

Barrow Coastal Storm Damage Reduction Study
Scoping Meeting

June 12, 2003, 7 p.m., North Slope Borough Assembly Chambers, Barrow, Alaska

Meeting Notes

1. Curt Thomas, North Slope Borough's study manager, introduced the Corps of Engineers (Corps) and thanked the people from the community that came to hear about this important study. Curt brought refreshments for everyone.
2. The Corps prepared a PowerPoint slide presentation to describe the planning process and schedule for the study. A hard copy of the presentation was handed out at the meeting (enclosure 1) as well as study questions and comment sheets people could fill out and mail in (enclosure 2). Ten people signed the attendance sheet (enclosure 3).
3. Forest Brooks, project formulator for the Corps, was the main presenter and started out by saying that the Corps was in Barrow to hear from the public on their ideas, concerns, and questions about the study. Forest introduced the Corps of Engineers study team and then proceeded to give an overview of the study process.
4. The Corps Study Team: Andrea Elconin-project management, Forest Brooks- project formulation, Lizette Boyer- environmental resources, Diane Hanson- cultural resources, Dee Ginter-hydraulic design, Brian Harper-economics, Jim Robson-soils and geology (not present) and Neesha Wendling-U.S. Fish and Wildlife Service representative.
5. Forest described the study development phases indicating that the feasibility report would be finished in 2008 after five years of study and analysis of alternatives. Construction, if this was the determined outcome, would start by 2012. Many important decisions will have to be made in the study before a project can be authorized by congress. The feasibility study must meet the Water Resource Council's Principles and Guidelines criteria. The final plan for storm damage reduction has to meet the planning objectives, be economically justifiable, environmentally acceptable and meet coastal engineering design standards. The planning objectives at this time are: (1) provide relief from storm damage and shoreline erosion that threatens homes, shoreline bluffs, and critical community infrastructure, (2) reduce flood damages to critical public and private facilities, (3) if incidental to gravel extraction, improve navigation for lightering barge lading and unloading, (4) protect the sensitive arctic environment and mitigate significant project impacts where reasonable, and (5) identify and develop practical ecosystem restoration opportunities. The planning objectives were discussed and generated comments from the attendees. One question was how do we evaluate benefits for the navigation project? Do we evaluate the value of scientific studies and subsistence occurring in Elson lagoon? The answer from the economist Brian Harper was that we couldn't count scientific studies as a benefit. Subsistence can be counted as a benefit as a straight substitution for obtaining food but not as a cultural value.

6. Forest presented two conceptual alternatives for discussion.

(a) Beach Nourishment: Add gravel over 100 feet width of beach southwest of Barrow to a point about 500 feet northeast of the Barrow landfill. The roadway would be raised by 6.5 feet. This would require about 2 million cubic yards of gravel for the beach and about 500,000 cubic yards for the road. 10,000 cubic yards of gravel would need to be replenished annually.

(b) Beach Nourishment with Concrete Mattress. This is a similar alternative in the same area but would include a hardened revetment on the slope of the raised road. Gravel would be added over 50 feet width of beach. This plan would still require 1 million cubic yards of gravel for the beach and 500,000 cubic yards for the road with the same annual maintenance.

7. Several questions were voiced about the safety for vehicles of an elevated road. The design would have to take into account gentle slopes for vehicle safety. There were questions on boat and equipment access to the beach: The whaling equipment in particular. What would an elevated road do to drainage patterns. Would runoff create a big lake behind the road? Would there need to be culverts? Would the road be a secondary barrier for erosion control and an ice barrier? Dee Ginter answered yes, the road would serve as a secondary barrier. The question was asked whether something other than gravel material could be used for the road? Ice scour is a big design constraint. Graves and cultural resources are also a big consideration along the beach. There was a discussion of major historical storms and ice damage and if the Corps would take into consideration local elder knowledge of conditions. The comment was that the Corps needs to consider climatic events beyond the 50 or 100- year events in designing a project. The Corps needs to consider the ramifications of aggravating a situation with a design with a 200-year event. The example given was the Point Hope seawall. A really big flood came from the opposite side of the point where the wall was built. This led to the comment on how the Corps formulates its alternatives and whether and how intensive an independent review of alternatives there will be. The Corps needs to guard against seeking only institutional remedies for problems. A member of the Native Village of Barrow asked if the IRA could be a cooperating agency for the Environmental Impact Statement. The answer is yes because they could be very helpful in interviewing elders about traditional knowledge. This will be followed up with a letter to the tribe. (Note; The study team met with the Native Village of Barrow and the Inupiat Community of the Arctic Slope the next day).

8. Forest discussed the preliminary gravel source locations that Jim Robeson has identified. There are three locations: (1) BIA discovery. This is named after BIA drilling near the existing gravel pit. The deposit could stretch approximately 15 miles south of the existing pit into the tundra at a depth of 20 to 30 feet. This site will be

drilled after September 1 to verify. (2) Cooper Island located about 38 miles east of Barrow. (3) Elson Lagoon west. The Elson Lagoon site is the least likely to produce suitable gravels. Most of the material is thought to be fine grained. This also makes the navigation channel less viable.

9. Several comments were voiced about potential gravel sources. The BIA site drilling will need to consider cultural resources before drilling. Cooper Island is a long-term study area for black guillemots. The scientific community has a great interest in maintaining the study. George Divoky is the bird biologist who has spent 29 summers on Cooper Island, and he has offered to share his knowledge of the island and guide the Corps on a site visit this summer. This trip will take place on August 19. There is deposition that is occurring westward and erosion occurring eastward. The bird colony is not on the gravel accumulation side. Cooper Island is also a safe haven for vessels coming from Admiralty Bay. It is important to maintain the island for this purpose. It is also a traditional use area.

