Environmental Resources Section

Public Notice

Alaska District
U.S. Army Corps of Engineers

Date: 11 September 2019 Identification No. 19-010
Please refer to the identification number when replying.

The U.S. Army Corps of Engineers, Alaska District (Corps) has prepared an environmental assessment (EA) and Finding of No Significant Impact (FONSI) for the following project:

Maintenance Dredging Operations
Ninilchik Small Boat Harbor (SBH)
Ninilchik, Alaska

The Corps will continue its maintenance dredging practices that were developed for the 2017-2019 dredging time period. This time period incorporated a modification to its annual maintenance dredging activities at the Ninilchik SBH because the site being used to place dredged material was nearing capacity; subsequently, another site was identified to function as a dredged material management area, should it become necessary. In addition to annually dredging approximately 9,000 cubic yards from the entrance channel and mooring basin, the Corps plans to remove approximately 4,000 cubic yards of additional material to reach federally-authorized project depths. The need to perform the additional dredging is the result of a tidal datum update published in 2014 by the National Oceanic Atmospheric Administration (NOAA) that indicated a vertical change in the survey control for the project by approximately +1.28 feet. Ultimately, the Corps' dredging operation will facilitate the commercial and subsistence fishing fleet's ability to receive the full economic benefits associated with the federally- authorized project depths.

The proposed project and potential environmental impacts are described in the subject EA and unsigned FONSI. These documents are available for 15 days from the date of this notice on the Alaska District's website at: www.poa.usace.army.mil. To access these documents: click on the "Reports and Studies" tab, under "Documents Available for Review," and then click on "Operations and Maintenance". The FONSI will be signed upon review of comments received and resolution of significant concerns. Please submit comments regarding the proposed action to Christopher.A.Hoffman@usace.army.mil or to the address below.

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 15-day review period explaining why you believe a meeting is necessary.

Notice is 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 that 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.

Anyone that desires to comment on this proposed action with respect to water quality certification may submit written comments to ADEC at the address below within 15 days from the date of this notice.

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

For additional information about the proposed project, please contact Chris Hoffman of the Environmental Resources Section at (907) 753-5524, at the above email or Corps postal address.

Michael R. Salyer

Michael R. Salyer
Chief, Environmental Resources Section

US Army Corps of Engineers
Alaska District

Environmental Assessment and Finding of No Significant Impact

Maintenance Dredging Operations
Ninilchik Small Boat Harbor
Ninilchik, Alaska

September 2019

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:

Maintenance Dredging Operations
Ninilchik Small Boat Harbor
Ninilchik, Alaska

The Ninilchik Small Boat Harbor (SBH) was authorized under the Rivers and Harbor Act of 1958 (Public Law 85-500, 85th Congress, S.3910, July 3, 1958) and constructed in 1961. Lacking a local governing body, the State of Alaska Department of Natural Resources in 1960 agreed to act as the project's local sponsor to construct a small boat harbor at Ninilchik on State of Alaska-owned land. As the local sponsor, the State of Alaska is to provide the United States, without cost, "… the necessary lands, easements and right-of-ways, and spoil (i.e., dredged material) disposal areas both for new work and subsequent maintenance…" (Chief of Engineers Report, House Document No. 34, 85th Congress, 1st Session).

The Corps found it necessary to re-evaluate and modify its dredging activities for the period of 2017-2019 at the Ninilchik SBH because the currently-used dredged material placement site is nearing capacity and another site (or sites) and/or beneficial uses of the material must be found in order for the Corps to continue its annual maintenance dredging activities. In addition to annually dredging approximately 9,000 cubic yards from the entrance channel and mooring basin, the Corps plans to remove approximately 4,000 cubic yards of additional material to reach federally-authorized project depths. The need to perform the additional dredging is the result of a tidal datum update published in 2014 by the National Oceanic Atmospheric Administration (NOAA) that indicated a vertical change in the survey control for the project by approximately +1.28 feet. Ultimately, the Corps' dredging operation will facilitate the commercial and subsistence fishing fleet's ability to receive the full economic benefits associated with the federally-authorized project depths.

The Corps will continue its maintenance dredging practices that were developed for the 2017-2019 dredging time period. This time period incorporated a modification to its annual maintenance dredging activities at the Ninilchik SBH because the site being used to place dredged material was nearing capacity; subsequently, another site was identified to function as a dredged material management area, should it become necessary. In addition to annually dredging approximately 9,000 cubic yards from the Ninilchik SBH's entrance channel and mooring basin, the Corps plans to remove approximately 4,000 cubic yards of additional material to reach federally authorized project depths. While previously authorized, the approximately 4,000 cubic yards of additional material was not dredged during the 2017-2019 period due to funding constraints. It is anticipated that the additional material would be dredged in the upcoming years as funds are available.

The Corps' recommended plan is to use conventional construction equipment (e.g. front end loaders, bulldozers, and trucks) to maintenance dredge the Ninilchik SBH entrance channel and initially use the material to construct a temporary dewatering basin on the beach, south of the entrance channel. Secondly, the same equipment will be used to beneficially place dredged material from the entrance channel on existing shoreline revetments and along annually-identified eroding sections of the south beach shoreline. Sediment hydraulically dredged from the mooring basin, using a cutterhead suction dredge, will be discharged into the aforementioned dewatering basin; afterwards, the dewatered dredged material will also be beneficially placed, using conventional construction equipment, along the identified eroding sections of the south beach shoreline. Lastly, any remaining dredged material from the entrance channel and mooring basin will be spread in thin layers on south beach's nearshore environment using conventional construction equipment. The same means and methods will be used for the additional dredging to the federally-authorized project depth in the mooring basin and entrance channel; encountered

consolidated material, if any, incapable of being dredged with the hydraulic cutterhead suction dredge will remain in place.

Implementing the following measures will, to the maximum extent practicable and appropriate, help to mitigate potential impacts on Cook Inlet's and the Ninilchik River's fish and wildlife resources:

1. The Alaska Department of Fish and Game divisions of Habitat and Sports Fish shall be contacted 3 days prior to the initiation of dredging and be given the opportunity to monitor the operations for unforeseen adverse environmental impacts.

2. Dredging operations shall occur only during the period March 15 through May 15 to protect anadromous salmon migrating into the Ninilchik River and larval razor clams settling into the State of Alaska, Clam Gulch Critical Habitat Area substrate. Dredging at other times occur after written approval from the Alaska Department of Fish and Game.

3. The Alaska Department of Transportation and Public Facilities shall be given the first opportunity to beneficially use any portion of or all dredged material for State-authorized public purposes.

4. To protect razor clam populations within the State of Alaska, Clam Gulch Critical Habitat Area, no dredged material be disposed of on south beach below +10 feet mean lower low water (MLLW), and only permitted to be placed in thin layers of 12 inches or less between +10.0 feet MLLW and 18.6 mean high water (MHW).

5. Geotextile fabric, or similar protection measures, shall be placed at the dewatering basin outfall to minimize beach erosion and be completely removed after dredging operations each season.

6. No vehicles or other construction related equipment leaking fuels, oils, hydraulic, or cooling fluids shall operate in the project area.

7. Spill response equipment and supplies be readily available on site and used immediately to contain and cleanup oil, fuel, hydraulic fluid, antifreeze, or other pollutant spills.

The Corps' Ninilchik SBH maintenance dredging operations comply with all applicable Federal, State of Alaska and local government environmental laws and regulations, and fulfills its statutory mission and responsibilities, giving consideration to economic, environmental, and engineering factors. Overall, the project's environmental impacts are expected to be short-term, with no long-term, significant or cumulative adverse impacts on Cook Inlet's and Ninilchik River's fish and wildlife resources. Therefore, the Corps has determined that the completed environmental assessment supports the conclusion that the proposed maintenance and new dredging activities at the Ninilchik SBH do not constitute a major Federal action significantly affecting the quality of the human environment. An environmental impact statement is therefore not necessary for the proposed action.

_____ _____

Phillip J. Borders
Colonel, U.S. Army
Commanding

Date

Environmental Assessment
Maintenance Dredging Operations
Ninilchik Small Boat Harbor
Ninilchik, Alaska

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1.0 Purpose and Need

The U.S. Army Corps of Engineers, Alaska District (Corps) proposes to continue its dredging activities at the federally-authorized navigation project at Ninilchik, Alaska (Figure 1). This continuation would incorporate the traditionally used placement method of dewatering and placing along the beach berm and the new method of thin-layer placement used between 2017 and 2019 and described in detail in the 2016 Environmental Assessment. The modifications implemented between 2017 and 2019 were necessary because: (1) the current location used to place dredged material was nearing capacity and other sites and/or beneficial uses of the material must be found in order for the Corps to continue to conduct its Federal operation and maintenance (O&M) activities; and (2) more dredging in the entrance channel and mooring basin, beyond what is annually dredged, must occur in order for the commercial and subsistence fishing fleet to receive the full project benefits associated with federally-authorized project depths. The need for the one-time additional dredging event is the result of a tidal datum update published in 2014 by the National Oceanic Atmospheric Administration (NOAA) that indicated a vertical change in the survey control for the project by approximately +1.28 feet. The one-time additional dredging was planned for the 2017-2019 time period covered by the 2016 Environmental Assessment for this project, but funds were not available to complete the work. It is anticipated that this one-time additional dredging would occur within the upcoming decade.

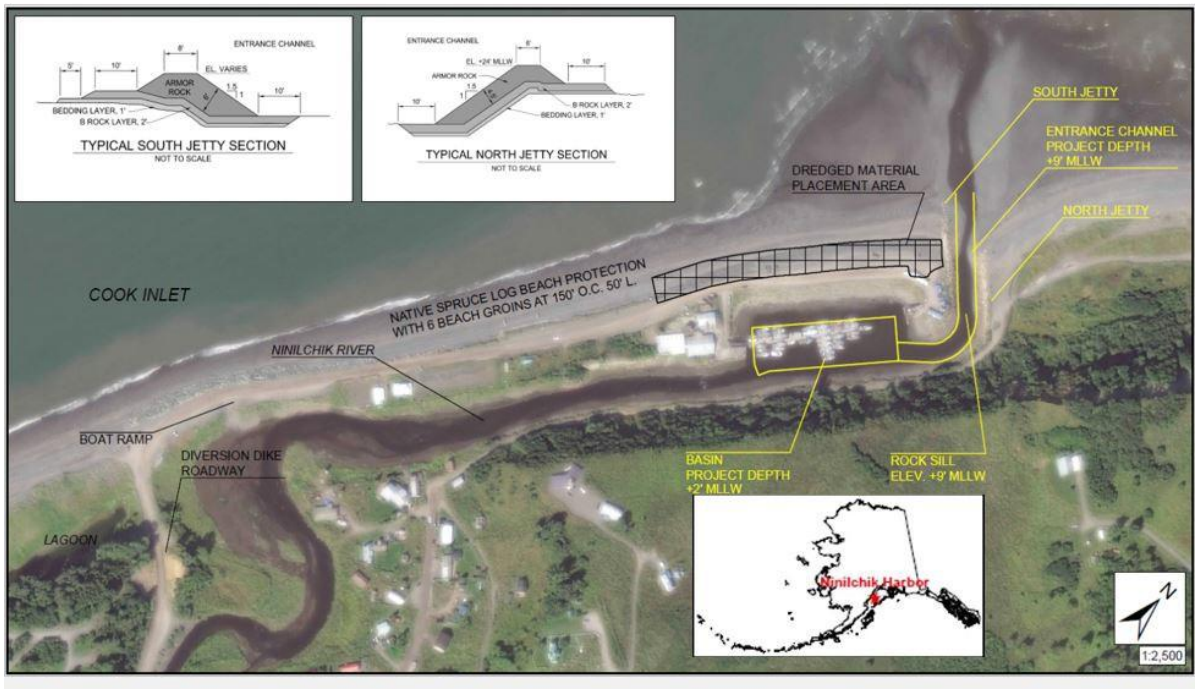


Figure 1. Ninilchik Small Boat Harbor, Ninilchik, Alaska (imagery from 2015).

This environmental assessment (EA) conducts a National Environmental Policy Act (NEPA) evaluation of the Corps' proposed modifications to dredging activities at the Ninilchik Small Boat Harbor (SBH), and gives consideration to economic, environmental, and engineering factors.

2.0 Background

2.1 Project Authorization, Construction and Agreements

The Ninilchik SBH was authorized under the Rivers and Harbor Act of 1958 (Public Law 85- 500, 85th Congress, S.3910, July 3, 1958). During its conception, the Ninilchik SBH was envisioned to be a simple widening and deepening of the Ninilchik River channel. Lacking a local governing body, the State of Alaska Department of Natural Resources (ADNR) in 1960 agreed to act as the project's local sponsor to construct a small boat harbor at Ninilchik on State of Alaska-owned land. As the local sponsor, the State of Alaska is to provide to the United States, without cost, "… the necessary lands, easements and right-of-ways, and spoil (i.e., dredged material) disposal areas both for new work and subsequent maintenance…" (Chief of Engineers Report, House Document No. 34, 85th Congress, 1st Session).

The harbor was constructed in the fall of 1961 by excavating an area between a bluff and an associated barrier gravel/sand bar near the mouth of the Ninilchik River. The entrance channel was designed so that boats drawing 4 feet or less could enter and exit the harbor on all high tides. After its construction in 1961, the Corps found it necessary (because of serious sedimentation, shoaling and shoreline erosion) to change the harbor's Federal features several times, e.g., increasing the size of the mooring basin, increasing the length of the entrance channel, and reconstructing the entrance channel jetties. The Corps also found it necessary to construct a variety of erosion protection structures along the western side of the barrier spit separating Cook Inlet and the mooring basin, as shoreline erosion was deteriorating the usefulness of the spit in protecting the mooring basin (USACE, 1973). In 1985, the Alaska Department of Transportation and Public Facilities (ADOT/PF) assumed responsibility for managing the Ninilchik SBH per an Interagency Land Management Agreement with the ADNR.

Table 1 describes the Ninilchik SBH's existing Federal project features, as illustrated in Figure 1. The small boat basin provides protected moorage with half-tide access for 32 vessels and is an important harbor of refuge for lower Cook Inlet. The mooring basin and entrance channel also provide access for fishing boats to unload their catch and take on supplies. The harbor is not ice-free. At the end of the fishing season, the State of Alaska-owned floats are removed from the mooring basin, and they are replaced in May after the harbor has been dredged.

2.2 Historical Dredging Activities

A variety of methods were used to dredge the mooring basin and entrance channel and dispose of the dredged material. Between 1962 and 1978, a land-based crane with a dragline or a clamshell-type bucket were used to dredge and place material into trucks. The trucks then transported the material to designated disposal sites on the beach immediately north of the entrance channel or south of the old Ninilchik River slough. In 1974, the Alaska Department of Fish and Game (ADFG) began restricting dredging between May 15 and October 1 to avoid

Table 1. Existing Ninilchik Small Boat Harbor Federal project features, Ninilchik, Alaska.

