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Saugerties Harbor: Past and Present

by PATRICK LANDEWE on Oct 2, 2015 • 6:30 am

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(Photo by Doug Freese)

Dredging of Saugerties Harbor commenced on Monday, Sept. 14. Methodically, heavy machinery was deployed in full view of the lighthouse. A tall yellow crane towered above the trees. Its perch was a rusty work barge anchored by long steel spuds. With a whirring of winches and cables, the crane's boom lurched and hoisted an orange clamshell from the muddy bottom of the creek dripping with water. Swinging over a hopper scow, the clamshell opened with a clank, and the contents dropped with a dull thud into the empty hopper. This mechanical movement was repeated a hundred times over. One scoop of silt at a time, the scow filled to the waterline over the course of a workday. In the fading twilight, the tug *Margot* towed out the full hopper scow and replaced it with an empty one. This daily routine of scooping and dumping and hauling would continue to the first of October.

The dredging is being performed to improve access for the Coast Guard Cutter Wire to its homeport at the Saugerties station. The scope of work includes only the area at the mouth of the Esopus Creek from the confluence with the Hudson River upstream towards the Coast Guard Station a distance of approximately 1,200 feet. The quantity of dredge material is estimated to be over 20,000 cubic yards and will be disposed 30 miles away at Houghtaling Island. The contract was awarded by the U.S. Army Corps of Engineers to Carver Construction and its dredging subcontractor JT Cleary for a bid of approximately \$2.8 million.

As a harbor, the mouth of the Esopus Creek forms a natural navigation channel sheltered by a sedimentary delta. River deltas form when a stream carrying sediment reaches a body of standing water where the current slows down, spreads out, and deposits sediments. The Esopus Creek delta is one of the major recent alluviums of the Hudson River, forming since the last Ice Age. It extends halfway across the Hudson River.

Also known as Saugerties Flats, the submerged delta influenced the development of the waterfront. Dutch traders marked it on their charts as a hazard to navigation. British colonists also charted it. The hamlet of Malden settled at the northern extremity of the delta, and Glasco settled at the southern extremity. The village used the creek channel as a harbor. In 1835, the first Saugerties Lighthouse was built to mark the delta. In 1877, the Long Dock was built to traverse the delta to access the deepwater channel of the Hudson.

The entrance to the harbor suffers from sedimentation due to the formation of a mouth bar. Natural navigation channels in tidal estuaries often suffer from the generation of bars as sediment settles out at the mouth. Prior to improvements to the harbor, larger vessels had to wait for high tide to enter or exit the Esopus Creek from the Hudson River. A survey in 1883 showed the mouth of the creek obstructed by a bar over a thousand feet long with a water depth of only three feet at low tide.

In 1888, the Army Corps started improving the harbor. The completed project included the north and south dikes, which are each about 2,000 feet long and parallel to the bank. The dikes were designed to "promote the scour of freshets" to prevent shoaling at the mouth. The purpose of these structures was to minimize maintenance dredging by concentrating the water flow along the creek channel to flush out sediments during high flow events, usually in the spring, when melting snow or heavy rains flood the creek. The combination of dikes and dredging created a channel nine feet deep. In 1902, the channel was improved to 12 feet deep.

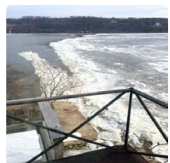
In 1920, the Army Corps reported that "the freshets, since the completion of the Ashokan Dam on Esopus Creek, appear to have been reduced to a point where they have no effect in scouring the channel." The Ashokan Dam captured the spring run-off and reduced downstream flows. As a result, shoaling continued at the mouth of the creek despite the harbor improvements. Dredging was required to maintain the improved depth. The creek channel was dredged in 1928 and 1935, and the spoils were piled behind the dikes, forming the narrow peninsula leading to the Lighthouse. The channel was dredged again in 1967.

The Saugerties Harbor channel was last dredged in 1988. For the last two decades, minimum water depths in the mid-channel have fluctuated from as little as 7.2 feet in 1998 to as much as 9.0 feet in 2011 after Tropical Storms Irene and Lee flushed out the creek, according to surveys of the creek by the Army Corps. The most recent survey from Dec. 2014 indicated a minimum depth in the mid-channel of 7.6 feet, and the cutter *Wire* runs the risk of brushing bottom at low tide. Upstream of the Coast Guard station, surveys show mid-channel depths over 10 feet. Although visible shoals have developed along the shoreline in some spots, sufficient water depth for navigation persists in the mid-channel except at the mouth where the dredging is planned.

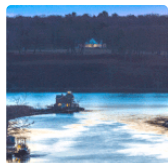
As the price tag on this current project illustrates, dredging is expensive. To justify such a costly measure, it must offer some significant public benefit. The Army Corps provides maintenance of harbor channels that serve "essential navigation needs of general commerce" as part of their mission. Since the Saugerties Harbor is no longer used for shipping cargo, it fails to meet the "economic test" in Army Corps budgeting. Nonetheless, the Army Corps was able to reallocate savings from another project elsewhere in order to address the plight of the cutter, which serves commerce by breaking river ice in the winter time. The Coast Guard also operates ice breakers from Bayonne, NJ to keep the Hudson open to commercial vessels. Unless there is a dramatic change to the economics of the Saugerties waterfront or the priorities of federal budgets, it'll likely be another 20 or 30 years before the dredge revisits the creek.

Patrick Landewe is the Saugerties lighthouse keeper. His column appears monthly.

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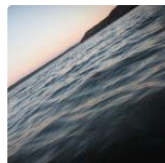
Keeper's Log:
Blame it on the tides



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