



**US Army Corps  
of Engineers**

Philadelphia District

## **Public Notice**

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Public Notice No.  
CENAP-PL-E-06-01

Date  
February 10, 2006

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Internet Homepage <http://www.nap.usace.army.mil>

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In Reply Refer to: Environmental Resources Branch

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### **INDIAN RIVER INLET SHORELINE PROTECTION PROJECT SUSSEX COUNTY, DELAWARE**

Pursuant to Section 404 of the Clean Water Act of 1977 and Section 10 of the Rivers and Harbors Act of 1899, NOTICE IS HEREBY GIVEN that the Philadelphia District, U.S. Army Corps of Engineers (Corps) proposes the construction of the Indian River Inlet Project on the Indian River, Sussex County, Delaware (Figure 1).

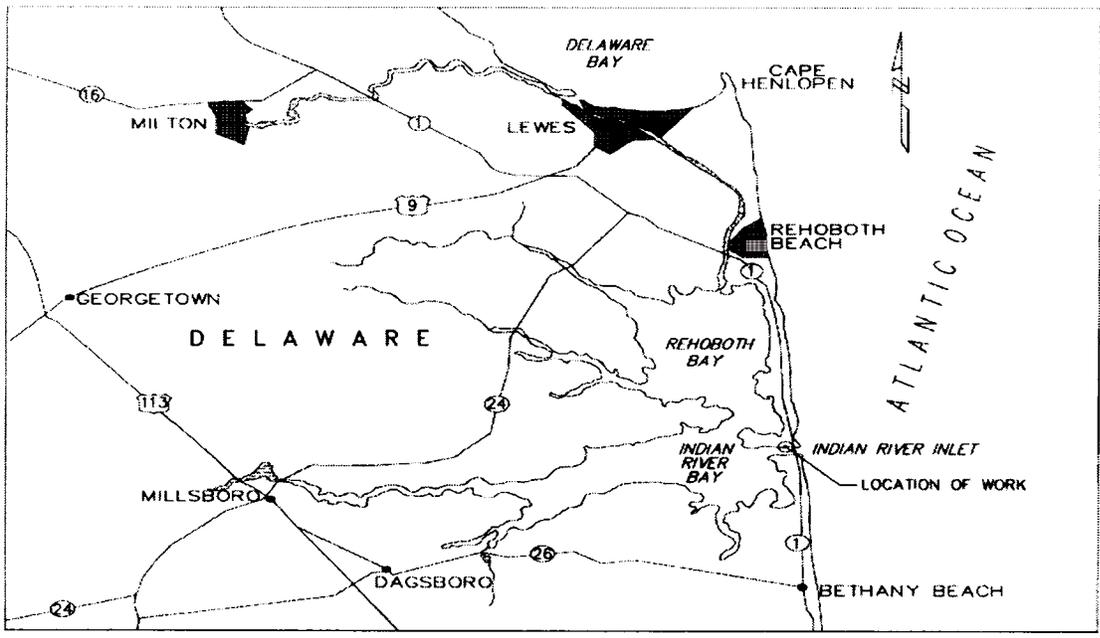
The Corps has evaluated the construction of a stone revetment at Indian River Inlet in Sussex County, Delaware. The Corps authority for the Indian River Inlet Project is Section 103 of the Rivers and Harbors Act of 1962 as amended, Shoreline Protection. The project was developed by the Corps, U.S. Coast Guard (USCG), and the Delaware Department of Natural Resources and Environmental Control (DNREC).

The project area is the northern interior shoreline of Indian River Inlet, adjacent to the USCG Facilities located in Sussex County, Delaware. The new portion of the project extends approximately 270 ft from the existing USCG Station's bulkhead westward to the end of the 1988 Corps completed shore revetment project (Figure 2).

The project purpose is to protect approximately 900 feet of eroding shoreline on the north shore of Indian River Inlet. The original approved project was to construct a stone revetment 1,850 feet long and tie into the existing USCG bulkhead. To save costs, the 1988 construction was limited to 1580 feet; that portion of the shoreline actually eroding. The remaining approximately 270 feet of the unprotected shoreline along the northern interior of the Inlet has been subjected to increased erosion over the last decade (Photo 1). The USCG facility, Delaware Seashore State Park, and access to portions of the park and marina are being threatened. If nothing is done, the existing revetment project will be flanked which will result in failure.

The purpose of this new project is to complete the remaining 270 feet of the revetment and realize the full benefits of a shoreline with stone protection. In addition, there is 630 feet of the existing project (1988) that needs repair work as a result of 20 years of service, resulting in a total project length of approximately 900 ft. The alignment of the new stone revetment will reflect the contour of the eroded shoreline and not the original revetment. This will minimize the amount of backfill needed for the stone revetment.