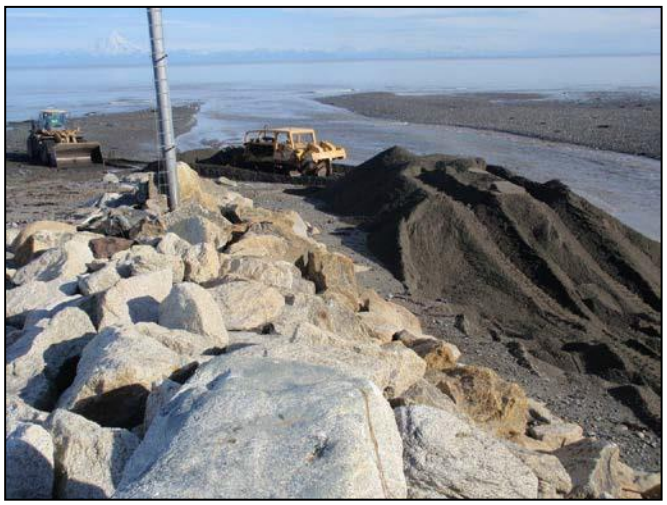
Project Feature	Length (maximum feet)	Width (maximum feet)	Depth (feet above mean lower low water)
Entrance Channel	575	50	+9
Mooring Basin	400	120	+2
North Jetty	240		
South Jetty	240		

conflicts with in-coming salmon runs and sport fishing activities; however, emergency dredging is periodically permitted by ADFG outside the timing window when littoral drift unexpectedly shoals in the entrance channel. Beginning in 1978, annual maintenance dredging was accomplished using a hydraulic suction dredge. Material from the mooring basin and a part of the entrance channel was released as a slurry on the beach north of the Ninilchik River, where the tide gradually dispersed the material. Occasionally, material removed from the entrance channel using conventional construction equipment was used in emergency beach and bluff erosion protection projects in proximity to the harbor.

In 1995, the Corps decided that using the north beach disposal site was no longer feasible because the Corps surmised that north-to-south littoral drift was depositing sediment from the north beach disposal site back into the Ninilchik River (i.e. the mooring basin) and entrance channel. Therefore, in 1996 the Corps relocated the dredged material placement site to the beach immediately south of the south jetty where a temporary dredged material dewatering basin would be constructed from entrance channel dredged material. Instead of releasing a slurry of dredged material from the mooring basin directly onto the beach, the dredged material was released into the dewatering basin. Additionally, ADNR through a memorandum to ADOT/PF, stated that there would be no objection to ADOT/PF using the State-owned dredged material from the dewatering basin for public purposes (i.e. for road maintenance and/or for beach nourishment purposes). On April 21, 1997, a letter signed by the Corps and ADOT/PF documented an agreement for ADOT/PF to use the dewatered dredged material placed immediately south of the south jetty for the previously stated public purposes.

2.3 Existing Maintenance Dredging Operations

Since 1996, the Corps has been using conventional construction equipment at low tide, and seaward of the harbor's rock sill, to move accumulated sediment out of the harbor's entrance channel (Photo. 1).



Photograph 1. Construction equipment dredging the Ninilchik SBH entrance channel.

Front-end loaders and/or excavators are used to place the sediment into trucks, which transport the material to an upper south beach site where it is used to construct the dredged material-dewatering basin above the +18.6 feet mean high water (MHW) mark (Photo. 2).

Photograph 2. Constructing the dewatering basin, Ninilchik SBH.

A hydraulic cutterhead dredge removes shoaled material from the harbor basin, the effluent of which is conveyed by pipeline to the dewatering basin where particulates settle out and an outfall weir allows water to flow down the beach to Cook Inlet (Photos 3 and 4).

Photograph 3. Hydraulic cutterhead suction pipeline dredge in the Ninilchik SBH mooring basin.

Photograph 4. Dredged material from the mooring basin being discharged into the dewatering basin.

Despite ADOT/PF's use of the dredged material for periodic local road improvement projects and annual shoreline erosion abatement activities (Photo 5), in 2014 the Corps found it necessary to begin moving and expanding the dewatering basin site farther south along the shoreline, within the currently authorized real estate boundary and above the 18.6 feet MHW mark. The move and expansion became necessary because the State of Alaska's need for the dredged material become significantly less than the quantity typically removed during each maintenance dredging season. This has resulted in limited capacity along the upper reach of the beach south of the south jetty to construct the dewatering basin.

Photograph 5. Dewatered dredged material being placed on damaged and failing shoreline revetment.

Dredged material not used by ADOT/PF is leveled from the top of the roadway down to the 18.6 feet MHW mark to match the natural slope of the shoreline and beach contour (Photo 6).

Photograph 6. Dredged material contoured to match the existing shoreline and beach contours.

Between 2012 and 2016, the amount of dredged material annually removed from the Ninilchik SBH ranged between 5,000 and 13,100 cubic yards, and averaged approximately 9,000 cubic yards (5,500 cubic yards from the mooring basin and 3,500 cubic yards from the entrance channel).

3.0 National Environmental Policy Act and Permitting Activities

When the Ninilchik SBH was being planned and constructed between 1958 and 1961, the NEPA and Clean Water Act did not exist; thus, no environmental documentation was required for the

original project. However, soon after the NEPA passed in 1972, the Corps began preparing EAs and/or environmental impact statements (EIS) for various Ninilchik SBH projects. The historical and existing O&M activities at the Ninilchik SBH have undergone the following environmental evaluation processes:

- Dec. 1973. *Final Operation and Maintenance Environmental Impact Statement.* Covered the use of a dragline/clamshell dredge. Dredged material was loaded into trucks and then placed on the beach north of the entrance channel and in an area by the old Ninilchik River slough. Timber beach slope protection structures were repaired as well.

- March 1974. *Environmental Assessment.* Beach protection and mooring basin slope stabilization were added to operation and maintenance activities. Corps constructs a groin field (seven timber structures filled with gravel) along the Cook Inlet shore, installs a test drainage system, and installs test sheet piling.

- Jan. 1978. *Environmental Assessment.* Addressed new Corps regulations: Protection of Wetlands and Water Quality. The Corps begins using a hydraulic pipeline dredge (Corps' dredge the Warren George– used until 1988) instead of land-based dredging. Dredged material to be placed in the entire 8.5-acre old Ninilchik River slough and then used as a campground; capacity for 10 to 15 years. No evidence that the site was ever used as the community objected to using this site.

- Nov. 1978. *Environmental Assessment.* Protect log revetment, construct three timber groins, and gabion mattress.

- Feb. 1980. *Public Notice ER-02-1980 and Apr. 1980, Finding of No Significant Impact.* Dredge an upriver settling basin and place dredged material in shoreline erosion-prone areas.

- Mar. 1996. *Environmental Assessment and Finding of No Significant Impact.* Addressed moving dredged material (from the north side) to the south side of the entrance channel, using a settling basin for dredged material from mooring basin, and ADOT/PF using dredged material for road maintenance and other public purposes.

- September 2016. *Environmental Assessment and Finding of No Significant Impact.* Addressed placing material on the south side of the entrance channel plus thin-layer placement of additional material if space was not available along the upper reach of the beach.

The Corps is required to secure the following permits before conducting annual maintenance dredging operations at the Ninilchik SBH:

- Alaska Department of Environmental Conservation: Water Quality Certification, Reference No. ER-16-07; expiration date, October 26, 2021.
- Alaska Department of Fish and Game: Special Area Permit 12-V-0406-SA, Clam Gulch Critical Habitat Area; expiration date, December 31, 2019.

- Kenai Peninsula Borough: Floodplain Development Permit, RC Number 10792; expiration date, December 31, 2019.

4.0 Environmental Setting

4.1 Physical Environment

Ninilchik, Alaska is on the eastern shore of Cook Inlet in a narrow valley formed by the Ninilchik River. The area contains poorly drained bogs intermixed with forested uplands. The shoreline north and south of the river mouth is a continuous flat bench with few irregularities. The shoreline currents and wave action carry silt, sand, and gravel laterally along the beach (littoral drift). Between late fall and early spring, littoral drift tends to move beach material north to south. During the late spring to early fall, littoral drift tends to move beach material south to north. Littoral drift, storm driven materials, and river-born sediments all contribute to the annual deposition of materials in the Ninilchik SBH. Cook Inlet turbidity measurements, offshore from Ninilchik, range between 4 and 7 nephelometric turbidity units (NTU), and total suspended solids range between 3 milligrams per liter (mg/L) to 19 mg/L (ENRI, 1995).

The Ninilchik SBH is constructed in the mouth of the Ninilchik River, behind a barrier beach or ridge, locally called the spit. The spit is composed of unconsolidated overburden consisting of littoral-transported gravel with localized patches of sandy gravel, sand lenses, and a 2-foot- thick silt layer on the riverside of the spit.

4.2 Biological Environment

The Ninilchik River (ADFG Anadromous Fish Stream 244-20-10090) sustains spawning populations of chinook, coho, and pink salmon, and steelhead and Dolly Varden trout. Generally, anadromous fish enter the river at higher tides, pass over the existing rock sill at the mouth of the mooring basin, and hold in the deeper pools (including the mooring basin) in the lower reaches of the river. The fish then move upstream, beyond the mooring basin, to spawn. Pink salmon spawn in the lower reaches. King salmon are usually the first adult salmon to enter freshwater starting around mid-May. Pink salmon are the first juvenile out-migrants in the spring and have been known to migrate out of the river to Cook Inlet under the ice during breakup.

A thorough account of the Ninilchik's nearshore environment was made by the U.S. Fish and Wildlife Service (USFWS) when field data was collected to facilitate their environmental evaluation of the Corps' then-proposed navigation improvements to the Ninilchik SBH (USFWS, 1983). The USFWS found 16 marine fish taxa inhabiting the nearshore zone in May, with longfin smelt being the most abundant. Also, five species of flatfish were typically found in the area. The USFWS noted that the diversity and number of fish collected was greater adjacent to the mouth of the Ninilchik River, as opposed to collections made approximately 0.5 mile north and south of the river mouth. Essential fish habitat (EFH) species known to occur in offshore Cook Inlet waters include Pacific cod, sculpin, walleye pollock, eulachon, and all five Pacific salmon species, all of which have been found are in stomach content analysis of Cook Inlet beluga whales (HDR and URS, 2006). The extreme conditions of tide, currents, icing, and beach instability in Cook Inlet severely limits the ability of intertidal areas near Ninilchik to become vegetated with periphytic algae and to become high quality ESH for the subject species.

The region surrounding Ninilchik is inhabited seasonally by a variety birds. Waterfowl seen in the saltwater coastal areas and freshwater inland areas include green-winged teal, pintail, barrow's goldeneye, mallard, scaup and Canada goose. The most common seabirds are murrelets, auklets, puffins, guillemots, and murres. Commonly seen shorebirds include sandpipers, plovers, surfbirds, turnstones and dunlins. Bald eagles also occur often in the area. The area in the immediate vicinity of the mouth of the Ninilchik River is not considered a major avian nesting or resting area due to the proximity of the Ninilchik community and disturbances from boat traffic and recreational activities.

National Marine Fisheries Service (NMFS) managed marine mammal species in Cook Inlet include the Steller sea lion, harbor seal, beluga whale, Dall and harbor porpoise, and killer and humpback whale. However, no high concentrations of these species are known to occur in Ninilchik's nearshore marine waters. The Cook Inlet beluga whale distinct population segment (DPS) is listed as an endangered species under the Endangered Species Act (ESA), and critical habitat has been identified in three Cook Inlet areas, none of which occur in the Ninilchik River area (Figure 2). The Steller sea lion western DPS is also listed as an endangered species but critical habitat has not been designated in upper Cook Inlet, including the offshore marine waters from Ninilchik. The ESA-threatened Steller's eider (Alaska breeding population), managed by the USFWS, is known to occur in lower Cook Inlet; however, no individuals are known to frequent the Ninilchik area, nor has any critical habitat been designed in the Ninilchik area.

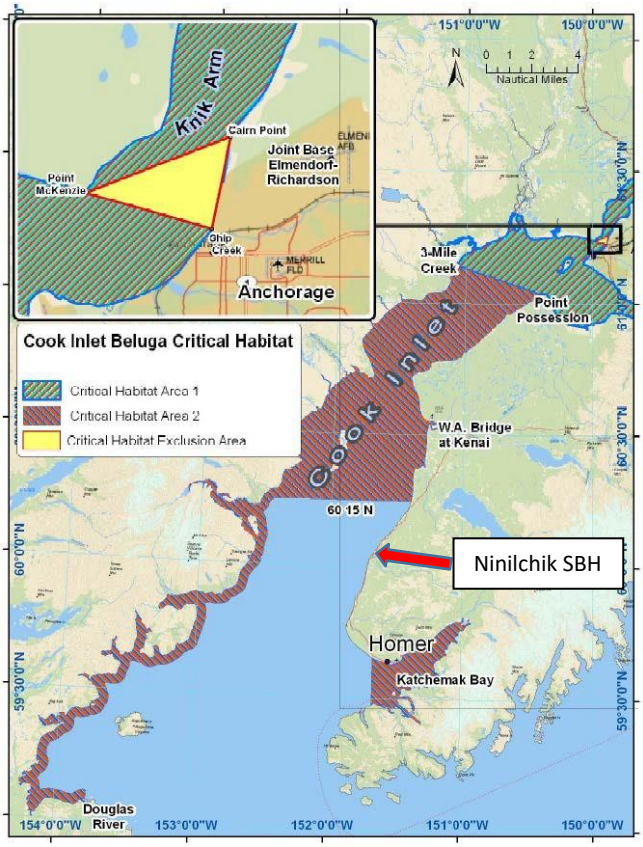


Figure 2. Cook Inlet beluga whale critical habitat areas.

The same USFWS site investigation found the Ninilchik beaches to be essentially devoid of epifauna (USFWS, 1983). The rocky alluvial fan at the river mouth and other scattered exposed rocks along the beach provided the only hard substrate for organism attachment and shelter (e.g. blue mussel, barnacles, periwinkles, sea anemone, and species of crab, shrimp and amphipods). The single-most numerous infaunal organism sampled by the USFWS was a polychaete worm, which was found to be more abundant in the upper intertidal area, decreasing in numbers toward the lower intertidal area, a distribution trend reversed by bivalves (e.g. Nuttall's cockle, surf clam, *Macoma* sp., and razor clams).

A recreational shellfishery for razor and hard shell clams exists along the eastern shoreline of Cook Inlet. Offshore from and next to Ninilchik is the 30,000-acre Clam Gulch Critical Habitat Area (CHA), which was established by the State of Alaska in 1976, "…to ensure that the public continues to have the opportunity to enjoy its prolific razor clam beds." (AS 16.20.220.270). The Clam Gulch CHA stretches between Cape Kasilof and Happy Valley, and its habitat lies between -5.0 feet MLLW and 18.6 feet MHW (Figure 3). Historically, clamming efforts in the Ninilchik area concentrated on and next to a sandbar located approximately 0.5 mile south of the Ninilchik River mouth (Kerkvliet and Booz, 2016). One can dig for razor clams year round; however, most effort occurs from May through August on tides lower than -2.0 feet mean lower low water (MLLW) (Kerkvliet and Booz, 2016). Any development or activity, meeting the criteria, in the Clam Gulch CHA requires a State of Alaska Critical Habitat Permit (aka, Special Area Permit).

