon on St. Paul Island may contain up to 1,000 Northern fur seal pups and juveniles from late August through November. A significant oil spill in that area could adversely impact the fur seal juveniles and pups found along the shoreline and in tide pools as they are learning to swim. The thick pelage of northern fur seals constitutes the principle element of their thermoregulatory mechanism, which restricts heat loss to the surrounding environment. Oiling increases the thermal conductance of the pelts causing greater heat loss when they are immersed in water. The consequence of any loss of insulation will vary with individual animals. Newborn pups are generally the most vulnerable, particularly when the mother leaves the rookery, typically for several days to forage. The physical condition of animals will also cause variable effects from any oiling. Young pups, breeding males just returning to sea, and lactating females probably have less fat for insulation than other segments of the population and therefore may be most susceptible to the negative effects of oiling.

6.2.10 Water and Sediment Quality

Dredging usually affects water quality by resuspending clean and/or contaminated bottom sediment in the water column, thereby increasing turbidity and the spread of contamination. The areas proposed for dredging (i.e., the entrance channels and sediment management area) are associated with strong currents, high wave energy, and shifting sediment. Corps geotechnical investigations reveal that the sediment proposed for dredging is primarily composed of a heterogeneous mixture of coarse-grained material (e.g. sand, gravel, and

cobble) and lacks the fine-grained material (e.g. silts and clays) usually associated with increasing turbidity and contaminated sediments.

Some areas in the Salt Lagoon have been associated with possible sediment contamination; however, no maintenance dredging would occur in proximity to the 2004 corrective action at the Salt Lagoon Channel Diesel Seep Site (also known as Two Party Agreement Sites 13a and 13b). A National Oceanic and Atmospheric Administration (NOAA) characterization of the subject diesel seep did not indicate contaminant levels of concern in the sediment, i.e. diesel-range organic compounds (DRO) above ADEC Method One soil cleanup level for DRO, 200 mg/kg, used as a benchmark. NOAA concluded that biological harm was not likely occurring in the marine environment in proximity to the Diesel Seep Site due to petroleum contamination (Souik *et al.*, 2005).

In 1998, the ADEC requested the sampling and analysis of intertidal and subtidal sediments at Village Cove to determine the levels of DRO in a 27.5-acre area proposed for dredging. The information was requested as part of ADEC's processing of a Water Quality Certification of Reasonable Assurance application for Corps Permit Application "Bering Sea 62, NPACP No. 071-OYD-U-870522, State I.D. No. AK 9712-03AA. The results indicated that the sediments underlying the proposed dredging area were generally free of non-biogenic DRO, although very low concentrations (slightly above background levels but below the ADEC Level A soil cleanup criteria of 100 mg/kg) of petroleum-derived DRO were present in a small portion of the proposed dredged material near the mouth of the Salt Lagoon (Golder Associates Inc., 1998).

The Corps investigated a possible source of sediment contamination near the shoreline during the construction of the City of St. Paul's small boat harbor. The Corps' chemical analytical results were compared against the ADEC soil cleanup levels under 18 AAC 75, Oil and Hazardous Substances Pollution Control, Method Two cleanup levels for the Under 40 Inch Zone, and it was determined that no chemicals of concern were detected near or above ADEC screening criteria.

The Corps believes that all the maintenance-dredging areas' sediment is free of petroleum contamination because high-energy, long-shore processes transport clean sediment into Village Cove from contaminant-free areas outside Village Cove. In addition, the course-grained nature of the sediment is not inclined to accumulate contaminants as fines and silt do.

However, because potential sources of petroleum contamination exist in the Village Cove area (as discussed in Section 6.2.9 Oil Spills), the Corps and ADEC have agreed to jointly develop and implement a dredged material sampling plan, possibly using Pro UCL software. Dredging management units, if established, would help determine the required number of samples and their locations; however, ADEC believes that at a minimum, eight individual, not composite, dredged material and disposal area background samples would be collected and analyzed for metals and DRO. The Corps will test and provide ADEC sampling results prior to being permitted to dredge. ADEC believes that contaminated dredged material, if any, would be placed in the City of St. Paul's existing landfill in accordance with solid waste management regulations (18 AAC 60.025, Polluted Soil).

No open water disposal of dredged material is proposed. Per agreements between the City of St. Paul and the Corps, the city provides to the U.S. Government all lands, easements, right-of-ways, dredged material disposal areas, and performs all relocations required for project operation and maintenance. An April 29, 2015, on-site visit by Corps personnel verified that all the potential dredged material disposal sites are on uplands, accessible by road, and not on archeological sites.

The Corps proposes to place fill material in the form of armor, base, and toe rock (graded rip rap) in scour holes and at the base of breakwaters. Therefore, in accordance with Section 404(b)(1) of the Clean Water Act (CWA) guidelines, the Corps has prepared an evaluation of the possible effects of the discharge of dredged or fill material into waters of the United States (see Appendix A). On the basis of the Section 404(b)(1) guidelines, the proposed O&M activities at St. Paul Harbor, Alaska comply with the subject guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects (see Section 8.0 Conclusions and Recommendations) on St. Paul Harbor's aquatic ecosystem.

7.0 FEDERAL AND STATE COMPLIANCE AND COORDIANTION

Numerous environmental laws and Executive Orders (EO) influence and guide water resources planning, development, and management within the Corps' Civil Works and O&M programs. The Corps' "Environmental Desk Reference" (USACE, 2002**)** is a document intended to serve as a desktop reference for Corps personnel on environmental statutes and executive policy. The desktop reference also identifies the general requirements for Corps environmental compliance with laws and EOs. Some environmental statutes and executive policy are routinely applicable to every Corps study or project. Others may only occasionally apply, depending on specific circumstances.

Complying with State of Alaska environmental statutes has historically centered on complying with the State's coastal zone management authorities; however, the State of Alaska withdrew from the voluntary National Coastal Zone Management Program (http://coastalmanagement.noaa.gov/programs/czm.html) on July 1, 2011. Subsequently, within the State of Alaska, the Federal consistency requirements under the Coastal Zone Management Act do not apply to Federal agencies, those seeking forms of Federal authorization, and state and local government entities applying for Federal assistance. However, the Corps is still responsible for complying with State of Alaska environmental statutes, e.g. Alaska Department of Fish and Game (ADF&G) Fish Habitat Permit and Special Area Permit and the ADEC issuance of a Clean Water Act-related "Certificate of Reasonable Assurance," and a Solid Waste Disposal permit. Table 2 summarizes the Corps' project compliance with relevant Federal and State of Alaska environmental statutory authorities.

8.0 CONCLUSIONS AND MITIGATION RECOMMENDATIONS

A wide variety of marine habitat and fish and wildlife resources are on and surround St. Paul Island. Mixed in this environmental setting are the City of St. Paul and its associated harbor facilities, which were constructed over a period of 30 years. Periodically, navigation features require maintenance to ensure their continued function and operation. The Corps is responsible for maintaining the Federal navigation features it constructed at St. Paul Harbor, which include some of the features the Corps is proposing for maintenance and repair: dredging shoaled in portions of the main and small boat harbor entrance channels, preventing damage to rubble mound breakwaters from adjacent scour holes, and dredging a sediment management area.

Table 2. St. Paul Island Harbor O&M project compliance with relevant Federal and State of Alaska environmental statutory authorities.

Federal Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
Clean Air Act (CAA), as amended	**FC** Confirmed with State of Alaska, Air Quality Program that project area is not in or near a "non-attainment", "maintenance", or Class I areas.	Section 176(c) requires that Federal agencies assure that their activities are in conformance with Federally-approved state implementation plans for geographic areas designated as "non-attainment" and "maintenance" areas under the CAA.
Clean Water Act (CWA) of 1977, as amended (Sections 401 and 404)	**PC** Section 404(b)(1) evaluation prepared and sent to ADEC for review and their possible issuance of a Section 401 water quality certification. See Appendix A – 404(b)(1) Evaluation.	The specific sections of the CWA that apply to the proposed project are Section 404, addressing discharges to waters of the United States, and Section 401, which requires certification that the permitted project complies with the State Water Quality Standards for actions within State waters.

Table 2 Continued.

Federal Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
Coastal Zone Management Act of 1982	**Not Applicable** Corps is continuing to coordinate its St. Paul Harbor activities with State of Alaska environmental resource agencies to ensure compliance with state statutes.	The State of Alaska withdrew from the voluntary National Coastal Zone Management Program on July 1, 2011. Therefore, within the State of Alaska, the Federal consistency requirements under the Coastal Zone Management Act do not apply to Federal agencies.
Endangered Species Act (ESA) of 1973, as amended	**PC** Letters of coordination sent to the USFWS and NMFS and follow-up discussions about implementing mitigation measures have occurred with NMFS. See Appendix B - Agency Coordination.	The Corps is required to coordinate with both the USFWS and NMFS to identify what ESA-listed species under those agencies respective jurisdictions may be present in the project area.
Fish and Wildlife Coordination Act (FWCA), as amended	**FC** Numerous FWCA reports were prepared for previously constructed navigation improvements at St. Paul Harbor, the findings of which were used to prepare this environmental assessment. Unlike civil works water resource feasibility studies, O&M activities do not require FWCA reports.	The FWCA requires the Corps to consult with the USFWS whenever the waters of any stream or other body of water are proposed to be impounded, diverted, or otherwise modified.
Marine Mammal Protection Act	**PC** Letters of coordination sent to the USFWS and NMFS and follow-up discussions about implementing mitigation measures have occurred with NMFS. See Appendix B - Agency Correspondence.	The Corps is required to coordinate with the USFWS and NMFS on potential impacts to species covered by this act and must address these agencies' concerns and recommendations.

Table 2 Continued.

Federal Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
Marine Protection, Research, and Sanctuaries Act of 1972	**FC** No ocean dumping of dredged material is part of the Corps' O&M activities at St. Paul Harbor.	The Act regulates the dumping of materials into ocean waters and prevents, or restricts, dumping of materials that would degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities. The Act provides for a permitting process to control the ocean dumping of dredged material.
Migratory Bird Treaty Act of 1918, with amendments	**FC** The Corps' project activities will avoid all seabird-nesting habitat in Village Cove. Dredging and breakwater repair activities are not expected to "take and/or kill" migratory birds.	It is unlawful, except as permitted by regulations, "to pursue, hunt, take, capture, kill…any migratory bird, any part, nest or egg," or any product of any bird species protected by the Act. The Corps is required to avoid a taking under this act during construction of a project.
Magnuson-Stevens Fishery Conservation and Management Act	**PC** An EFH evaluation has been prepared and included in the project's environmental assessment. NMFS will review the Corps EFH evaluation and provide feedback.	Federal action agencies that carry out activities that may adversely impact EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH.
National Environmental Policy Act of 1969, as amended	**PC** The Corps completed this EA, in compliance with NEPA and Corps regulation ER 200-2-2 (Procedures for Implementing the NEPA). If no objection, FONSI to be signed after 30-day public review.	This Act requires that environmental consequences and project alternatives be considered before a decision is made to implement a Federal project. Full compliance will be achieved upon completion of public review of the EA, resolution of any significant concerns, and signing of the FONSI.

Table 2 Continued.

Federal Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
National Historic Preservation Act of 1966, as amended	**FC** The State Historical Preservation Officer has concurred with the Corps' "no effect" determination. See Appendix B - Agency Coordination.	Federal agencies are required to identify cultural or historic resources that may be affected by a project and to consult with the State Historic Preservation Officer when a Federal action may affect cultural resources.
Rivers and Harbors Act of 1899	**FC** The Corps' O&M activities are designed to maintain the efficacy of existing navigation improvements in St. Paul Harbor.	Section 10 of this Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the Corps. The Corps does not issue permits to itself, so no specific permit is required under this act.
Executive Order 11990 - Protection of Wetlands	**FC** No Corps O&M activities at St. Paul Harbor will occur within or affect wetlands.	To the extent possible, Federal agencies should avoid, to the long and short term, adverse impacts associated with the destruction or modification of wetlands and avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.
Executive Order 13112 – Invasive Species	**FC** The Corps will require its contractor to implement measures to prevent the introduction of invasive species (e.g. rats) to St. Paul Island.	Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, prevent the introduction of invasive species.
Executive Order 12898 – Environmental Justice in Minority Populations and Low-income populations.	**FC** The Corps' project is designed to maintain the integrity of its existing Federal navigation improvements at St. Paul Harbor, which helps maintain harbor-derived local economic benefits.	Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such activities do not have the effect of excluding persons from participation in, denying persons the benefits of, or subjecting persons to discrimination.

Table 2 Continued.

State of Alaska Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
State of Alaska, Department of Fish and Game Fish Habitat Permit, AS 16.05.841-871.	**FC** No anadromous fish habitat or freshwater bodies are within the St. Paul Harbor O&M project area.	ADF&G protects freshwater anadromous fish habitat and the free passage of anadromous and resident fish in fresh water bodies. Any activity or project below the ordinary high water mark of an anadromous stream requires a Fish Habitat Permit.
State of Alaska, Department of Fish and Game Special Area Permit, AS 16.20.	**FC** No anadromous fish habitat or freshwater bodies are within the St. Paul Harbor O&M project area.	ADF&G manages/permits activities that occur in legislatively designated special areas.
State of Alaska, Department of Environmental Conservation, Clean Water Act, Section 401, 18 AAC 70.	**PC** Section 404(b)(1) evaluation prepared and sent to ADEC for review and their possible issuance of a Section 401 water quality certification. See Appendix A - Section 404(b)(1) evaluation.	Any activity that might result in a discharge into waters of the U.S. must obtain a water quality certificate from ADEC stating that the discharge will comply with the CWA, Alaska Water Quality Standards (18 AAC 70), and other applicable State laws.
State of Alaska, Department of Environmental Conservation, Solid Waste Program	**PC** The Corps is coordinating its dredging and upland placement of dredged material with this program, which includes sediment testing of dredge material. See Appendix B - Agency Coordination.	This program issues permits for the disposal of solid waste, contaminated soil and the terrestrial placement of (contaminated and uncontaminated) dredged material.

The primary environmental issues associated with the proposed O&M activities are the potential impacts associated with construction-related petroleum spills and the potential impacts on threatened and endangered species; marine mammals; essential fish habitat; water, sediment, and air quality; benthic habitat and organisms; avifauna; and historic and cultural resources. The major findings and conclusions include:

- The proposed action will have no effect on USFWS and NMFS listed or proposed-for-listing threatened or endangered species or destroy or adversely modify existing or proposed critical habitat, as St. Paul Harbor is not known to support the subject species or have any designated critical habitat.

- The proposed action has the potential to have a MMPA-related "harassment take" of fur seals if its in-water activities extend beyond late-August/September 1 when juvenile fur seals and pups begin arriving to the Village Cove area.

- The proposed action is not expected to "take" migratory birds or any sea/shore birds inhabiting St. Paul Harbor or surrounding the Village Cove area.

- O&M activities at St. Paul Harbor would result in short-term alterations of EFH for the following species: walleye pollock, Pacific cod, yellowfin sole, rock sole, sculpins, red king crab and blue king crab. Rocky EFH substrate will replace soft-bottom EFH substrate when existing rubble mound breakwaters are reinforced with additional armor, base, and toe rock. Therefore, the proposed action may affect, but is not likely to adversely affect, EFH and EFH-managed species/species complexes for Bering Sea/Aleutian Islands Groundfish and Bering Sea/Aleutian Islands King and Tanner Crabs.

