

# Long Island Sound Dredged Material Management Planning

## Project Characteristics:

- *Long-Term Regional Dredged Material Management Planning (DMMP)*
- *Upland Disposal Alternatives*
- *Cultural Resources Inventory*
- *Economic Benefit Analysis*
- *Programmatic Environmental Impact Statement (EIS) Support*



Woods Hole Group worked with the US Army Corps of Engineers (USACE) on a set of projects related to management of dredged material in Long Island Sound (LIS).

## LIS Literature Review

A review of literature was done to support the USACE's efforts to formulate alternatives for the management of dredged material in Long Island Sound. Woods Hole Group compiled, reviewed, and catalogued information related to dredging and dredged material management in the region. The project included an extensive literature search to locate recently published reports and data related to dredging and dredged material management. Information sources were summarized in an ACCESS database, with information on the document source, type of work product (field investigation, summary report, modeling, monitoring, etc.), major and minor topics, time period covered, GIS compatibility, availability online, and points of contact for further information.

The database and literature library developed for this project can be used to quickly locate information on various topics relevant to dredged material management in the LIS region.

## LIS Upland, Beneficial Use, and Sediment Dewatering Site Investigations

Woods Hole Group investigated potential alternatives for dredged material handling, including upland disposal, sediment dewatering, and beneficial use including beach nourishment in LIS region.

The work was conducted in support of a regional DMMP for LIS that laid out alternatives for dredged material management, including general engineering design and analysis of the capacity for material at each site.

The project involved detailed, site-specific investigation of over 100 sites previously identified as potentially suitable for dredged material placement. Information was gathered from the site owners/operators regarding the acceptability of dredged material for placement or dewatering, types and volumes of material that could be accepted, general engineering design for beach nourishment and dewatering sites, and operational constraints.

Field investigations were done to document site conditions including current uses, abutting property conditions, site access, proximity to wetlands and other sensitive habitats, shoreline conditions and adjacent water depths, and sediment/soil characteristics. The site reports included plot plans, aerial photography of the delineated sites, ground photographs, and a summary of information gathered from the owner interviews and field investigations.

Spatial information was stored in ArcGIS database and Google Earth file formats. Results of the site investigation work were used to determine the volume of dredged material each site can accommodate, feasibility of material placement at each site, the extent and cost of site preparation, regulatory requirements for site use, potential impacts to critical resources, and costs associated with site use.

# Long Island Sound Dredged Material Management Planning (continued)

## LIS Cultural Resources Inventory

In support of the overall LIS DMMP process, Woods Hole Group, in association with PAL, prepared a cultural resources inventory that identified historic properties including archaeological sites, and identified the location of prehistoric and/or historic sensitive areas along the shores of LIS. The presence of archeological sites in or near a potential disposal site can limit or eliminate the site as a potential dredge disposal site. The study area along the coast of LIS is a sensitive region for terrestrial archaeological resources dating from temporal/cultural periods of documented human occupation, approximately 12,000 years ago to present.

- The cultural resources inventory identified historic properties including archaeological sites and sensitivity of 57 coastal communities in Rhode Island, Connecticut, and New York, located along the LIS.
- The archaeological sites inventory for the terrestrial portion of the study area consists of 3,146 recorded archaeological sites, of which 195 are identified as National and State Register (NR/SR) listed or eligible sites, either within a historic/archaeological district or individually listed. Additionally, there were five National Register-listed or eligible archaeological districts (or historic districts with archaeological significance).
- A total of 847 shipwrecks and obstructions were reported within the study area. Just four of these shipwrecks and obstructions are NR-listed or eligible historic properties.
- A total of 2,032 historic resources, including 914 in Connecticut, 927 in New York, and 118 in Rhode Island, were identified within the study area. The resources include buildings, sites, structures, objects, and districts that are listed, determined eligible, or potentially eligible for the National Register and/or State Register within the respective states in which they are located.

The study produced a series of GIS overlays that identified the resources and will allow the LIS Study Team to evaluate the potential viability of potential disposal sites within the study area.

## LIS Economic Data Update

Woods Hole Group, in association with Industrial Economics, Inc., prepared an economic evaluation of navigation-dependent industries in LIS, and the regional economic impacts of a No Open-Water Disposal Alternative for the LIS Dredged Material Management Plan.

The analysis used input-output modeling to assess the regional economic significance of navigation-dependent activity including marine transportation (commercial shipping, scenic water transportation, and shipbuilding), commercial fishing, recreational boating, ferry-dependent tourism, and activity related to the Naval Submarine Base in Groton, CT.

The impact of the No Open-Water Disposal Alternative was evaluated over a 20-year period, and effects on economic output, gross state product (GSP), employment, and taxes were estimated. Results can be used to evaluate regional economic implications for dredged material management in LIS.

## LIS Environmental Data Update

The US Army Corps of Engineers (USACE) needed to compile baseline environmental data to formulate alternatives for the management of dredged material in LIS. Woods Hole Group worked with USACE to develop an environmental data summary for LIS. The project identified and summarized environmental data developed in the LIS region between 2002 and 2009. The main work product for this project was an annotated EXCEL database summarizing environmental data sources for LIS. Data sources were categorized by topic, sponsoring agency, spatial extent, time period covered, and relevance to LIS dredged material management. The searchable database developed for this project can be used to quickly access information on natural resources and environmental conditions in LIS and surrounding upland areas.