



**US Army Corps  
of Engineers**  
Philadelphia District

Wanamaker Building  
100 Penn Square East  
Philadelphia, PA 19107-3390  
ATTN: CENAP-OP-R

# Public Notice

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Public Notice No.	Date
<b>CENAP-OP-R-2013-1009</b>	<b>MAR 06 2015</b>
Application No.	File No.
<b>CENAP-OP-R-2013-1009</b>	<b>CENAP-OP-R-2013-1009-23</b>

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In Reply Refer to:  
**REGULATORY BRANCH**

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This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

The purpose of this notice is to solicit comments and recommendations from the public concerning issuance of a Department of the Army permit for the work described below.

**APPLICANT:** U.S. Fish and Wildlife Service  
Prime Hook National Wildlife Refuge  
11978 Turtle Pond Road  
Milton, Delaware 19968

**WATERWAY:** Delaware Bay

**LOCATION:** Prime Hook National Wildlife Refuge, Sussex County, Delaware

**ACTIVITY:** The U.S. Fish and Wildlife Service (Service) proposes to construct an ecosystem restoration project within the Prime Hook National Wildlife Refuge (NWR) in Sussex County, Delaware. The refuge was established in 1963, stretching along the southwestern shore of Delaware Bay just north of Cape Henlopen in Sussex County, and encompasses 10,144 acres of tidal salt-marshes, agricultural lands and upland forests, bordering on three bay-front communities: Slaughter Beach, Prime Hook Beach and Broadkill Beach. The refuge was established under the authority of the Migratory Bird Conservation Act and provides an important stop-over site for migratory birds that travel the Atlantic Flyway. It also provides breeding habitat for federally and state-listed threatened and endangered species, as well as many neo-tropical migrating bird species.

The Delaware Bay shoreline of the refuge has experienced significant erosion and tidal flooding in recent years, including the effects of Super-storm Sandy in October 2012. Sandy and other coastal storms have regularly breached the bay-front dunes, thereby exacerbating the rapid inundation of saltwater which has killed freshwater vegetation and enhanced elevation subsidence, biochemical changes, and further wildlife habitat loss. Because of its strategic location on the lower Delaware Bay, the Service has determined that preserving and protecting these habitats is critical to its mission. Prime Hook NWR has national conservation significance as a designated RAMSAR Wetland of International Significance (1999), American Bird Conservancy Important Bird Area (2000), and a Western Hemisphere Shorebird Reserve Network Site (1986).

The restoration project is composed of two elements: the construction of a fore-beach and dune on the Delaware Bay shoreline, and the construction and restoration of a back-barrier marsh, including the development of a network of meandering tidal channels. The Service has prepared an environmental assessment (EA) of the effects of its proposed project. The Corps of Engineers participated as a cooperating agency in the preparation of the EA. The text of the EA is available at <http://www.fws.gov/hurricane/sandy/projects/PrimeHookBarrierBeach.html>. Attached are site and vicinity maps for the beach/marsh restoration and offshore borrow area. Further information about the project, including extensive plans (some superimposed on aerial photography) may be obtained by viewing the Environmental Assessment and appendices.

To accomplish the project objectives, the Service intends to discharge approximately one million cubic yards of clean fill/sand along a 6,375 linear foot stretch of barrier beach and back-barrier marsh within Unit II of the refuge. Staging of land-based equipment would occur entirely on uplands within the refuge. The sand is intended to restore the damaged Delaware Bay foreshore and dune and to create a back-barrier marsh platform composed of salt and brackish-water wetlands within Unit II of the refuge, an area which was previously managed by the Service as a fresh-water impoundment. In addition to the shoreline and marsh restoration work, the Service intends to dredge a network of meandering channels within the existing marsh to distribute diurnal tidal water cycles throughout Units II and III. The shoreline breaches mentioned above have recently initiated the natural reversion of this once fresh-water impoundment back to its historic salt/brackish vegetative state. It is the intention of the Service to accelerate the recovery of the marsh with a view towards its near-term protection from future coastal storms during the recovery cycle.

