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

Navigation Improvements
Craig, Alaska

I. Project Description and Background

A. Location: The project area is in the near-shore environment at the northwest corner of Craig Island (roughly, 55.48°N, 133.16°W), adjacent to the community of Craig, Alaska, and the disused Wards Cover cannery site (figures 1 and 2).

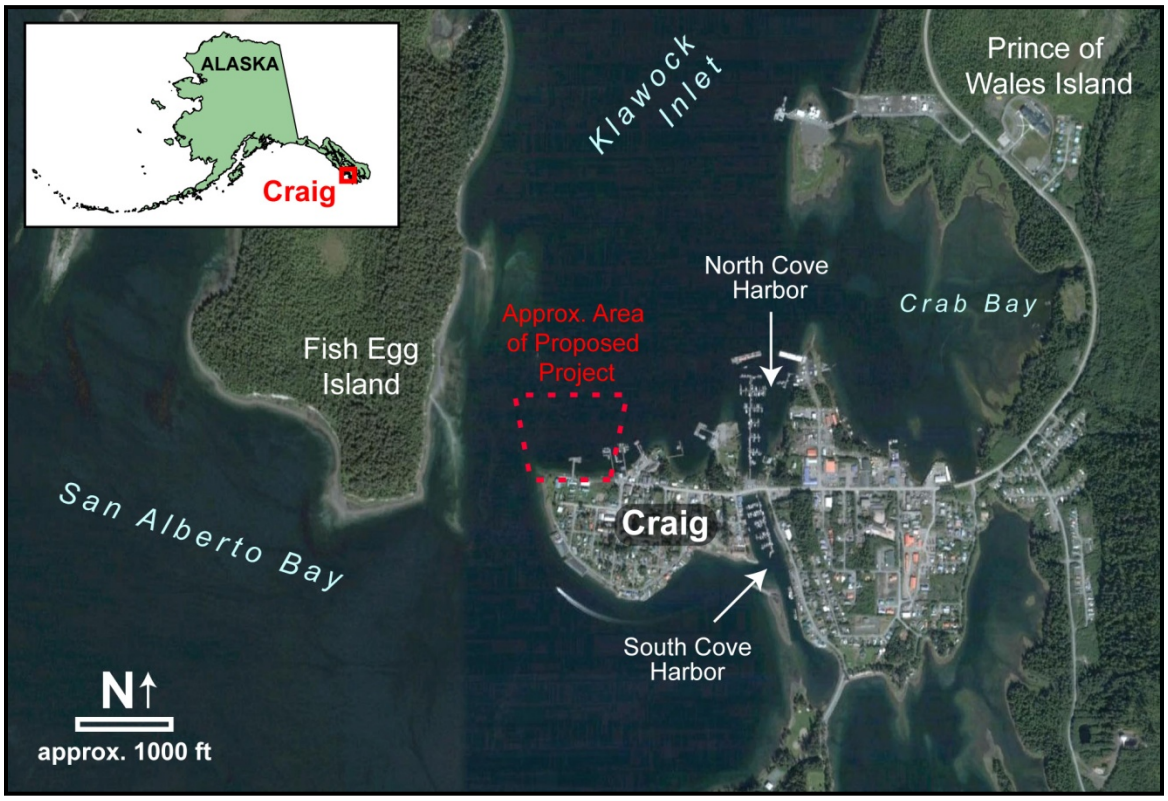

Figure 1. Location and vicinity of the proposed harbor site at Craig, Alaska.

B. General Description: The integrated feasibility report and environmental assessment (FR/EA) to which this evaluation is appended contains a full discussion of the project problems and alternatives. The intent of this project is to provide additional protected moorage space for vessels at Craig, where demand for moorage for commercial, subsistence, and recreational vessels exceeds the current supply. The six construction alternatives discussed in the FR/EA are all placed at the same location, and use rubblemound breakwaters of differing configurations to define harbor basins of 7.5, 10.1,

Figure 2. 2012 aerial view of the proposed project site (view is from the north).

25.1, or 42.5 acres to accommodate different fleet sizes. All of the alternatives avoid the need for dredging, by positioning the mooring basin in sufficiently deep water.