- The proposed action is within the boundaries of the Seal Island Historic District, a National Historic Landmark eligible for the National Register under Criterion A. The State of Alaska Preservation Officer has concurred with the Corps' determination that the proposed action will result in no adverse effect to the Seal Island Historic District.

- Project vessels have the potential to introduce rats to St. Paul Island which would adversely impact seabird populations throughout the island.

- The areas to be maintenance dredged are likely to be free of petroleum contamination because high-energy, long-shore processes continually transport clean sediment into Village Cove from contaminant–free areas outside Village Cove. In addition, the course-grained nature of the sediment to be dredged is not inclined to accumulate contaminants as fines and silt do. However, petroleum products are known to leak from and be washed off vessels into harbor waters.

The following mitigation measures are expected to avoid and minimize potential environmental consequences to the extent practicable and appropriate. The proposed action does not warrant compensatory mitigation measures, as the affected marine habitat is not in limited supply in the St. Paul Island area and the creation of additional subtidal, intertidal and supratidal rocky substrate (associated with scour hole and breakwater protection and repair) would provide more complex, diverse and high-value habitat for marine fishery resources.

1. No in-water work shall be conducted between September 1 and November 1 to avoid impacting (i.e. taking) juvenile fur seals and pups returning to Village Cove and the Salt Lagoon entrance channel.

2. Project vessels shall not travel within 3,000 feet of designated Steller sea lion critical habitat (haul outs or rookeries).

3. The Corps' contractor shall coordinate with the "Tribal Government of Saint Paul Island" to secure certification that their vessels are rat-free.

4. Project-related activities shall not use the Boulder Beach area to access work sites in order to avoid impacting (i.e. taking) least-auklets or their nesting habitat.

5. The Corps' contractor shall prepare an oil spill and prevention plan, in accordance with Federal, State of Alaska, and St. Paul Harbor requirements, and have it reviewed and approved by the Corps and St. Paul Harbormaster prior to commencing work.

6. Project vessels must be operated in compliance with State of Alaska marine vessel (air emissions) visibility standards (18 AAC 50.70).

7. Dredging operations shall not place dredged material in open water, and instead shall place all dredged material on St. Paul Island uplands.

8. The Corps and ADEC shall jointly prepare and implement a dredged material sampling plan for diesel range organics and metals so that contaminated dredged material, if found, is properly disposed of.

9. The USFWS's "Observer Protocols for Pile Driving, Dredging and Placement of Fill, dated August 7, 2012" shall be implemented to protect Northern sea otters and Steller's eiders from being adversely impacted from such activities.

10. The Corps' contractor shall take reasonable precautions, per 18 AAC 50.045(d), to prevent the generation of fugitive dust at its rock source and dredged material disposal sites.

The Corps has incorporated all appropriate and practicable measures to offset possible impacts caused by the proposed St. Paul Harbor O&M activities. The environmental impacts associated with the proposed action are expected to be short-term, with no long-term, significant or cumulative adverse impacts on the area's fish and wildlife resources. Therefore, the Corps has determined that: (1) the EA prepared for this action supports the conclusion that the proposed action at St. Paul Harbor does not constitute a major Federal action significantly affecting the quality of the human environment; (2) preparing an environmental impact statement is not necessary; and (3) signing a Finding of No Significant Impact is appropriate.

9.0 PREPARERS OF THIS DOCUMENT

This EA was prepared by Mr. Wayne Crayton, project biologist; Ms. Deidre Ginter, project hydraulic engineer; and Diane Walters, writer-editor. Ms. Julie Anderson is the project manager.

10.0 REFERENCES AND CITATIONS

Flint, M.V. (editor). 1999. Investigations of the Pribilof Marine Ecosystem, Ecosystems of the Saint Paul Island Salt Lagoon and Harbor (Village Cove), The City of Saint Paul, St. Paul Island, Alaska - P.P. Shirshov Institute of Oceanology, Moscow. 321 pp.

Golder Associates Inc., 1998. Sediment sampling for diesel range organics, St. Paul, Alaska. Prepared for DHI Consulting Engineers, Anchorage, AK. 3 pp. + tables, figures and appenidix.

Gundlach, E., M. Kendziorek, J. Whitney, E. Thomson, and A. Sowles. 1999. Sensitivity mapping of the Pribilof Islands, Alaska: An area of extreme environmental sensitivity. In 1999 International Oil Spill Conference Proceedings: March 1999, Vol. 1999, No. 1, pp. i-xxv.

National Marine Fisheries Service, Protected Resources
http://www.nmfs.noaa.gov/pr/species/esa/
http://www.nmfs.noaa.gov/pr/species/mammals/

U.S. Army Corps of Engineers (USACE). 2010. Chemical Data Report: Sediment Survey, St. Paul Harbor Dredging (10-069), St. Paul, Alaska. Prepared by Materials Section, Engineering Services Branch, Alaska District. August. 5 pp. + appendices.

_____. 2006. General Reevaluation Report, Environmental Assessment and Finding of No Significant Impact, Saint Paul Small Boat Harbor, Saint Paul, Alaska. Alaska District. February. 54 pp. + appendices.

_____. 2002. Environmental Assessment and Finding of No Significant Impact, Small Boat Harbor, Emergency Breakwater Repair and Disposal of Dredged Material, St. Paul Island, Alaska. Alaska District. March. 49 pp. + appendices.

_____. 2002. Civil Works Environmental Desk Reference. Prepared by Institute for Water Resources. Vicksburg, MS. IWR Report 96-PS-3. Updated January 2002. 346 pp.

_____. 1998. Environmental Assessment and Finding of No Significant Impact, Harbor Improvements, St. Paul, Alaska, Salt Lagoon Entrance Channel. Alaska District. April. 22 pp. + appendix.

_____. 1997. Study for Flushing of Salt Lagoon and Small-Boat Harbor Improvements at St. Paul Harbor, St. Paul Island, Alaska. Authored by Robert R. Bottin, Jr. and Hugh. F. Acuff, Waterways Experiment Station. Vicksburg, MS. Miscellaneous Paper CHL-97-7. August. 26 pp. + plates.

_____. 1996. Harbor Improvements Interim Feasibility Report and Environmental Assessment, St. Paul, Alaska. Alaska District. August. 67 pp. + appendices.

_____. 1988. Environmental Assessment, St. Paul Harbor, St. Paul Island, Alaska. Alaska District. February. 40 pp. + appendices.

_____. 1982. Final Harbor Feasibility Report and Environmental Impact Statement, St. Paul Island, Alaska. Alaska District. December. 25 pp. + EIS and appendices.

U.S. Coast Guard, Office of Investigation and Analysis (http://www.uscg.mil/history/missions/marinesafety/docs/NotableSpills1989-2011.pdf)

U.S. Fish and Wildlife Service, Environmental Conservation Online System (http://ecos.fws.gov/tess_public/reports/species-listed-by-state-report?state=AK&status=listed)

Souik, P., J. Lindsay, M. Harmon, L. Johnson, and N. Barnea. 2005. Investigation of Chemical Contamination and Toxicity in the St. Paul Island, Alaska Salt Lagoon and Channel. NOAA, Office of Response and Restoration, Pribilof Project Office. Seattle, WA. Prepared January 31, 2005. 10 pp. + appendices.

APPENDIX A

EVALUATION UNDER
SECTION 404(b)(1) CLEAN WATER ACT
40 CFR PART 230

ST. PAUL HARBOR, ALASKA
OPERATION AND MAINTENANCE ACTIVITIES

EVALUATION UNDER
SECTION 404(b)(1) CLEAN WATER ACT
40 CFR PART 230

ST. PAUL HARBOR, ALASKA
OPERATION AND MAINTENANCE ACTIVITIES

I. Project Description

The U.S. Army Corps of Engineers (Corps) conducts periodic field surveys of its navigation projects to identify any need for repairs and/or maintenance dredging. Recent field surveys revealed the need to address hazards threatening the Federal navigation features at St. Paul Harbor, St. Paul Island, Alaska. Specifically, the Corps proposes to: (1) construct repairs to the detached rubble mound breakwater, (2) construct scour hole protection in the main harbor and small boat harbor entrance channels and adjacent to rubble mound breakwaters, (3) dredge to project depth selected shoaled areas of the main and small boat harbor entrance channels, (4) dredge to project depth a sediment management area, and (5) place dredged material on uplands (figure 1). The proposed operation and maintenance (O&M) actions are justified because St. Paul has become an important harbor-of-refuge for the bottom-fishing fleet in the Bering Sea and provides crucial economic support for this remote community. Without such actions, the structural integrity of the harbor's navigation features will be compromised, jeopardizing the harbor's continued functional and economic value to the bottom fish industry and island community.

II. Factual Determinations

A. Physical Substrate Determinations

St. Paul Harbor's substrate is composed of sand, gravel, and rock. There is little fine-grained material (silts and clays) in the Village Cove area. The shoreline is composed of boulders.

B. Water Circulation, Fluctuations, and Salinity Determinations

The Corps previously constructed a spending beach in Village Cove to lessen wave heights within the harbor, ensure proper water circulation within the harbor, help disperse harbor-related pollutants, and distribute suspended sands entering the harbor during storms. The tidal- and storm-induced flushing of the harbor is excellent with no "dead zones." Water circulation is strongest in the area of the detached breakwater and weakest at the northeast corner of the harbor. A constructed energy channel at the mouth of Salt lagoon has increased storm-generated water circulation in the lagoon and stabilized salinity levels.

Figure 1. Areas of proposed O&M activities at St. Paul Harbor, Alaska.

C. Suspended Particulate/Turbidity Determinations

A short-term increase in turbidity and resuspended solids is expected during dredging operations, repairing breakwaters, and constructing scour hole protection. The amount of fines in the material to be dredged is extremely low, and no fines are expected to be in the

rock material used for repairing breakwaters and constructing scour hole repairs. The Corps anticipates dredging approximately 85,000 cubic yards of material that is composed of well-to-poorly sorted sand/cobble, with less than 15 percent fines. No long-term water column effects are anticipated.

D. Contaminant Determinations

Uncontaminated marine sediments mainly enter the harbor through the gap between the detached breakwater and boulder spit. Fish processors discharge their wastes at East Landing, far removed from Village Cove and the harbor. St. Paul has no other industry. Because of its predominantly coarse-grained nature, the sediment to be dredged has little retention capacity for contaminants. However, because diesel fuel is heavily used and stored at the harbor, the Corps and Alaska Department of Environmental Conservation (ADEC) agree that a limited number of sediment samples should be collected and analyzed for diesel range organics (DRO) and metals to validate the assumption that the sediment to be dredged meets ADEC sediment quality criteria

E. Aquatic Ecosystems and Organism Determinations

St. Paul Island and its surrounding area support a wide variety of fish and wildlife resources and sensitive habitat (figure 2). The island's seas cliffs support large numbers of breeding seabirds and the surrounding marine waters support numerous species of marine mammals. The sections that follow describe those categories of fish and wildlife resources more likely to be impacted by the Corps' proposed O&M activities at St. Paul Harbor: subtidal benthic habitat, threatened and endangered species, marine mammals, avifauna, and essential fish habitat.

Benthic habitat: Those areas where the entrance channel has shoaled in and where scour holes have developed are not likely to have well established benthic communities because of the high-energy oceanic processes that form them; i.e. the substrate is neither sedentary nor stable enough to allow dense communities of infauna to become established in such a short time. Those communities that somehow were capable of establishing themselves probably include polychaete worms, crustaceans (crabs and shrimp), and echinoderms. Communities of mollusk, however, would not have had enough time to reestablish themselves to any large degree.

Fishery resources and essential fish habitat (EFH): Seven fish species have EFH in Village Cove: walleye pollock, Pacific cod, yellowfin sole, rock sole, sculpins, red king crab, and blue king crab. No freshwater EFH (anadromous waters) exist in the Corps' project area.

- Walleye pollock: adults more likely in deeper water outside Village Cove but juveniles likely use the area pelagically and feed on the bottom.
- Pacific cod: adults more likely in deeper water outside Village Cove but late juveniles likely use the area pelagically and feed on the bottom.
- Yellowfin sole: adults and late juveniles exhibit a benthic lifestyle in Village Cove, where they spawn and feed on the bottom.
- Rock sole: adults and late juveniles exhibit a benthic lifestyle in Village Cove, where they spawn and feed on the bottom.

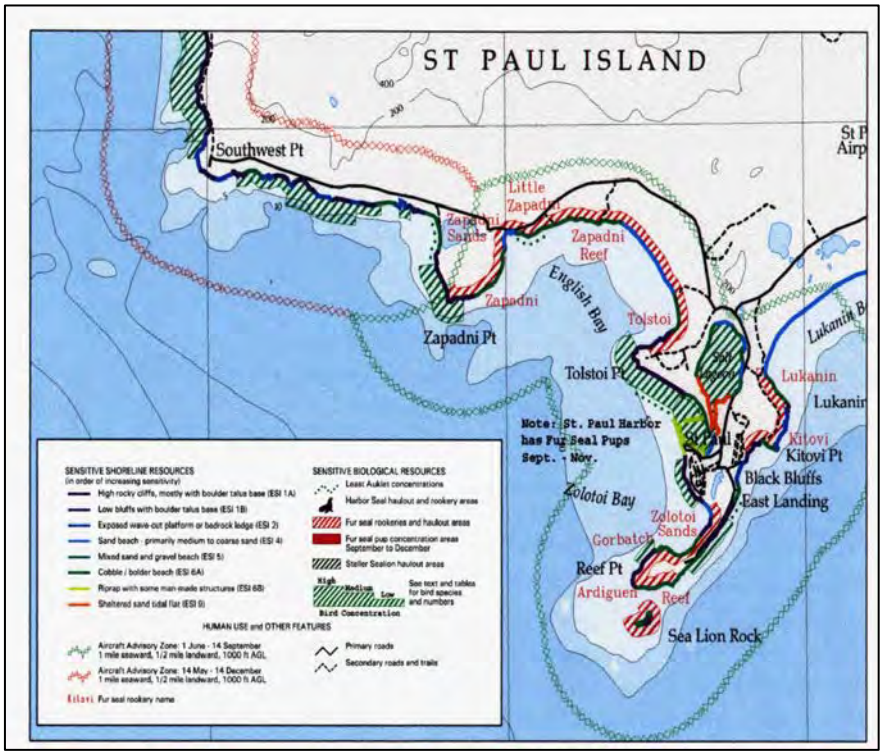


Figure 2. Sensitive shoreline and biological resources in the vicinity of St. Paul Harbor, St. Paul Island, Alaska (from: Gundlach, E., M. Kendziorek, J. Whitney, E. Thomson, and A. Sowles. 1999. Sensitivity mapping of the Pribilof Islands, Alaska: An area of extreme environmental sensitivity. In 1999 International Oil Spill Conference Proceedings: March 1999, Vol. 1999, No. 1, pp. i-xxv.

- Sculpin: adults and late juveniles inhabit a wide range of habitats but are mainly associated with a benthic lifestyle and a sandy/rocky substrate, which Village Cove has.
- Red king crab: Shallow inshore areas (less than 50 meters) support mating and molting individuals. Larvae generally occupy the upper 30 meters of the water column. Village Cove's shallow depth (5 meters and less) is poor habitat for supporting red crab life stages.
- Blue king crab: Shallow inshore areas (less than 50 meters) support mating and molting individuals. Larvae generally occupy the upper 30 meters of the water column. Village Cove's shallow depth (5 meters and less) is poor habitat for supporting red crab life stages.

No NMFS-designated "Habitat Areas of Particular Concern (HAPC)" are within or in proximity to the Corps' project area. HAPCs are discrete subsets of EFH that provide extremely important ecological functions or are especially vulnerable to degradation.