The beachfill portion of the project entails placement of beachfill sand obtained from a nearshore borrow area via hydraulic pipeline dredging on 6,375 linear feet of shoreline within the Refuge's Management Unit II. The estimated quantity of material need for the beachfill is 1.1 million cubic yards (cy). The sand will be placed on the beach to create a dune and beach berm of uniform cross section. The seaward beach berm will be approximately 220 feet wide and the landward berm will be approximately 70 feet wide at elevation +7.2 North American Vertical Datum (NAVD 88) with a dune at an elevation of +9.8 feet NAVD 88. The dune will be 40 feet wide at its crest and incorporate 7.5 acres of planted dune grasses across the surface of the dune. The dune shall have a total of 11,885 linear feet of sand fence running parallel to the dune along both the seaward and landward toes. The back berm (landward of the dune) will transition to a marsh platform, approximately 400 feet wide and running the length of the beachfill dune with a slope of 75:1 to elevation +1.6 NAVD 88 and then transitioning to a slope of 100:1 until tying into existing ground. Less than 0.5 acre of saltmarsh vegetation may be impacted in this transition zone of the landward sloping berm and the back barrier wetland platform. The back barrier marsh platform has been designed to incorporate the existing shoals which have formed since the breaches occurred. Once sufficient elevations are established on the marsh platform with dredged material, *Spartina* spp. will be planted along approximately 60 acres of the marsh platform. Additionally, natural colonization of *Spartina* and other saltmarsh plants is expected to occur rapidly. The material to construct the marsh platform will be hydraulically pumped from Borrow Area PHB-B (845 acres) located 1.5 to 2.3 miles from the

placement area. The length of the back barrier marsh platform is 6,375 linear feet with a 70 foot wide platform crest (landward berm at elevation +7.2 NAVD 88).

Results from vibra-core sampling and sediment analyses revealed that significant quantities of beach compatible sands reside in the shoals offshore of the Refuge from Prime Hook to Slaughter Beach. The shoal materials consist of medium to coarse grained sands and reside in surficial layers ranging from 12 to 20 feet thick. These potential borrow areas are approximately 4,500 to 11,500 feet offshore and contain up to 20 million cubic yards of beach compatible sands. Within the preferred borrow area's (PHB-B) 845 acres, 449 acres have sand thickness of more than 14 feet deep; 246 acres have sand depths ranging from 5 to 14 feet deep; and 95 acres have sand depths less than 5 feet deep). Approximately 55 acres of the site was found to contain no sand. Both Borrow Areas PHB-A and PHB-C possess sand of thicknesses greater than 14 feet throughout. Dredging cut depth will be limited to -5 feet below the bay bottom. Hydraulic dredges typically cut in a manner that creates ridges approximately 5 feet wide and 200 feet in length.

The proposed placement site is comprised of an eroding beach sand berm with exposed underlying peat and inundated saltmarsh and open shallow water areas along the southwestern coastline of the Delaware Bay. The proposed site is unconfined for sand placement on a shoreline. A hydraulic dredge will be used to excavate the borrow material from the borrow area. The material would be transported using a pipeline delivery system to the berm, dune, and back barrier wetland restoration site. Subsequently, final grading would be accomplished using standard construction equipment.

In addition to beach restoration, the re-establishment of historical tidal circulation channels is an important feature of the Refuge's wetland restoration and recovery plan. Adjacent and interior of the above-mentioned back barrier transitional marsh platform, a combination of a main channel conveyance and offshoot finger conveyance channels will be excavated by hydraulic means, side-casting the material in an area 150 feet wide adjacent to the excavated channels to enhance habitat diversity within the marsh with both high and low elevation areas. Side-casted material will not be placed on existing vegetation or within historic open water pools. It will be placed alternately on both sides of the channel, so as not to create long linear elevated levees that could restrict flow out of the channel onto the marsh platform. Side-casted material will be strategically placed in lower elevation regions to build up the marsh platform elevation. Approximately 113,739 linear feet of dredged channels will be excavated, side-casting approximately 575,000-675,000 cubic yards of material. Approximately 54.8 acres of mudflat and sand flat within Unit II and 100.7 acres within Unit III of the interior Refuge will be dredged to create conveyance channels, with the thin-layered sediments applied to existing intertidal mudflats and sandflats (126.9 acres in Unit II and 257.7 acres in Unit III). It is expected that the thin-layering and reduction in water levels will result in the creation of 1,000 acres of vegetated tidal marsh. Approximately 1,800 linear feet of the easternmost section of Fowler Beach Road, separating Units I and II will be removed to allow for additional *Spartina* colonization. No wetlands will be impacted at any of the three construction staging areas.

The main conveyance channel (approximately 51 feet wide and -3.5 feet NAVD88 with a potential -0.5 foot overcut) will begin at the northernmost end of Management Unit II at Fowler Beach Road traveling south through Management Units II and III and ending in the southernmost

portion of Management Unit III just north of Broadkill Beach Road. Several finger conveyance channels (approximately 27 - 44 feet wide and -2.5 feet NAVD88 with a potential -0.5 foot overcut) will branch off of the main conveyance channel within the interior portions of Management Units II and III to increase tidal circulation throughout the Refuge marshes.

The material to be dredged within Management Units II and III (approximately 575,000 – 675,000 cubic yards) and side-casted consists of fine-grained clay and silts. Approximately 54.8 acres of mudflat and sand flat within Unit II and 100.7 acres within Unit III of the interior Refuge will be dredged to create conveyance channels, with the thin-layered sediments applied to existing intertidal mudflats and sandflats (126.9 acres in Unit II and 257.7 acres in Unit III).