Alternative 2b (figure 3) is the Tentatively Selected Plan. This alternative would require placement of 279,050 cubic yards of rock into the marine environment to create 1,933 combined linear feet of rubblemound breakwater with a footprint of 10.1 acres.

C. Authority: The feasibility study for this project was conducted under authority granted by a resolution adopted on December 2, 1970, by the Committee on Public Works of the U.S. House of Representatives, under House Document No. 414, 83rd Congress, 2nd Session.

D. General Description of Dredged or Fill Material: Construction of the breakwaters under the preferred alternative would require the placement of approximately 31,100 cubic yards of armor rock, 42,650 cubic yards of B rock, and 205,300 cubic yards of core rock. The breakwater would occupy 10.1 acres of submerged land. The rock would be obtained from a local approved source. No dredging would be performed.

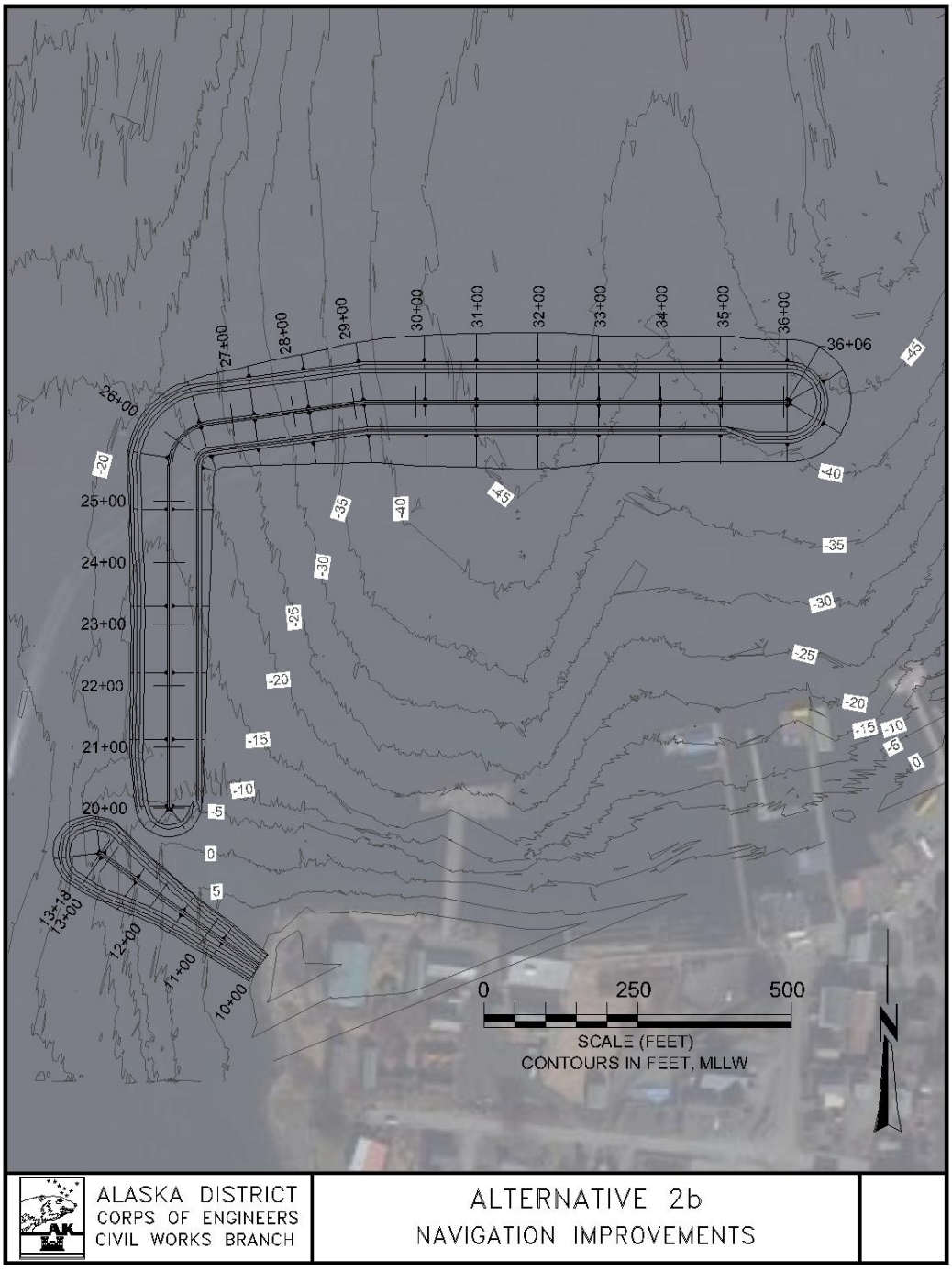

Figure 1. Layout of Alternative 2b, the Tentatively Selected Plan.