No NMFS-designated "EFH Area(s) Protected from Fishing" (EAPF) are within or in proximity to the Corps' project area. An EAPF is an area in which the NMFS and the

regional fishery management council have used EFH provisions, established in Section 303(a)(7) of the Magnuson-Stevens Fishery Conservation and Management Act, to prevent or mitigate adverse effects from fishing on EFH.

F. Proposed Disposal Site Determinations

No in-water disposal of dredged material will occur. All dredged material will be disposed of at City of St. Paul-identified upland sites. The proposed action would comply with applicable water quality standards and would have no appreciable detrimental effects on municipal and private water supplies, recreational and commercial fisheries, water-related recreation, or aesthetics.

G. Determination of Cumulative and Secondary Effects on the Aquatic Ecosystem

All maintenance dredging and breakwater/scour hole repair will occur on and at existing navigation features. The amount of rock needed to repair the scour holes and breakwaters represents a minor incremental increase relative to those major intertidal/subtidal fills that have already been experienced in the area. In conclusion, the Corps' proposed action, in concert with past, present, and foreseeable actions is not likely to have any significant cumulative or secondary impact on St. Paul Harbor's fish, wildlife, and human resources.

III. Findings of Compliance or Non-Compliance with the Restrictions on Discharge

A. Adaptation of the Section 404(b)(1) Guidelines to this Evaluation

The proposed project complies with the requirements set forth in the Environmental Protection Agency's Guidelines for Specification of Disposal Sites for Dredged or Fill Material, and no adaptations of the guidelines were made relative to this evaluation.

B. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site, Which Would Have Less Adverse Impact on the Aquatic Ecosystem

The proposed action will repair existing Federal navigation features in St. Paul Harbor. Without such actions, the structural integrity of the harbor's navigation features will become compromised, thereby, jeopardizing the harbor's continued functional and economic value to the bottom fish industry and island community. The only alternatives are how the work is accomplished (cutter dredge vs. hydraulic suction dredge; what the scour holes are filled with; in-water disposal vs. upland disposal). The proposed actions, as described, are the least damaging practicable alternatives after taking into consideration the area's fish and wildlife resources, project costs, existing technology, and logistics in light of the overall project purpose.

C. Compliance with Applicable State Water Quality Standards

The proposed action is not expected to have an appreciable adverse effect on water supplies, recreation, growth and propagation of fish, shellfish and other aquatic life, or wildlife. Nor will the proposed action be expected to introduce petroleum hydrocarbons, radioactive materials, residues, or other pollutants into the waters of St. Paul Harbor. A temporary increase in turbidity and settleable solids will result locally from construction

activities. The Corps' has concluded that the proposed action will comply with State of Alaska water quality standards.

D. Compliance with Applicable Toxic Effluent Standards or Prohibition under Section 307 of the Clean Water Act

No toxic effluents that will affect water quality parameters are associated with the proposed action. Therefore, the project complies with toxic effluent standards of Section 307 of the Clean Water Act.

E. Compliance with Endangered Species Act of 1973

Threatened and endangered species coordination occurred with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) for the proposed action in St. Paul Harbor.

Although several species of endangered whales are present in the Bering Sea, none are known to inhabit the near shore waters of Village Cove. The threatened Steller sea lion hauls out on Walrus Island, some 10 nautical miles northeast of St. Paul Island. Steller sea lion critical habitat (50 CFR 226.202) includes a 20-nautical-mile buffer zone around all major haul outs and rookeries, as well as associated terrestrial, air and aquatic zones, and three large offshore foraging areas. St. Paul Island lies within the 20-nautical-mile buffer zone around Walrus Island. According to the St. Paul Harbormaster (personal communication, Jason Merculief), Steller sea lions and Northern sea otters do not inhabit Village Cove; however, in reportedly rare circumstances, a Steller sea lion has been observed feeding in the harbor area, among transiting vessels.

Endangered Steller's eiders have been observed in the Pribilof Islands area but no sightings of the species have been recorded in the Village Cove area. The short-tailed albatross and Eskimo curlew ranges include the Pribilof Islands but like the Steller's eider, no individuals have been reported in the Village Cove area.

The Corps has determined that its proposed action at St. Paul Island Harbor will have no effect on USFWS and NMFS listed or proposed-for-listing threatened or endangered species, or destroy or adversely modify existing or proposed critical habitat, as the Corps' action area (i.e. Village Cove) is not inhabited by the subject species, nor does it have any designated critical habitat.

F. Evaluation of Extent of Degradation of the Waters of the United States

There are no municipal or private water supplies or freshwater waterbodies in the area that could be negatively affected by the proposed project. There will be no significant adverse impacts to plankton, fish, shellfish, wildlife, and/or special aquatic sites in the project area.

G. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Environment.

The following mitigation measures shall be incorporated into the proposed action's recommended plan to ensure that no impacts adversely affect St. Paul Island's local fish and wildlife resources:

- No in-water activities shall occur between September 1 and November 1 to avoid impacting (i.e. taking) juvenile fur seals and pups returning to Village Cove and the Salt Lagoon entrance channel.

- Project vessels shall not travel within 3,000 feet of designated Steller sea lion critical habitat (haulouts or rookeries).

- The Corps' contractor shall coordinate with the "Tribal Government of Saint Paul Island" to secure certification that their vessels are rat-free.

- Project activities shall not use the Boulder Beach area to access work sites in order to avoid impacting (i.e. taking) least-auklets or their nesting habitat.

- The Corps' contractor shall prepare an oil spill and prevention plan, in accordance with Federal, State of Alaska, and St. Paul Harbor requirements, and have it reviewed and approved by the Corps and St. Paul Harbormaster.

- Project vessels must be operated in compliance with State of Alaska marine vessel (air emissions) visibility standards (18 AAC 50.70).

- Dredging operations shall not place dredged material in open water, and instead shall place all dredged material in St. Paul Island uplands.

- The Corps and Alaska Department of Environment Conservation shall jointly prepare and implement a dredged material sampling plan for diesel range organics and metals so that contaminated dredged material, if found, is properly disposed of.

- The USFWS's "Observer Protocols for Pile Driving, Dredging and Placement of Fill, dated August 7, 2012" shall be implemented to protect Northern sea otters and Steller's eiders from being adversely impacted from such activities.

- The Corps' contractor shall take reasonable precautions, per 18 AAC 50.045(d), to prevent the generation of fugitive dust at its rock source and dredged material disposal sites.

SECTION 404(b)(1) CLEAN WATER ACT
(40 CFR PART 230)

FINDING OF COMPLIANCE

ST. PAUL HARBOR, ALASKA
OPERATION AND MAINTENANCE

1. No Significant adaptations of the Section 404(b)(1) guidelines were made relative to this evaluation.

2. Recent field surveys revealed the need to address hazards threatening the Federal navigation features at St. Paul Harbor. Specifically, the U.S. Army Corps of Engineers, Alaska District (Corps) proposes to: (1) construct repairs to a detached rubble mound breakwater, (2) construct scour hole protection in the main harbor and small boat harbor entrance channels and adjacent to rubble mound breakwaters, (3) dredge to project depth selected shoaled areas of the main and small boat harbor entrance channels, (4) dredge to project depth a sediment management area, and (5) place dredged material on uplands.

3. The Corps' operation and maintenance (O&M) actions are justified because St. Paul has become an important harbor-of-refuge for the bottom-fishing fleet in the Bering Sea and provides crucial economic support for this remote community. Without such actions, the structural integrity of the harbor's navigation features will likely be compromised, therefore, jeopardizing the harbor's continued functional and economic value to the bottom fish industry and island community.

4. The proposed action will not violate applicable State of Alaska Water Quality Standards, with the possible exception of short term and localized impacts on turbidity and suspended solids. The proposed action also will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

5. The proposed action will not affect any threatened and endangered species or their critical habitat.

6. The proposed action will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife will not be adversely affected also. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreation, aesthetic and economic values will not occur.

7. Appropriate measures to minimize potential adverse impacts include the following:

- No in-water activities shall occur between September 1 and November 1 to avoid impacting (i.e. taking) juvenile fur seals and pups returning to Village Cove and the Salt Lagoon entrance channel.

- Project vessels shall not travel within 3,000 feet of designated Steller sea lion critical habitat (haulouts or rookeries).

- The Corps' contractor shall coordinate with the "Tribal Government of Saint Paul Island" to secure certification that their vessels are rat-free.

- Project activities shall not use the Boulder Beach area to access work sites in order to avoid impacting (i.e. taking) least-auklets or their nesting habitat.

- The Corps' contractor shall prepare an oil spill and prevention plan, in accordance with Federal, State of Alaska, and St. Paul Harbor requirements, and have it reviewed and approved by the Corps and St. Paul Harbormaster.

- Project vessels must be operated in compliance with State of Alaska marine vessel (air emissions) visibility standards (18 AAC 50.70).

- Dredging operations shall not place dredged material in open water, and instead shall place all dredged material in St. Paul Island uplands.

- The Corps and Alaska Department of Environment Conservation shall jointly prepare and implement a dredged material sampling plan for diesel range organics and metals so that contaminated dredged material, if found, is properly disposed of.

- The USFWS's "Observer Protocols for Pile Driving, Dredging and Placement of Fill, dated August 7, 2012" shall be implemented to protect Northern sea otters and Steller's eiders from being adversely impacted from such activities.

- The Corps' contractor shall take reasonable precautions, per 18 AAC 50.045(d), to prevent the generation of fugitive dust at its rock source and dredged material disposal sites.

8. On the basis of the Section 404(b)(1) guidelines, the proposed O&M activities at St. Paul Harbor, Alaska comply with the subject guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on St. Paul Harbor's aquatic ecosystem.

APR 29 2015

Date

Michael D. Noah
U.S. Army Corps of Engineers
Alaska District
Chief, Environmental Resources

APPENDIX A

AGENCY COORDINATION

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 6898
JOINT BASE ELMENDORF-RICHARDSON, ALASKA 99506-0898

Environmental Resources Section

MAR 09 2015

Mr. Greg Balogh
Protected Resources Division
National Marine Fisheries Service
222 W. 7th Ave., #43
Anchorage, Alaska 99513-7577

Dear Mr. Balogh

The U.S. Army Corps of Engineers, Alaska District (Corps) is preparing an environmental assessment addressing repairs to Federal navigation features at St. Paul Harbor, St. Paul Island, Alaska. Specifically, the Corps proposes to: (1) repair detached rubble mound breakwater, (2) repair scour holes in the harbor's entrance channels and adjacent to a rubble mound breakwater, (3) dredge to project depth selected shoaled areas of the main and small boat harbor entrance channels, (4) dredge to project depth a sediment management area, and (5) dispose of dredged material in upland locations (enclosure). Without such repairs, the structural integrity of the harbor's navigation features would be compromised, therefore jeopardizing the harbor's continued functional and economic value to the bottom fish industry and island community. The Corps' environmental assessment will describe the maintenance activities in more detail and their potential environmental impacts, as well as include environmental protection measures designed to mitigate any foreseeable adverse effects.

Section 7 of the Endangered Species Act (ESA) requires Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of critical habitat. To comply with Section 7 of the ESA and to facilitate the environmental assessment's development, the Corps wishes to initiate informal consultation with the NMFS under Section 7 of the ESA.

According to NMFS's web site (http://alaskafisheries.noaa.gov/mapping/esa/), the Corps believes that the threatened/endangered species listed below, along with designated critical habitat, have the potential to be present in the St. Paul Harbor area. The Corps asks that NMFS verify the accuracy of our species list and, if necessary, add any species that are missing.

- Western Distinct population Steller Sea Lion
  Critical Habitat: Northeast Point and Sea Lion Rock.
- Humpback Whale
  No critical habitat has been promulgated by the NMFS for this species.
- North Pacific Right Whale
  Critical habitat does not exist around St. Paul Harbor.

- Western North Pacific Gray Whale
  No critical habitat has been promulgated by the NMFS for this species.

NMFS feedback will facilitate the Corps' evaluation of the maintenance activities according to their potential for effects on the listed species and critical habitat. No formal consultation with the NMFS will be sought if the Corps determines that its maintenance activities will have no effect on the listed species or critical habitat. The Corps will seek NMFS concurrence if its maintenance activities may affect, but are not likely to adversely affect, listed species or critical habitat. Formal consultation with the NMFS will be required if the Corps determines that its activities are likely to adversely affect the listed species or critical habitat.

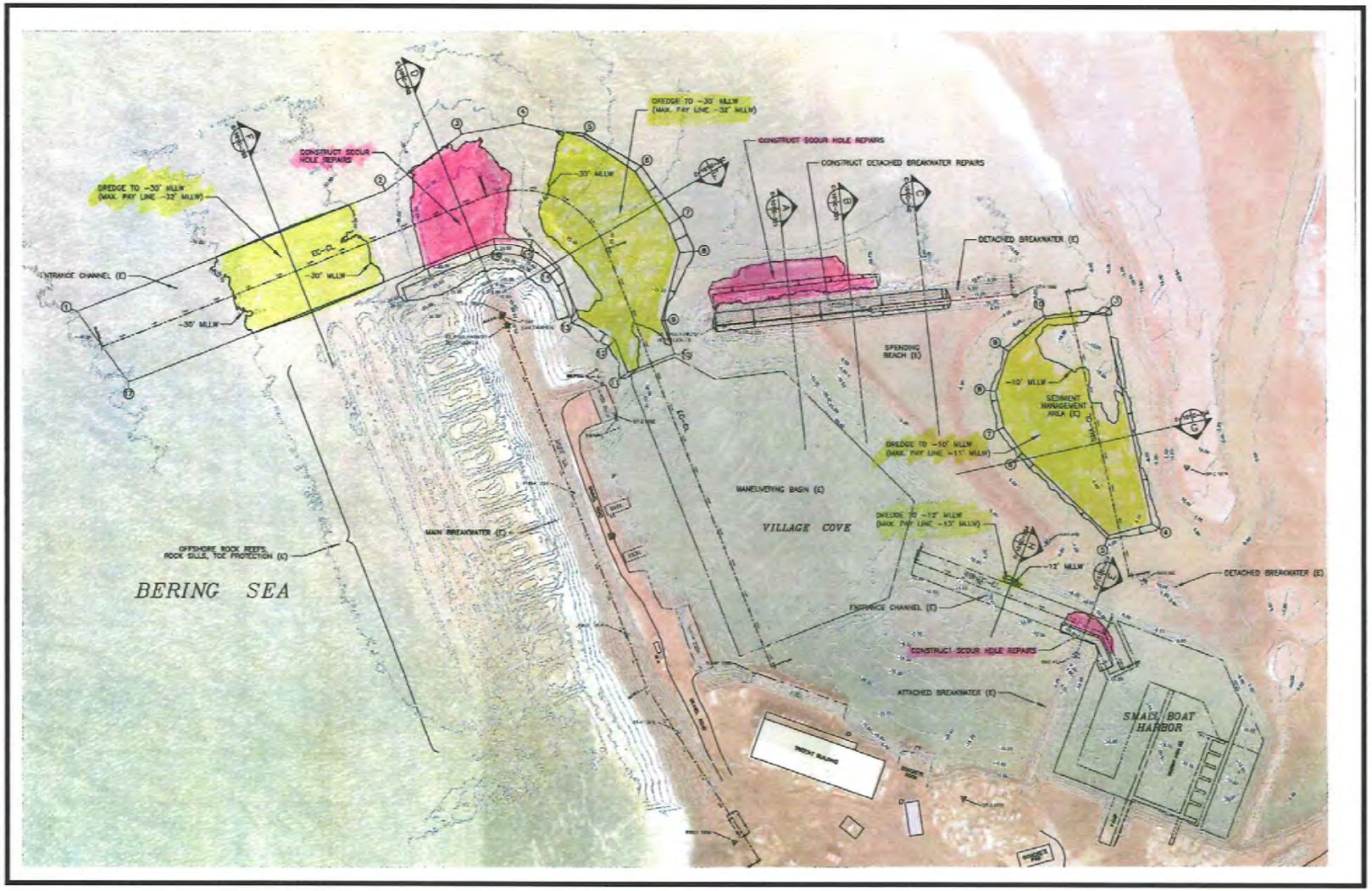
Thank you for your assistance. If you have any questions regarding the Corps' request or require additional information, please contact Wayne M. Crayton of my staff at (907) 753-2656 or at Wayne.M.Crayton@usace.army.mil.

