



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET, NW
WASHINGTON, DC 20314-1000

APR 10 2019

CECW-POD

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)
(ASA(CW))

SUBJECT: Kenai Bluffs Bank Stabilization Section 116 Feasibility Study, Final Integrated Feasibility Report and Environmental Assessment (FIFREA)

1. Purpose. I request budgeting support and assistance for the construction of the Kenai, Alaska coastal protection project. Based on the findings of the FIFREA and in accordance with 1 June 2010 Implementation Guidance (IG) for Section 116 of the Energy and Water Development and Related Agencies Appropriations Act (EWDRAAA) of 2010, HQUSACE has approved the decision document. Per the IG dated 10 May 2012, a Design Agreement (DA) and Project Partnership Agreement (PPA) will be executed by the District Commander and sponsor upon approval of the ASA(CW). Model agreements will be utilized for the DA and PPA.

2. Authorization. This GI study was conducted under authority granted by Section 116 of the EWDRAAA of 2010 which states:

“The Secretary of the Army is authorized to carry out structural and non-structural projects for storm damage prevention and reduction, coastal erosion, and ice and glacial damage in Alaska, including relocation of affected communities and construction of replacement facilities: Provided, that the non-Federal share of any project carried out pursuant to this section shall be no more than 35 percent of the total cost of the project and shall be subject to the ability of the non-Federal interest to pay, as determined in accordance with 33 U.S.C. 2213(m).”

3. Project Background.

a. Located in the city of Kenai on the western coast of the Kenai Peninsula southwest of Anchorage, the Kenai Bluffs coastal erosion area is approximately 5,000 linear feet of high bank that ranges in height from 55 feet to 70 feet above the toe along the north bank of the Kenai River at the river mouth to Cook Inlet.

b. The Kenai Bluff face is receding at an approximate average rate of three feet per year. Public and private property, structures and infrastructure, and cultural resources have been lost and continue to be threatened by the receding bluff. The bluff consists of unconsolidated sediments that remain over steep and unstable because it is exposed to

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Cook Inlet coastal storms and extreme floodtides that have the fourth largest range in the world of 31.4 feet. Tidal currents and wave action during flood tides attack the toe of the bluff, removing sediments that originate from the bluff face and accumulate at its toe. Coastal storms also degrade the structural integrity of the exposed lower bluff face. The opportunities that could be realized with a stabilized bluff include:

- 1) Prevent or reduce damages or loss of property, structures, and cultural resources
- 2) Manage risks associated with bluff erosion
- 3) Enhance stable environment with a stable stream bank and riparian corridor
- 4) Improve recreational usage of the area
- 5) Enhance navigation

4. Study Plan and Alternatives. The study evaluated a number of alternatives to address the feasibility of reducing or halting erosion at Kenai based on economic, engineering, and environmental and cultural resources factors. The final array consisted of a variety of alternatives including river mouth relocation, revetting and vegetating bluff-face buried/weighted toe, protective berm, and structure relocation.

Five alternatives and a No Action Plan were formulated, evaluated, and compared to identify the National Economic Development (NED) Plan. However, since none of the alternatives resulted in net positive NED benefits, a Cost Effectiveness and Incremental Cost Analysis (CE/ICA) was conducted in accordance with Section 116 implementation guidance. Additional HQUSACE policy guidance on least cost analysis was used to support plan selection. As a result, the least cost analysis supported the NED and CE/ICA analysis in identifying the recommended plan, which consists of constructing an armor-stoned berm as a line of protection along approximately 5,000 lineal feet of receding coastal bluff that is about 70 feet in height. The berm would be approximately 12 feet tall and its goal is to create a condition that allows the bluff to stabilize over time after project implementation by protecting the lower portion of the bluff soils from coastal storm damage and preventing the soils accumulating at the toe from being washed away during the higher tide cycles. After implementation, the bluff face erodes back naturally over time, and the soil accumulating between the berm and the toe can develop a

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relatively stable base that will allow a more stable bluff face to develop without implementing a revetment solution that extends further up the bluff face.