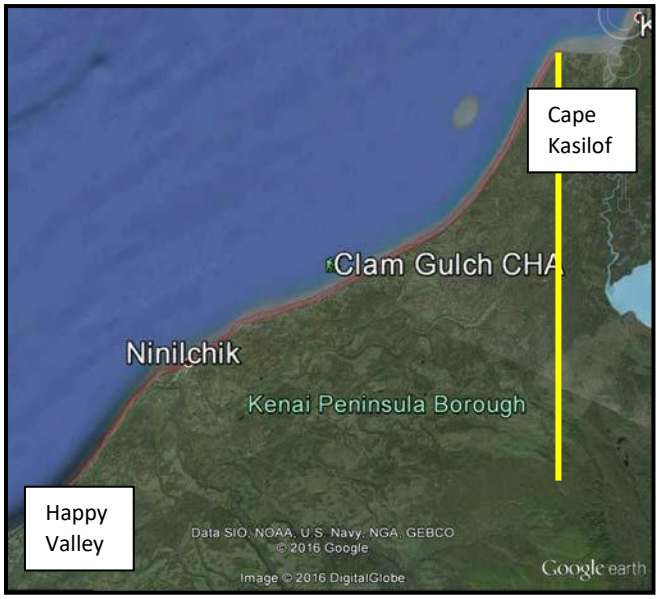


Figure 3. Clam Gulch Critical Habitat Area stretches between Happy Valley and Cape Kasilof.

Razor clams feed when tides cover their beds by taking in seawater using an inhalant siphon to filter out plankton and other food particles. The razor clam populations in the Ninilchik area prefer sandy nearshore habitat and occur from approximately +4 feet MLLW to depths of 30 fathoms (ADFG, 2016). Razor clam spawning in eastern Cook Inlet occurs in late July and August and larvae drift from 6 weeks to over 2 months (September and October) before settling to the substrate in the fall as juveniles, which live in the top centimeters of substrate, maturing to harvest-able size within 3 or 4 years at Ninilchik (Kerkvliet and Booz, 2016).

The USFWS (1983) found that the beach north of the Ninilchik river mouth was comparatively more dense with razor clams than beach areas south of the river mouth; yet, the south-side beaches had larger sized individuals (20 percent of the clams sampled were greater than 130 millimeters). It was thought that relatively small razor clams (60 to 80 millimeters) found north of the river mouth might occupy habitat important for recruitment. The USFWS found that few razor clams were exposed on tides less than -3.0 feet MLLW.

More recent razor clam investigations conducted by Kerkvliet and Booz (2016) in 2014 and 2015 showed that the average number of mature-sized razor clams at Ninilchik's study site south of the river mouth was 80 percent lower than averages seen by ADFG between 1991 and 2012. Survey results, based on the length and age of the juvenile sized razor clams, also suggested that few individuals would reach maturity by 2017 or 2018. Consequently, ADFG closed the Cook Inlet Personal Use Clam Fishery in the Ninilchik and Clam Gulch areas because of the low density of mature and juvenile razor clams (ADFG News Release, dated February 24, 2015). The subject closure remains in effect (ADFG News Release dated January 1, 2016).

The specific cause(s) of the decline in razor clam abundance on Cook Inlet eastside beaches remains unknown, but ADFG believes it is related to poor spawning and/or settling success and the high natural mortality of mature razor clams (Kerkvliet and Booz, 2016). The influx of fresh

water from the Ninilchik River and occasional winter storms during periods of high tides, like that which occurred in November 2010 (Redoubt Reporter, 2010), could be considered limiting factors in razor clam development and mortality as well.

4.3 Socio-economic, Recreational and Cultural Environment

The small community of Ninilchik occupies land around the mouth of the Ninilchik River and the plateau overlooking the river valley. Its resident population in 2010 totaled 883, a +14 percent population change since 2000. Ninilchik suffered heavily during the 1964 Good Friday earthquake, when the village sank 3 feet and sections of land, including its landing strip, disappeared into Cook Inlet. Subsequently, "New Ninilchik" was built on the bluffs between the Ninilchik River and Deep Creek, along several miles of the Sterling Highway.

Ninilchik's economic base is influenced by the seasons and peaks during the commercial summer salmon fishing season. Fishing, tourism, and local services provide most of the area's employment. The Ninilchik SBH is home to a small percentage of the lower Cook Inlet drift gill net fishing fleet. The majority of the fleet is based out of Kenai, Alaska, and follows the fish from lower Cook Inlet north past Kalgin Island as they migrate up the inlet. Ninilchik has no cannery, although a small ice storage facility accepts salmon at the harbor. Most salmon landed at Ninilchik, however, are either trucked to Alaska canneries in Kenai, Kasilof, and Homer, or are transferred to tenders headed for these locations. The harbor is designed to provide moorage for 32 vessels; yet, over 150 fishing vessels use the harbor and at times up to 100 vessels have been observed in the harbor at once.

The Ninilchik area annually receives heavy recreational use. The Ninilchik River and adjacent marine waters support popular sport fisheries. Seven to 10 licensed halibut charters operate between Ninilchik and Anchor Point. The Ninilchik River receives an average 10,000 angler days during the sport fishing season. The Ninilchik State Recreation Area, across the river from the old village, is road accessible and offers an 85-unit beach campground and a 13-unit bluff campground.

The Alaska Native Claims Settlement Act recognized Ninilchik as an Alaska Native village, which led to the formation of the Ninilchik Native Association Incorporated and to the further recognition by the U.S. Congress, that Ninilchik's descendants comprised a quasi- sovereign government (equivalent to American Indian tribes). The Ninilchik Village Tribe is the modern Alaska Native tribe of most of the southern Kenai Peninsula.

The Ninilchik Traditional Council (NTC), headquartered in Ninilchik, is the tribe's governing body for Natives who live in the area surrounding Ninilchik, or who descended from the original inhabitants. The NTC presides over tribal affairs. Its ongoing mission is to promote the sovereignty, well-being, and the cultural identity of the Ninilchik tribe's people for generations to come. It publicly strives to:

- encourage the environmental stewardship of lands within tribal boundaries
- promote access to health, education, and family resources
- foster positive community development and civic projects
- contribute to the growth of the southern Kenai Peninsula's local economy
- support the culture and arts of local communities.

Historically an area used by Dena'ina Indians for fishing, Ninilchik is the oldest settlement on the Kenai Peninsula. The Russian-American Company established Ninilchik in the 1820s for its elderly and disabled employees who could not endure the long journey back to Russia. Other Russian settlers soon congregated there, and in 1901, the settlers constructed the community's Russian Orthodox Church. After Russia sold Alaska to the United States in 1867, most residents elected to stay and today their descendants form the core of the present community.

The Old Ninilchik Village Site has been classified as a National Historic District (AHRS No. KEN-00032). The Holy Transfiguration of Our Lord Chapel in Ninilchik is on the National Register of Historic Places (NRIS ID 78003426). No other historic properties or prehistoric sites are within or adjacent to the project area (i.e. the mooring basin and entrance channel) and the revetment protecting the spit. On August 26th, 2019 the Alaska State Historic Preservation Officer stated that No Historic Properties would be affected by the proposed action.

4.4 Dredged Material Characteristics

Deposition of sediments within the harbor and entrance channel result from freshwater river sediments, saltwater sediments by flood tides and storm events, and littoral drift. The barrier spit separating the Ninilchik SBH from Cook Inlet, and associated beach and shoreline, is composed of unconsolidated overburden consisting of littorally transported gravel and localized patches of sandy gravel, sand lenses, and a 2-foot-thick silt layer exposed on the riverside of the spit. The amount of material moved and the net direction of that movement changes seasonally. Summer seasonal alongshore currents are depositional and move from south to north, while wintertime, storm-driven currents move north to south and are erosive. The primary sources of possible contamination in the harbor are associated with the seasonal use of the harbor by the commercial and subsistence fishing fleet and associated support facilities. Secondary contamination sources are related to development activities in the Ninilchik River watershed. Ninilchik SBH does not show the potential for low-level chronic pollution typical of most small boat harbors, due to the continuous flushing action of the Ninilchik River into Cook Inlet

The Corps conducted its most recent sediment characterization in 2016, as the last time such information was collected and analyzed was in 1992. The April 2016 sediment samples were collected from the harbor and adjacent shoreline areas (Figure 4). Thirteen sediment samples collected from five harbor locations were chemically characterized to determine whether sediments in the harbor have been affected by chemical, fuel, or metals contamination and to determine the appropriate use(s) and/or disposal options for the dredged material. Eight sediment samples were also collected in the Ninilchik River upstream of the harbor to determine background metals concentrations in naturally occurring river sediment and to compare those concentrations with harbor sediment metal concentrations. Also, for comparative background purposes and future reference in long-term dredged material management planning, sediment samples were collected from 13 locations in Cook Inlet's nearshore and beach environment and analyzed for a variety of metals, including arsenic and chromium. While the metals concentrations of the marine sediments were generally lower than the harbor sediments, the difference was not statistically significant. No known spills have occurred in the project area since the site was last characterized in 2016 according to the Alaska Department of Environmental Conservation spill database (https://dec.alaska.gov/Applications/SPAR/PublicMVC/PERP/SpillSearch) accessed on September 9th, 2019.

Grain size and total organic carbon analyses were performed on the harbor samples to help in data interpretation. In general, harbor sediment samples were very fine and contained organic matter (e.g. root and leaf matting) that had a hydrogen sulfide (H_2SO_4) odor; however, a few samples consisted of denser sands and gravels with little organic content. No harbor collected sediment had any visual or olfactory evidence of contamination.

Analytical results were compared to both the most stringent Alaska Department of Environmental Conservation (ADEC) Method 2 screening criteria (to determine the suitability of unrestricted upland disposal) (ADEC, 2015), as well as Dredged Material Management Program guidelines (to determine unrestricted offshore/in-water disposal) (USACE, 2014). A statistical analysis was also performed to determine whether the material can continue to be beneficially reused in accordance with ADEC Dredged Material Guidance (ADEC, 2013). The results of the 2016 sampling effort are summarized in Table 2 and the complete chemical data report is available upon request (USACE, 2016).

Arsenic and chromium were detected in sediments at a concentration exceeding ADEC upland disposal criteria; however, their concentrations were determined to be within background concentrations and are assumed to be naturally occurring. One beach sample collected from a site south of the Ninilchik river mouth exceeded ADEC screening criteria for unrestricted upland disposal; further in-situ testing may be required before a decision can be made to use this site for dredged material placement. Similar to the analytical results from a 1992 sampling effort at the Ninilchik SBH, 2016 analytical results indicate that the sediment to be dredged from the mooring basin and entrance channel are suitable for beneficial uses and for both upland and in-water disposal (USACE, 2016).

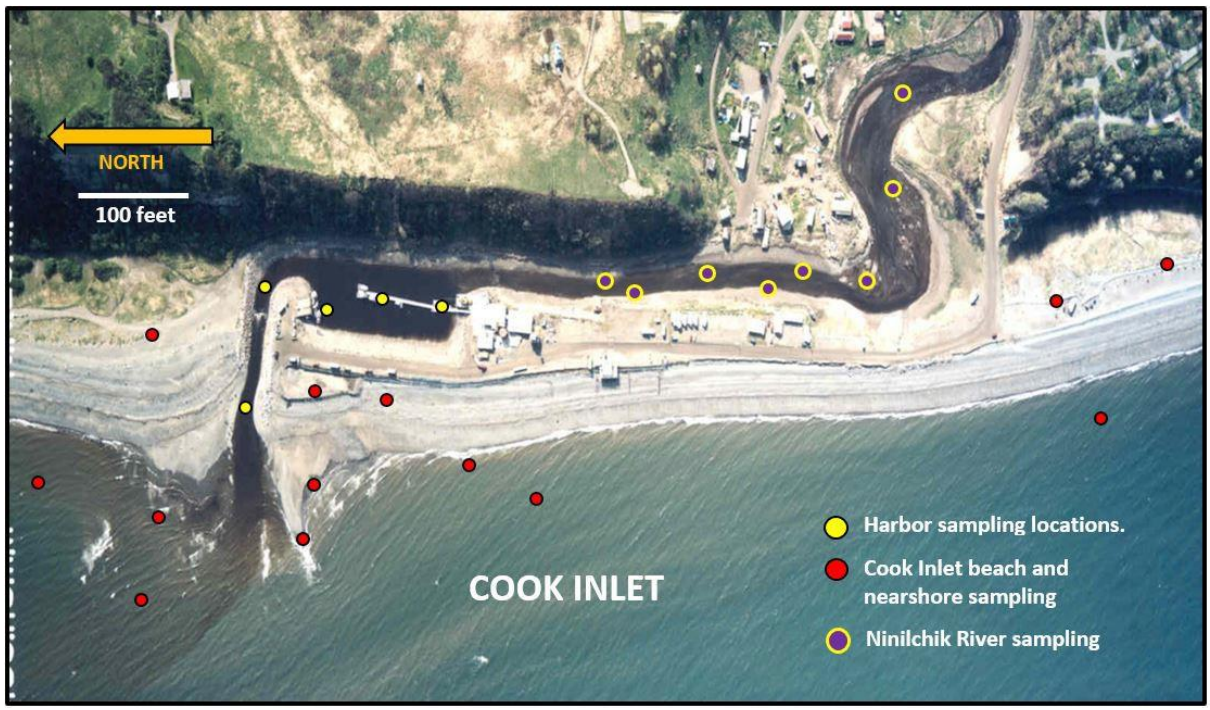


Figure 4. 2016 sediment sample locations (approximate), Ninilchik Small Boat Harbor, Ninilchik, AK (imagery from 2012).

Table 2. Summary of 2016 sediment chemical testing results, Ninilchik SBH, AK (USACE, 2016).

Method	Chemical Analysis	Results
AK103 Target heavy fuels and lubricating oil	Residual Range Organics (RRO)	RRO detected at levels below cleanup criteria.
AK102 Target diesel, heavy fuels	Diesel Range Organics (DRO)	DRO detected at levels below cleanup criteria, even with possible biogenic interference.
AK101 Target gasoline	Gasoline Range Organics (GRO)	All GRO detected was more than two orders of magnitude lower than ADEC screening criteria.
SW846 6020A & 7471A Target regulated metals from fuels, paints, batteries, etc.	Eight RCRA Metals (Resource Conservation and Recovery Act)	Only arsenic and chromium concentrations exceeded ADEC screening levels; however, the detected range of concentrations is comparable to natural background concentrations.
SW846 8081B Target pesticides (e.g. DDT) residues.	Chlorinated Pesticides	No targeted pesticides were detected at concentrations above ADEC or DMMP* screening criteria. All analytes are below ADEC screening criteria for upland disposal.
SW846 8260B Target fuel constituents and solvent compounds.	Volatile Organic Compounds (VOCs) [benzene, toluene, ethylbenzene, xylene (BTEX), 2 butanone, methylene chloride, carbon disulfide+]	No VOCs were detected at concentrations above ADEC or DMMP screening criteria. All analytes are below ADEC screening criteria for upland disposal.
SW846 8270D-SIM Target petroleum-related compounds.	Polycyclic Aromatic Hydrocarbons (PAHs)	No PAHs were detected at concentrations above ADEC or DMMP screening criteria. All analytes are below ADEC screening criteria for upland disposal.
* DMMP – Dredged Material Evaluation and Disposal Procedures User Manual, November 2015.		