Furthermore, in 2005, as a result of the constant erosion and as a temporary solution to the problem, the non-federal sponsor, DNREC, placed approximately 18,000 sand bags on the project site (Photo 2). Our proposed stone revetment will be compatible and work in unison with the existing sand bags.



**LOCATION MAP**

SCALE IN MILES

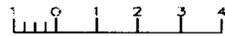
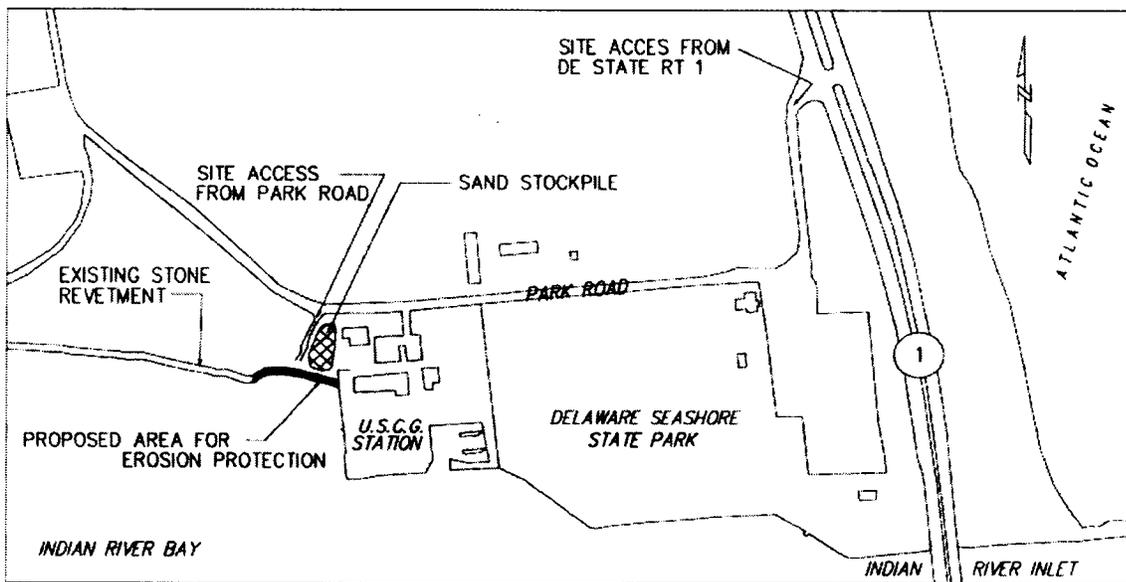


Figure 1. Indian River Inlet project location map.



**VICINITY MAP**

SCALE IN FEET



Figure 2. Preferred alternative: tidal inundation with water-control structure (using new channel alignment).