E. Description of the Proposed Discharge Site: The west side of the breakwater would take advantage of a submerged rocky or cobble spur extending north from the northwest

corner of Craig Island; the exact composition of the substrate in this area is unknown, but is assumed to be coarse or rocky based on the heavy growth of large kelp in the area. The north arm of the breakwater would extend into waters of about 45 feet below mean lower low water (MLLW). The substrate in this area is known from an underwater video survey to consist of shelly, gravelly sand with sparse vegetation.

F. Description of Disposal Method: The rock pieces would be transported to the construction site by barge, and placed into position using an excavator or similar equipment.

II. Factual Determinations

A. Physical Substrate Determinations: The west side of the breakwater would extend along a submerged rocky or cobbly spur extending north from the northwest corner of Craig Island; the exact composition of the substrate in this area is unknown, but is assumed to be coarse based on the heavy growth of large kelp in the area. The north arm of the breakwater would be placed in waters of about 45 feet below MLLW. The substrate in this area is known to consist of shelly, gravelly sand with sparse vegetation.

B. Water Circulation, Fluctuations, and Salinity Determinations: The project alternatives were designed using circulation criteria to minimize environmental degradation associated with harbor improvements. Nece, et al. 1979 "Effects of Planform Geometry on Tidal Flushing and Mixing in Marinas" was adopted as standard practice for estimating harbor basin flushing by use of an average exchange coefficient for one tidal cycle. This work is based on physical model studies of harbor basins of varying geometry and tidal range typical of Puget Sound in the State of Washington; the mean tidal range for the project site at Craig (10 feet) is greater than that for the Puget Sound area (6 feet).

The project alternatives would not affect tidal fluctuation. The hydraulic design examined the potential for storm surge. Storm induced surge can produce short term increases in water level, which can rise to an elevation considerably above tidal levels. Craig experiences low pressure events that could contribute to storm surge, but the water is too deep to stack up and cause a significant surge. A rise in the water elevation due to surge has not been a problem reported at Craig.

The proposed harbor would not enclose the discharge of any freshwater stream, and would not cause changes in salinity versus current ambient levels.

C. Suspended Particulate/Turbidity Determinations: Placement of the bottom course of rock for the breakwaters would loft some bottom sediment into the water column. This increase in turbidity would be short-term and highly localized. The rock itself would have a minimal layer of surficial dust and fines on its surface that would also contribute in a minor way to the short-term, localized increases in turbidity.

D. Contaminant Determinations: The rock placed for the breakwaters would be clean material free of contaminants. Marine sediment nearest the former cannery facilities and the old cannery dock is presumed to contain chemical contamination; no dredging is planned as part of the proposed project. The breakwaters are located well away from the cannery, and sediment lofted by the placement of rock for the breakwater would not be expected to contain contaminants. However, removal of debris, existing pilings from the old cannery pier, and other offshore structures near the cannery may loft contaminated sediment into the water column if not done with care. Cutting or shearing the old pilings instead of pulling them may minimize disturbance of contaminated sediment.

Certain types of high-sulfide rock found on Prince of Wales Island have been found to leach potentially damaging concentrations of acid when crushed and incorporated into structures such as road beds. The exact source of rock to be used for the Craig harbor breakwaters has not yet been selected, but the most likely sources are quarries producing limestone or greywacke, materials which would not be expected to generate acid. The final selection of the rock source will take into account the type of rock and its potential to generate acid leachate, and mineral types with a potential to generate acid will be avoided.