5.0 Alternatives under Consideration

The Council on Environmental Quality (CEQ) regulations at 40 CFR 1502.14(a) require Federal agencies to rigorously explore and objectively evaluate all reasonable alternatives and, for alternatives eliminated from detailed study, briefly explain the reasons for elimination. Alternatives being analyzed must: (1) meet the purpose and need for the proposed action; (2) reduce the adverse environmental effects of the proposed action; (3) be feasible; and, (4) be capable of analysis. The No-Action alternative, however, must be included and analyzed, regardless of conformance with the purpose and need, or its feasibility, as this is a mandatory CEQ regulation, and necessary to provide clear management options for the decision maker(s).

5.1 No-Action Alternative

The No-Action alternative would not re-evaluate the Corps' Ninilchik SBH maintenance dredging program, would cease all maintenance dredging operations beginning in spring 2020, as no locations for the placement of and/or the disposal of dredged material would have been identified, environmentally evaluated, and found to be compliant with all applicable Federal and state environmental laws and regulations.

5.2 Dredging Equipment Alternatives

Dredging equipment, classified according to the methods of excavation and operation, can be grouped into the following two main categories: mechanical dredges (e.g. backhoe and clamshell/grab) and hydraulic dredges (e.g. cutterhead suction and trailing suction hopper). Subgroup categories of dredges can also be identified on the basis of propulsion, i.e. self-propelled verses stationary, and specialized tools used for specific purposes (e.g. encapsulated bucket dredge and auger dredge).

Using a hydraulic dredge (cutterhead suction dredge) to remove shoaled material from the mooring basin since 1978 has proven to be cost-effective and environmentally compatible. Continuing to be eliminated from further consideration, and determined not to be feasible, is using a floating plant with mechanical equipment to remove shoaled material from the mooring basin because the size of the harbor and entrance channel is too small relative to the size of the necessary equipment, high cost of mobilization/demobilization, and overall efficiency of mechanical equipment to accomplish the annual dredging.

Using a hydraulic dredge to remove shoaled material from the entrance channel is technically not feasible, and not considered in more detail because low tides prevent the equipment from floating and having an adequate supply of water to discharge the suction-dredged sediment.
Safely removing the shoaled material during high tide without damaging the dredge equipment or the north and south jetties is also a concern. Alternatively, continuing to use mechanical equipment at low tide (i.e. conventional construction equipment such as bulldozers, excavators, front-end loaders, and trucks) has proven to be a cost-effective and environmentally compatible means of removing shoaled entrance channel material without damaging equipment or structures.

The type of equipment used to conduct the additional dredging in the mooring basin and entrance channel is expected to be, respectively, a hydraulic cutterhead dredge and conventional construction equipment. Consolidated material such as coal seams, cobbles, and boulders may not be capable of removal using a hydraulic cutterhead dredge; therefore, if such material is encountered during mooring basin dredging operations, the material will not be removed by any other means and remain in place.

5.3 Dredged Material Management Alternatives

Corps policy is to place dredged material associated with O&M projects in the least costly manner that is consistent with sound engineering practice and that meets applicable Federal and state environmental standards (EPA and USACE, 2007). This is referred to as the base plan or least environmentally damaging, practicable alternative (LEDPA). Congressional acts also influence the identification of alternatives, for example, the Water Resources Development Act (WRDA) of 1992, Section 204 and WRDA 1996, Section 1135 both encourage the Corps to prioritize the beneficial use of dredged material and fully and equally consider all practicable placement alternatives that comply with all Federal and state laws. Beneficial use may be defined as any use that does not regard the dredged material as a waste; uses include beach nourishment [defined as the discharge of dredged or fill material for the purpose of replenishing an eroded beach or placing sediments in the littoral transport process (Code of Federal Regulations, 2012)], habitat creation, and land reclamation.

The Corps considered a wide variety of dredged material management alternatives for the Ninilchik SBH, prioritizing beneficial use and upland disposal first, with open water and nearshore disposal second. Ultimately the Corps, State of Alaska, and other stakeholders were unable to identify any currently available and/or authorized upland sites, i.e. above 24.5 feet high tide line (HTL), capable of receiving dredged material for beneficial or disposal purposes. Open water disposal alternatives (e.g. hydraulically pumping and/or placing excavated material into barges for transport and disposal in open water beyond 0 feet MLLW) were dropped from consideration given the lengthy timeframe typically required to seek approval to use such sites. The alternatives remaining for further consideration in this EA are related to the beneficial use and/or disposal of dredged material in the nearshore environment (i.e. between 24.5 feet HTL and 0 feet MLLW) (Figure 5).

5.3.1 North Beach

Material dredged from the entrance channel and mooring basin is transported to and disposed of directly on north beach between 24.5 feet HTL and 0 feet MLLW.

5.3.2 South Beach, Option 1

Material dredged from the entrance channel and mooring basin is transported to and disposed of directly on south beach between 24.5 feet HTL and 0 feet MLLW.

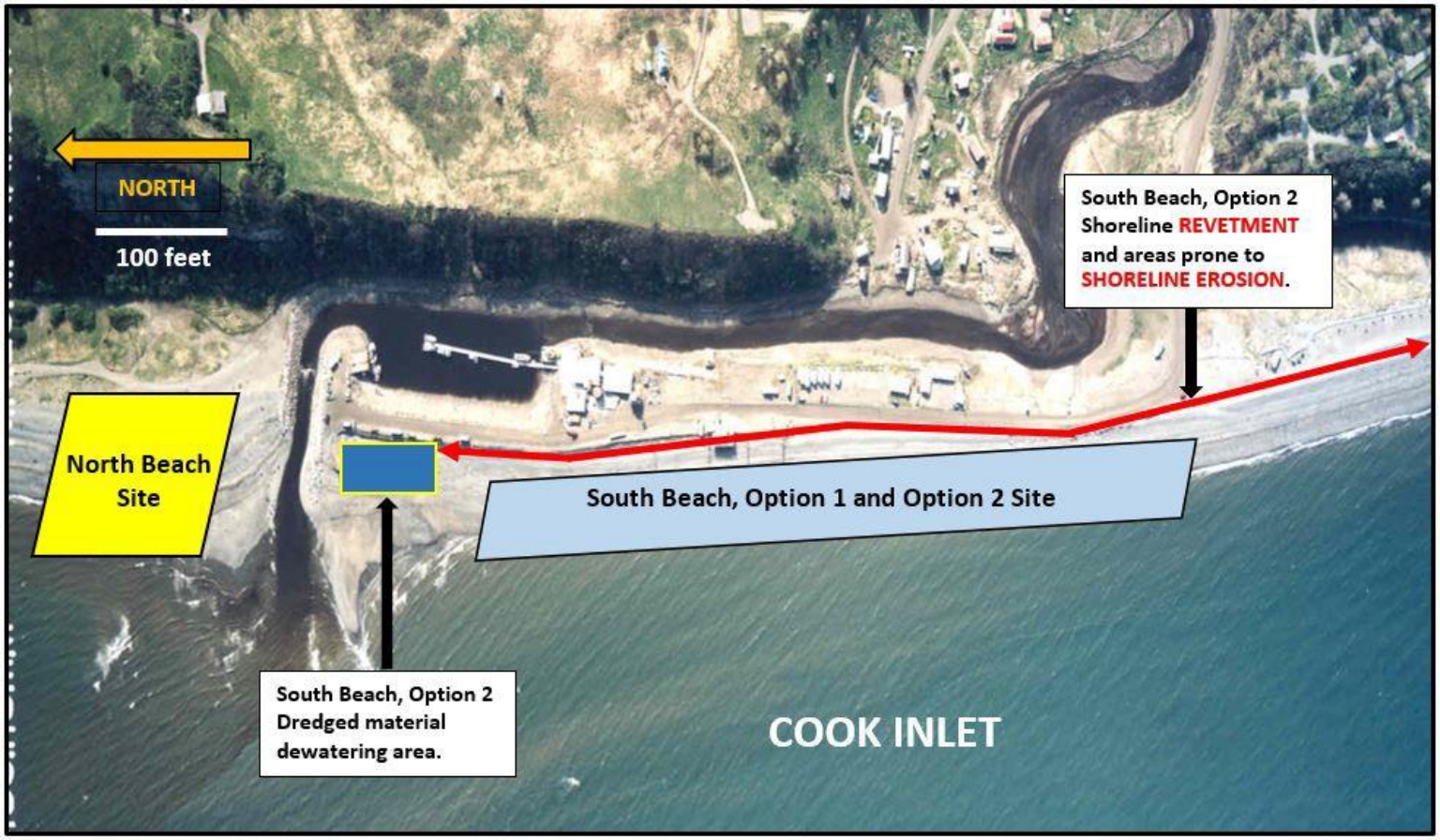


Figure 5. Dredged material management alternatives (location and size approximations), Ninilchik Small Boat Harbor, Ninilchik, AK (imagery from 2012).

5.3.3 South Beach, Option 2

Material dredged from the entrance channel and mooring basin is transported to south beach and, as needed, used for beneficial purposes between 24.5 feet HTL and 18.6 feet MHW; dredged material not used beneficially is disposed of between 18.6 feet MHW and 0 feet MLLW.

6.0 Environmental Consequences of Alternatives

Previous Corps navigation studies, EAs, and an EIS have included environmental evaluations of a wide variety of dredging and dredged material management alternatives for the Ninilchik SBH (USACE, 1973, 1974, 1978, 1980, 1984 and 1996). Many of the "means and methods" environmentally evaluated are presently being implemented, such as, using a hydraulic cutterhead dredge in the mooring basin and constructing a dewatering basin on the south side of the south jetty with material dredged from the entrance channel. The primary environmental consequences identified, though still pertinent in this environmental assessment, were not necessarily associated with how the dredging was conducted. Instead, primary concerns focused on the potential impacts of where and how the disposal and/or beneficial use of dredged material could affect Cook Inlet's environmental resources (e.g. marine mammals, shore birds, marine fish, EFH, anadromous fish, and water quality). More recent coordination with numerous Federal and state environmental resource agencies enabled the Corps to identify the topmost concerns, that is, the effects of the Corps' action on anadromous fish in the Ninilchik River and razor clam populations within the Clam Gulch CHA. Therefore, a more detailed discussion about the impacts of an alternative on razor clams and anadromous will be included, as needed. Appendix A summarizes the potential environmental impacts associated with this EA's Ninilchik SBH maintenance dredging alternatives on all the major categories of environmental resources known to occur in the Ninilchik area.

6.1 No-Action Alternative

The Ninilchik SBH must be maintenance dredged annually to keep the harbor in operation. If locations for placing or disposing the dredged material are not identified and made available annually, maintenance dredging by the Corps would be discontinued and/or the frequency of dredging would likely be decreased. Over time, the Ninilchik SBH would deteriorate naturally and, in time, the Ninilchik River channel and the barrier sand bar would reestablish themselves as before the harbor was constructed. A deteriorated harbor would significantly and adversely impact the socioeconomic benefits derived from the harbor by the commercial fishing fleet, local residents, and public using local recreational facilities. Implementing the No-action alternative, however, would eliminate dredging-induced impacts, such as, a short-term decrease in water quality, displacing epifauna, disturbing anadromous fish, and potentially degrading razor clam habitat in the Clam Gulch CHA.

In addition to deferring annual maintenance dredging activities, not dredging the harbor deeper due to the tidal datum update would preclude the local commercial and subsistence fishing fleet from receiving the full project benefits (e.g. safety, economics and access) associated with authorized project depths.

6.2 North Beach

Material dredged from the entrance channel and mooring basin would be transported to and disposed of directly on north beach between 24.5 feet HTL and 0 feet MLLW.

The Corps used the north beach area for disposing of Ninilchik SBH dredged material between 1967 and 1996, and environmentally evaluated its activities in numerous NEPA documents (USACE, 1973, 1974, 1978, 1980 and 1984). Beginning in 1967, the Corps used trucks (loaded by either a land-based crane with a dragline or clamshell type bucket) to dredge the entrance channel and dispose of the dredged material directly on the beach above 19.3 feet mean higher high water (MHHW), just north of the entrance channel. It was thought at the time that placing dredged material here would help replace beach material being eroded away by wave action, and that the erosive forces would help ensure the availability of the area as a future disposal site. During the same time frame, when the Corps was using the north beach area as a dredged material disposal site, Heckart (1973) in USACE, 1973, reported that the beaches north and south of the Ninilchik river mouth were considered to be, "… significant in terms of razor clam abundance and digger participation." It would appear to the Corps that the then healthy population of razor clams and associated high volume of clamming harvesting activities that primarily occurred at lower intertidal areas (e.g. below 0 feet MLLW) were not being adversely impacted by the then dredged material disposal activities that occurred between seaward of +10 feet MLLW and 24.5 feet HTL.

In 1978, the Corps began using a hydraulic cutterhead suction dredge to remove and transport material via pipeline to the same area north of the harbor where the slurry was discharged directly on the beach between +5.0 feet MLLW and approximately 24.5 feet HTL, and dispersed by the tides. However, to alleviate shoaling problems and boats from running aground in the entrance channel, the Corps recommended in 1986 that instead of placing dredged material adjacent to the north jetty, the disposal area should be moved 350 feet farther north up the beach and placed seaward of the +10 feet MLLW elevation, as below this elevation the material would be exposed to wave action on a more frequent interval, which would facilitate northward movement of the material by the normal summer wave climate.

The Corps stopped using the farther north area in 1996, and started using areas south of the entrance channel, when it was determined that the direction of the alongshore sediment movement had changed and was now redepositing sediment from the north into the Ninilchik river channel. However, it is now understood that, with some exceptions, alongshore sediment movement changes direction seasonally. That is, primarily to the north in the summer and primarily to the south in the winter.

Other than the shoaling problem in the entrance channel, no adverse environmental impacts were noted to have occurred, between 1967 and 1996, when the Corps used north beach as a disposal area and the previously described dredging methods. The lack of adverse impacts may be due to the dredged material not being contaminated and of similar physical characteristics as the substrate it was placed upon, and the area of deposition was essentially void of epifauna and sparsely populated with infauna. However, that does not mean environmental impacts were not generated. Certainly, there was a short-term and localized decrease in nearshore Cook Inlet water

quality, a short-term change in beach morphology, and those organisms inhabiting the footprint of the disposal area were buried by sediment. The Corps would expect the same types of environmental impacts to be generated if the north beach were to be used again.

