

Centerville River Dredging and Long Beach Nourishment

Project Characteristics

- *Dredging and Beach Nourishment Design*
- *Confined Aquatic Disposal Design*
- *Fine-grained Sediment Disposal*
- *Analysis of Alternatives*
- *Environmental Permitting*
- *Environmental Impact Report (EIR)*

Woods Hole Group, Inc. worked for the Town of Barnstable, MA to design and permit dredging of the Centerville River. The project objective was to improve navigability of the Centerville River while also providing environmental benefits to the nearby barrier beach system. The project design included maintenance and improvement dredging within five (5) channel reaches of the Centerville River and East Bay estuary system. A total of 51,000 cubic yards of sandy and fine-grained material have been dredged as part of the two-phased project. Phase I of the project included maintenance dredging of the first 6,700 feet of the main channel with disposal of 20,000 cubic yards of sandy material on the adjacent Long Beach barrier, and disposal of 6,000 cubic yards of silty material offsite. Phase II of the project dredged 25,000 cubic yards of silty material into beachside dewatering basins. Once dried, the material was trucked to an upland beneficial reuse site. Additional dredging within shallower portions of the Phase I and II channel areas is planned for the 2006/2007 dredging season.

During initial design, Woods Hole Group identified characteristics of the project area through collection of high-resolution bathymetry, vibra cores, sediment grab samples, tidal elevation data, beach profiles, and benthic species and distribution information. A numerical model was implemented to identify potential impacts of the proposed project on tidal circulation, flushing, and water quality. The bathymetric data was used to calculate the quantities of proposed dredge material, and detailed grain size and chemical analyses were utilized to identify the sediment compatibility and disposal site options. A thorough analysis of disposal site alternatives was completed prior to developing the final design.



Woods Hole Group worked closely with project proponents and local, state and federal environmental regulatory agencies to develop a plan for the dredging and disposal. Draft and Final Environmental Impact Reports were prepared addressing concerns regarding impacts to shellfish, finfish, eelgrass, beach stability, endangered species, and wetland resources. The full range of local, state, and federal permits were filed for, and obtained, prior to construction.

The proposed project offers the following benefits: improved public access to coastal waters, improved public safety, enhanced storm damage protection and flood control, addition of sediment to the littoral system, and enhanced wildlife habitat for nesting shorebirds.