Sincerely,

Michael D. Noah
Chief, Environmental Resources Section

Enclosure

Cc: Jeanne Hanson, NMFS Assistant Regional Administrator, Anchorage, AK



Enclosure: Proposed operation and maintenance activities at St. Paul Harbor, St. Paul Island, Alaska.

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 6898
JOINT BASE ELMENDORF-RICHARDSON, AK 99506-0898

MEMORANDUM FOR THE RECORD (MFR) 16 March 2015
CEPOA-P-C-ER

SUBJECT: St. Paul Island Small Boat Harbor Operation and Maintenance (O&M) activities.

PURPOSE: To document Endangered Species Act (ESA), Section 7 coordination with the National Marine Fisheries Service (NMFS), Alaska Region.

1. A March 12, 2015, phone call was received from:

Ms. Bridget Crokus
Endangered Species Act Consultation Biologist
Contractor with Ocean Associates, Inc.
NMFS Anchorage Field Office
222 West 7th Ave, Box 43
Anchorage, AK 99513
Phone: 907-271-1937

regarding the U.S. Army Corps of Engineers, Alaska District's (Corps) March 9, 2015, ESA/Section 7 letter of coordination.

2. Ms. Crokus called to inform me that it would be many weeks before the Corps would receive a written reply from her office and gave me the option of receiving a reply via her phone call. I informed her that the Corps would prefer a written reply for the project's administrative record but given the circumstances of needing to complete the project's environmental assessment (EA) in a timely manner, her feedback via the phone call was appreciated.

3. This MFR officially serves as documentation of ESA Section 7 coordination between the Corps and NMFS regarding the Corps' proposed O&M activities on St. Paul Island.

4. Ms. Crokus stated that two species [Finback Whale (*Balaenoptera physalus*) and Sperm Whale (*Physeter catodon* (=*macrocephalus*)] should be included on the list of ESA species the Corps identified as potentially being present in the St. Paul Harbor area.

5. Ms. Crokus also mentioned that an Alaska federal court vacated a NMFS rule declaring a population (Beringia distinct population) of bearded seals (*Erignathus barbatus*) in the state "threatened" under the ESA. Should the ruling be successfully appealed (albeit undefined as to if and/or when), the Corps would have to include the species in future St. Paul Harbor Section 7 consultations.

6. Regarding the Steller Sea Lion western distinct population, I was informed that there is a 20 nautical miles critical habitat aquatic zone surrounding St. Paul Island and that a rookery is on Walrus Island, some 10 miles northeast of St. Paul.

7. The feedback provided by Ms. Crokus will be used to determine the potential impacts, if any, on NMFS-managed ESA species…the findings of which will be incorporated in the St. Paul Harbor O&M EA.

8. This MFR was prepared by Wayne Crayton, Staff Project Biologist. Questions should be addressed to him at 907-753-2656 or at Wayne.M.Crayton@usace.army.mil.

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 6898
JOINT BASE ELMENDORF-RICHARDSON, AK 99506-0898

MEMORANDUM FOR THE RECORD (MFR) 3 April 2015
CEPOA-P-C-ER

SUBJECT: St. Paul Island Small Boat Harbor Operation and Maintenance (O&M) activities.

PURPOSE: To document Marine Mammal Protection Act (MMPA) coordination with the National Marine Fisheries Service (NMFS), Alaska Region.

1. A March 23, 2015, voice-mail message was received from Mr. Mike Williams (Mike)
Pribilof Islands Program Manager
NMFS Anchorage Field Office
Protected Resources Division
222 West 7th Ave, Box 43
Anchorage, AK 99513
Phone: 907-271-5117

2. Mike called regarding the U.S. Army Corps of Engineers, Alaska District's (Corps) March 9, 2015, ESA/Section 7 letter of coordination with the NMFS. I returned the call on March 31, 2015, and this MFR is a record of that conversation.

3. Mike is the Pribilof Islands Program Manager and coordinates MMPA issues on St. Paul and St. George islands. Mike has 20-plus years of Pribilof Island work experience with the NMFS. I mentioned that I had a previous conversation with another NMFS staff person in his office, Bridget Crokus, regarding ESA/Section 7 issues and that he could obtain a copy of the MFR I prepared of that conversation from her.

4. Mike wanted to inform the Corps of NMFS's concern about how the Corps' O&M activities in St. Paul Harbor might impact the MMPA-protected and depleted St. Paul Island fur seal population. NMFS's concern is that beginning in late-August/September 1 through October young juvenile fur seals and pups begin to move into the Village Cove area, especially in the Salt Lagoon area and should the Corps be still working on its O&M activities at that time, a MMPA-related "harassment take" (take) violation would likely occur. Mike though that it would virtually impossible avoid a take of fur seals after September 1. Fur seals are present on St. Paul Island from May through December, though their presence within and near the harbor are rare or intermittent until September. In some years, hundreds of young fur seals daily enter and exit the harbor and can be found in the Salt Lagoon channel and hauled out on the coast. Fur seals are common transiting the waters of Village Cove throughout this period.

5. Take is defined under the MMPA as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. 1362) and further defined by regulation (50 CFR 216.3) as "to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. The MMPA, with certain exceptions, allows the take of marine mammals in U.S. waters.

6. Under the 1994 Amendments to the MMPA, harassment is statutorily defined as, any act of pursuit, torment, or annoyance which has the potential to: (1) unintentionally injure a marine mammal or marine mammal stock in the wild (Level A Harassment); or, (2) has the potential to unintentionally disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B Harassment).

7. Mike suggested that a take might be avoided if the Corps' O&M activities were concluded by September 1, at the latest. If the Corps wants to keep working work after September 1, Mike suggested that the Corps and NMFS coordinate the development of a fur seal monitoring program designed to avoid a take of fur seals, that is, work would temporarily shut down until the observed fur seal(s) left a predetermined area for a specified time.

8. Mike also suggested that the Corps could apply for an Incidental Harassment Authorization (IHA) from NMFS, which can be viewed as an "insurance policy" to authorize an NMFS-acceptable number of unintentional fur seal harassment takes. Applying for an IHA is a defined process, requiring the applicant to provide a project description, technical effects analyses, and an estimate of take by the project activities. A mitigation, monitoring, and reporting plan is also developed by the applicant as part of the process. See http://www.nmfs.noaa.gov/pr/permits/incidental/ for details.

9. It was my expressed opinion, which needs to be confirmed by the Corps' Project Manager (Ms. Julie Anderson) and Project Team, that the subject work would be conducted over two or more construction seasons and could be successfully conducted each construction year outside the late-August/September 1 - November 1 time frame. I inquired about if working on the outer harbor features (dredging the main entrance channel and scour hole protection which is furthest away from Salt Lagoon), after September 1 would avoid taking fur seals. Mike answered fur seals transit through the waters offshore of Village Cove area and would be present, but whether those passing fur seals would be affected at a level considered taking is less certain.

10. Here's what I concluded from my conversation with Mike

    - Corps O&M activities conducted between late-August/September 1 – November 1 in St. Paul Harbor (Village Cove area) would likely result in a MMPA harassment-take of the St. Paul Island depleted fur seal population, as fur seal juveniles and pups enter the harbor and can be found hauled out onshore in the Salt Lagoon entrance and channel during that period, though in some years they have limited or no presence on land within the Village Cove area.

    - There is a very small chance of avoiding a fur seal "take" if the Corps' O&M activities were conducted within the late-August/September 1 – November 1 timeframe when fur seals are known to enter the harbor area regularly.

    - Three options exist if the Corps wishes to perform O&M activities within the late-August/September 1 – November 1 timeframe:

        a. Option 1: Develop a fur seal monitoring program with the NMFS so that a temporary shutdown of O&M activities would occur until such time a fur seal(s) exits a predetermined exclusion zone for a specified time period.

b. Option 2: Apply for an IHA from NMFS, which if granted, would permit the Corp to unintentionally-take, via harassment, a predetermined number of fur seals.

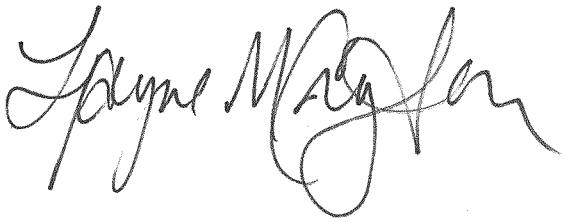
c. Option 3: Proceed with the subject O&M activities within the late-August/September 1 – November 1 timeframe, hoping not to violate the MMPA by "taking" fur seals.

11. The feedback and information provided by Mike will be used to determine the potential impacts on fur seals, develop mitigation measures, and be incorporated in the St. Paul Harbor O&M environmental assessment. The information will also be shared with the Corps' Project team, as it will be very important to make a decision about how the timing restriction will or will not affect project design and contracting specifications.

12. This MFR was prepared by Wayne Crayton, Staff Project Biologist. Questions should be addressed to him at 907-753-2656 or at Wayne.M.Crayton@usace.army.mil.

POSTSCRIPT: A short follow-up discussion, via email, with Mike occurred on April 2, 2015, regarding a question posed by the Corps Project Manager, Julie Anderson: "Does the time frame restriction apply to work above the water line, such as completing the rock work on the detached breakwater?" For clarification, I stated that a barge previously loaded outside the restricted timeframe with source rock, would tie up next to the detached breakwater. The machinery on the top of the breakwater would pluck rock off the barge and place it on the breakwater. All the in-water breakwater work would have been completed within the restricted timeframe...it is the top work/finishing touches above the waterline that Julie is referring to.

Mike suggested in his reply that if work were confined to the top of the breakwater, it would be difficult to associate an effect from an upland activity to harassing a fur seal swimming by or hauled out at another location. Mike also added that regardless of harassment from the project, NMFS is always concerned about oil spills in the harbor, because fur seals are as sensitive to oiling as otters. I stated that the oil spill issue would be addressed in the project's "Plans and Specifications", as an oil spill prevention and cleanup plan is required of the contractor. In addition, potential environmental impacts from oil spills will be addressed in the environmental assessment.



4.6.15 3130-1RCOE

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 6898
Joint Base Elmendorf-Richardson, ALASKA 99506-0898

REPLY TO ATTENTION OF:

Environmental Resources Section

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Department of Natural Resources
Office of History and Archaeology
550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

Dear Ms. Bittner:

The U.S. Army Corps of Engineers (Corps) is planning to perform harbor related operation and maintenance activities at Saint Paul, Island, Alaska (Sec. 25, T35S, R132W; and Sec. 26, T35S, T131W; Seward Meridian; USGS Quad Pribilof Islands C-4, D-4; Figure 1). In compliance with Section 106 of the National Historic Preservation Act of 1966 [36 CFR 800.3(a)(1)], the purpose of this letter is to inform your office of a Federal undertaking with a determination of no adverse effect to historic properties and to seek your concurrence on the assessment of effect.

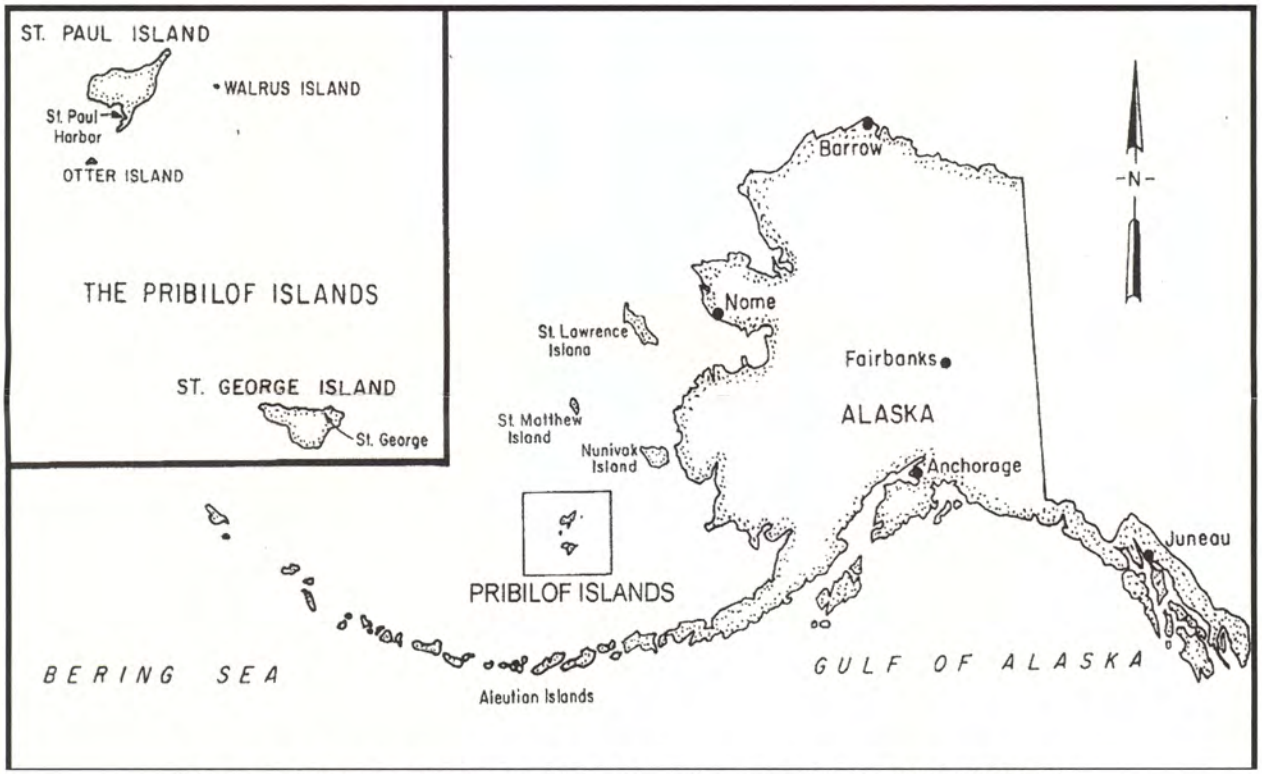


Figure 1. Saint Paul Harbor and Island location and vicinity (USACE 2015).

