

# FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

## PHIPPS OCEAN PARK BEACH RESTORATION PROJECT TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA

FEBRUARY 2004

Prepared for:

Town of Palm Beach  
Palm Beach County, Florida

And

U.S. Army Corps of Engineers  
Jacksonville District

And

Florida Department of Environmental  
Protection



Prepared by:

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And

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## Regulatory Authorization Clean Water Act Section 404 and Rivers and Harbors Act Section 10

### PHIPPS OCEAN PARK BEACH RESTORATION PROJECT TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA

**LEAD AGENCY:** Jacksonville District, U.S. Army Corps of Engineers

**COOPERATING AGENCIES:** Town of Palm Beach, Florida (permit applicant), Florida Department of Environmental Protection, U.S. Environmental Protection Agency, And National Marine Fisheries Service, U.S. Fish & Wildlife Service.

This Final Supplemental Environmental Impact Statement (FSEIS) describes the Applicant's Preferred Alternative and the alternatives evaluated to provide shore protection for the shoreline surrounding Phipps Ocean Park within the Town of Palm Beach, Florida. The recommended plan is intended to: (1) mitigate the long-term erosion impacts of Lake Worth Inlet and armored coastline north of the Project Area; (2) provide and maintain storm protection to upland improvements; (3) restore and maintain the beach for public recreational use; and (4) restore and maintain the beach for marine turtle nesting habitat. The plan includes placement of approximately 1.5 million cubic yards of fill over approximately 1.9 miles of beach, between DNR Monuments R-116 and R-126, and installation of 3.1 acres of hardbottom reef. Sand compatible with the existing beach will be obtained from borrow areas located approximately 3,500 feet offshore and between 1.5 and 2.6 miles south of the fill. Geotechnical analysis of the borrow area indicates that the material is suitable for the restoration of Phipps Ocean Park Beach and suitable for use by nesting sea turtles and subsequent hatching success. The borrow areas have been designed with buffer zones to avoid impact to hardbottom communities in the vicinity of the borrow areas. Mitigation of hardbottom resources within the fill area is required and has been incorporated into the plan.

For more information, contact Penny Cutt, Project Manager,  
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E-mail to: Penny.Cutt@saj02.usace.army.mil.

The public comment period on the Final SEIS shall end 30 days after date of publication in the Federal Register.



U.S. Army Corps of Engineers  
Jacksonville District

**EXECUTIVE SUMMARY**

**FINAL**

**SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT**

**REGULATORY AUTHORIZATION**

**USACE SECTION 10 AND SECTION 404 PERMITS**

**PHIPPS OCEAN PARK**

**BEACH RESTORATION PROJECT**

**TOWN OF PALM BEACH**

**PALM BEACH COUNTY, FLORIDA**

Project Description. The Applicant's Preferred Alternative for the Phipps Ocean Park Beach Restoration Project (Project) entails the placement of 1.5 million cubic yards of sand to restore 1.9 miles of beach within the Town of Palm Beach immediately south of Sloan's Curve, with construction of an artificial reef proposed as mitigation for unavoidable impacts to nearshore hardbottom. The fill area extends between DNR Monuments R-116 and R-126.

The fill design profile includes a constructed berm width of approximately 140 to 330 feet with a dry beach width (distance to the MHW) of approximately 198 to 380 feet. The projected toe of fill extends approximately 280 to 540 feet offshore and will unavoidably impact approximately 3.1 acres of nearshore hardbottom located immediately adjacent to the shoreline. Fill is proposed to be obtained from two offshore borrow areas located approximately 3,500 feet offshore and between 1.5 and 2.6 miles south of the fill area. Fill will be transferred from the borrow areas to the fill area by hydraulic dredge; construction by hopper dredge will not be allowed to avoid impacts to hardbottom biological communities in the vicinity of the borrow areas.

Need or Opportunity. The Project is located on the southeast Florida coast within Palm Beach County. The proposed work is consistent with the "*Comprehensive Coastal Management Plan Update - Palm Beach Island, Florida*" (June 1998) and the "*Coast of Florida, Erosion and Storm Effects Study - Region III, with Final Environmental Impact Statement, U.S. Army Corps of Engineers, Jacksonville District*", October 1996. The Project is needed to mitigate the long-term erosion impacts of Lake Worth Inlet and the erosion impacts of the armored coastline north of the Project Area, provide and maintain storm protection to upland improvements, restore and maintain the beach for public recreational use, and to restore and maintain the beach for marine turtle nesting habitat.

The Florida Department of Environmental Protection (FDEP) has designated all of the Project Area from DNR Monument R-116 to R-126 as an area of "critical erosion." This designation is based on (a) the erosion attributable to the influence of Lake Worth Inlet and the adjacent armored shoreline and (b) the existing headland features surrounding the Project Area.

Shoreline conditions and structures updrift of the Project Area exacerbate erosion and, if action is not taken, will lead to significant future erosion of the Project Area and the shoreline further south. Net longshore sand transport in the region is to the south. Since construction of the Lake Worth Inlet and inlet jetties, the longshore flow of sand has been interrupted and sand starves the region south of the Inlet leading to the construction of seawalls, groins, and eventually a rock revetment constructed by the Florida Department of Transportation (FDOT) north of Sloan's Curve in 1987. The revetment has cut-off the sand supply from the dune landward of the revetment. These conditions are expected to continue to contribute to the erosion within the Project Area in the future.