From what is now known about razor clam biology and its preferred habitat in Eastern Cook Inlet (ADFG, 2016), and about the Ninilchik area's high-energy, nearshore oceanographic processes (Schumacher, 2005), the intertidal area between 0 feet MLLW and 24.5 feet HTL at the north beach site is not likely to support substantial populations of mature and juvenile razor clams. Therefore, if this alternative were chosen as the Corps' Recommended Plan was chosen as an alternative, it would be modified to add a more protective razor clam buffer, that is, the Corps would place dredged material in thin layers, less than 12 inches thick, within a narrowed-down range of +10.0 feet MLLW and 24.5 feet HTL (from 0 feet MLLW and 24.5 feet HTL). This would effectively mitigate adversely impacting Clam Gulch CHA razor clam populations and its habitat, as this narrowed-down intertidal area is not associated with high quality razor clam habitat.

The direct disposal of all dredged material on north beach, without first dewatering it, would permanently precluded its use for beneficial purposes, including constructing or maintaining public transportation projects by the ADOT/PF or other resource agencies (e.g. ADFG, ADNR and the Alaska Division of Parks and Outdoor Recreation).

6.3 South Beach

Between 1967 and 1978 the Corps also used conventional construction equipment to transport and place dredged material from the Ninilchik SBH on various beach areas south of the harbor, but only when the primary disposal beach area north of the harbor was inaccessible by land transportation. The frequency of these occurrences is not documented; however, when the south beach area was used, the Corps placed dredged material along erosive shoreline sections of the spit and along a 400-foot-section of shoreline between +20.0 feet MLLW and +30.0 feet MLLW, adjacent to the State of Alaska campground. Historical photographs also indicate that dredged material was periodically spread on south beach intertidal areas.

Between 1978 and 1996 the south beach no longer functioned as a placement area for the dredged material. Instead, the north beach site was used exclusively when the Corps began using a hydraulic cutter dredge to conduct maintenance dredging of the harbor. However, early in 1978 the Corps considered discharging dredged material in the old Ninilchik River slough south of the project. This alternative was later dropped because of community opposition.

It was not until 1996 that the Corps began placing dredged material south of the river to be used beneficially by ADOT/PF as well as along sections of eroding shoreline. Placing dredged material along the eroding south beach shoreline and on existing shoreline protective structures has been and continues to be considered beneficial to the local community and continued use of the harbor (USACE, 2003). No significantly adverse environmental impacts were ever recorded or documented when the Corps used south beach locations and these methods of placing dredged material between 1967 and 1996. The dredged material was not contaminated and had similar physical characteristics as the substrate it was placed upon, and the area of deposition was essentially void of epifauna and sparsely populated with infauna.

6.3.1 South Beach, Option 1

Material dredged from the entrance channel and mooring basin would be transported to and disposed of directly on south beach between 24.5 feet HTL and 0 feet MLLW.

Unlike the north beach site, the south beach nearshore intertidal environment rarely has had the direct application of dredged material either mechanically or via a hydraulic pipeline. The Corps expects, however, the same type and magnitude of environmental impacts to be generated at the south beach site as those expected to be generated at the north beach site. Dredged material directly placed and/or discharged on south beach areas would cause a short-term and localized decrease in nearshore Cook Inlet water quality, a short-term change in beach morphology, and benthic organisms inhabiting the footprint of the disposal area would be buried by sediment.

Results from a 2011 razor clam survey conducted by ADFG revealed high abundances of mature razor clams on north and south beach areas despite a major 2010 winter die-off; however, between 2014 and 2015 abundances were 90 percent below historical averages (Kerkvliet and Booz, 2016). From 2014 to 2015, preliminary estimates of natural mortality of mature razor clams at Clam Gulch ranged between 68 percent and 78 percent (Kerkvliet and Booz, 2016). As previously described, ADFG ordered all beaches in the Clam Gulch CHA closed to razor clamming in 2015 and the area has not been reopened to clamming as of 2019.

South and north beach morphology and razor clam habitat, separated by the mouth of the Ninilchik River, is very similar and subjected to identical Cook Inlet oceanic processes. For that reason, south beach's intertidal area between 0 feet MLLW and 24.5 feet HTL is not likely to support substantial populations of mature and juvenile razor clams. Therefore, like north beach, if the Corps chose this alternative as its Recommended Plan, it would be modified to add a more protective razor clam buffer, that is, dredged material would be placed in thin layers of 12 inches or less within a more narrowed-down range of +10.0 feet MLLW and 24.5 feet HTL (from 0 feet MLLW and 24.5 feet HTL). This would effectively mitigate adversely impacting Clam Gulch CHA razor clam populations and their habitat, as this narrowed-down area is not associated with high quality razor clam habitat.

Similar to the north beach alternative, dredged material entirely disposed of and/or discharged directly on south beach areas, without first being dewatered, would permanently precluded its use for the aforementioned beneficial purposes.

6.3.2 South Beach, Option 2

Material dredged from the entrance channel and mooring basin is transported to south beach and, as needed, used for beneficial purposes between 24.5 feet HTL and 18.6 feet MHW; dredged material not used beneficially is disposed of between 18.6 feet MHW and 0 feet MLLW.

The process of maintenance dredging the harbor basin with a hydraulic cutterhead dredge and placing the material in a dewatering basin constructed south of the Ninilchik River mouth from the entrance channel material, which was removed with conventional construction equipment, was previously evaluated by the Corps under NEPA and a Finding of No Significant Impact (FONSI) signed on April 29, 1996 (USACE, 1996). Not evaluated in the subject NEPA

document was beneficially placing dredged material along eroding sections of south beach's shoreline and spit road revetment and disposing dredged material on south beach's nearshore environment. However, in 2013, the ADOT/PF received Department of the Army authorization (Regulatory Division POA-1950-6, Nationwide Permit No. 3a Maintenance) to place up to 5,000 cubic yards of Corps-dredged material from the Ninilchik River on a 55,000-square-foot portion of the damaged spit road revetment, between 24.5 feet HTL and 18.6 feet MHW. To date, no adverse environmental impacts have been known to occur as a result of this annually occurring beneficial use of dredged material, which with the State of Alaska's approval, the Corps proposes to continue and expand farther south along the shoreline to the State of Alaska Ninilchik Recreational Area.

Unlike South Beach, Option 1, the Corps does not expect to dispose of the entire amount of dredged material on south beach's nearshore environment. Most of dredged material would be used beneficially along the shoreline (as each year winter storms erode away various amounts of previously placed sacrificial dredged material) and/or to be hauled off-site by the ADOT/PF. However, if in any given year not all generated dredged material is used beneficially or for off-site public purposes, the remaining amount of dredged material would be disposed of on south beach's nearshore environment.

For similar reasons previously stated regarding South Beach, Option 1, the intertidal area between 0 feet MLLW and 24.5 feet HTL is not likely to support substantial populations of mature and juvenile razor clams. Therefore, if the Corps chose this alternative as its Recommended Plan, it would be modified to add a more protective razor clam buffer, that is, dredged material would be placed in thin layers of 12 inches or less within a more narrowed-down range of +10.0 feet MLLW and 24.5 feet HTL (from 0 feet MLLW and 24.5 feet HTL). This would effectively mitigate adversely impacting Clam Gulch CHA razor clam populations and their habitat, as this narrowed-down area is not associated with high quality razor clam habitat. Impacts, either positive or negative, to razor clams from dredging and disposal using this alternative (South Beach, Option 2) between 2017 and 2019 have not been reported.

7.0 Recommended Plan: South Beach, Option 2 (Modified)

As agreed, the State of Alaska has the primary responsibility to identify where material dredged from the Ninilchik SBH is to be placed, and ADOT/PF is approved by ADNR to use the dredged material for public purposes. The Corps' and State of Alaska's priority is to have all material dredged from the Ninilchik SBH used beneficially, either in upland or approved near- shore locations. No upland locations have been identified or approved for receiving any quantity of dredged material from the Ninilchik SBH. The ADOT/PF has, on occasion, used limited quantities of dredged material for repairs to roads leading to and surrounding the harbor and larger dredged material quantities for protecting existing shoreline erosion control structures and repairing other sections of eroding shoreline. Until such time that a long-term upland disposal location and/or other beneficial uses are found for the material dredged from the Ninilchik SBH, South Beach, Option 2 (Modified) is the Corps' Recommended Plan.

> *Material dredged from the entrance channel and mooring basin is transported to south beach and, as needed, used for beneficial purposes between 24.5 feet HTL and 18.6 feet MHW; dredged material not used beneficially is disposed of between 18.6 feet MHW and +10 feet MLLW.*

The South Beach, Option 2 alternative has been modified to provide a protective buffer zone for razor clam populations in the Clam Gulch CHA. More specifically, dredged material would be placed in thin layers of 12 inches or less within a more narrowed-down range of +10.0 feet MLLW and 24.5 feet HTL (from 0 feet MLLW and 24.5 feet HTL). This would effectively mitigate adversely impacting Clam Gulch CHA razor clam populations and their habitat, as this narrowed-down area is not associated with high quality razor clam habitat.

7.1 Mitigation Measures

The Corps began incorporating mitigation measures (e.g. timing restrictions) into its maintenance dredging operation at the Ninilchik SBH in 1973, and to date, others have been added to help avoid and minimize environmental impacts on Cook Inlet's and the Ninilchik River's fish and wildlife resources to the maximum extent practicable and appropriate. Incorporating the following stipulations into the Ninilchik SBH's maintenance dredging operations will prevent adverse environmental impacts from occurring:

- The Alaska Department of Fish and Game divisions of Habitat and Sports Fish shall be contacted 3 days prior to the initiation of dredging and be given the opportunity to monitor the operations for unforeseen adverse environmental impacts.

- Dredging operations shall occur only during the period March 15 through May 15 to protect anadromous salmon migrating into the Ninilchik River and larval razor clams settling into the State of Alaska, Clam Gulch Critical Habitat Area substrate. Dredging at any other time shall only occur after written approval from the Alaska Department of Fish and Game.

- The Alaska Department of Transportation and Public Facilities shall be given the first opportunity to beneficially use any portion or all dredged material for State-authorized public purposes.

- To protect razor clam populations within the State of Alaska, Clam Gulch Critical Habitat Area, no dredged material shall be disposed on south beach below +10 feet MLLW, and only permitted to be placed in thin layers of 12 inches or less between +10.0 feet MLLW and 18.6 MHW.

- Geotextile fabric, or similar protection measures, shall be placed at the dewatering basin outfall to minimize beach erosion and be completely removed after dredging operations each season.

- No vehicles or other construction related equipment leaking fuels, oils, hydraulic, or cooling fluids shall operate in the project area.

- Spill response equipment and supplies shall be readily available on site and used immediately to contain and cleanup oil, fuel, hydraulic fluid, antifreeze, or other pollutant spills.

8.0 Agency Coordination and Compliance with Federal, State of Alaska and Local Environmental Statues

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 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. ADFG's Special Area permits and the ADEC issuance of a Clean Water Act-related "Certificate of Reasonable Assurance" (Appendix B).

The Corps' provisions for complying with the NEPA are found in the CEQ Regulations (40 CFR Parts 1500-1508) and are supplemented by ER 200-2-2 (USACE, 1988); together they provide a framework for compliance with other environmental elements with specific statutory compliance requirements. Appendix C summarizes this project's compliance with relevant Federal, State of Alaska, and local environmental statutory authorities.

9.0 Conclusions

The Recommended Plan and associated mitigation measures fulfill the purpose and need of the Ninilchik SBH giving consideration to economic, environmental, and engineering factors. The beneficial use of placing dredged material from the entrance channel and mooring basin on aging shoreline erosion control structures and on other sections of shoreline that are eroding would help to provide protection to the harbor and spit road until such time that the State of Alaska designs and constructs a permanent structural solution. The Recommended Plan will be implemented for the future maintenance dredging and:

- 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;
- will not "take" migratory birds or any sea/shore birds inhabiting the Ninilchik area;
- will not adversely impact Ninilchik River's anadromous fish population;
- will have no effect on EFH and EFH-managed species/species complexes;
- will have no effect on the Old Ninilchik Village Site National Historic District; and
- will not cause significant adverse impacts on the State of Alaska's Clam Gulch CHA razor clam population in the Ninilchik area.

Therefore, the environmental assessment prepared for this action supports the Corps' conclusions that: (1) the Recommended Plan does not constitute a major Federal action significantly affecting the quality of the human environment; (2) preparing an EIS is not necessary; and (3) signing a FONSI is appropriate.

10.0 Preparers of this Document

This EA was prepared by Mr. Chris Hoffman, Biologist and Mr. Michael Tencza, Operations Project Manager.

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APPENDIX A

SUMMARY OF POTENTIAL IMPACTS ASSOCIATED WITH MAINTENANCE DREDGING OPERATIONS

NINILCHIK SMALL BOAT HARBOR
NINILCHIK, ALASKA

APPENDIX A: Summary table of potential environmental impacts associated with Ninilchik Small Boat Harbor maintenance dredging operations.

Environmental Evaluation Categories	No Action Alternative/Future W/O Project Conditions	North Beach	South Beach, Option 1	Recommend Plan South Beach, Option 2 (Modified)
Marine Mammals	No Corps dredging and dredged material management activities at the Ninilchik SBH would not preclude Cook Inlet marine mammals from being potentially impacted by vessel transits in and out of the mooring basin, ongoing harbor activities, and any unforeseeable shoreline development activities requiring intertidal & subtidal fill.	Dredging activities would have no effect on Cook Inlet marine mammals, as dredging is confined to the Ninilchik River's mooring basin and in the Ninilchik River's entrance channel at low tide. Dredged material disposal in the upper intertidal zone [+10 ft. mean lower low water (MLLW) and 24.5 ft. high tide line (HTL)] would also have no effect on Cook Inlet marine mammals.	Dredging activities would have no effect on Cook Inlet marine mammals, as dredging is confined to the Ninilchik River's mooring basin and in the Ninilchik River's entrance channel at low tide. Dredged material disposal in the upper intertidal zone (+10 ft. MLLW and 24.5 ft. HTL) would also have no effect on Cook Inlet marine mammals.	Dredging activities would have no effect on Cook Inlet's marine mammals, as dredging is confined to the Ninilchik River's mooring basin and in the Ninilchik River's entrance channel at low tide. The beneficial use/disposal of dredged material in the upper intertidal zone (+10 ft. MLLW and 24.5 ft. HTL) would also have no effect on Cook Inlet marine mammals.
Benthic Invertebrates	No Corps dredging and dredged material management activities at the Ninilchik SBH would not preclude benthic invertebrates, especially razor clam populations, from being impacted by ongoing harbor activities and any unforeseeable shoreline development activities requiring intertidal & subtidal fill.	Dredging activities would eliminate the benthic invertebrate populations, within the mooring basin and entrance channel dredging footprint, which became established since the previous year's dredging event.	Dredging activities would eliminate the benthic invertebrate populations, within the mooring basin and entrance channel dredging footprint, which became established since the previous year's dredging event.	Dredging activities would eliminate the benthic invertebrate populations, within the mooring basin and entrance channel dredging footprint, which became established since the previous year's dredging event.