2015-00539

Description of Undertaking and the Area of Potential Effect (APE):

The existing Saint Paul Harbor is on the outer end of Village Cove. The history of Saint Paul Harbor's development occurred in three general phases (Figure 2). Phase I, completed in 1990, included a 1,050- foot-long main breakwater, a 1,000- foot-long inner breakwater, a 2-acre turning basin at a depth of 18 feet mean lower low water (MLLW), a 700-foot-long dock, and a 6-acre mooring basin. Phase II, completed in 1996, addressed an unanticipated demand for harbor services and overtopping problems associated with the main breakwater: (1) the depth of the entrance channel was increased to -30 feet MLLW, (2) a maneuvering basin was enlarged and dredged to -29 feet MLLW, (3) a +4 feet MLLW spending beach was constructed and a sediment management area was established on the lee side of the 1,000- foot-long detached breakwater, (4) three offshore reefs 1,300 feet in length at -12 feet MLLW were constructed parallel to the main breakwater, and (5) the natural entrance channel to the Salt Lagoon was realigned to restore the lagoon's water quality and biological productivity. Phase III, completed in 2010, involved: (1) the construction of a small boat harbor,; (2) an entrance channel dredged to -16.5 feet MLLW, (3) a maneuvering area dredged to -12 feet MLLW, and (4) construction of wave protection/flow directing features, such as a 435-foot-long, +10- foot MLLW breakwater, and a 530-foot-long, +10-foot MLLW circulation berm.

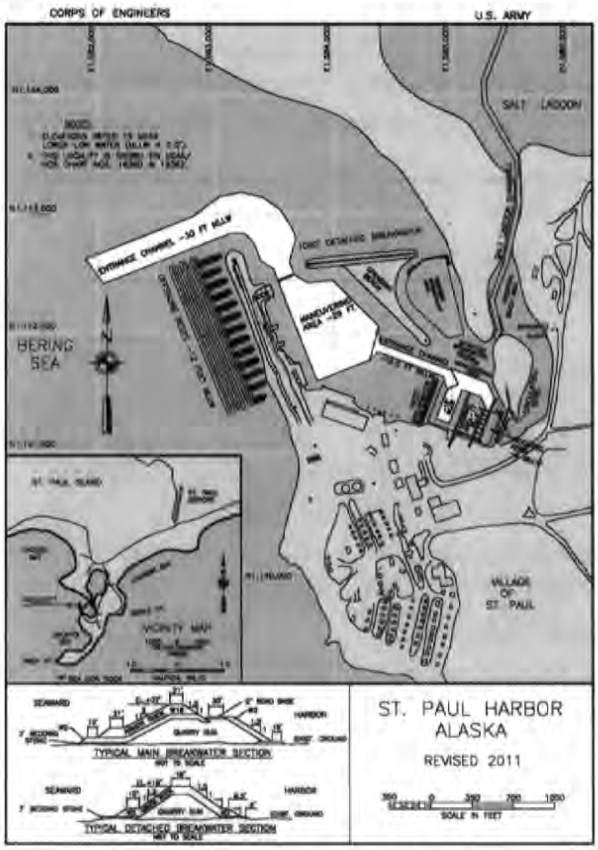


Figure 2. Navigation improvement features, Saint Paul Harbor, Alaska (USACE 2011).

Field surveys in 2006, 2011, and 2014 revealed the development of scour holes in the harbor's two entrance channels and adjacent to a rubble mound breakwater and shoaled-in areas (Figure 3). The purpose of the Corps' proposed undertaking is to repair federal navigation features

at St. Paul Harbor. Specifically, the Corps will: (1) repair a 1,000- foot- long detached rubble mound breakwater, (2) repair scour holes in the harbor's entrance channels and adjacent to a rubble mound breakwater, (3) dredge to project depth selected shoaled areas of the main and small boat harbor entrance channels, (4) dredge to project depth a sediment management area, and (5) dispose of dredged material in upland locations.

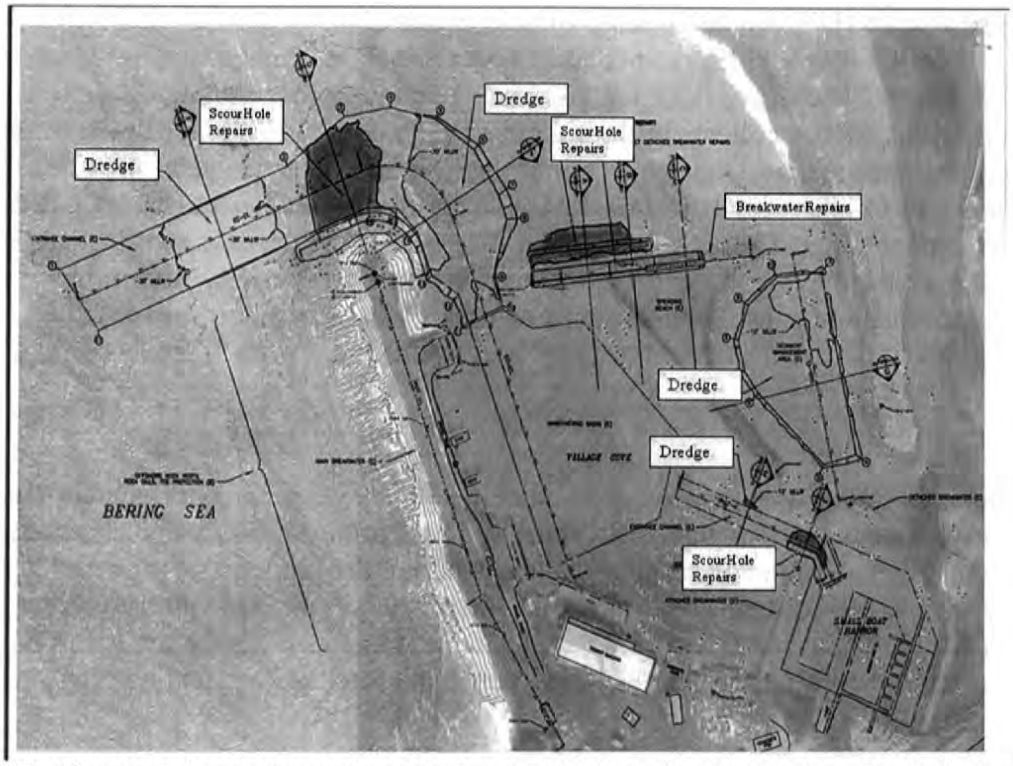


Figure 3. APE of proposed operation and maintenance activities at St. Paul Harbor, St. Paul Island, Alaska.

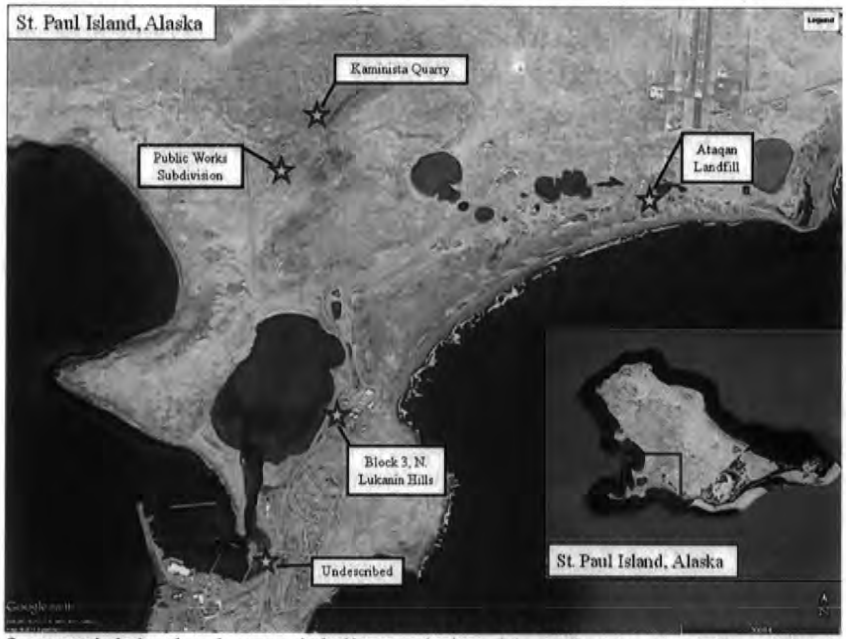


Figure 4. APE of potential dredged material disposal sites identified by the City of St. Paul and the U.S. Army Corps of Engineers.

The proposed project will take place inside the existing harbor. The area of potential effect (APE) includes the Saint Paul Harbor basin, western portions of the Seal Island Historic District National Historic Landmark (XPI-002), the dock facilities on St. Paul Harbor's eastern shoreline, five potential barrow sites, and existing roads leading from the harbor's loading dock to the barrow sites.

Dredged materials will be disposed of at five potential locations: an undescribed landfill, Block 3 in North Lukanin Hills, the public works subdivision, Kaminista Quarry, and the Ataqan landfill (Figure 4). The Corps does not designate rock sources for its projects; however, the Corps believes that rock will be collected from Kaminista Quarry and used to repair the rubble mound breakwater and scour holes. Barrow locations on Saint Paul Island have been utilized in the past for Corps and city projects and are already disturbed. Sediment from the harbor will be dredged and loaded onto a barge. Dredged materials will be taken to the dock and offloaded onto trucks, which will only use the island's existing roadway system to dispose the materials at one or more of the designated disposal sites. Maintenance operations will prohibit off road activities.

History

Saint Paul Island was formed approximately 400,000 years ago, and as interpreted from geologic evidence, was never glaciated (Veltre and McCartney 1994:2). It has been speculated by archaeologists that with the lowering of sea levels during the last ice age, the Pribilof Islands would have been hills towering over the Beringian plain that may have attracted ancient hunters. The first archaeological survey of Saint Paul Island was an unsuccessful attempt to find this early occupation (Bryan 1966), but no prehistoric settlements were located, and no prehistoric sites have since been identified (Pipkin 2007).

There have been a number of archaeological surveys on Saint Paul Island that have identified many historic properties. The earliest survey was conducted by Bryan in the early 1960's. While unsuccessful in his objective to discover early prehistoric sites, he did find many of the historic era sites located on the island. An archaeological survey in the Pribilofs during the early 1980s also recorded several early historic settlements on St. George and St. Paul Islands, with over a dozen AHRS numbers assigned (Bryan 1966). In 1986 Douglas and Mary Veltre conducted a survey at St. George Island (Veltre and Veltre 1986), and subsequent field efforts have been organized by Douglas Veltre through the University of Alaska. Otherwise, the archaeological record is known from survey and monitoring studies conducted for specific cultural resource purposes (Yarborough 1986; Reynolds 1985; Mobley 1992, 1993, 1999, 2006, 2008, 2010). Thus far, archaeological investigations have supported early historic accounts indicating that the Pribilof Islands had no prehistoric occupation prior to Russian resettlement of Aleut workers and their families to harvest seal pelts in the late 1700s.

In 1786 Gerassim Pribilof of the Russian Lebedev-Lastochkin Fur Company encountered uninhabited St. George Island and eagerly noted its large seal rookeries. Within two years both St. George and St. Paul Islands were forcibly colonized with Aleuts from the Aleutian Islands (Orth 1967:826, 828), beginning two centuries of commercial sealing at the Pribilof Islands. An estimated 2.5 million pelts were taken from the islands during Russian control (Bower 1945:1-2).

Small communities on each island were maintained by the Russian American Company through three successive charters beginning in 1799 and lasting until the transfer of Alaska's administration to the United States in 1867. The Pribilofs passed into American hands in 1867 with the purchase of Alaska. In 1970, Congress awarded a twenty-year concession to hunt seals in the Pribilofs to the Alaska Commercial Company of San Francisco. The rental for this concession was $55,000 a year. The company was also obligated to pay the government a duty of $2.625 per seal skin taken, and to annually provide the islands' Aleut inhabitants with 2,500 dried salmon, 60 cords of firewood, a sufficient quantity of slat and barrels to preserve meat, and to maintain a school on each island. The company was also ordered to treat the Aleuts with respect and kindness. They made efforts to improve their housing by replacing the traditional earthen barabaras with wood frame houses covered with tar paper. A physician was stationed on each island, and a hospital was built at St. Paul.

From 1870 to 1890 the fur seal industry in the Pribilofs was operated as a franchise from the Federal government to the Alaska Commercial Company, followed by two decades under the North American Commercial Company (Baker 1957:7). The Federal government took over direct management in 1910 through the Bureau of Fisheries under the Commerce Department, then through the U.S. Fish and Wildlife Service under the Interior Department. Throughout, the Pribilof Aleuts were maintained at their island villages to serve as seasonal laborers when the seal harvest began each summer. Government ships including Navy vessels supplied the two islands, and Federal agents held considerable control over the villagers and their actions. In 1911 a Navy radio station was built on a 19-acre site just south of St. Paul village in conjunction with similar stations at Kodiak and Dutch Harbor.

The Japanese attack on Pearl Harbor in December 1941 was followed soon thereafter by the bombing of U.S. bases at Dutch Harbor and the capture and fortification of Kiska and Attu Islands in the Aleutians, prompting the forced evacuation of Aleutian villages to camps in southeast Alaska (Kohlhoff 1995:71-72). U.S. troops soon took over both Pribilof Islands, with 875 men building an airstrip at St. Paul and 41 men stationed at St. George (Kohlhoff 1995:137-138). By September of 1943 the military contingent consisted of only ten men at St. Paul, and during the following year, most Pribilof villagers returned home. The Federal government resumed commercial sealing operations. Dwindling fur seal populations and the provisions in international fur seal treaties prompted the Federal government to suspend commercial sealing at St. George in 1972 (Thomas 1990:9-12). Commercial sealing was stopped at St. Paul in 1984. Telephone service in the 1970s made the Navy radio station unnecessary, and the facility was closed. The primary economies of the two islands have shifted to fishing and tourism, along with investments made by their respective village corporations founded under the Alaska Native Claims Settlement Act (ANCSA). Harbor improvements continued at St. Paul in an effort to develop a fishing service industry.

Previous Consultation for the Saint Paul Boat Harbor

The following documents are a list of EA/FONSI and EIS's that have previously been prepared by the Corp concerning past navigation projects at St. Paul, Alaska. Records indicate that SHPO concurred with the Corps' Finding of No Significant Impact in the 1996, 1998, 2002, and 2006 navigation improvement and harbor construction projects.

- 1982. St. Paul Harbor, Final Feasibility Report and Environmental Impact Statement. Re: the construction and maintenance of a main breakwater and an entrance channel and maneuvering area.
- 1988. St. Paul Island Harbor, Environmental Assessment. Re: the construction of a secondary, detached breakwater.
- 1996. St. Paul Harbor Improvements, Interim Feasibility Report and Environmental Assessment. Re: Dredging the entrance channel and maneuvering basin deeper, constructing a spending beach on the lee side of a detached breakwater, and constructing three offshore reefs parallel to the main breakwater. SHPO concurred with Corps' findings.
- 1998. St. Paul Harbor Improvements, Salt Lagoon Entrance Channel. Environmental Assessment and Finding of No Significant Impact. Re: Constructing features designed to restore Salt Lagoon's full tidal exchange to its condition prior to the construction of the harbor's breakwaters and reconstruct tidal flats. SHPO concurred with Corps' findings.
- 2002. St. Paul Small Boat Harbor, Emergency Breakwater Repair and Disposal of Dredged Material. Environmental Assessment and Finding of No Significant Impact. Re: the construction of a small boat harbor within the confines of existing breakwaters, the on-going emergency action for the protection of the existing main breakwater and related infrastructure, and the disposal of dredged material. SHPO concurred with Corps' findings.
- 2006. St. Paul Harbor, General Reevaluation Report Environmental Assessment and Finding of No Significant Impact (Hanson January 28, 2005 letter to SHPO). SHPO concurred with Corps' findings.

Sites Identified in the Area of Potential Effect

Examination of the Alaska Historic Resources Survey (AHRS) database revealed one National Historic Landmark within the project APE: the Seal Island Historic District (XPI-002; Table 1). No known prehistoric sites are identified within the project's APE.

