BARROW COASTAL STORM DAMAGE REDUCTION STUDY

November 2004 Study Activity Update

We are in the first phase of a 3 phase study. Phase 1 activities have concentrated on collecting field data to better understand the problem so solutions can be formulated into alternatives. Information on the existing natural and physical characteristics of the project site helps us understand the erosion and flooding problems and predict the consequences of constructing the various alternatives.

The preliminary alternatives being considered are: 1. beach nourishment using local or imported material, 2. the use of groins to catch and retain beach sediments, 3. vertical seawalls, 4. a hardened bluff face, 5. intermittent offshore breakwaters, and 6. phased relocation of facilities. The alternatives could be used in combination or alone.

The study began in February 2003, since then we have done the following:

- Deployed instruments off shore of the Barrow beach to determine speed and direction of currents, water level, and wave height and period. This information is being used to calibrate the models that will feed into the sediment transport analyses and storm damage assessment. The near-shore instrument pod was damaged from ice this year. There was partial data recovery. Another instrument pod is still deployed and will be retrieved through the ice later this year.

- Conducted a drilling program at the proposed gravel source areas at Cooper Island, the BIA site and offshore-submerged spit, and near shore along the Barrow beach. The results show that Cooper Island and the BIA site have enough material for beach nourishment. Further analyses on the feasibility of using and extracting gravel from these sites, including developing costs and identifying environmental impacts, will be conducted this winter and spring. The offshore-submerged spit exploration did not find sufficient quantities of usable material, and ocean currents made exploration very difficult. The barrow beach core samples will help in analyzing sediment size and sediment transport processes. The final drilling report will be posted on our web page in January 2005.

- Conducted environmental studies that included near-shore fish surveys at the Barrow beach and at Cooper Island and invertebrate sampling. Near- shore substrates were a very hard silt/clay composition so no samples were collected. No crabs were caught in crab pots. A plant survey was conducted at Cooper Island. Plant species are limited on the sandy island to arrowgrass along the perimeter of lagoons. Scattered hardy plants include Arctic poppy, tufted saxifrage, beach rye, scurvy grass, and oyster leaf. The dominant fish species caught at the Barrow beach were capelin and young-of-the-year Arctic cod. The dominant fish caught at Cooper Island were capelin and Arctic cod on the Beaufort Sea side, and least cisco and juvenile cottids on the Elson Lagoon side. We are also conducting literature searches on natural resources in the project areas such as fish, bird, and mammal habitat uses. Specific bird and plant surveys

will be conducted next season at the BIA site, and additional bird habitat evaluations at Cooper Island.

- Conducted cultural resources surveys at the BIA site and on Cooper Island. No cultural properties were discovered at the BIA site. Cultural properties exist on Cooper Island and would require mitigation.

- Performed economic baseline analyses at Barrow that focused on the without project condition to determine monetary damages caused by shoreline erosion and flooding. Elevations of structures and value of structures and contents were surveyed. We will use this information to determine damages and develop a scenario analysis: In other words what will happen with and without a storm damage reduction project alternative under different assumptions regarding future conditions. In order to authorize a Federal project for construction, an economic justification must be done to determine the plan that contributes the most to national economic development.

We would like to more formally discuss our study results and the preliminary alternatives with you at a public meeting to be held in Barrow in late March 2005. We will announce this meeting in a public notice next year with time and place information. We are always available to you to discuss the project and to receive comments on our Web page http://www.poa.usace.army.mil/en/cw/barrowSDR/barrow.htm, or by phone.

Project Delivery Team:

Curt Thomas-Project Manager, North Slope Borough 852-0417

Corps of Enginners:
Andrea Elconin-Project Manager 753-5680
Forest Brooks-Project Formulator 753-2627
Lizette Boyer-Biologist (907) 753-2637
Dee Ginter-Hydraulic Engineer 753-2805
Brian Harper-Economist 753-2515
Dan Werkmeister-Economist 753-2641
Diane Hanson-Archeologist 753-2631
Greg Carpenter-Geologist 753-2684

US ARMY ENGINEER DISTRICT ALASKA
CEPOA-EN-CW-ER (Boyer)
PO BOX 6898
ELMENDORF AFB, AK 99506-0898

BOX HOLDER
BARROW, ALASKA 99723