Environmental Evaluation Categories	No Action Alternative	North Beach	South Beach, Option 1	Recommend Plan South Beach, Option 2 (Modified)
Benthic Invertebrates (continued)		The disposal of dredged material in the upper intertidal zone, (+10 ft. MLLW and 24.5 ft. HTL), would have short term and minimal impacts on benthic invertebrate populations.	The disposal of dredged material in the upper intertidal zone (+10 ft. MLLW and 24.5 ft. HTL) would have short term and minimal impacts on benthic invertebrate populations.	The beneficial use of dredged material between 24.5 feet HTL and 18.6 feet MHW would not adversely impact benthic invertebrate populations. The disposal of dredged material, not used for beneficial purposes, between 18.6 feet MHW and +10 feet MLLW would have short term and minimal impacts on benthic invertebrate populations.
Fishery Resources & Essential Fish Habitat (EFH)	No Corps dredging and dredged material management activities at the Ninilchik SBH prevent any occasion to impact EFH and its associated species in Cook Inlet and the Ninilchik River. However, EFH and its species could be affected by ongoing harbor activities and any unforeseeable shoreline development activities requiring intertidal & subtidal fill.	Because of ADFG-required work restrictions, dredging and disposal activities are not expected to adversely impact Ninilchik River's anadromous fish populations and their EFH in the river. Modified disposal activities between +10 ft. MLLW and 24.5 ft. HTL will not adversely impact Cook Inlet EFH or its associated species.	Because of ADFG-required work restrictions, dredging and disposal activities are not expected to adversely impact Ninilchik River's anadromous fish populations and their EFH in the river. Modified disposal activities between +10 ft. MLLW and 24.5 ft. HTL will not adversely impact Cook Inlet EFH or its associated species.	Because of ADFG-required work restrictions, dredging and disposal activities are not expected to adversely impact Ninilchik River's anadromous fish populations and their EFH in the river. The beneficial use/disposal of dredged material between +10 ft. MLLW and 24.5 ft. HTL will not adversely impact Cook Inlet EFH or its associated species.

Environmental Evaluation Categories	No Action Alternative	North Beach	South Beach, Option 1	Recommend Plan South Beach, Option 2 (Modified)
Water Quality	No Corps dredging and dredged material management activities at the Ninilchik SBH would eliminate the short term degradation of water quality (e.g. turbidity) in the nearshore environment of Cook Inlet and in the Ninilchik River. However, harbor-related runoff and permitted wastewater discharges would continue to affect Cook Inlet and Ninilchik River water quality.	Dredging and disposal activities would generate a short term degradation of water quality (e.g. turbidity) in the nearshore environment of Cook Inlet. However, no adverse impacts would result because of the inherently high background turbidity levels in Cook Inlet.	Dredging and disposal activities would generate a short term degradation of water quality (e.g. turbidity) in the nearshore environment of Cook Inlet. However, no adverse impacts would result because of the inherently high background turbidity levels in Cook Inlet.	Dredging and the beneficial use/disposal of dredged material would generate a short term degradation of water quality (e.g. turbidity) in the nearshore environment of Cook Inlet. However, no adverse impacts would result because of the inherently high background turbidity levels in Cook Inlet.
Avian	No Corps dredging and dredged material management activities at the Ninilchik SBH would not preclude potential impacts to Cook Inlet and the Ninilchik area's avian populations from ongoing vessel traffic and other harbor and area recreational activities.	Dredging and disposal activities would not adversely affect local avian populations, as there would only be a short-term displacement of birds from the project area because of project generated noise and human activities. However, sometimes dredging can become an attractive nuisance.	Dredging and disposal activities would not adversely affect local avian populations, as there would only be a short-term displacement of birds from the project area because of project generated noise and human activities. However, sometimes dredging can become an attractive nuisance.	Dredging and the beneficial use/disposal of dredged material would not adversely affect local avian populations, as there would only be a short-term displacement of birds. However, sometimes dredging can become an attractive nuisance.
Threatened & Endangered (T&E) Species	No Corps dredging and dredged material management activities at the Ninilchik SBH would not preclude potential impacts to Cook Inlet's endangered beluga whale, Steller sea lion and Steller's eider populations from non-	Dredging and disposal activities would have no effect on Cook Inlet's endangered beluga whale, Steller sea lion and Steller's eider populations or any of their critical habitat areas, as dredging is confined to the Ninilchik River's mooring	Dredging and disposal activities would have no effect on Cook Inlet's endangered beluga whale, Steller sea lion and Steller's eider population or any of their critical habitat areas, as dredging is confined to the Ninilchik River's mooring	Dredging activities would have no effect on Cook Inlet's endangered beluga whale, Steller sea lion and Steller's eider population or any of their critical habitat areas, as dredging is confined to the Ninilchik River's mooring basin

Environmental Evaluation Categories	No Action Alternative	North Beach	South Beach, Option 1	Recommend Plan South Beach, Option 2 (Modified)
Threatened & Endangered (T&E) Species (continued)	Corps navigation improvement activities/projects (albeit undefined) in the Ninilchik area.	basin and in the Ninilchik River's entrance channel at low tide. Dredged material disposal in the upper intertidal zone (between +10 ft. MLLW and 24.5 ft. HTL) would also have no effect on Cook Inlet T&E species and their habitat.	basin and in the Ninilchik River's entrance channel at low tide. Dredged material disposal in the upper intertidal zone (between +10 ft. MLLW and 24.5 ft. HTL) would also have no effect on Cook Inlet T&E species and their habitat.	and in the Ninilchik River's entrance channel at low tide. The beneficial use/disposal of dredged material in the upper intertidal zone (between +10 ft. MLLW and 24.5 ft. HTL) would also have no effect on Cook Inlet T&E species and their habitat.
Subsistence Resources	No Corps dredging and dredged material management activities at the Ninilchik SBH would preclude the harbor's continued use for facilitating the harvest of subsistence resources in Cook Inlet.	Dredging and disposal activities would have no adverse impact on Ninilchik area subsistence users or the resources harvested. On the contrary, Corps O&M activities at Ninilchik facilitates the continued use of the harbor for Cook Inlet subsistence purposes.	Dredging and disposal activities would have no adverse impact on Ninilchik area subsistence users or the resources harvested. On the contrary, Corps O&M activities at Ninilchik facilitates the continued use of the harbor for Cook Inlet subsistence purposes.	Dredging and the beneficial use/disposal of dredged material would have no adverse impact on Ninilchik area subsistence users or the resources harvested. On the contrary, Corps O&M activities at Ninilchik facilitates the continued use of the harbor for Cook Inlet subsistence purposes.
Cultural, Historical & Archaeological Resources	No Corps dredging and dredged material management activities at the Ninilchik SBH would not preclude potential impacts to cultural, historical and archeological resources from non-Corps navigation improvement activities & projects (albeit undefined) in the Ninilchik area.	Dredging and disposal activities would not impact any customary & traditional practices or historical/archaeological features, as no such resources are within or adjacent to the project area.	Dredging and disposal activities would not impact any customary & traditional practices or historical/archaeological features, as no such resources are within or adjacent to the project area.	Dredging and the beneficial use/disposal of dredged material would not impact any customary & traditional practices or historical/archaeological features, as no such resources are within or adjacent to the project area.

Environmental Evaluation Categories	No Action Alternative	North Beach	South Beach, Option 1	Recommend Plan South Beach, Option 2 (Modified)
Environmental Justice	No Corps dredging and dredged material management activities at the Ninilchik SBH would adversely impact minority and low-income populations in the Ninilchik area, as they depend on the economic benefits derived from the harbor's seasonal operation.	Dredging and disposal activities would have no disproportionally high or adverse human health or environmental effects on minority and low-income populations in the Ninilchik area. On the contrary, minority and low-income populations in the Ninilchik area, depend on the economic benefits derived from the harbor's seasonal operation.	Dredging and disposal activities would have no disproportionally high or adverse human health or environmental effects on minority and low-income populations in the Ninilchik area. On the contrary, minority and low-income populations in the Ninilchik area, depend on the economic benefits derived from the harbor's seasonal operation.	Dredging and the beneficial use/disposal of dredged material would have no disproportionally high or adverse human health or environmental effects on minority and low-income populations in the Ninilchik area. On the contrary, minority and low-income populations in the Ninilchik area, depend on the economic benefits derived from the harbor's seasonal operation.
Indirect Impacts	If the harbor is not annually maintenance dredged, it will not continue to function optimally as a harbor of refuge and support the local commercial fishing fleet, if at all. Over time, the economic and subsistence benefits derived from the harbor and its support activities would dwindle and ultimately be eliminated. In addition, generated dredged material would not be made available for beneficial public uses.	There may a short term impact to those wishing to use the beach and spit road while conventional excavation and hauling equipment are being used. Because of safety concerns, pedestrian access to the project area would be limited for approximately 2 to 3 weeks.	There may a short term impact to those wishing to use the beach and spit road while conventional excavation and hauling equipment are being used. Because of safety concerns, pedestrian access to the project area would be limited for approximately 2 to 3 weeks.	There may a short term impact to those wishing to use the beach and spit road while conventional excavation and hauling equipment are being used. Because of safety concerns, pedestrian access to the project area would be limited for approximately 2 to 3 weeks.

Environmental Evaluation Categories	No Action Alternative	North Beach	South Beach, Option 1	Recommend Plan South Beach, Option 2 (Modified)
Cumulative Impacts	If the Ninilchik SBH were to no longer function, the subject fleet would have to move to the only other harbor in lower Cook Inlet, the Homer Small Boat Harbor. Such a move to an already overcrowded harbor would tax the harbor's existing infrastructure and neighboring support facilities. Ultimately, the harbor would have to expand into the adjacent Kachemak Bay Critical Habitat Area.	The two nearest annual Corps maintenance dredging projects in Cook Inlet are at the Port of Anchorage and the Homer SBH. Approximately 1 million cubic yards of sediment is dredged from the Port of Anchorage between April and November and disposed of in Cook Inlet, offshore from Port McKenzie. Dredging the Cook Inlet Nav. Channel generates millions of cubic yards of material, but it is not dredged annually. Approximately 15,000 cubic yards of sediment is dredged annually from the Homer SBH and USCG dock between April and May, dewatered, and stockpiled on Homer Spit. No adverse impacts to Cook Inlet's biological resources have been associated with dredging at the aforementioned locations. Dredging approximately 9,000 cubic yards of sediment from the Ninilchik SBH and disposing of it into Cook Inlet is cumulatively, not expected to generate adverse impacts.	The two nearest annual Corps maintenance dredging projects in Cook Inlet are at the Port of Anchorage and the Homer SBH. Approximately 1 million cubic yards of sediment is dredged from the Port of Anchorage between April and November and disposed of in Cook Inlet, offshore from Port McKenzie. Dredging the Cook Inlet Nav. Channel generates millions of cubic yards of material, but it is not dredged annually. Approximately 15,000 cubic yards of sediment is dredged annually from the Homer SBH and USCG dock between April and May, dewatered, and stockpiled on Homer Spit. No adverse impacts to Cook Inlet's biological resources have been associated with dredging at the aforementioned locations. Dredging approximately 9,000 cubic yards of sediment from the Ninilchik SBH and disposing of it into Cook Inlet is cumulatively, not expected to generate adverse impacts.	The two nearest annual Corps maintenance dredging projects in Cook Inlet are at the Port of Anchorage and the Homer SBH. Approximately 1 million cubic yards of sediment is dredged from the Port of Anchorage between April and November and disposed of in Cook Inlet, offshore from Port McKenzie. Dredging the Cook Inlet Nav. Channel generates millions of cubic yards of material, but it is not dredged annually. Approximately 15,000 cubic yards of sediment is dredged annually from the Homer SBH and USCG dock between April and May, dewatered, and stockpiled on Homer Spit. No adverse impacts to Cook Inlet's biological resources have been associated with dredging at the aforementioned locations. Dredging approximately 9,000 cubic yards of sediment from the Ninilchik SBH and disposing of it into Cook Inlet is cumulatively, not expected to generate adverse impacts.

APPENDIX B

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

MAINTENANCE DREDGING OPERATIONS
NINILCHIK SMALL BOAT HARBOR
NINILCHIK, ALASKA

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

6.4 MAINTENANCE DREDGING OPERATIONS

NINILCHIK SMALL BOAT HARBOR
NINILCHIK, ALASKA

I. Project Description

Location: Ninilchik, Alaska is approximately 100 miles south of Anchorage on the eastern shore of Cook Inlet, in a narrow valley formed by the Ninilchik River. The small community of Ninilchik occupies land around the mouth of the Ninilchik River and the plateau overlooking the river valley. The harbor, constructed in 1961, is designed to provide moorage for 32 vessels; however, over 150 fishing vessels are known to use the harbor and at times up to 100 vessels have been observed in the harbor.

Purpose and Authority: The U.S. Army Corps of Engineers, Alaska District (Corps) found it necessary to re-evaluate and modify its annual dredging activities for the period of 2017-2019 at the federally-authorized small boat harbor in Ninilchik, Alaska (Figure B-1). The re-evaluation became necessary because the currently used dredged material management site, depicted in Figure B-1, is nearing capacity and another site (or sites) for beneficial use of the material must be found in order for the Corps to continue its operation and maintenance activities. In addition to maintenance dredging activities, a one-time dredge event to remove approximately 1.28 feet of material as a result of a tidal datum update will facilitate the commercial and subsistence fishing fleet's ability to receive the full economic benefits associated with federally-authorized project depths.

The Ninilchik Small Boat Harbor (SBH) was authorized under the Rivers and Harbor Act of 1958 (Public Law 85-500, 85th Congress, S.3910, July 3, 1958). As the local sponsor, the State of Alaska is to provide to the United States, without cost, "… the necessary lands, easements and right-of-ways, and spoil (i.e., dredged material) disposal areas both for new work and subsequent maintenance…" (Chief of Engineers Report, House Document No. 34, 85th Congress, 1st Session). In 1985, the Alaska Department of Transportation and Public Facilities (ADOT/PF) assumed responsibility for managing the Ninilchik SBH per an Interagency Land Management Agreement with the Alaska Department of Natural Resources (ADNR).

Proposed Action: (Figure B-2): The Corps plans to use material dredged from the Ninilchik SBH beneficially, either in upland or near-shore locations. However, no upland locations have currently been identified or approved for receiving any quantity of dredged material from the Ninilchik SBH. Until such time that a long term location and/or other beneficial uses can be found for the material dredged from the Ninilchik SBH, conventional construction equipment will be used to dredge the Ninilchik SBH entrance channel and initially use the material to construct a temporary dewatering basin on the beach, south of the entrance channel. The same equipment will be used to beneficially place dredged material from the entrance channel along

annually-identified eroding sections of south beach's shoreline. Any remaining dredged material from the entrance channel will be disposed of by spreading it thinly on south beach's nearshore environment between 18.6 mean high water (MHW) and +10 feet mean lower low water (MLLW). Material hydraulically dredged from mooring basin will be discharged into the aforementioned dewatering basin; afterwards, the dewatered dredged material will also be beneficially placed using conventional construction equipment along eroding sections of south beach's shoreline. Lastly, any remaining dewatered dredged material will also be disposed of by spreading it thinly on south beach's nearshore environment (between 18.6 MHW and +10 feet MLLW) using conventional construction equipment.