Table 1. AHRS sites within the project APE.

Site Name	AHRS No.	NATREG STATUS
Seal Island Historic District National Historic Landmark	XPI-002	Eligible under Criterion A

XPI-002 is identified as being a rookery for fur seals and part of the historic fur seal hunting grounds. XPI-002 includes the beaches of Saint Paul and Saint George Islands. The National Historic Landmark is historically significant because of its association with historic Aleut subsistence practices and because of its association with the historic Russian, British, French, Spanish, and American fur hunting trade. Records indicate that during July and August of each year, hunters drove young "bachelor" fur seal males to inland killing areas, where the seals were easily captured, slaughtered and skinned (Bower 1945). Killing of the fur seals was historically reported as being "indiscriminate" and resulted in the near extinction of the fur seal population on the Pribilof Islands. Subsistence fur seal harvesting by Natives takes place to this day; however, quotas are strongly regulated.

Assessment of Effects

Proposed operation and maintenance improvements at the Saint Paul Harbor are taking place in an area already heavily used and disturbed by past construction of the existing breakwater and harbor facilities. The borrow site locations have been used for harbor construction activities in the past and are utilized by the community of Saint Paul outside of this proposed projects' undertaking.

The proposed operation and maintenance improvements project is within the boundaries of XPI-002, a National Historic Landmark (NHL) eligible for the National Register under Criterion A. The undertaking is taking place in areas already of the NHL that is heavily modified by dredging and tidal action; heavily built up by existing dock and harbor facilities constructed in 2002; and includes existing roads and barrow source locations. The Corps has determined that the proposed project actions will not further diminish the property's location, design, setting, materials, workmanship, feeling, or association as the undertaking will take place on previously modified and disturbed surfaces. Following 36 CFR 800.4(d)(1), the Corps seeks your concurrence in the determination that the proposed Saint Paul Harbor operation and maintenance improvements project will result in **no adverse effect** to XPI-002. This assessment is based on past harbor improvement work within the same APE and is consistent with previous assessments and concurrences concerning past construction and navigational improvements at the Saint Paul Harbor. If you have any questions about this project, please contact me by phone at (907)753-5670, or by email at shona.d.pierce@usace.army.mil.

Sincerely,

Shona D. Pierce

Shona Pierce
Archaeologist

Cf:

Darrel Lewis
Alaska Regional Office, National Park Service
240 West 5th Avenue
Anchorage, AK 99501

Honorable Simeon Swetzof
City of St. Paul
PO Box 901
St. Paul Island, AK 99660-0901

Pat Baker
Aleut Community of Saint Paul Island
pnbaker@aleut.com
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Melvin Smith, Manager of Resource Development
Aleut Corporation
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Anchorage, AK 99503-6087

Millie McKeown, Cultural Heritage Director
Aleutian Pribilof Islands Association, Inc.
1131 East International Airport Rd
Anchorage, AK 99518

Julie Shane
Tanadgusix Corporation
615 E 82nd Avenue, Suite 200
Anchorage, AK 99518

References

Baker, Ralph C.
1957 Fur Seals of the Pribilof Islands. *U.S. Fish and Wildlife Service Conservation in Action 12.*

Bower, Ward T.
1945 The Fur Seal Industry of the Pribilof Islands, Alaska. *U.S. Fish & Wildlife Service Fishery Leaflet 77.*

Bryan, Alan L.
1966 *An Archaeological Reconnaissance of the Pribilof Islands.* Manuscript on file, Alaska Office of History and Archaeology, Anchorage.

Kohlhoff, Dean
1995 *When the Wind Was a River.* University of Washington Press, Seattle.

Mobley, Charles M.
1992 *Results of Trip to St. George.* Memo to Chuck Diters, U.S. Fish & Wildlife Service, Anchorage.
1993 *The St. George Seal Skin Plant, St. George Island, Alaska.* Report prepared by Charles M. Mobley & Associates, Anchorage, under contract to Alpha Engineering Group, Inc., Bothell, Washington, for National Marine Fisheries, National Oceanic and Atmospheric Administration, Seattle.
1999 *Archaeological Monitoring of the Seal Skin Plant Stabilization, St. George Island, Alaska.* Report prepared by Charles M. Mobley & Associates, Anchorage, under contract to St. George Tanaq Corporation, Anchorage, for National Oceanic and Atmospheric Administration, Seattle.
2006 *Determinations of Effect and Monitoring Plan for Cultural Resources, National Oceanic & Atmospheric Administration Environmental Restoration Program, St. George and St. Paul Islands, Alaska.* Report prepared by Charles M. Mobley & Associates, Anchorage, under contract to National Oceanic & Atmospheric Administration, Seattle.
2008 *Summary of the Historic Architecture Inventory of St. George and St. Paul Villages, Seal Islands National Historic Landmark, Pribilof Islands, Alaska.* Report prepared by Charles M. Mobley & Associates, Anchorage, under contract to National Oceanic & Atmospheric Administration, Seattle.
2010 *Archaeological Monitoring of the 2010 St. Paul Sewer Main Installation, Pribilof Islands, Alaska.* Report prepared by Charles M. Mobley & Associates, Anchorage, under contract to Polarconsult Alaska, Inc., Anchorage, Alaska.

Orth, Donald J.
1967 Dictionary of Alaska Place Names. *U.S. Geological Survey Professional Paper 567.*

Pipkin, Mark E.
2007 *Archaeological Monitoring of the Excavation of the Decommissioned Power Plant Site in Saint Paul, Alaska.* Prepared for Bering Sea Ecotech.

Reynolds, Georgeanne L.
1985 *Cultural Resources Survey for Defense Environmental Restoration Account (DERA) of World War II Cleanup Sites, St. George and St. Paul Islands*. Manuscript on file, Alaska Office of History and Archaeology, Anchorage.

Thomas, Paul
1990 *Fur Seal Island: An Environment in Peril*. Souvenir Press, London.

Veltre, Douglas W., and Allen P. McCartney
1994 *An Archaeological Survey of the Early Russian and Aleut Settlements on St. Paul Island, Pribilof Islands, Alaska*. Report submitted to TDX Corporation, St. Paul, Alaska.

Veltre, Douglas W., and Mary J. Veltre
1986 *Early Settlements on St. George Island: An Archaeological Survey of Three Russian Period Sites in the Pribilof Islands, Alaska*. Report submitted to Alaska Division of Parks and Outdoor Recreation under Historic Preservation Fund Grant #86-243.

Yarborough, Michael R.
1986 *Archaeological Survey of a Proposed New Runway and an Expansion of the Existing Runway on St. George Island, Alaska*. Report submitted to the Alaska Department of Transportation and Public Facilities under Project 56124.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 6898
JOINT BASE ELMENDORF-RICHARDSON, ALASKA 99506-0898

Environmental Resources Section

MAR 10 2015

Ms. Socheata Lor
U.S. Fish and Wildlife Service
Anchorage Fish and Wildlife Field Office
4700 BLM Road
Anchorage, Alaska 99507

Dear Ms. Lor

The U.S. Army Corps of Engineers, Alaska District (Corps) is preparing an environmental assessment addressing repairs to Federal navigation features at St. Paul Harbor, St. Paul Island, Alaska. Specifically, the Corps proposes to: (1) repair a slumping detached rubble mound breakwater, (2) repair scour holes in the harbor's entrance channels and adjacent to rubble mound breakwaters, (3) dredge to project depth selected shoaled areas of the main and small boat harbor entrance channels, (4) dredge to project depth a sediment management area, and (5) dispose of dredged material in upland locations (enclosure). Without such repairs, the structural integrity of the harbor's navigation features would be compromised, therefore jeopardizing the harbor's continued functional and economic value to the bottom fish industry and island community. The Corps' environmental assessment will describe the maintenance activities in more detail and their potential environmental impacts, as well as include environmental protection measures designed to mitigate any foreseeable adverse effects.

Section 7 of the Endangered Species Act (ESA) requires Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of critical habitat. To comply with Section 7 of the ESA and to facilitate the environmental assessment's development, the Corps wishes to initiate informal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA.

According to the USFWS's web site (http://ecos.fws.gov/tess_public/reports/species-listed-by-state-report?state=AK&status=listed), the Corps believes that the USFWS-managed threatened/endangered species listed below, along with designated critical habitat, have the potential to be present in the St. Paul Harbor area. The Corps asks that USFWS verify the accuracy of our species list and, if necessary, add any species or pertinent information that is missing.

- Short-tailed albatross (*Phoebastrai(=diomedea) albatrus*): Endangered
  No critical habitat rules have been published.

- Steller's eider (*Polysticia stelleri*), Alaska breeding population: Threatened
  Designated critical habitat does not exist in the St. Paul Harbor area.

- Northern sea otter (*Enhydralutris kenyoni*), Southwest Alaska Distinct Population Segment: Threatened
  Designated critical habitat does not exist in the St. Paul Harbor area.

- Eskimo curlew (*Numenius borealis*): Endangered
  No critical habitat rules have been published.

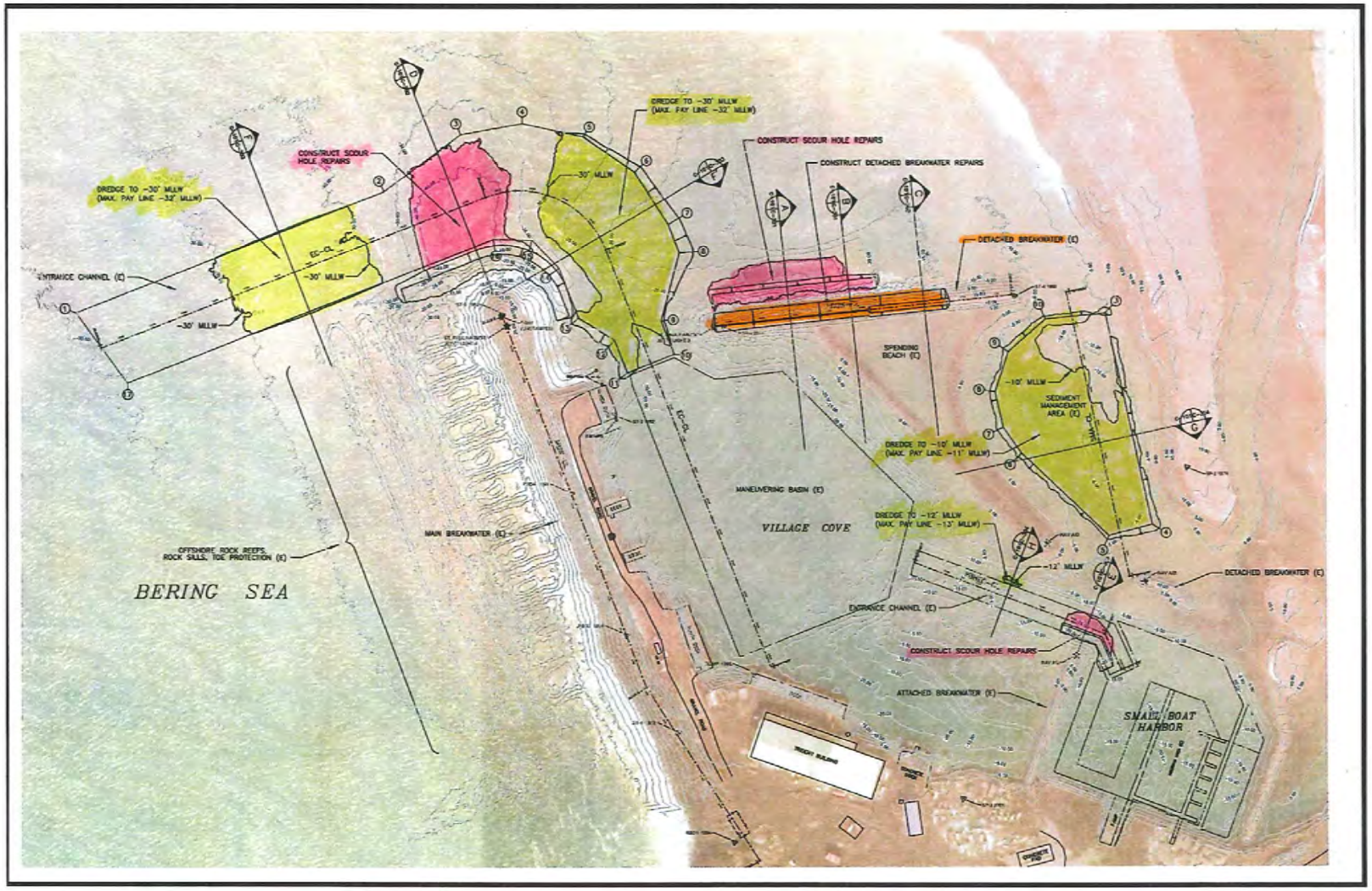
USFWS feedback will facilitate the Corps' evaluation of the maintenance activities according to their potential for effects on the listed species and critical habitat. No formal consultation with the USFWS will be sought if the Corps determines that its maintenance activities will have no effect on the listed species or critical habitat. The Corps will seek USFWS concurrence if its maintenance activities may affect, but are not likely to adversely affect, listed species or critical habitat. Formal consultation with the USFWS will be required if the Corps determines that its activities are likely to adversely affect the listed species or critical habitat.

Thank you for your assistance. If you have any questions regarding the Corps' request or require additional information, please contact Wayne M. Crayton of my staff at (907) 753-2656 or at Wayne.M.Crayton@usace.army.mil.

Sincerely,

Michael D. Noah
Chief, Environmental Resources Section

Enclosure



Enclosure: Proposed operation and maintenance activities at St. Paul Harbor, St. Paul Island, Alaska.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 6898
JBER, ALASKA 99506-0898

MEMORANDUM FOR RECORD (MFR) 18 December 2014
CEPOA-P-CW-ER

SUBJECT: St. Paul Island Small Boat Harbor and Lowell Creek Diversion Tunnel O&M projects coordination meeting, November 19, 2014, with/at the Alaska Department of Environmental Conservation (ADEC).

PURPOSE: The purpose of the meeting was to brief the attendees about the Corps' O&M projects at the subject sites and to obtain ADEC's feedback relative to Clean Water Act-related issues (e.g. Section 401 and 404 and dredged material characterization and disposal). This MFR does not function as meeting minutes, but instead the MFR summarizes discussions and documents project decisions, agreements and strategies.

ATTENDEES:

Wayne Crayton - USACE Environmental Resources
Julie Anderson - USACE Construction Operation
Dee Ginter - USACE Hydraulics Hydrology
Ken Eisses - USACE Hydraulics Hydrology
Jim Rypkema - ADEC Wastewater Discharge Authorization Program
Shannon DeWandel - ADEC Wastewater Discharge Authorization Program
Bill Oconnell - ADEC Contaminated Sites Program
Louis Howard - ADEC Contaminated Sites Program
Lori Aldrich - ADEC Solid Waste Program
David Winandy - NOAA Safety and Environmental Compliance Office (via phone)

DISCUSSION:

Briefly, the Lowell Creek project involves repairing the diversion tunnel's reinforcements with new concrete, rebar and grouting to coincide with the low-flow season.

1. Discussions centered around the need to conduct a Section 404(b)(1) evaluation for the proposed activities. ADEC agreed that Lowell Creek is "waters of the United States" and therefore subject to the Clean Water Act.

2. Because the proposed maintenance activities are associated with a previously authorized, currently serviceable structure, the ADEC agreed with the Corps that the work can proceed under Nationwide Permit No. 3 (Maintenance) and no new Section 404(b)(1) evaluation is required.