E. Aquatic Ecosystems and Organism Determinations: Marine substrates and habitats in the waters off Craig Island range from rock, to coarse gravel and cobbles, to sand and mud, reflecting the degree of protection from ocean waves afforded a particular location. The southwest and west shoreline is more exposed to swells sweeping up Bucareli Bay from the open ocean, and is more likely to consist of gravel and cobbles. More protected waters, such as the project site in partially enclosed Klawock Inlet, have finer sand and mud substrates. An underwater video survey performed by the Corps in April 2014 found flat shelly sand with sparse clumps of marine algae on the seafloor in the area where the northern arm of the breakwater would be installed. The west arm of the breakwater would lie along a reef extending from the northwest corner of Craig Island. The environment along the reef is not well characterized, but appears to be colonized by large kelp, indicating a rocky or cobble substrate. The marine waters around Craig host extensive beds of eelgrass. A narrow band of eelgrass runs through the project area parallel to the north shore of Craig Island. The western extremity of this eelgrass bed ends at the reef; the west arm of the breakwater has the potential to intrude upon a very

small portion of the eelgrass bed, but otherwise the project has been designed to avoid and minimize impacts to the eelgrass.

The underwater survey did not reveal notable numbers of fish or other marine organisms using the general project area, in comparison to highly productive herring spawning habitat along the west shores of Craig Island and Fish Egg Island. A beach seining study at the project site in April 2014 captured a low number of fish, which appeared to be a mix of kelp- and eelgrass-associated species.

The installation of the breakwaters would bury approximately 10.1 acres of existing submerged habitat consisting of deep-water benthic communities and shallower kelp beds. The breakwaters would permanently replace existing habitat with rocky substrate extending from the seabed to the surface, introducing structure and vertical relief that does not currently exist in the project area.

The breakwaters can be expected to rapidly colonize with marine algae and invertebrate organisms characteristic of rocky intertidal and subtidal habitats, and with different communities than currently exist at the site. Based on studies of rubblemound breakwaters installed in a similar setting near Sitka, Alaska, the revegetated breakwaters at Craig can be expected to offer spawning and rearing opportunities for fish such as Pacific herring superior to what currently exists at the project site.

The preferred alternative includes a fish passage breach that will reduce the breakwater impact on juvenile fish migrating through the near-shore environment. This fish passage feature was designed with input from the U.S. Fish and Wildlife Service, the Alaska Department of Fish and Game, and the National Marine Fisheries Service.

F. Proposed Disposal Site Determinations: No dredging is associated with the proposed project. Construction operations associated with installing the breakwaters would have only a temporary effect on the water column. The proposed action would comply with applicable water quality standards and would have no appreciable detrimental effects on municipal and private water supplies, recreational and commercial fisheries, water-related recreation, or aesthetics.

G. Determination of Cumulative and Secondary Effects on the Aquatic Ecosystem: The new small boat harbor will substantially increase the vessel moorage capacity along the Craig waterfront, with the increased risk of fuel spills and long-term environmental degradation that goes with such development. The fact that the project area has already been affected by a century of commercial use limits the environmental impacts that the project will cause to the immediate area. Most of the north Craig Island waterfront is

already developed for marine transportation and commercial uses; future waterfront development beyond the proposed project would most likely consist of replacement or repurposing of existing facilities. The rehabilitation of the Ward Cove cannery property proposed by the City of Craig, along with the development of a new small boat harbor immediately offshore, would greatly increase the level of human activity at the northwest corner of Craig Island.

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

A. Adaptation of the Section 404 (b)(1) Guidelines to this Evaluation: The proposed project complies with the requirements set forth in the Environmental Protection Agency's Guidelines for Specification of Disposal Sites for Dredged or Fill Material.

B. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem: The principle discharge to waters of the U.S. proposed in this project would be the placement of rock for rubblemound breakwaters. The project requires breakwaters of some type to create a protected harbor basin for boat moorage. The Corps studied the possibility of floating breakwaters, but quickly determined that floating breakwaters would not be effective in the wave environment at Craig.

The Corps studied ten potential harbor sites in the Craig area. Several of the viable sites, including Fish Egg Island, False Island, and Crab Bay, appeared to have greater ecological value than the proposed Wards Cove location, would probably require dredging, and were thus not carried forward for consideration. The Corps determined that dredging of marine sediment was not necessary to construct a harbor at the Wards Cove location, thus avoiding issues with the disturbance and discharge of potentially contaminated sediment, and the destruction of eelgrass beds.