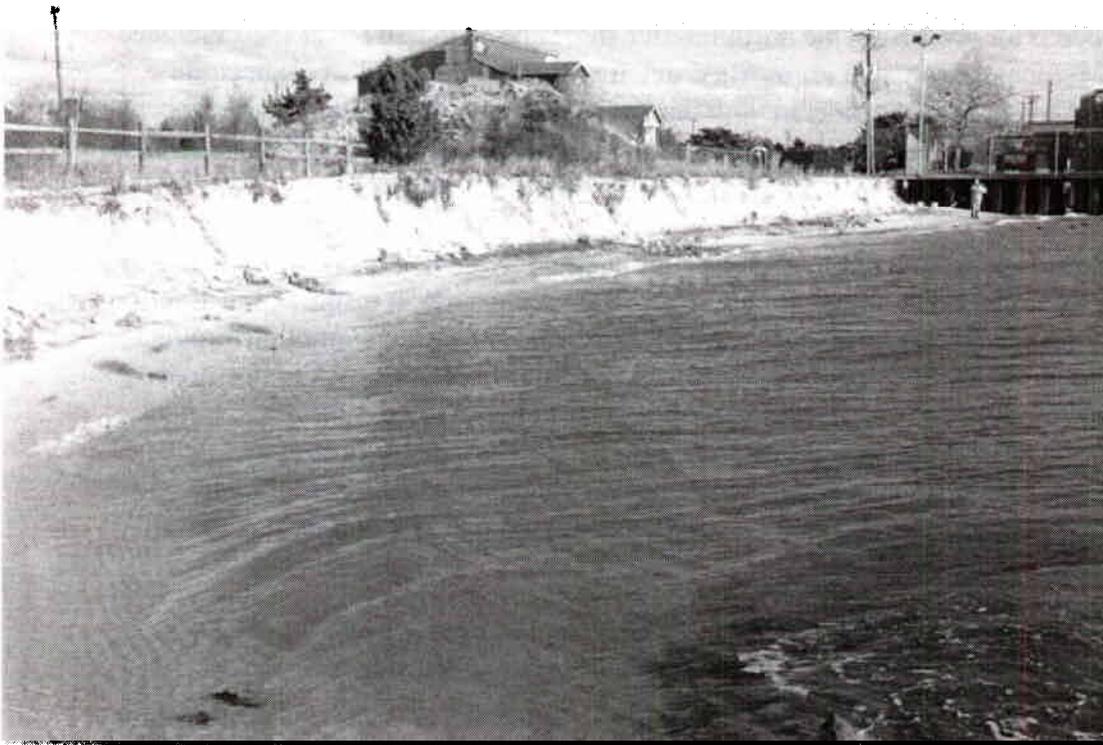


Photo 1. Project site with an eroding shoreline (looking eastward) (photo December 2004).

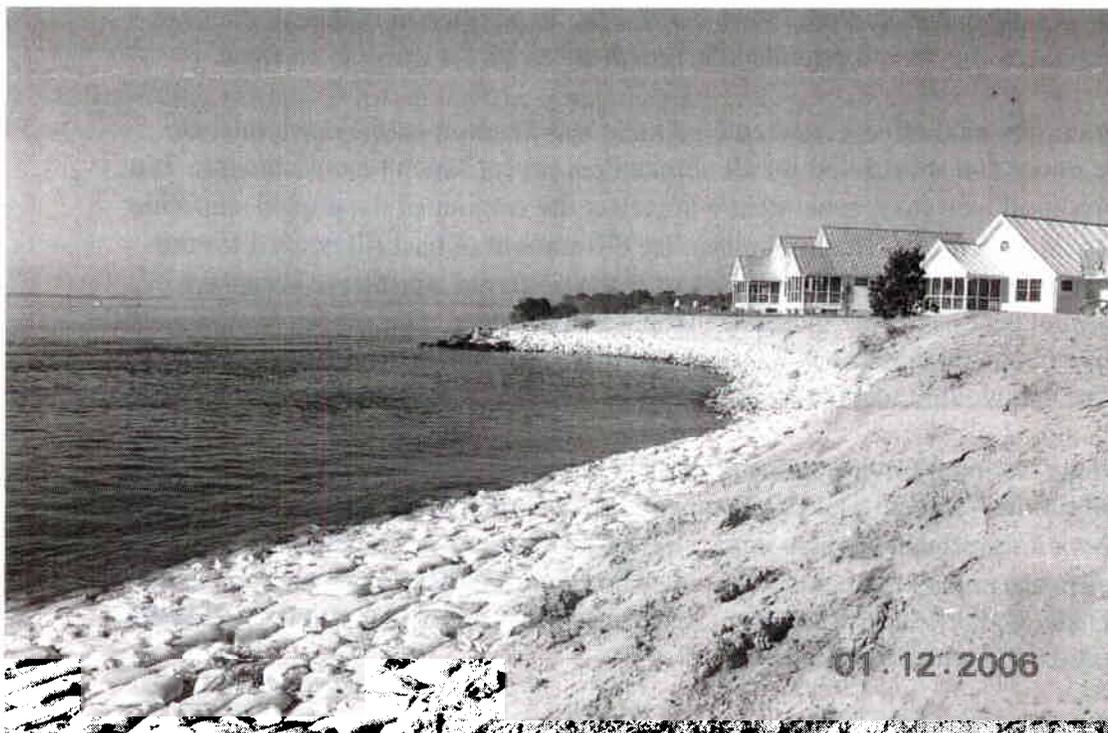


Photo 2. Existing conditions of the project site (looking westward) showing the sandbags that were placed as a temporary erosion control measure (photo January 2006).

Alternatives considered for protecting the north interior shoreline of Indian River Inlet included beach nourishment; stone, gabion, and grout-filled nylon bag revetment; and steel sheetpile bulkhead. The alternatives were considered with respect to project cost, habitat loss due to construction activities, destruction of benthic organisms, turbidity increases, and disturbances to fish and wildlife, especially during spawning, nesting, and migratory periods.