5. Project Costs. The estimated project first cost of the recommended plan is \$40.3 million which includes the cost of constructing the proposed features and the value of lands, easements, rights-of-way and relocations. The estimated Federal (65 percent) and non-Federal (35 percent) cost shares are \$26.2 million and \$14.1 million, respectively. The recommended plan protects 31 bluff parcels and provides average annual benefits of \$800,000. The average annual cost is \$1.2 million, including operation, maintenance, repair, replacement and rehabilitation (OMRR&R), with net annual benefits of minus \$400,000 and a benefit-to-cost ratio of approximately 0.66. Economic analyses are based on October 2018 price levels, a 50-year period of analysis, and the Fiscal Year 2019 Federal discount rate of 2.875 percent.

6. Stakeholder Input. The goals and objectives included in the Campaign Plan of the USACE have been fully integrated into the Kenai Bluffs Coastal Storm Risk Management study process. The proposed plan has been designed to avoid or minimize environmental impacts while maximizing future safety and economic benefits to the community. The study team organized and participated in stakeholder meetings and public workshops throughout the process and worked with local groups to achieve a balance of project goals and public concerns. The study report fully describes the erosion risk associated with the Kenai Bluffs bank stabilization project, and risks that will not be reduced; these residual risks have been communicated to the city of Kenai, Alaska (the non-Federal sponsor for the authorized project).

The effects on cultural resources and its determination of "no historic properties affected" was based on the scenario of constructing an armor-rock berm along the Kenai Bluffs toe (Alternative 5), where there is no grading or reshaping of the bluff face. This recommended alternative will have no adverse effect on cultural resources, as none exist within the project area of potential effect because allowing the upper bluff face to erode to its natural angle-of-repose is not a Federal undertaking on the part of the USACE under the National Historic Preservation Act, and the consequences of that natural erosion are not assessed. The Alaska State Historic Preservation Officer (SHPO) concurred with this USACE's determination in a stamped concurrence dated 20 July 2016. The completed project will have no impact on subsistence, as no subsistence activities are conducted on the project site. The timing of project construction will need to be coordinated with the city of Kenai, the Alaska Department of Fish and Game, and other stakeholders, if the fishing season cannot be avoided altogether. No other subsistence or personal use resources (e.g., shellfish) are identified at the project site. The proposed construction of the plan as discussed in this

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document would have short-term controllable environmental impacts during construction that will be largely minimized by avoiding the period when beluga whales may be present. In the long term, the selected erosion control measure will improve the overall quality of the human environment. This assessment supports the conclusion that the proposed project does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, a Finding of No Significant Impact has been prepared. The Alaska District Office of Counsel has reviewed this document and has issued a certification of legal sufficiency. Local State and Agency (S&A) review was conducted with no significant comments.

7. Technical and Policy/Legal Review. The Alternatives Milestone was held on 13 May 2015. An Independent External Peer Review (IEPR) waiver was requested and approved on 16 February 2017. The Tentatively Selected Plan Milestone was held on 17 February 2017. The Draft Report was reviewed in October 2017. The Agency Decision Milestone was held on 31 October 2017. The cost estimate was reviewed and certified by the Cost Estimating Directorate of Expertise on 2 July 2018. Agency Technical Review of the Final Feasibility Report was completed and certified on 2 November 2018. HQUSACE conducted policy and legal review of the draft and final integrated feasibility report and environmental assessment, and all comments have been resolved.

8. Recommendation. I have reviewed the report and approve the Recommended Plan of constructing an armor-stoned berm approximately 12 feet in height as a line of protection along approximately 5,000 lineal feet of receding coastal bluff by protecting the lower portion of the bluff soils from coastal storm damage and being washed away during the higher tide cycles. I request that you support and assist in budgeting of the recommended berm construction project at the base of the Kenai Bluffs which is technically sound and environmentally sustainable.



JAMES C. DALTON, P.E.
Director of Civil Works