US Army Corps of Engineers®
Engineer Research and Development Center

National Erosion Control Development and Demonstration Program (Section 227)

River Street Cut, Seabrook, NH

Background

The town of Seabrook is located on the coast of New Hampshire along the New Hampshire-Massachusetts border. The Hampton/Seabrook Harbor is characterized by a major tidal inlet, large shoals (including a flood-tidal delta), and two major tributaries. The Hampton and Taylor Rivers lie to the north and the Blackwater River lies to the south. Historical aerial photographs show the estuarine shoals and tidal channels frequently shift position. To reduce this shifting, the U.S. Army Corps of Engineers constructed a 1,126-km-(700-mile-) long entrance channel to the harbor in 1965. The state dredged the harbor in 1955, and since that time, it has been an active, working harbor.

View of Hampton/Seabrook Harbor

Problem

The Blackwater River is changing course resulting in localized bank and bar erosion and channel and harbor shoaling. The immediate problem is erosion occurring along River Street in the Blackwater River and the resulting shoaling at the Seabrook Piers and mooring field. A second point of erosion is occurring just north of Yankee Fisherman's Coop through a large clam flat known as "Middle Ground." Middle Ground contains New Hampshire's largest clam resource. This second point of erosion and shoaling is of concern because of its strategic location at the mouth of the harbor. Increased shoaling here could close the harbor. The increasing erosion has required more frequent dredging of the harbor and mouth of the Blackwater River. The harbor used to be dredged every 5 to 6 years; now it must be dredged yearly.

Technology

The general project concept is to abate erosion at River Street and minimize shoaling of the inner harbor by filling the cut with dredged material and containing the fill with thermoplastic sheet pile.

Status

The study is presently in the conceptual design and planning phases. In cooperation with the University of New Hampshire (UNH), an evaluation of the dynamics of geomorphologic changes in the Hampton/Seabrook Harbor was conducted and baseline field data collected to assist decision-making in harbor management activities. UNH conducted bathymetric and current surveys; analyzed grain sediment pathways; assessed bed form movement; and used the TABS-MD model. The Memorandum of Agreement (MOA) is pending.

Time Line Contract for construction was awarded 16 August 2004. Monitoring of the project is projected to begin later this year.

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Additional information can be found at *http://chl.erdc.usace.army.mil/section227*.