II. Factual Determinations

A. Physical Substrate Determinations

The Ninilchik SBH is constructed in the mouth of the Ninilchik River, behind a barrier beach or ridge, locally called the spit. The spit and associated beach and shoreline is composed of unconsolidated overburden consisting of littorally-transported gravel and localized patches of sandy gravel, sand lenses, and a two-foot-thick silt layer exposed on the riverside of the spit.

B. Water Circulation, Fluctuations, and Salinity Determinations

The dominant currents within Cook Inlet are tidal, which are forced externally. Two unequal high and low (mixed semi-diurnal) tides occur per lunar day (24 hours, 50 minutes), with the mean range (height) increasing northward. Internal forcing for currents results from the regional winds and river discharge. The rivers and streams flowing directly into the nearshore environments of Cook Inlet release sediments and minerals to the marine system, affecting salinity, temperature and other aspects of water. The presence of freshwater promotes density-driven currents that alter the phase and duration of tidal currents. Since 1970, there has been a general warming and freshening of the upper layer (0-100m) of the water column (0.9 degrees C and a salinity decrease of ~ 0.06 $^{0}/_{00}$), while in the lower water column (100-250 m), temperature increased 0.8 degrees C and salinity increased ~ 0.04$^{0}/_{00}$ (ENRI, 1995).

C. Suspended Particulate/Turbidity Determinations

Suspended sediment input from the head of Cook Inlet is very high; it is overwhelmingly comprised of very fine-grained glacial till. Deposition of sediments within the harbor and entrance channel result from freshwater river sediments, saltwater sediments by flood tides and storm events, and littoral drift. Cook Inlet turbidity measurements, offshore from Ninilchik, range between 4 and 7 nephelometric turbidity units (NTU) and total suspended solids range between 3 milligrams per liter (mg/L) to 19 mg/L (ENRI, 1995). The amount of material moved and the net direction of that movement changes seasonally. Summer seasonal longshore currents are depositional and move from south to north, while wintertime, storm-driven currents move north to south, and are erosive.

D. Contaminant Determinations

The primary sources of possible contamination in the harbor are associated with the seasonal use of the harbor by the commercial and subsistence fishing fleet and associated support facilities. Secondary contamination sources are related to development activities in the Ninilchik River

watershed. It should be noted that the Ninilchik SBH, while possessing the potential for low-level chronic pollution typical of most small boat harbors, does not exhibit this condition primarily due to the continuous flushing action of the Ninilchik River into Cook Inlet.

The Corps conducted its most recent sediment characterization in 2016, as the last time such information was collected and analyzed was in 1992. The April 2016 sediment samples were collected from the harbor and adjacent shoreline areas (Figure B-3). Thirteen sediment samples collected from five harbor locations were chemically characterized to determine whether sediments in the harbor have been impacted by chemical, fuel, or metals contamination and to determine the appropriate use(s) and/or disposal options for the dredged material. Eight sediment samples were also collected in the Ninilchik River upstream of the harbor to determine background metals concentrations in naturally occurring river sediment and to compare those concentrations with harbor sediment metal concentrations. Also, for comparative background purposes and future reference in long-term dredged material management planning, sediment samples were collected from 13 locations in Cook Inlet's nearshore and beach environment and analyzed for a variety of metals, including arsenic and chromium. While the metals concentrations of the marine sediments were generally lower than the harbor sediments, the difference was not statistically significant.

Grain size and total organic carbon analyses were performed on the harbor samples to help in data interpretation. In general, harbor sediment samples were very fine and contained organic matter (e.g. root and leaf matting) that had a hydrogen sulfide (H_2SO_4) odor; however, a few samples consisted of denser sands and gravels with little organic content. No harbor collected sediment had any visual or olfactory evidence of contamination.

Analytical results were compared to both the most stringent Alaska Department of Environmental Conservation (ADEC) Method 2 screening criteria (to determine the suitability of unrestricted upland disposal) (ADEC, 2015), as well as Dredged Material Management Program guidelines (to determine unrestricted offshore/in-water disposal) (USACE, 2014). A statistical analysis was also performed to determine if the material can continue to be beneficially reused in accordance with ADEC Dredged Material Guidance (ADEC, 2013). The results of the 2016 sampling effort are summarized in Table B-1 and the complete chemical data report is available upon request (USACE, 2016).

Arsenic and chromium were detected in sediments at a concentration exceeding ADEC upland disposal criteria; however, their concentrations were determined to be within background concentrations and are assumed to be naturally occurring. One beach sample collected from a site south of the Ninilchik river-mouth exceeded ADEC screening criteria for unrestricted upland disposal; further in-situ testing may be required before a decision can be made to use this site for dredged material placement. Similar to the analytical results from a 1992 sampling effort at the Ninilchik SBH, 2016 analytical results indicate that the sediment to be dredged from the mooring basin and entrance channel are suitable for beneficial uses and for both upland and in-water disposal (USACE, 2016).

Table B-1. Summary of 2016 sediment chemical testing results, Ninilchik SBH, AK (USACE, 2016).

Method	Chemical Analysis	Results
AK103 Target heavy fuels and lubricating oil	Residual Range Organics (RRO)	RRO detected at levels below cleanup criteria.
AK102 Target diesel, heavy fuels	Diesel Range Organics (DRO)	DRO detected at levels below cleanup criteria, even with possible biogenic interference.
AK101 Target gasoline	Gasoline Range Organics (GRO)	All GRO detected was more than two orders of magnitude lower than ADEC screening criteria.
SW846 6020A & 7471A Target regulated metals from fuels, paints, batteries, etc.	Eight RCRA Metals (Resource Conservation and Recovery Act)	Only arsenic and chromium concentrations exceeded ADEC screening levels; however, the detected range of concentrations is comparable to natural background concentrations.
SW846 8081B Target pesticides (e.g. DDT) residues.	Chlorinated Pesticides	No targeted pesticides were detected at concentrations above ADEC or DMMP* screening criteria. All analytes are below ADEC screening criteria for upland disposal.
SW846 8260B Target fuel constituents and solvent compounds.	Volatile Organic Compounds (VOCs) [benzene, toluene, ethylbenzene, xylene (BTEX), 2 butanone, methylene chloride, carbon disulfide+]	No VOCs were detected at concentrations above ADEC or DMMP screening criteria. All analytes are below ADEC screening criteria for upland disposal.
SW846 8270D-SIM Target petroleum-related compounds.	Polycyclic Aromatic Hydrocarbons (PAHs)	No PAHs were detected at concentrations above ADEC or DMMP screening criteria. All analytes are below ADEC screening criteria for upland disposal.
* DMMP – Dredged Material Evaluation and Disposal Procedures User Manual, November 2015.		

E. Aquatic Ecosystems and Organism Determinations

The Ninilchik River (ADFG Anadromous Fish Stream 244-20-10090) sustains spawning populations of chinook, coho, and pink salmon, and steelhead and Dolly Varden trout. Generally, anadromous fish enter the river at higher tides, pass over the existing rock sill at the mouth of the mooring basin, and hold in the deeper pools (including the mooring basin) in the lower reaches of the river. The fish then move upstream, beyond the mooring basin, to spawn. Pink salmon

spawn in the lower reaches. King salmon are usually the first adult salmon to enter freshwater starting around mid-May. Pink salmon are the first juvenile out-migrants in the spring and have been known to migrate out of the river to Cook Inlet under the ice during breakup.

National Marine Fisheries Service (NMFS) managed marine mammal species in Cook Inlet include the Steller sea lion, harbor seal, beluga whale, Dall and harbor porpoise, and killer and humpback whale. However, no high concentrations of these species are known to occur in Ninilchik's nearshore marine waters. The Cook Inlet beluga whale distinct population segment (DPS), is listed as an endangered species under the Endangered Species Act (ESA), and critical habitat has been identified in three Cook Inlet areas, none of which occur in the Ninilchik River area. The Steller sea lion western DPS is also listed as an endangered species but critical habitat has not been designated in upper Cook Inlet, including the offshore marine waters from Ninilchik. The ESA-threatened Steller's eider (Alaska nesting population), managed by the USFWS, is known to occur in lower Cook Inlet; however, no individuals are known to frequent the Ninilchik area, nor has any critical habitat been designed in the Ninilchik area.

A thorough account of the Ninilchik's nearshore environment was made by the U.S. Fish and Wildlife Service (USFWS) when field data was collected to facilitate their environmental evaluation of the Corps' then-proposed navigation improvements to the Ninilchik SBH (USFWS, 1983). The USFWS found 16 marine fish taxa inhabiting the nearshore zone in May, with longfin smelt being the most abundant. Also, five species of flatfish were typically found in the area. The USFWS noted that the diversity and number of fish collected was greater adjacent to the mouth of the Ninilchik River, as opposed to collections made approximately 0.5 mile north and south of the river mouth. Essential fish habitat (EFH) species known to occur in offshore Cook Inlet waters include Pacific cod, sculpin, walleye pollock, eulachon, and all five Pacific salmon species, all of which have been found in stomach content analysis of Cook Inlet beluga whales (HDR and URS, 2006). The extreme conditions of tide, currents, icing, and beach instability in Cook Inlet severely limits the ability of intertidal areas near Ninilchik to become vegetated with periphytic algae and to become high quality ESH for the subject species.

The same aforementioned USFWS site investigation found the Ninilchik beaches to be essentially devoid of epifauna (USFWS, 1983). The rocky alluvial fan at the river mouth and other scattered exposed rocks along the beach provided the only hard substrate for organism attachment and shelter (e.g. blue mussel, barnacles, periwinkles, sea anemone, and species of crab, shrimp and amphipods). The single-most numerous infaunal organism sampled by the USFWS was a polychaete worm, which was found to be more abundant in the upper intertidal area, decreasing in numbers toward the lower intertidal area, a distribution trend reversed by bivalves (e.g. Nuttall's cockle, surf clam, *Macoma* sp., and razor clams).

A recreational shellfishery for razor and hard shell clams exists along the eastern shoreline of Cook Inlet. Offshore from and adjacent to Ninilchik is the 30,000-acre Clam Gulch Critical Habitat Area (CHA), which was established by the State of Alaska in 1976, "…to ensure that the public continues to have the opportunity to enjoy its prolific razor clam beds." (AS 16.20.220.270). The Clam Gulch CHA stretches between Cape Kasilof and Happy Valley, and its habitat lies between -5.0 feet MLLW and 18.6 feet MHW (Figure 3). Historically, clamming efforts in the Ninilchik area concentrated on and adjacent to a sandbar located approximately 0.5

mile south of the Ninilchik River mouth (Kerkvliet and Booz, 2016). Razor clams can be dug year round; however, most effort occurs from May through August on tides lower than -2.0 feet mean lower low water (MLLW) (Kerkvliet and Booz, 2016). Any development or activity, meeting the criteria, in the Clam Gulch CHA requires a State of Alaska Critical Habitat Permit (aka, Special Area Permit).

Razor clams are filter feeders, feeding when tides cover their beds and their inhalant siphon takes in seawater to filter out plankton and other food particles. Now-filtered seawater is expelled through an exhalant siphon. The razor clam populations in the Ninilchik area prefer sandy nearshore habitat and occur from approximately +4 feet MLLW to depths of 30 fathoms (ADFG, 2016). Razor clam spawning in eastern Cook Inlet occurs in late July and August and larvae drift from 6 weeks to over 2 months (September and October) before settling to the substrate in the fall as juveniles, which live in the top few centimeters of substrate, maturing to harvestable size within 3 or 4 years at Ninilchik (Kerkvliet and Booz, 2016).

The USFWS (1983) found that the beach north of the Ninilchik river mouth was comparatively more dense with razor clams than beach areas south of the river mouth; however, the south-side beaches had larger sized individuals (20 percent of the clams sampled were greater than 130 millimeters). It was thought that relatively small razor clams (60 to 80 millimeters) found north of the river mouth might occupy habitat important for recruitment. Overall, the USFWS found that few razor clams were exposed on tides less than -3.0 feet MLLW.

More recent razor clam investigations conducted by Kerkvliet and Booz (2016) in 2014 and 2015 showed that the average number of mature-sized razor clams at Ninilchik's study site south of the river mouth was roughly 80 percent lower than averages seen by ADFG between 1991 and 2012. Survey results, based on the length and age of the juvenile sized razor clams, also suggested that few individuals would reach maturity by 2017 or 2018. Consequently, ADFG closed the Cook Inlet Personal Use Clam Fishery in the Ninilchik and Clam Gulch areas because of the low density of mature and juvenile razor clams (ADFG News Release, dated February 24, 2015). The subject closure remains in effect (ADFG News Release dated January 1, 2016).

The specific cause(s) of the decline in razor clam abundance on Cook Inlet eastside beaches remains unknown, but ADFG believes it is related to poor spawning and/or settling success and the high natural mortality of mature razor clams (Kerkvliet and Booz, 2016). The influx of fresh water from the Ninilchik River and occasional winter storms during periods of high tides, like that which occurred in November 2010 (Redoubt Reporter, 2010), could be considered limiting factors in razor clam development and mortality also.

F. Proposed Disposal Site Determinations

No in-water disposal (placement below +10 feet MLLW) of dredged material will occur, although some material is expected to migrate below this elevation due to the tides and currents. The Corps believes that there is adequate justification to show that widespread dispersion by the tides and currents will result in no significant adverse environmental effects, as the discharged material is intended to be spread naturally in a thin layer over a large area of the substrate rather than be contained within the disposal site. A mixing zone determination is not applicable to this project. The proposed action is expected to 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 operations will occur at existing navigation features. If necessary, dredged material not used for beneficial purposes will be disposed of in the nearshore, intertidal environment. The Corps' proposed action, in concert with past, present, and foreseeable actions is not likely to have any significant cumulative or secondary impact on water resources or interfere with the productivity and water quality of existing aquatic 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 (USEPA) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, and no adaptations of the guidelines were made relative to this evaluation. To comply with the National Environmental Policy Act (NEPA) and other Federal, State of Alaska and local environmental laws and regulations, the Corps prepared an environmental assessment (EA), dated September 16, 2016, to address the potential environmental impacts associated with the Corps' proposed action. The Corps released Public Notice ER-16-07 informing the public that the EA was available for a 30-day review and comment period. The Corps determined that the EA supports the conclusion that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment and therefore, preparing an environmental impact statement is not necessary.

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

No upland dredged material disposal sites have been identified for use. No other beneficial uses of dredged material, other than that identified, are available. The Corps chose the least damaging practicable alternative after taking into consideration the area's fish and wildlife resources, project costs, existing technology, and logistics in light of the overall project purpose. See sections 5.0 (Alternatives under Consideration), 6.0 (Environmental Consequences of Alternatives) and 6.3 (South Beach) in the subject EA for a more detailed discussion of the reasons behind selecting the proposed plan.

C. Compliance with Applicable State Water Quality Standards

The Corps' 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 would the Corps' project expect to introduce petroleum hydrocarbons, radioactive materials, residues, or other pollutants into the Ninilchik River or Cook Inlet. A temporary increase in turbidity and settleable solids would result locally from construction activities. The Corps has concluded that the proposed action is in compliance 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 would affect water quality parameters are associated with the Corps' 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

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

F. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972

The Corps' proposed action does not include disposing dredged material in territorial waters (3 miles from 0 MLLW) of the U.S. or in Secretary of Commerce-designated National Marine Sanctuaries.