3. ADEC also stated that if the project footprint is greater than one acre, a storm water pollution prevention plan would be required that implemented best management practices to control erosion and the release of sediment.

The Corps' project at St. Paul Island involves repairing existing rubble mound breakwaters affected by storms, dredging shoaled-in navigation channels and a settlement basin, and disposing of dredged material (attachment 1).

1. The project is likely to proceed in stages. Priority work is repairing a breakwater and repairing three scour-holes, followed by dredging four areas and disposing of the material upland. The breakwaters and scour-hole repairs would likely be rock obtained from the island's existing quarry, provided the rock meets project specifications. More than likely, a clamshell dredge would be used, in conjunction with a barge, to dredge shoaled-in areas composed of sand and gravel. Dredged material is expected to be off-loaded at the harbor's dock into trucks and transported upland for placement.

2. Maintenance dredging has not occurred since the completion of harbor construction in 2010. Collectively, the Corps expects to dredge and dispose of about 85,000 cubic yards of shoaled material.

3. Dredged material is not expected to exceed sediment quality criteria because of the dynamic oceanographic nature of the coastline. Dredged material sampling results from 2004-2005 will be used to help develop a proposed project dredged material sampling plan, possibly using free download Pro UCL software. State of Alaska solid waste management regulations (18AAC60.025, Polluted Soil; attachment 2) will also be considered in developing the subject sampling plan.

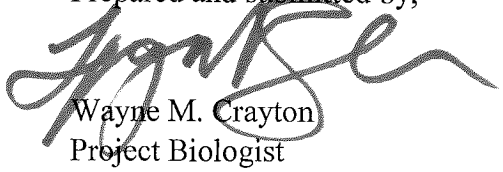
4. Dredge management units, if established, would help determine the number of necessary samples and locations. However, ADEC is thinking at this time that the Corps' dredged material sampling plan should include at least 8 individual, not composite, dredged material and disposal area background samples and they should be analyzed for metals and DRO.

5. The Corps and ADEC agreed that sampling will be performed prior to dredging and disposal of material, but not before the construction contract is awarded, as is the usually the Corps' process. Currently no equipment exists on St. Paul Island to reach the maximum pay-lines, up to -32 feet MLLW, to sample. The Corps plans to require the construction contractor to test and provide sampling results, including a 30-day agency review period, prior to being allowed to dredge material.

6. ADEC believes that contaminated dredged material, if any, would be disposed of at the City of St. Paul's existing landfill. It is believed that uncontaminated dredged material would go to a City of St. Paul yet-to-be-identified designated stockpile area, which might include its existing inert monofill.

Questions should be addressed to Wayne Crayton at 753-2656 (Wayne.M.Crayton@usace.army.mil) and Julie Anderson at 753-5685 (Julie.L.Anderson@usace.army.mil).

Prepared and submitted by,



Wayne M. Crayton
Project Biologist
CEPOA-P-CW-ER

18 AAC 60.025 is repealed and readopted to read:

18 AAC 60.025. Polluted soil. (a) Unless otherwise approved under (b), (c), or (d) of this section, polluted soil may be disposed of only in a Class I MSWLF or a landfill that meets all applicable requirements of this chapter and federal law for the disposal of industrial solid waste or for drilling waste.

(b) The disposal or beneficial use of polluted soil within a Class III MSWLF will be approved on a case-by-case basis only if the owner of the polluted soil and the owner or operator of the landfill demonstrate, to the satisfaction of the department, that:

(1) petroleum hydrocarbons are the only contaminants in the soil.

(2) the polluted soil originates from the cleanup of a single spill incident within the community served by the landfill;

(3) the volume of the polluted soil requiring disposal is less than 500 cubic yards; and

(4) the contaminant concentrations within the polluted soil do not exceed the following maximum values as measured by the applicable Alaska methods for petroleum hydrocarbons described in Appendix D of the *Underground Storage Tanks Procedures Manual,* dated November 7, 2002:

(A) 900 mg/kg Gasoline Range Organics (by Method AK 101);

(B) 2,000 mg/kg Diesel Range Organics (by Method AK 102); and

(C) 4,500 mg/kg Residual Range Organics (by Method AK 103).

(c) The beneficial use of polluted soil that does not meet the volume, source, or contaminant concentration criteria in (b)(2), (b)(3), or (b)(4) of this section may be approved within a Class III MSWLF if the proposed use of the soil

(1) has a direct benefit to the community;

(2) can be accommodated within the established operational practices at the landfill or within the existing maintenance, closure, or expansion plans for the landfill; and

(3) will comply with the conditions and requirements in (d) and (e) of this section.

(d) The disposal of polluted soil at a landfill other than a Class I MSWLF, an industrial solid waste landfill, a drilling waste landfill, or a Class III MSWLF, or the beneficial use of polluted soil under (c)(3) of this section, will be approved on a case-by-case basis only if the owner of the polluted soil and the owner or operator of the landfill demonstrate, to the satisfaction of the department, that

(1) the waste in the landfill cannot be washed into nearby surface water and leachate from the landfill cannot reach nearby surface water;

(2) the polluted soil will not cause a threat to the public health, safety, or welfare, or to the environment if it is disposed in the landfill;

(3) there is no practical potential for migration of a hazardous constituent from that landfill to an aquifer during the active life and post closure care of the landfill; and

(4) the owner of the landfill agrees to implement institutional controls that the department determines are necessary for long term protection of the public health, safety, or welfare and the environment.

(e) The demonstration required in (d) of this section must be certified by a qualified groundwater scientist and based upon site-specific

(1) field-collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting fate and transport of hazardous constituents; and

(2) hazardous constituent fate and transport predictions that anticipate maximum, likely migration and consider effects on public health, safety, and welfare and the environment.

(Eff. 1/28/96, Register 137; 7/11/99, Register 151; am 9/5/2010, Register 195; am __/__/__, Register ___)

Authority: AS 44.46.020 AS 46.03.296 AS 46.03.810
AS 46.03.010 AS 46.03.299 AS 46.04.020
AS 46.03.020 AS 46.03.302 AS 46.09.020
AS 46.03.100 AS 46.03.800

18 AAC 60.200(a) is amended to read:

18 AAC 60.200. Permit requirement. (a) Except as otherwise provided in this section, a person may treat or dispose of solid waste, or construct, modify, or operate a solid waste facility only in accordance with a waste disposal permit issued by the department under 18 AAC 60.215**, an authorization under (c) or (d) of this section or otherwise issued by the department,** or a research, development, and demonstration permit issued under 18 AAC 60.213. However, a permit **or authorization** under this chapter is not required for

18 AAC 60.200 is amended by adding new subsections to read:

(c) The disposal of municipal solid waste in a Class III MSWLF meeting the standards of 18 AAC 60.300(c)(3)(B) will be authorized by the department provided

(1) the landfill serves an average daily population of fewer than 50 persons;

(2) the landfill is sited and operated in accordance with the requirements of this chapter;

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF AIR QUALITY
Air Non-Point Mobile Sources

619 E. Ship Creek Avenue, Suite 249
Anchorage, Alaska 99501
Main: 907-269-7577
Toll Free: 866-241-2805
Fax: 907-269-7508
www.dec.alaska.gov

April 7, 2015

Wayne M. Crayton
US Army Corps of Engineers, Alaska District
P.O. Box 6898
JBER, AK 99906

Dear Mr. Crayton:

This letter is in regards to your request to provide comment regarding an air quality review of the St. Paul Island Harbor, maintenance dredging and breakwater repair, by the U.S. Army Corps of Engineers. As described in the attachment the project is not currently in a nonattainment area or maintenance area for air quality control under the Clean Air Act. Therefore, projects receiving federal funds or approvals do not require a conformity analysis under General Conformity regulations.

However, particular attention should be given during any construction activities to take reasonable precaution per 18 AAC 50.045(d) to prevent fugitive dust. Thank you for contacting us about your project. If you have further questions or concerns about air quality issues, you may contact me at (907) 269-7579 or by e-mail at cindy.heil@alaska.gov.

Sincerely,

Cindy Heil
Program Manager, ANPMS

Attachment: Copy of Original request

DEC Air Quality Conformity Request Form
Project Located Outside of Nonattainment/Maintenance Area

- Location of the Project:

  Name: ST. PAUL ISLAND HARBOR
  Address: ST. PAUL, ALASKA
  Lat/Long Coordinates[1]:
  Size (acres):

- Type of Project / Project description:

  MAINTENANCE DREDGING AND BREAKWATER REPAIR

- Is the project located inside of a nonattainment or maintenance area?

  ☐ Yes
  ☒ No

  If no, explain how you reached that conclusion.[2]

  OBTAINED INFORMATION FROM ADEC AIR QUALITY PROGRAM WEB SITE

- Define the period of performance that can be foreseen.

  State Date: —
  Construction Period: MAY – SEPT.
  Operation Start Date: 2016 – 2018

- Contact information for responsible federal manager requesting.

  Name: WAYNE M. CRAYTON
  Agency: USARMY CORPS OF ENGINEERS, ALASKA DISTRICT
  Address: P.O. BOX 6898 JBER, AK 99506
  Phone No.: 907-753-2456
  Email Address: Wayne.M.Crayton@USACE.army.mil

  If more than one agency is responsible for the project, provide contact information for other managers below.

  Name: N/A
  Agency:
  Address:
  Phone No.:
  Email Address:

Wayne M. Crayton 01 APRIL 2015

[1] For projects located near nonattainment / maintenance areas provide a map/diagram displaying the location of the property relative to the nonattainment / maintenance boundary.
[2] This response is relevant for projects located near nonattainment / maintenance areas.

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 6898
JOINT BASE ELMENDORF-RICHARDSON, AK 99506-0898

29 April 2015

CEPOA-PM-C-ER
MEMORANDUM FOR THE RECORD (MFR)

SUBJECT: St. Paul Island Small Boat Harbor Operation and Maintenance (O&M) activities.

PURPOSE: To document coordination with the U.S. Fish and Wildlife Service, Alaska Region.

1. This MFR is a record of my April 27, 2015, conversation with Ms. Leah Kenney (Leah), who is with the:

   U.S. Fish and Wildlife Service
   Anchorage Fish and Wildlife Field Office
   4700 BLM Road
   Anchorage, AK 99507
   Phone: 907-271-2440

2. Leah called regarding the U.S. Army Corps of Engineers, Alaska District's (Corps) March 9, 2015, ESA/Section 7 letter of coordination with the USFWS.

3. Leah informed me that St. Paul Island does not have any critical habitat for the threatened Steller's eider (*Polysticta stelleri*) and threatened spectacled eider (*Somateria fischeri*), and that no other threatened or endangered species, other than what the Corps identified in the subject letter, occur in the St. Paul Island vicinity.

4. Leah also provided valuable information about the USFWS's "2012 Northern sea otter and Steller's eider observer protocol" and suggested it be implemented when construction begins. Subsequently, Leah sent a pdf of the document to me via email.

5. The feedback and information provided by Leah will be incorporated in the St. Paul Harbor O&M environmental assessment, especially in sections pertaining to mitigation recommendations. The information will also be shared with the Corps' Project team so that the project's "Plans and Specifications" (which go out for bid) identify the need for implementing an observer program.

6. This MFR was prepared by Wayne Crayton, Staff Project Biologist. Questions should be addressed to him at 907-753-2656 or at Wayne.M.Crayton@usace.army.mil.

Wayne M Crayton

Anchorage Fish and Wildlife Field Office
Observer Protocols for
Pile Driving, Dredging and Placement of Fill
Draft August 7, 2012

Contact: Kimberly Klein,
907-271-2066, Kimberly_Klein@fws.gov

Northern sea otters (*Enhydra lutris kenyoni*) may be harmed by noise from pile driving and other activities. Steller's eiders (*Polysticta stelleri*) are unlikely to be in the project area between April 15-Novemeber 15 (Unalaska), May 1 - October 31 (Cook Inlet and Kodiak Island); work should be scheduled to occur to during this time to avoid impacts. However, if present, Steller's eiders may also be harmed by noise. Impacts from noise are likely to be avoided if it is confirmed that otters and eiders are not present within a "hazard area" near the source of the noise. The "hazard area" is defined here as the area in which noise levels from construction activities are expected to exceed threshold noise levels that cause harm. Tables 1 specifies the size of the hazard area for dredge and fill activities and pile driving. The use of one or more observers to "clear" the hazard area is an effective means to assure that no Steller's eiders or sea otters will be harmed. The observer is responsible for communicating the presence of one or more Steller's eider or sea otters in the hazard area to the construction operators, and halting work until the animal voluntarily leaves the area. To "clear" the area means to verify no listed species are present; no action may be taken to disturb otters or eiders, move them away, or discourage their use of an area.

Because there has been no research conducted to establish noise thresholds for sea otters or Steller's eiders, we used noise thresholds established by the National Marine Fisheries Service National Marine Fisheries Service [NMFS] for pinnipeds to guide development of hazard areas. NMFS determined that thresholds for Level A Harassment (injury) and Level B Harassment (disturbance) would be reached for pinnipeds under the following scenarios (NOAA 2005; NOAA 2006; NOAA 2008; NMFS 2009, Southall et al. 2007; full citations are available upon request):

- Level B Harassment due to airborne noise: 100 dB re: 20 µPa;
- Level B Harassment due to underwater noise: 120 dB re: 1 µPa for vibratory pile driving;
- Level B Harassment due to underwater noise: 160 dB re: 1 for impact pile driving;
- Level A Harassment due to underwater noise: 190 dB re: 1.

The U.S. Fish and Wildlife Service (Service) recommends the size of the hazard area be established according to Table 1. The hazard area includes all marine areas below mean high tide (MHT) within a specified radius around the source of the noise. Areas blocked by points of land or shoreline contours are not included in the hazard area, but a 10° buffer outside of these areas should be included (see Figure1).

The distances identified in Table 1 represent the minimum hazard area radii needed to ensure that the typical maximal sound production levels reached during specified activities attenuate to levels below those expected to cause injury. The Service estimates these thresholds to be **110 dB re: 20 µPa for airborne noise, and 183 dB re 1µPa2-sec cumulative SEL for underwater noise**. These distances include a buffer for protection against injury due to cumulative sound exposure.

Table 1. Hazard area radii for specified activities, based on typical maximal sound levels generated during pile driving, dredging and fill placement activities[1].

Activity	Details (pile size, etc.)	Sound Production Level			Radius of Hazard Area centered on noise source
		Peak**	RMS**	SEL**	
In-water Impact Pile Driving*	Round or H pile >36"	>215	>200	>190	Contact the Service
	Round or H >36" with sound attenuation devices	200-215	185-200	175-190	2000 meters
	Round or H >24" up to 36"	200-215	185-195	175-185	2000 meters
	Round or H >24-36" with sound attenuation devices	190-205	175-185	165-175	500 meters
	Round or H ≤24"	185-210	170-185	160-175	500 meters
	Round or H ≤24" with sound attenuation devices	<200	<185	<175	300 meters
	Sheet Pile-any size	190	170	160	500 meters
	Sheet Pile-any size, with sound attenuation devices	180	160	150	300 meters
In-water Vibratory Pile Driving*	Round or H >36"	185-200	170-190	160-180	1000 meters
	Round or H >36" with sound attenuation devices	175-190	160-180	150-170	500 meters
	Round or H >24" up to 36"	175-195	165-185	155-175	500 meters
	Round or H >24" up to 36" with sound attenuation devices	165-185	155-175	145-165	300 meters
	Round or H ≤24"	<190	<180	<170	300 meters
	Round or H ≤24" with sound attenuation devices	<180	<170	<160	100 meters
	Sheet Pile-any size	182	165	165	300 meters
	Sheet Pile-any size, with sound attenuation devices	172	155	155	100 meters
Land-based Pile Driving	Based on in-situ recordings and sound propagation modeling, the distances needed to provide protection from airborne noise impacts would be adequately covered by monitoring the hazard area established for underwater sound propagation.				Same as each category above. Hazard area is limited to areas below MHT.
In-water Fill Placement and Dredging	All in-water use of heavy equipment for manipulating the substrate; including use of hydraulic rock breakers, drills, etc.	140-200	125-185	115-175	300 meters

* In-water <20 m ** Underwater sound pressure levels are measured in dB re: 1 μPa.