All of the configuration alternatives carried forward for detailed analysis have similar impacts to the aquatic ecosystem. None of these alternatives has less adverse impacts on the aquatic ecosystem.

C. Compliance with Applicable State Water Quality Standards: The proposed construction project would not be expected to have an appreciable adverse effect on water supplies, recreation, growth and propagation of fish, shellfish and other aquatic life, or wildlife. It would not be expected to introduce petroleum hydrocarbons, radioactive materials, residues, or other pollutants into the waters near Craig. A temporary increase

in turbidity would result from construction activities. The project would comply with State water quality standards. Adherence to water quality standards would be monitored.

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 proposed project. 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 only ESA-listed species identified as potentially existing in the project area is the humpback whale. The Corps made a determination that the project "may affect, but not adversely affect" humpback whales in a letter emailed to the NMFS on 13 June 2014. The NMFS concurred with this determination in a letter dated 9 July 2014, stating that humpback whales were not likely to be adversely affected by the project. This letter reiterated that ESA-listed Western DPS Steller sea lions are unlikely to be found in the Craig area, and consultation for that species is not required for this project.

F. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection. Research, and Sanctuaries Act of 1972: Not applicable; no marine sanctuaries are present near the project site.

G. Evaluation of Extent of Degradation of the Waters of the United States: There are no municipal or private water supplies or freshwater bodies in the area that could be negatively affected by the proposed project. There would be no significant adverse impacts to plankton, fish, shellfish, or wildlife. The project has been designed to avoid impacts to special aquatic sites in the form of eelgrass beds, and it expected to have no or very minor effects on the eel grass beds in the project area.

H. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Environment: Incorporating the following avoidance, minimization, and conservation measures into the proposed project would help to ensure that no significant adverse impacts will occur.

- The Corps will construct the harbor without dredging marine sediment, thus avoiding issues with the disturbance and discharge of potentially contaminated sediment, and keeping damage to eelgrass beds to insignificant levels.

- In-water work between March 15 and June 15 will be avoided. This period coincides with the peak herring spawn and juvenile salmon out-migration

activities, when humpback whales and other marine mammals are most likely to be in the project area.

- Fish passage will be incorporated into the breakwater design, in a manner that does not impair the effectiveness of the breakwater.

- Project vessels will be limited to a speed of 8 knots to reduce the risk of collisions with protected species.

- Workers conducting in-water construction will be instructed to watch for marine animals, and cease work if an animal approaches within 50 meters.

- The selected contractor will include an Oil Spill Prevention and Control Plan in its Environmental Protection Plan, which is submitted to the Corps for review and approval.

I. On the Basis of the Guidelines the Proposed Site for the Discharge of Fill Material is: Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem.

FINDING OF COMPLIANCE
FOR

Navigation Improvements
Craig, Alaska

1. No significant adaptations of the guidelines were made relative to this evaluation.

2. The principle discharge to waters of the U.S. proposed in this project would be the placement of rock for rubblemound breakwaters; the project requires breakwaters to create a protected harbor basin for boat moorage. The Corps studied ten potential harbor sites in the Craig area. Several of the viable sites, including Fish Egg Island, False Island, and Crab Bay, appeared to have greater ecological value than the proposed Wards Cove location, and would probably require dredging. The selected Wards Cove location has been previously impacted by cannery operations; the location would not require dredging, and can therefore avoid issues with the disturbance and discharge of potentially contaminated sediment, and minimize impacts to eelgrass beds.

3. The planned discharge would not violate any applicable State water quality standards, nor violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

4. Use of the selected disposal site will not harm any endangered species or their critical habitat.

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

6. Appropriate steps to minimize potential adverse impacts of the discharge on aquatic systems include: avoidance of dredging; incorporation of fish passage; suspension of in-water work during herring spawn and salmon out-migration (March 15 to June 15); monitoring for marine animals during construction; safe vessel practices to minimize risk of collisions, chemical releases, and other impacts to marine organisms and the environment.

7. On the basis of the guidelines the proposed site of construction and discharge is specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.