G. 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 would be no significant adverse impacts to plankton, fish, shellfish, wildlife, and/or special aquatic sites in the project area.

H. 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 Corps' proposed action to ensure that no impacts adversely affect Ninilchik River's and Cook Inlet's local fish and wildlife resources:

- The Alaska Department of Fish and Game divisions of Habitat and Sports Fish shall be contacted 3 days prior to the initiation of dredging and be given the opportunity to monitor the operations for unforeseen adverse environmental impacts.

- Dredging operations shall occur only during the period March 15 through May 15 to protect anadromous salmon migrating into the Ninilchik River and larval razor clams settling into the State of Alaska, Clam Gulch Critical Habitat Area substrate. Dredging at other times shall only occur after written approval from the Alaska Department of Fish and Game.

- The Alaska Department of Transportation and Public Facilities shall be given the first opportunity to beneficially use any portion of or all dredged material for State-authorized public purposes.

- To protect razor clam populations within the State of Alaska, Clam Gulch Critical Habitat Area, no dredged material shall be disposed of on south beach below +10 feet MLLW, and only permitted to be placed in thin layers of 12 inches or less between +10.0 feet MLLW and 18.6 MHW.

- Geotextile fabric, or similar protection measures, shall be placed at the dewatering basin outfall to minimize beach erosion and be completely removed after dredging operations each season.

- No vehicles or other construction related equipment leaking fuels, oils, hydraulic, or cooling fluids shall operate in the project area.

- Spill response equipment and supplies shall be readily available on site and used immediately to contain and cleanup oil, fuel, hydraulic fluid, antifreeze, or other pollutant spills.

I. Findings of Compliance or Non-compliance with the Restriction on Discharge

On the basis of the subject guidelines, the proposed disposal sites for the discharge of dredged or fill material are specified as complying with the guideline's requirements with the inclusion of appropriate and practicable discharge conditions (see subpart H) to minimize pollution or adverse effects to the affected aquatic environment.

J. References

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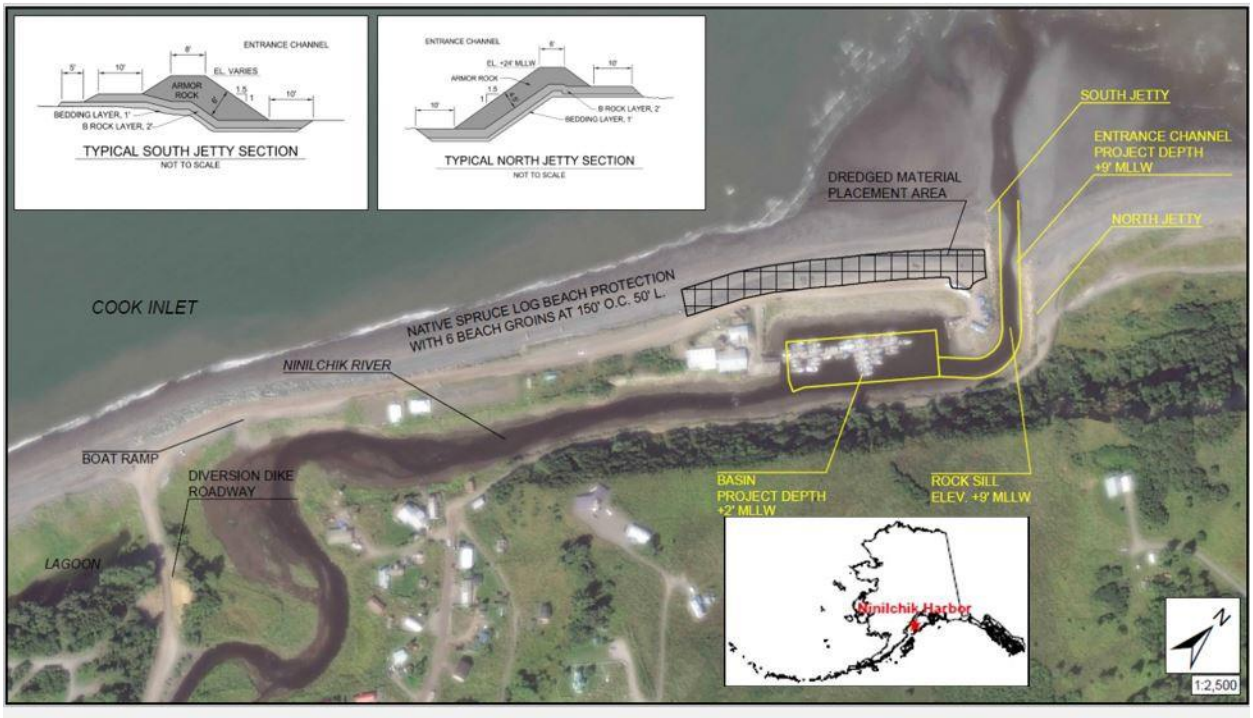

Figure B-1. Ninilchik Small Boat Harbor, Ninilchik, AK (imagery from 2015).

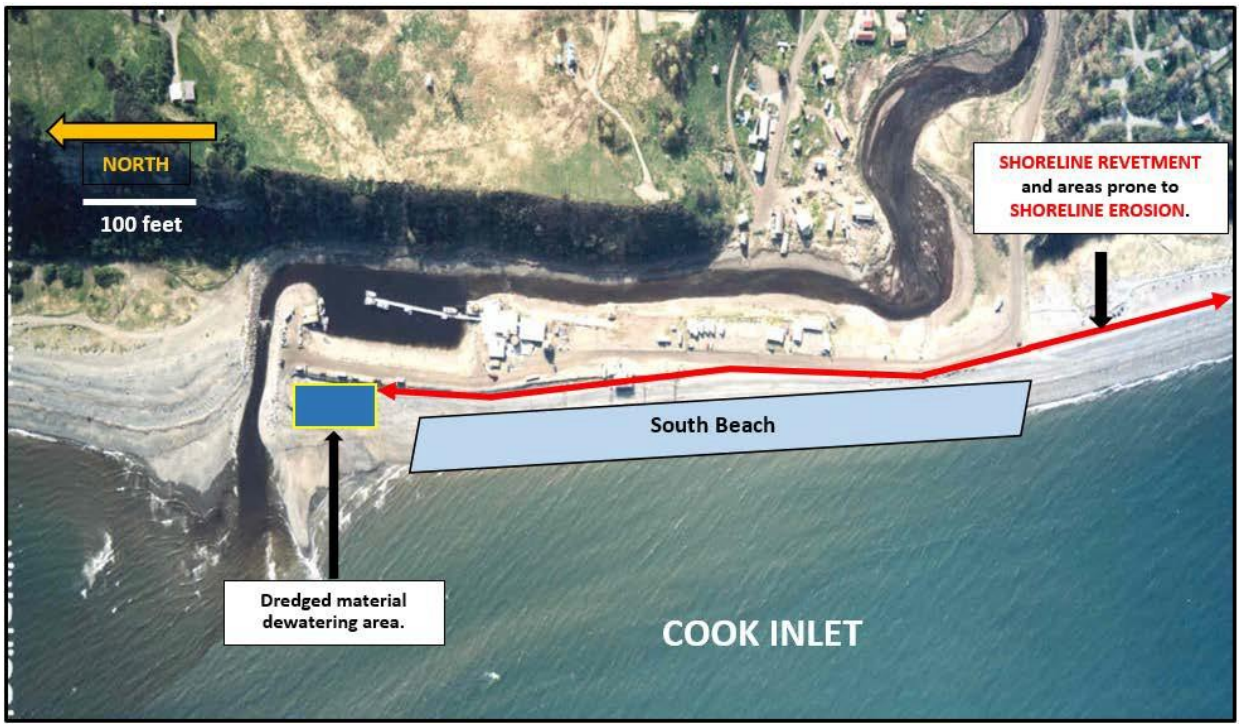

Figure B-2. Proposed action's dredged material management sites (size and location approximations), Ninilchik Small Boat Harbor, Ninilchik, AK (imagery from 2012).

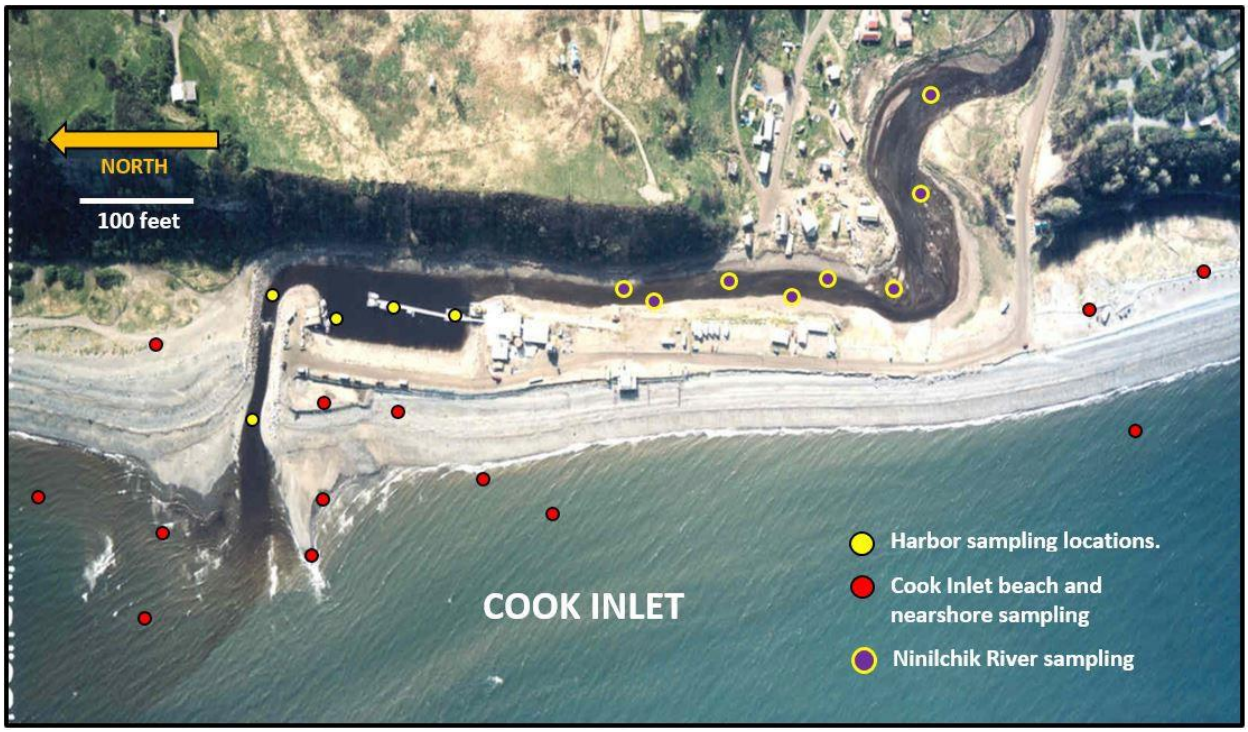

Figure B-3. 2016 sediment sample locations (approximate), Ninilchik Small Boat Harbor, Ninilchik, AK (imagery from 2012).

APPENDIX C

COMPLIANCE WITH RELEVANT FEDERAL, STATE OF ALASKA AND LOCAL GOVERNMENT ENVIRONMENTAL STATUTORY AUTHORITIES

MAINTENANCE DREDGING OPERATIONS NINILCHIK SMALL BOAT HARBOR NINILCHIK, ALASKA

APPENDIX C: Compliance with relevant Federal, State of Alaska and local government environmental statutory authorities, Ninilchik Small Boat Harbor.

Federal Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
Clean Air Act (CAA), as amended	**FC** Project area is not in or near "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** Revised Section 404(b)(1) evaluation prepared and sent to ADEC for review and their possible issuance of a new Section 401 water quality certification. See Appendix B – 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 from the State that the permitted project complies with the State Water Quality Standards for actions within State waters.
Coastal Zone Management Act of 1982	**Not Applicable** Corps is continuing to coordinate its 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	**FC** The Corps project will have no effect on ESA species.	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** Unlike Corps civil works water resource feasibility studies, operation and maintenance 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.

Federal Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
Marine Mammal Protection Act	**FC** The Corps project will have no effect on marine mammal species.	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.
Marine Protection, Research, and Sanctuaries Act of 1972	**Not Applicable** No ocean dumping of dredged material is proposed.	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 will not affect any migratory species or their nesting habitat in the Ninilchik area.	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	**FC** The Corps project will have no effect on essential fish habitat (EFH) or EFH managed species/species complexes.	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.

Federal Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
National Environmental Policy Act (NEPA) of 1969, as amended	**PC** The Corps completed this environmental assessment (EA), in compliance with NEPA and Corps regulation ER 200-2-2 (Procedures for Implementing the NEPA). If no objection, Finding of No Significant Impact (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.
National Historic Preservation Act of 1966, as amended	**FC** The State Historical Preservation Officer has concurred with the Corps' "no effect" determination, i.e., no effect on operation and maintenance (O&M) activities at the Ninilchik SBH.	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 at the Ninilchik SBH.	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 the Ninilchik SBH 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** No invasive species are expected to be introduced into the Ninilchik River and Cook Inlet aquatic environments, as construction equipment is expected to originate from environmentally-compatible AK environs.	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. The Corps Invasive Species Leadership Team oversees the Corps Invasive Species Program.

Federal Statutory Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
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 the Ninilchik SBH, 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.
State and Local Authority	**Compliance Status** **FC-full compliance** **PC-partial compliance**	**Comment**
State of Alaska Department of Fish and Game Fish Habitat Permit	**FC** In 2009, ADFG began combining Ninilchik SBH-related Fish Habitat Permits with Special Area Permits (SAP) and issued the Corps a new dual purpose SAP, 09-V-0163-SA.	ADFG 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	**PC** SAP 16-V-0307-SA, Amend. I, issued November 4, 2016, expires Dec. 31, 2019, and must be reissued prior to Spring 2020 dredging operations.	ADFG manages/permits activities that occur in legislatively designated special areas.
State of Alaska Department of Environmental Conservation Clean Water Act, Section 401	**PC** Revised Section 404(b)(1) evaluation prepared and sent to ADEC for review and their possible issuance of a new Section 401 water quality certification. See Appendix A – 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	**Not Applicable** Project activities do not include disposing any solid waste, contaminated soil, or dredged material terrestrially.	This program issues permits for the disposal of solid waste, contaminated soil and the terrestrial placement of (contaminated and uncontaminated) dredged material.

State and Local Authority	Compliance Status FC-full compliance PC-partial compliance	Comment
Kenai Peninsula Borough Habitat Protection District Permit	**Not Applicable** Project activities are beyond the limits of the habitat protection district.	Establishes a 50-foot habitat protection district that includes all lands within 50 horizontal feet of the ordinary high water mark of anadromous water-bodies.
Kenai Peninsula Borough Floodplain Development Permit	**PC** Corps' permit (RC Number 10792) expires December 31, 2019, and must be reissued prior to Spring 2020 dredging operations.	Permit insures the natural and beneficial functions of floodplains, and require standards so as to reduce losses to life and property.