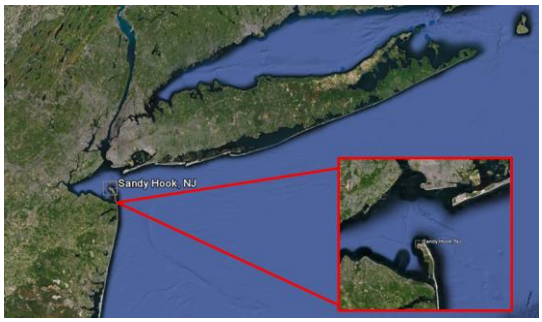
US Army Corps of Engineers®
Engineer Research and Development Center

# Regional Sediment Management Program

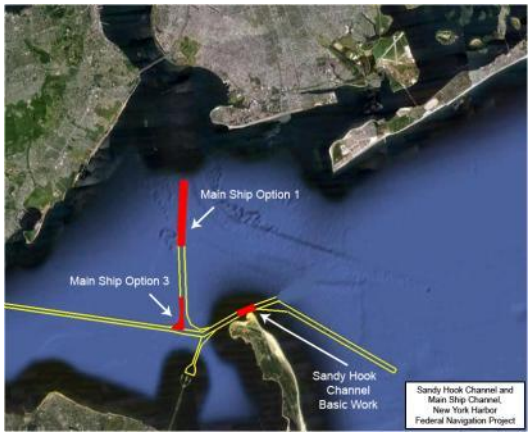
## Sandy Hook Channel Sediment Management

### Description

Sandy Hook is a peninsula in New Jersey that juts out to define the New York Harbor, as shown in Figure 1. The Sandy Hook area is managed by the National Park Service as a unit of the Gateway National Recreation Area (GNRA). Sandy Hook is bordered by Sandy Hook Bay to the west, and the Atlantic Ocean to the east. Raritan Bay is west of Sandy Hook Bay.




The navigation channel adjacent to Sandy Hook that leads toward the New York Harbor is maintained by the US Army Corps of Engineers, New York District (CENAN) to a depth of -35 ft MLW, as shown in Figure 2. Prior to 2008, the Sandy Hook channel required relatively infrequent dredging, which could effectively be accomplished with a medium-size (2,000 - 4,000 CY) hopper dredge. However, beginning in 2009 there has been a dramatic increase in the dredging requirements to keep the navigation channel deep enough for naval vessel traffic. The Sandy Hook Channel was dredged in FY10 and FY12, removing 132,000 CY and 176,000 CY of sand, respectively.




The purpose of this RSM study is to 1) characterize the problems impacting the Sandy Hook Channel, 2) identify if there are other regional problems / opportunities that could benefit from this excess material, 3) identify solutions that are available to address the shoaling problem, and address regional opportunities, and 4) recommend next steps for sediment movement, based upon these findings.

This RSM proposal is intended to identify Regional Sediment Management Alternatives that could be implemented to reduce the maintenance dredging costs for the Sandy Hook Channel, while addressing additional problems and needs for sediment in the area.

### Issue/Challenges

During the FY 12 dredging operation, the hopper dredge was extremely limited in its effectiveness and was unable to dredge in the area of the shoal because of the extreme shallow depths. This increase in shoaling is likely due to the northern migration of the spit at Sandy Hook. An examination of recent aerial photography shows the growth of the spit at Sandy Hook, which is impinging upon the channel. This northern migration is a natural shoreline progression, which has been occurring for centuries. It is possible that the recent changes are influenced by the sand that has been placed several miles to the south as part of the Atlantic Coast of New Jersey, Sea Bright to Manasquan Beach Erosion Control Project, which began construction in 1994. Prior to the beach nourishment project being

constructed, much of the shoreline to the south was in a sediment-starved condition, due to prior stabilization efforts, and offered little littoral material to the north.

**Successes Lessons Learned**

Past regional sediment management efforts have demonstrated that thorough planning studies help improve the planning and coordination necessary for successful implementation of regional sediment management practices.

**Expected Products**

- Updated sediment budget in SBAS-Arc10
- Technical Note on lessons learned from the backpassing program at Sandy Hook
- Identify and coordinate FY13/FY14/FY14 actions to optimize use of sediment based on knowledge gained
- Documentation of study findings and recommendations in summary report

**Potential Users**

The U.S. Army Corps of Engineers – New York District, State of New Jersey, Counties of Middlesex and Monmouth (along with municipalities within the Counties), the National Park Service and the United States Fish and Wildlife Service.

**Projected Benefits**

The District will be able to better plan for maintenance dredging and evaluate measures to reduce sedimentation in the channel and minimize future dredging needs along with identifying potential beneficial use of the material in New Jersey.

**Leveraging Opportunities**

There are multiple leveraging opportunities that are available including: (1) Sandy Hook Channel Navigation Project, (2) Atlantic Coast of New Jersey, Sea Bright to Manasquan Beach Erosion Control Project, (3) National Park Service Backpassing Project, and (4) coastal storm damage reduction projects along Raritan/Sandy Hook Bays.

**Points of Contact**

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**Participating Partners**

The study is being developed with the support and participation of the New Jersey Department of Environmental Protection and the National Park Service.