Sediments excavated within the interior of the Refuge to re-establish historical tidal flow are predominately organically enriched fine grained sediments (e.g. clays, silts) with fine to medium sand deposits in areas adjacent to the active breaches. The material will be thin-layer sprayed within the shallow water area of the northernmost end of Management Unit II, just south of Fowler Beach Road through the southernmost portion of Management Unit III, just north of Broadkill Beach Road. Side-casting material will not be placed on existing vegetation or within historic open water pools, and will be strategically placed in lower elevation areas to build up the marsh platform elevation adequate for plant growth.

**PURPOSE:** The stated purpose of the project is to restore beaches and marshes at the Prime Hook National Wildlife Refuge by closing shoreline breaches, constructing a marsh platform behind the beach barrier, and restoring historical, interior tidal wetland channels to a more natural hydrologic circulation pattern for the benefit of salt-marsh vegetative species (e.g., *Spartina* spp.). Tidal influx would provide a mechanism for sediment transport, resulting in an enhanced rate of marsh development. The goal of this plan is to manage the biological diversity, integrity, and environmental health of both the wetlands and interior upland forested areas to sustain high quality habitats for migratory birds, fish, resident wildlife and endangered species.

On April 10, 2008, the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency published a *Final Rule on Compensatory Mitigation for the Losses of Aquatic Resources* (33 CFR 325 and 332 and 40 CFR 230). The rule took effect on June 9, 2008. In accordance with 33 CFR Part 325.1(d)(7) of the rule, the applicant has stated that the proposed project has been designed to avoid and minimize adverse effects on the aquatic environment to the maximum extent practicable, and has further documented that compensatory mitigation is not necessary. A comprehensive discussion of the Service's efforts in this regard may be found within the Environmental Assessment of the project at:

<http://www.fws.gov/hurricane/sandy/projects/PrimeHookBarrierBeach.html>

A preliminary review of this application indicates that the proposed work would have no adverse effects on, or would not be likely to adversely affect listed species or their critical habitat pursuant to the Endangered Species Act (ESA) as amended. The U.S. Fish and wildlife Service has made its findings available at the above referenced Environmental Assessment. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act 1996 (Public Law 104-267), requires all Federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely effect Essential Fish Habitat (EFH).

Based on a preliminary review of this application, this office concurs with the EFH Assessment findings provided by the USFWS in the EA at <http://www.fws.gov/hurricane/sandy/projects/PrimeHookBarrierBeach.html> and has determined that the proposed work/project would have No Adverse Effects, or only Minimal Adverse Effects on Essential Fish Habitat (EFH) or upon the managed species and their life stages, either individually, cumulatively or synergistically. The proposed project would not eliminate, diminish, nor disrupt the functions of EFH. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

The decision whether to issue a permit will be based on an evaluation of the activity's probable impact including its cumulative impacts on the public interest. The decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the work must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the work will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs and welfare of the people. A Department of the Army permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the proposed work should be submitted, in writing, within 30 days to the District Engineer, U.S. Army Corps of Engineers, Philadelphia District, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390.

Review of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion therein are located within the permit area of the work. The U.S. Fish and wildlife Service has made its findings available at the above referenced Environmental Assessment. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

In accordance with Section 307(c) of the Coastal Zone Management Act of 1972, applicants for Federal Licenses or Permits to conduct an activity affecting land or water uses in a State's coastal zone must provide certification that the activity complies with the State's Coastal Zone

Management Program. The applicant has stated that the proposed activity complies with and will be conducted in a manner that is consistent with the approved State Coastal Zone

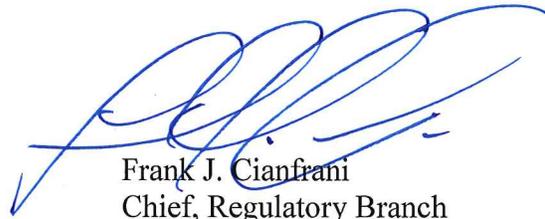
Management (CZM) Program. No permit will be issued until the State has concurred with the applicant's certification or has waived its right to do so. Comments concerning the impact of the proposed and/or existing activity on the State's coastal zone should be sent to this office, with a copy to the State's Office of Coastal Zone Management.

In accordance with Section 401 of the Clean Water Act, a Water Quality Certificate is necessary from the State government in which the work is located. Any comments concerning the work described above which relate to Water Quality considerations should be sent to this office with a copy to the State.

The evaluation of the impact of the work described above on the public interest will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act.

Any person may request, in writing, to the District Engineer, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state in writing, with particularity, the reasons for holding a public hearing.

