

Marshfield selectmen consider new strategies to limit storm damage, combat beach erosion

By James Kukstis

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Every year, Green Harbor is dredged by the Army Corps of Engineers, with the sediment removed dumped back into the sea off South Marshfield and North Duxbury. This year, thanks to a grant from Massachusetts Coastal Zone Management, the Woods Hole Group will be studying whether this material could be better used replenishing Marshfield's beaches.

MARSHFIELD - Every winter, residents witness the destructive power of the ocean, and the damage caused by storms to town beaches, seawalls and coastal property. As the town explores ways to address this issue, beach nourishment is considered an important part in a multi-pronged approach.

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Town Planner Greg Guimond said along with this study, the town is taking steps toward beach nourishment, a process made more difficult by a law that requires beaches to be publicly owned or to have rights of public access for sediment material to be placed on them.

Getting to that point for Marshfield's vulnerable coastline will require either the owners of the land granting easements to the town for this purpose, or the town taking the land through eminent domain.

Adding material to beaches is a crucial step in ensuring the longevity and effectiveness of seawalls, Guimond said.

“You need to rebuild seawalls, you need beach nourishment in front of those seawalls to protect them, and the third thing that we have to look at, unfortunately in our town, because we’re not talking about retreating, is offshore wave attenuating devices, which try to break the waves before they reach the beach,” said Town Planner Greg Guimond.

The Board of Public Works held a public meeting about these devices at the Marshfield Senior Center on Monday.

“We have to change the dynamic,” Selectman Jim Fitzgerald said. “Rebuilding the seawalls and have them knocked down over and over again just isn’t a sustainable situation.”

Nearly every summer for the past 20 years, the Army Corps of Engineers has dredged the floor of Green Harbor as part of their obligation to maintain the resource as a navigable waterway. Outside sediment and material slowly makes its way into the harbor, reducing the depth and narrowing the harbor’s entrance. Utilizing this dredged material could be an economical way to support beaches.

Woods Hole Senior Coastal Geologist Leslie Fields compared the equipment the corps uses to a vacuum cleaner, sucking up the bottom of the harbor and dumping sediment onto a large barge.

“From a coastal scientist standpoint, that’s something we don’t want to see,” she said. “It’s removing it from the beach system, the near shore system. The beaches in Marshfield are so eroded and we don’t really have a high tide beach there, so in our mind, that process of dredging and taking off shore is robbing the beaches of sand they desperately need.”

About 30,000 cubic yards of sediment is removed from Green Harbor each year, the size of a football field 30 feet high, Guimond said. This mass is enough to replenish 3,100 linear feet of seawall.

To begin to change this process, the Woods Hole Group submitted a grant application last May on behalf of the town, to Massachusetts CZM under their Coastal Resiliency Grant program. Marshfield was awarded \$36,000, and the town contributed \$12,000 of its own for a feasibility study to determine if this dredging material could be used to replenish the town's beaches, rather than simply being dumped at sea.

Fields said the study, which will take place this summer, will consider a variety of issues including erosion rates, grain size and the natural sediment characteristics of each beach. It will also look at existing wetland resources that may be harmed by placing dredging material near it, property ownership, the current directions of sediment transport, and the logistical challenges of moving the dredged material to the beaches.

Five permits are required for the potential placement of the dredged material; this summer's study will include a draft for the first.

"Hopefully, next year we can file another grant application to actually file for all the other permits," Fields said. "Once we have the permits, then that's really the beauty of the whole thing because the corps is still going to be coming in and dredging, then that makes it a lot more attractive for them to accommodate the town's desires to get the sand to those beaches."

Guimond said the town is looking at a three-year permitting process.

The Army Corps of Engineers, however, is hoping to dredge every other year, rather than every year, Guimond said, by digging a sediment basin in the channel, which would be deeper than what is typically dredged and would remove twice as much product.

"The thought is the sand will fill in that area first before it fills in the channel," he said. "We need to think about it a little more, but that's where they're headed versus doing something about extending the jetties."

Guimond said the corps will be performing emergency repairs on two breaches on the western jetty, but they are not discussing extending or correcting jetties at this time.

The Woods Hole Group will be holding a public meeting at the Ventress Memorial Library on Wednesday from 7 to 8:30 p.m. to introduce the project to Marshfield residents.

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