Adverse environmental impacts of stone, gabion or grout-filled nylon bag revetment placement along the proposed new 270 ft alignment would be short-term and a direct result of construction activities. Long-term impacts would be beneficial in nature due to stabilization of the eroding bank and the increase in heterogeneity caused by the placement of revetment. A majority of short-term impacts would result from the cut and fill required along the existing embankment necessary to provide a 2:1 slope and toe protection for the placement of the revetment. Any established benthic and intertidal zone fauna would be impacted along the bank during this time. Turbidity and sedimentation resulting from the bank construction would be minor due to the heavy nature of the sand substrate on the bank.

In general, stone riprap with a highly irregular facing and a shallow slope is favored biologically over gabions or grout-filled bags with a smoother surface. Irregular faces tend to dissipate wave energy better and have a greater ability to support various organisms. As currently observed on the 1988 constructed portion of the revetment, numerous species of mussels and algae are using the stone revetment as an attachment substrate.

Adverse impacts resulting from bulkhead construction would be similar to revetment construction, but would involve substantially more fill. It would also have short-term impacts on turbidity and burial of established intertidal flora and fauna. In addition, a bulkhead does not have the irregular surfaces that would provide attachment substrate for mussels or algae.

Overall, adverse environmental effects from embankment stabilization on the north interior shoreline would be minor and short-lived for all alternatives except beach renourishment. The alignment of the proposed new stone revetment will reflect the contour of the eroded shoreline and not the original revetment. This will minimize the amount of backfill needed for the stone revetment. Environmentally, a stone revetment is the preferred alternative because it maximizes the potential benefits of the increased habitat heterogeneity. Our preferred design (Figure 3) alternative (stone revetment) is the most cost effective and least environmentally damaging alternative that would meet the project goals.

In accordance with the National Environmental Policy Act, a Draft Environmental Assessment has been developed for this project. The Environmental Assessment concludes that the proposed action would not have a significant adverse impact on the environment. Therefore, a draft Finding of No Significant Impact has been prepared. The Environmental Assessment is being coordinated with DNREC, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service.

In accordance with Section 401 of the Clean Water Act, a Water Quality certification has been obtained from DNREC for this project. Based on the information gathered during the preparation of the Environmental Assessment, and the application of appropriate measures to minimize project impacts, it was determined in accordance with Section 307(C) of the Coastal Zone Management Act of 1972 that the plan complies with and can be conducted in a manner



The Environmental Assessment has shown that the proposed activity is not likely to jeopardize the continued existence of any species or the critical habitat of any fish, wildlife or plant, which is designated as endangered or threatened pursuant to Section 7 of the Endangered Species Act, as amended. In accordance with Section 404 of the Clean Water Act, a Section 404(b)(1) analysis was prepared for the proposed action. We anticipate temporary impacts to air and water quality during construction. However, we do not anticipate any long term environmental impacts associated with this project.

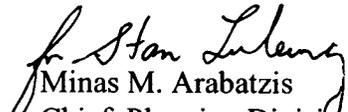
In accordance with guidelines established under Section 106 of the National Historic Preservation Act of 1966, as amended, no impacts are anticipated to historic properties or other cultural resources. In a correspondence dated February 24, 2005 the Delaware State Historic Preservation Office concurred with our findings that the project would have no effect on cultural resources.

The decision whether to accomplish the work proposed in this public notice will be based on an evaluation of the probable impact of the proposed work on the public interest. The decision will reflect the national concern for the protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonable foreseeable detriments. All factors, which may be relevant to the proposal, will be considered. Among those are conservation, fish and wildlife, general environmental concerns, economics, historic values, recreation, safety, water quality, aesthetics, and in general, the needs and welfare of the people.

The public and all agencies are invited to comment on this proposal. Copies of the draft Environmental Assessment are available upon request by calling Mr. Mark Eberle of the Environmental Resources Branch at (215) 656-6562. The public notice and Environmental Assessment are available for review on the Philadelphia District web page at [www.nap.usace.army.mil](http://www.nap.usace.army.mil).

Any person may request, in writing, to the District Engineer, within the comment period specified in this notice (**10 February 2006 through 10 March 2006**) that a public hearing be held to consider this proposal. Requests for a public hearing shall state, in detail, the reasons for holding a public hearing.

All comments on the work described in this public notice should be directed to Mr. Minas M. Arabatzis, ATTN: Environmental Resources Branch, U.S. Army Corps of Engineers, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390 by **10 March 2006**.

  
Minas M. Arabatzis  
Chief, Planning Division  
Philadelphia District  
U.S. Army Corps of Engineers



**U.S. ARMY CORPS OF ENGINEERS  
PHILADELPHIA DISTRICT  
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