

## What is happening with the rocks?

You may have seen the heavy equipment working on the west side of the southern mooring area. For more than 25 years the Harbor Management Commission has been working to remove two piles of rocks that have been hazards to navigation, sometimes visible at low tide.

Originally the rocks were added to two places along the eastern side of what was Thatchbed Island, creating two stone piers. They were built sometime before 1950 and after 1934, based on analysis of aerial photographs. A few years ago they were tested and determined to be indigenous rock, not European ballast rock.

It is believed that they were built to aide in fishing, as there are a number of similar structures between the mouth of the river and Deep River. Who built them is not known. They were not maintained and over the years they fell into disrepair, settled into the sand beneath and became hazards to navigation.

When HMC first tried to solve the hazardous situation they were permitted to dredge them and “dump” them in an approved location in Long Island Sound — expensive and not very environmentally friendly. The next option was to dredge them and ship the rock to a quarry — more environmentally friendly, but very expensive.

Finally, a few years ago a new governmental and environmentally friendly initiative, “living shoreline” was created. Moving the rocks from their hazardous location to a new site that would provide some protection to Thatchbed and help slow erosion in the area became a viable option. Under the requirements of General Permit 9, which covers what you can do through the supervision of the U.S. Army Corps of Engineers, HMC was able to get the required permits to move up to 200 linear feet of rock to their new location.

This removes the navigation hazard and will open the nearby area for additional moorings. More importantly the new location will be the cornerstone for a project that has the ambitious goal of restoring a large area of Thatchbed using dredge materials to create an environmentally friendly habitat. This area will return Thatchbed back to its 2000 footprint.

Dredging is a necessity to maintain dockage areas, navigation channels and mooring areas. The problem is “What do you do with the dredge material?” Some areas are able to put the material on land or filled behind bulkheads. But there is a very limited amount of that space available. Using approved disposal sites in Long Island Sound is more and more difficult with New York fighting such actions on environmental grounds. It is also becoming very expensive.

EPA and USACE have a manual - "Beneficial Uses of Dredge Material" that offers suggestions on dealing with the problem. Essex has an Ad Hoc Committee that was created to try to deal with Thatchbed's restoration and future. Researching this manual and various projects around the country that offered potential solutions allowed the committee to come up with a solution.

Using a product, "Envirotubes", that is designed for dealing with dredge materials and has a long history of successful implementation, we can create a perimeter with the dredge material and then back fill the enclosed area with additional dredge material. The tubes and the back filled area will be seeded with appropriate grasses.

The tubes are designed to be filled with hydraulically dredged material, allowing the water to be pushed through the top, creating a firm, solid structure. Our proposal uses tubes that have a 30 foot circumference in 200 foot lengths, when filled the tube will have a foot print about 10 feet wide, 200 feet long and about 5 feet high. Each tube will contain a little less than 200 cubic yards of material.

Tubes are positioned with the ends overlapped to provide continuity. In places with a concern of current or waves potentially undermining the tube, a scour apron is placed under the tube to help hold its position and strengthen it.

The overall project has the capability to absorb the potential dredge material available from Essex Yacht Club, Middle Cove Marina, Essex Harbor Management Commission's navigation channel maintenance and some additional options. Each dredging entity will pay their share for their dredging activity and material. There will very likely be a cost saving over mechanical dredging with disposal in the Sound.

Since all the dredge material will be contained within the tubes and back filled area, the project minimizes negative environmental impacts. The system utilizes hydraulic dredging which is cleaner, faster and provides a more even finished area underwater.

Officially, this a "demonstration project", meaning that it will literally show how the plan and method can work, so others can apply the benefits to their situation. A successful project could be the first step, perhaps adding another area later.

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Editors note: Contact Jeff Going - 860-961-5090      [jeffgoing47@gmail.com](mailto:jeffgoing47@gmail.com)

For more specifics, technical data, pictures, drawings, etc