The three miles of shoreline immediately north of Sloan's Curve are fronted by numerous armoring structures including rock revetments, seawalls, and groins. The existing groins north of Phipps Ocean Park deter southerly longshore transport to Phipps Ocean Park and into the Project Area. The Mid-Town Beach Restoration Project is also located to the north of this three-mile segment; the groins and armoring have impeded the southerly migration of the Mid-Town sand. In combination with the effects of Lake Worth Inlet, armoring structures have caused a longshore transport and sediment deficit to the Project Area, resulting in erosion, loss of the recreational beach, increase in the storm damage risk to upland property, and loss of marine turtle nesting habitat.

Major Findings and Conclusions. The proposed action is in the national interest and can be constructed while protecting the human environment from unacceptable impacts. Benefits of the proposed action would be to mitigate the long-term erosion impacts of the Inlet and the erosion impacts of armored coastline north of the Project Area, provide and maintain storm protection to upland improvements, restore and maintain the beach for public recreational use, and to restore and maintain the beach for marine turtle nesting habitat. The primary adverse impact of concern is the potential impact to hardbottom resources, particularly to ephemeral or intermittently exposed nearshore hardbottom features in the fill area. Other adverse impacts include increased turbidity and sedimentation in the vicinity of the borrow sites (including reefs in the vicinity of the borrow areas) during construction, increased sedimentation and turbidity along the nearshore environment during construction, and potential impacts on hardbottom habitat for managed fish species. Measures taken to avoid, minimize, and compensate for adverse impacts include reducing the fill volume and placement area relative to previous Federal projects considered for the area to avoid nearshore hardbottom resources, the use of buffer zones and strict construction vessel control requirements to avoid and minimize impact to hardbottom resources in the vicinity of the borrow areas, and installation of a 3.1-acre mitigation reef in water depths ranging from -5 feet to -13 feet north of the Project Area. Specific mitigation measures associated with the dredging operations include no anchoring within 200 feet of the offshore hardbottom, no dredging within 400 feet to 524 feet of the offshore hardbottom, delineation of the borrow area with lighted buoys, use of a real time geo-positioning system on the dredge, diver assisted dredge anchor placement during day light hours only, monitoring of turbidity and sedimentation, use of manatee observers, and extensive marine sea turtle monitoring.

Alternatives. Alternative plans evaluated in the FSEIS include, (1) the No Action Alternative, (2) beach nourishment and periodic renourishment in combination with groin structures, and (3) beach nourishment with periodic renourishment. Based upon the review of the Draft SEIS dated January 28, 2003, and in an effort to further reduce nearshore hardbottom impacts, an additional alternative designated the T-Head Groin and Reduced Fill Alternative was added and extensively evaluated in Appendix M of the document. Alternative sand sources considered include offshore borrow areas located approximately 3,500 feet offshore and between 1.5 and 2.6 miles south of the fill area mid-point, deepwater sand sources, upland sand sources, foreign sand sources, and sand from maintenance dredging of adjacent inlet ebb and flood shoals.

Applicant's Preferred Alternative. The Applicant's Preferred Alternative includes a combination of beach nourishment with periodic renourishment and construction of a 3.1-acre mitigation reef. The optimum plan for meeting the Applicant's project purposes consists of placement of 1.5 million cubic yards of sand over 1.9 miles of beach immediately south of Sloan's Curve between DNR Monuments R-116 to R-126. The optimum design profile includes a construction berm width of approximately 140 to 330 feet with a dry beach width (distance to the MHW) of approximately 190 to 380 feet. The projected toe of fill extends approximately 280 to 540 feet offshore. The preferred mitigation reef structure will provide for "like-kind" mitigation of the existing hardbottom impacted by the Project and accommodate species that use the impacted hardbottom. Throughout the document, all references to the "preferred alternative" or "proposed alternative" are intended to mean the Applicant's Preferred Alternative.

Issues Raised by the Public and Agencies. In addition to the potential adverse impacts identified in the "Major Findings and Conclusions" statement above, some agencies and public commenters raised other concerns during the scoping and Draft SEIS review processes. Generally, the additional concerns related to the purpose and need for the Project, quantification of hardbottom resources in the vicinity of the Project, the functions and values of hardbottom features, potential secondary and cumulative effects of the similar projects on hardbottom resources in the vicinity of the Project, impacts to essential fish habitat, potential existence of hardbottom in the borrow area dredge limits, and potential public safety concerns associated with the nearshore or shallow hardbottom mitigation reefs. Some commenters also expressed concern with the extent of shoreline erosion, whether the Project Area has been designated "critically eroded" by DEP, the threat of erosion to upland property and infrastructure, and the advantages and disadvantages of the No Action Alternative.

Areas of Controversy. The most significant area of controversy evaluated in this FSEIS concerns the functions and values of nearshore hardbottom features, the immediate and long-term impact of burying nearshore hardbottom in the fill area, the effectiveness of the mitigation to compensate for the resource impacts of the Project, and whether alternative project designs not considered in the Draft SEIS could significantly reduce the expected hardbottom impacts.

Unresolved issues. At the time the Final SEIS was prepared, the extent and location of the mitigation reef had not been finally resolved through the permitting process. This issue is evaluated in Section 4.7, Hardbottom Resources and addressed in Appendix E, Mitigation Reef Plan and Monitoring Program.