10. Forest presented the economic evaluation process. The process examines and compares conditions in the area without the project and with the project so that a true evaluation of project benefits can be made. Project benefits must exceed project costs. An example of benefits includes reduced damages to homes and businesses, roads, and the sewage lagoon. The economist team will be collecting data from the community and the borough to assess area conditions.

11. There were comments on the economic justification for the project. A point was made that project costs are high in Barrow. How is a benefit-cost analysis done? The utility manager spoke of the great importance of the utilidor to the community. These services have become accustomed to in Barrow just like similar services are expected and depended upon in any U.S. town. The cost of the utilidor is billions of dollars and would not be cost effective to move. Can the Corps participate in moving homes away from the shore? If there was no project, what would be the effects to other villages since Barrow is an economic center? Someone mentioned that the airport extension is toward the beach. If the utilidor is affected by erosion, what will be the effects to health if the community reverts back to honey buckets? What about a seawall in front of the landfill? An eroding landfill into the sea would be very expensive to clean up. What about the hospital and climate change research station planned for construction. Would these count as benefits? These are all very good questions some of which can be explained in the economic analysis that will be done as to what benefits can be counted. This will be a large part of the study. The high costs of living and operating in the arctic environment will appear on both the cost and benefit side of the analysis. Many benefits are based on the avoided replacement costs of infrastructure and other property. The team will work with the community and city and borough staff to identify the consequences of the coastal storms. We will build event trees that identify damages to the utilidor and impacts to the community. We will evaluate the damages caused by flooding in the community. We will consider nonstructural plans that may include relocating homes and other property from high-risk locations. Impacts to health will be considered along with risk to human

life. Some impacts will not be quantified monetarily and will be discussed as Other Social Effects. We will never quantify the value of a human life.

12. Forest presented the hydraulics and hydrology study effort. There will be data gathering current meters and wave gages placed in the Chukchi Sea this summer. Other tasks planned are to analyze wind and wave climate, and extreme storm events; conduct a circulation study, a beach material transport study, and to analyze beach loss. After all the data gathering and analysis, a better idea of the alternatives that could help the erosion and flooding problems can be formulated. All the data gathered will be shared with anyone who is interested. A question was asked if any ice work would be done and how ice affects waves. The answer was yes. There is data from other areas such as Nome but one commenter said that the ice in Barrow acts differently than in Nome. Another commenter wanted to know how long the instruments would be in place? The answer is that the instruments will be installed in August and removed in October, just before the ice comes in.

13. Lizette Boyer gave a presentation on the National Environmental Policy Act process. An Environmental Impact Statement (EIS) would be prepared for this project. The main purpose of the law is to insure that environmental information is made available to citizens before designs are formulated and decisions are made. The EIS will detail the environmental consequences of the alternatives. The public has a right to comment and be involved in the project. Scoping is a process that involves the public and resource agencies to identify the concerns and environmental issues. This is the reason for this meeting tonight and is an ongoing process throughout the study. The EIS will assess and analyze effects on natural resources, social values and cultural resources. Identified project impacts can require significant mitigation to reduce the environmental effects. Some of the significant resources recognized by law are cultural resources, endangered species, wetlands, essential fish habitat, marine mammals, and migrating birds.

14. There were not a lot of questions on the environmental process except interest in how to become a cooperating agency. There is a big concern about protecting gravesites and bird habitat. Continued coordination and communication is a key component to the process. The Corps plans on setting up a Web site to get information out to interested parties. More public meetings will be held when more study information is generated.

15. There were many questions and comments on potential alternatives other than beach nourishment. What about a gravel catch basin or groins on the ocean side? A pilot study could be conducted. What about seawalls or caissons? Dee Ginter mentioned that jack-up groins have been thought of. Another idea was possibly using pipe to trap gravel. There is a lot of pipe that could be used around town. Maybe there is a simple solution that could be less costly. For instance, there is an erosion protection structure near Brower Café that has withstood many storms. This has been looked at by the Corps. Again someone had the comment that the Corps needs to research reports that go back to the 1960's on floods and erosion. The Corps needs to use traditional knowledge on floods and erosion conditions. The Navy, when it built NARL's LCM dock, diverted

sand. The offshore shoal in the vicinity of the dump appears to protect the beach from erosion. Maybe this could be an option? There is a sunken ship along the coast and apparently no erosion in front of it. A comment was voiced on creating a boat harbor in North Salt lagoon. Dig a channel from Plover Point and use the material to create an offshore shoal for erosion protection. The commenter thought that maintenance dredging would be minimal. The depths now are three to four feet. Dredging to nine feet would be adequate. Boats and barges could use the protected channel and it would be more economical. Barges delayed by storms drive the prices higher than airfreight.

16. A comment on sharing data with the Barrow Arctic Science Consortium makes good sense since there is a lot of information that the Corps could use for the present study. The Corps will obtain the database. Another comment was on using traditional knowledge by conducting interviews. Elsa Itta at the Inupiat Center is a good contact.

17. A comment was made on the BIA gravel source reminding the Corps that a cultural resources survey may need to be conducted prior to drilling, not monitoring when drilling is taking place. NSB permitting policy title 19 was cited. The Corps archeologist will evaluate this.

18. Another commenter criticized the Corps Regulatory Branch for allowing a permit to continue taking gravel from the gravel pit without assessing the erosion consequences. The opinion was that the gravel pit is contributing to the coastal erosion problem. The Corps will work with the NSB permitting process.

19. Another commenter stated that he thought the Endangered Species Act does not apply to private property. A lot of the land around Barrow is village corporation property. However, the erosion study is a Federal undertaking, which must comply with all Federal laws.

20. The meeting began to wind down at about 9 p.m. Andrea Elconin thanked everyone for coming and closed the meeting.