[1] Typical maximal sound levels from Illinworth Rodkin (2007); Blackwell et al. (2004, cited in Navy 2011); Hastings and Popper (2005); Jasco Research Ltd (2005, as cited in Navy 2011); Laughlin (2005, 2010a,b) ; Reyff (2005); Onuu and Tawo (2006); URS (2007); Parvin et al. (2008); Jones and Stokes (2009); NOAA (2009); Navy (2009); Scientific Fishery Systems, Inc. (2009); Thomsen et al. (2009); Mumford (2011); Navy (2011); Robinson et al. (2011); WSDOT (2011); Cardno ENTRIX (2012). Full citations are available upon request.

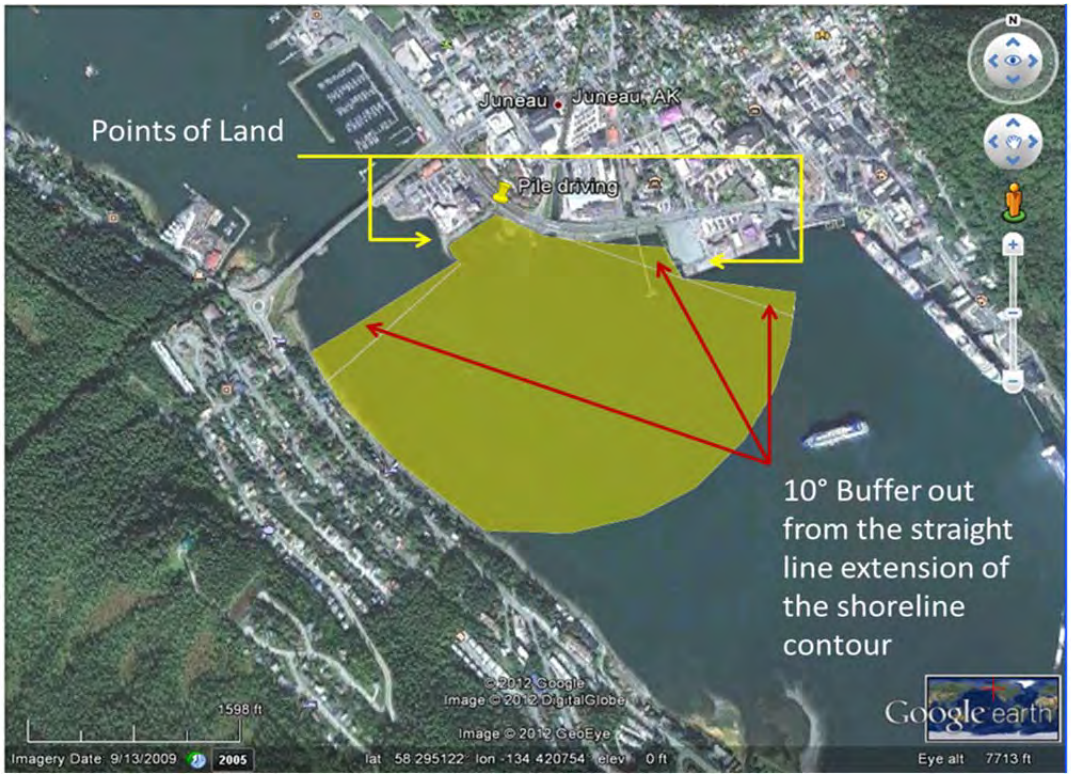


Figure 1. Depiction of a hazard area modified by the contours of the shoreline and points of land.

Ramp-up procedures

1. For impact pile driving, contractors will be required to provide an initial set of three strikes from the hammer at 40% energy, followed by a 30-second waiting period, then two subsequent three-strike sets. For vibratory pile driving, sound should be initiated for fifteen seconds at reduced energy followed by a 1-minute waiting period. This procedure would be repeated two additional times.
2. Ramp up procedures will be designed by the Applicant for in-water fill placement and in-water dredging activities specified in Table 1 to allow noise production to increase gradually from a low level, and to begin at locations farthest from marine areas. For example, a 5-minute period following startup of a single generator located well above high tide could be followed by 5 minutes of operating an excavator near the shoreline, etc. Equipment should be operated at low power, and then gradually increased to noisier, high-power levels. In-water noise production such as placement of fill should occur only after other all other noise-generating activities have ramped up and otters and eiders have had the opportunity to leave the area of their own accord.

Monitoring the "hazard area"

A. Pile driving: 100 to 2000-m "hazard area"

1. Observers will watch for Steller's eiders and sea otters within the appropriate hazard area as specified in Table 1 for 30 minutes prior to start of work. Observations will continue for the full duration of these activities.
2. If one or more Steller's eider or sea otter occurs within the hazard area before or at any time during pile driving, the observer will report the presence of the animal and work will immediately cease or be postponed until the animal leaves the hazard area on its own.

B. Fill Placement and Dredging: 300-m "hazard area"

3. Prior to commencing in-water fill placement, in-water dredging, and any other in-water use of heavy equipment for manipulating the substrate (including use of hydraulic rock breakers,

drills, etc.) observers will clear a 300-m hazard area. Additionally, observers will clear the hazard area before recommencing work after any break greater than 30 minutes.

4. If an otter or eider is seen within the hazard area during the 30-minute observation period prior to start-up, the observation period need not start over once the animal moves out of the hazard area, but work may not commence until the observation period is complete.
5. If a sea otter or eider enters the 300-m hazard area during fill placement or dredging, after the observation period has ended, work may continue.
6. If an otter or eider is seen in the 300-m buffer during the observation period prior to start of work and does not leave the area prior to the completion of the 30-minute observation period, ramp up procedures will be applied.

C. ALL noise-generating activities specified in Table 1 (applies to both A and B)

7. All observers must be capable of spotting and identifying sea otters and Steller's eiders and recording applicable data during all types of weather in which pile driving, in-water fill placement, or in-water dredging will be conducted.
8. All observer protocols will be applied to any unidentified duck whenever the observer cannot identify whether a duck is a male or a female Steller's eiders in breeding or nonbreeding plumage.
9. Observers will be given the authority to halt project activities if a sea otter or Steller's eider is present and to provide clearance for work to resume after the animal leaves on its own.
10. Observers will have no other duties during the observation period in order to ensure that watching for protected species remains the observer's main focus.
11. A lead observer will be responsible for implementing the protocols. The lead observer may select and train additional observers, but should remain accountable for their performance throughout the work season.
12. All observers must be trained in the monitoring methods to include the following topics:
    - Types of construction activities that require monitoring
    - Observation methods and equipment
    - Observation locations
    - Distance estimation
    - Data to record (parameters) and field forms
    - Species identification
    - Procedures to Stop Work
13. Tools, such as a laser range finder or buoys placed at 300 m intervals away from the shoreline should be used to aid the observer in estimating distances out to 1,000 m.
14. The following are examples of standard equipment recommended for use by observers:
    - High power, reticle binoculars 10 x 50 Bushnell
    - Range finder equivalent to Leica LRF 1200
    - GPS and compass
    - High power spotting scope
15. Observation stations will be established to maximize visibility of the hazard areas. Elevated observation stations will provide better visibility than those at sea level.
16. Observation stations may be established aboard moored vessels and stationary skiffs.
17. Use of a particular station may depend upon weather conditions. If the observable range from any one vantage point is limited due to weather or construction activity, the observer should use an established station that has a better vantage point for monitoring.
18. If visibility is poor due to weather or low light, pile driving will not commence until viewing conditions make it possible to clear the entire hazard area. In-water fill placement and in-water dredging may commence after ramp up procedures are conducted.
19. During periods of low visibility, pile driving may commence if additional observers can be added in multiple stations to provide complete visual coverage of the "hazard area".

20. Observers will record basic metrics such as start and end times, date, GPS location of the observation station, name of observers, type of work occurring, numbers and locations of observed sea otters or eiders, environmental conditions (air temperature, wind speed and direction, sea state, swell height, tide stage, visibility, percent cloud cover, and precipitation), documentation of work shut downs or postponements due to presence of otters or eiders, and length of time work was shut down or postponed.
21. Other data that may be useful include: records of sea otter and Steller's eider movements (direction and distance of travel), the times during which the movements occur, and a categorical assessment of behaviors during the observation period. For example, indicate whether sea otters or eiders are resting, feeding, grooming, engaging in social interactions, or travelling from one place to another. Record behavioral changes during the observation period, and comment on whether these behaviors appear to be associated with the work being conducted, and if so, what indications lead to that conclusion.
22. All observation records will be made available to the Service at the end of each calendar month.
23. A summary report will be provided to the Service by December 1 each year.

Optional Considerations:

Monitoring: Whenever possible, sound level testing should be conducted to determine the size of the "hazard area". A more accurate size of the "hazard area" for pile driving and for fill placement/dredging can then be used for these two categories of work instead of the buffers in Table 1. A smaller impact area can be monitored more easily and more accurately by fewer observers. To accomplish this, we recommend the following procedures:

1. Prior to sound monitoring, observers should clear a hazard area according to Table 1.
2. In-air and in-water sound pressures should be measured with portable instrumentation placed in intervals in multiple directions from the noise source as shown in Figure 2.
3. For best results, in-water measurements should be taken at multiple water depths.
4. Sound pressure should be monitored in marine waters out to the appropriate distance specified in Table 1 for the type of pile driving being conducted. For fill placement and dredging, a 300-m radius should be monitored.
5. Monitoring should be timed to record peak sound pressures. Sound pressure should be monitored during two categories of work (when both types of work will occur):
    a. Pile driving
    b. Dredging and fill placement
6. If possible, sound measurements should be taken at various locations simultaneously.
7. If actual noise levels are greater than **110 dB re: 20 µPa; for airborne noise or 183 dB re 1µPa2-sec cumulative SEL for underwater noise** at either the 500-m or 300-m radius from the source (as applicable for the type of activity), testing should be conducted at additional points at 300-m intervals further from the source site to determine the full extent of the area in which threshold levels are reached. If the hazard area is larger than 500 m, the Service should immediately be notified, and a 50% larger hazard area should be cleared by the observers prior to continuing work. All observer protocols will be applied to the expanded hazard area.
8. Sound level monitoring results should be reported to the Service. All estimates of sound pressure levels should be reported in dB re: 1 µp for in-water and dB re: 20 µp in air.

Modeling: Acoustic modeling may be conducted by a qualified engineer or hydrologist as an alternative to acoustic monitoring. The models selected should be capable of predicting underwater noise production and attenuation at various distances from the proposed noise-generating activities. Models should be customized to incorporate the specific techniques to be used, and the local bathymetry and substrate information. Modeling methods, assumptions, outputs, and uncertainties should be reported to the Service. The hazard area should be defined as wherever pressure levels are predicted to exceed **110 dB re: 20 µPa; for airborne noise or 183 dB re 1µPa2-sec cumulative**

SEL for underwater noise. All observer protocols should be applied to those areas. When possible, noise levels should be tested upon startup of work for comparison with model outcomes. If actual noise levels exceed predicted values, work should follow protocols outlined here, or should stop until sound level testing can be completed.

Videography: The use of video documentation of sea otter or Steller's eiders observations in or near the hazard area during pile driving, dredging or placement of fill is recommended to assist observers in recording and characterizing responses to noise. We are interested in developing a systematic videographic study. Please notify the Service if you intend to record wildlife near the hazard area as part of your project.

If warranted by new information, observer protocols may be revised by the USFWS.

Contact the Anchorage Fish and Wildlife Field Office with any additional questions or concerns.

Ellen W. Lance, Branch Chief
Endangered Species Branch
605 W. 4th Room G-61
Anchorage, AK 99501

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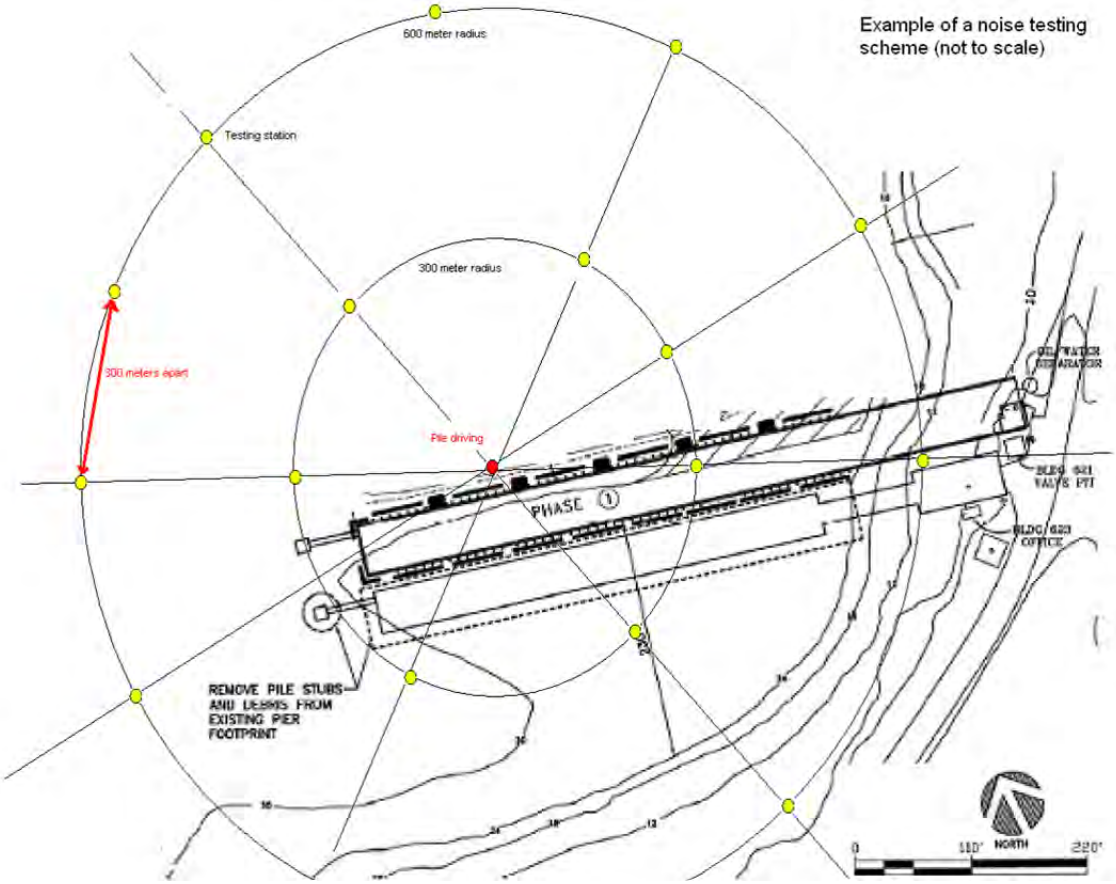

Figure 2. An example plan for noise testing. Test points are placed in intervals around the work site and each other (it is not to scale) to provide complete coverage of all areas of in-water work.