Additional information concerning this permit application may be obtained by calling John Brundage at 302-736-9763 between the hours of 1:00 and 3:30 p.m. or writing this office at the above address.



Frank J. Cianfrani  
Chief, Regulatory Branch



38°51'0"N

38°51'45"N

38°52'30"N

38°53'15"N

38°54'0"N

75°16'30"W

75°15'45"W

75°15'0"W

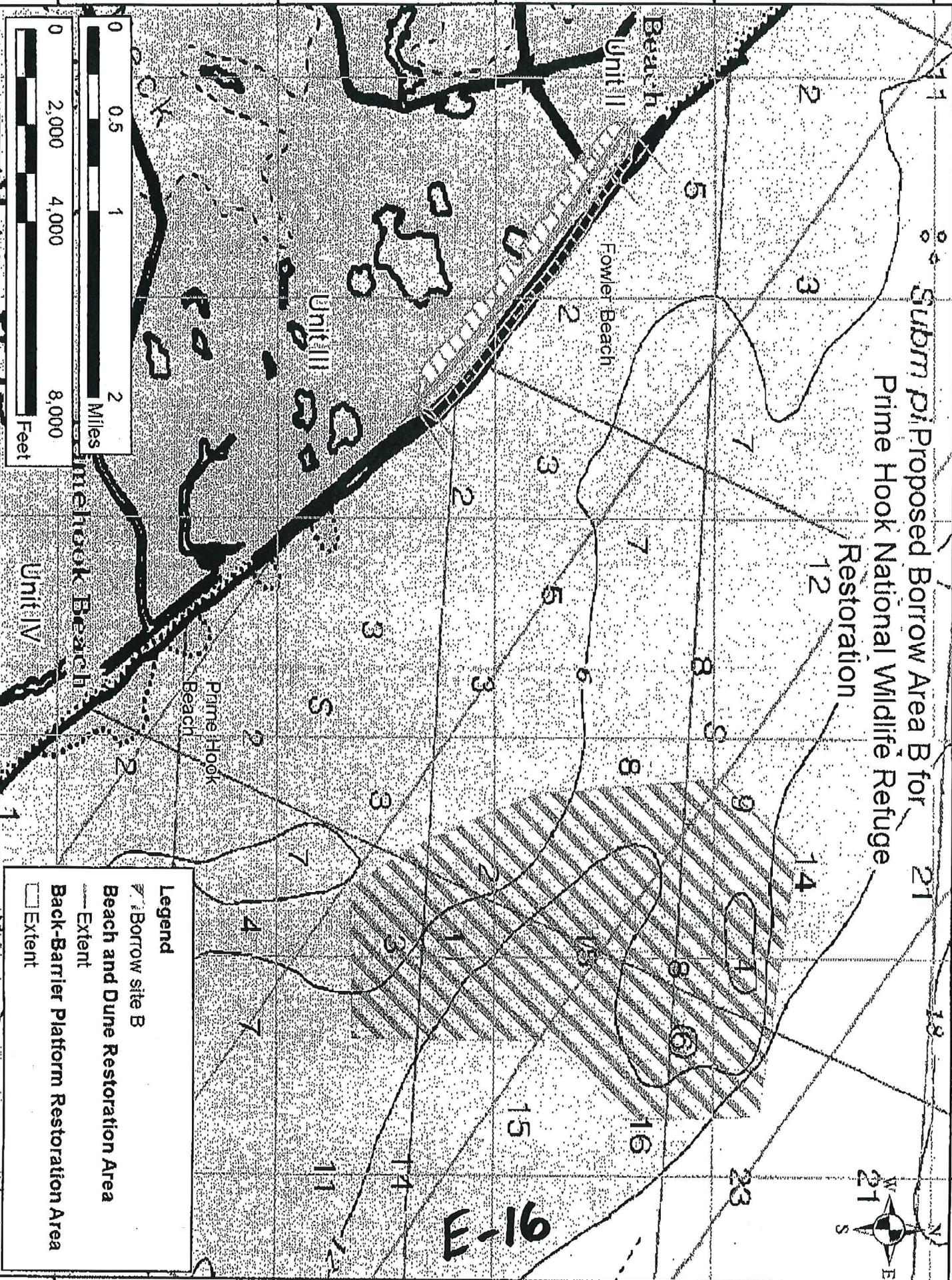
75°14'15"W

75°13'30"W

75°12'45"W

# Submittal Proposed Borrow Area B for Prime Hook National Wildlife Refuge Restoration

# E-16



**Legend**

- Borrow site B
- Beach and Dune Restoration Area
- Back-Barrier Platform Restoration Area
- Extent

38°51'0"N

38°51'45"N

38°52'30"N

38°53'15"N

38°54'0"N

75°16'30"W

75°15'45"W

75°15'0"W

75°14'15"W

75°13'30"W

75°12'45"W