

Clearing 'the lifeline of Cape towns': County dredge completes 25th season as rates increase

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Barnstable County Dredge Superintendent Jason Bevis pointed the bow of the Stephen S. Bradbury toward a private beach in Harwich.

Humming around the Bradbury in the calm, mid-June waters were four Carolina skiffs manned by the county dredge crew.

“Security call, Barnstable County dredge,” Bevis said into the black radio he clutched. “Pipeline floating from Saquatucket-Wychmere Harbor entrance to the west. We’ll be towing the pipeline across the channel in approximately half an hour, closing off the channel.”



Chris Armstrong, Leverman on the Barnstable County dredge, the Sand Shifter connects the pipeline that will transport sand from the ocean floor to Red River Beach in Harwich. *Jeannette Hinkle.*

Barely visible on the private beach Bevis aimed for was one end of the nearly 6,000-foot pipeline, which was propped up over the sand on yellow pontoons. The other end of the pipeline bobbed in the calm water near the Sand Shifter, a \$1.9 million cutterhead suction dredge manned by Leverman Chris Armstrong, who has worked for the program for roughly two decades.

The day before, sand slurry vacuumed out of Harwich's shoaling channels by the dredge had poured out of the pipe's mouth onto the beach. When the slurry dried into sand, the beach would be fuller, and more girded from the waves for a time.

Bevis and the crew were now tasked with moving the pipe's endpoint down the shoreline to Red River Beach, where the dredge would pump more sand threatening to choke off Saquatucket Harbor. There, Harwich town employees would collect and distribute the sand to other local beaches depleted by erosion. Sand not needed for public beaches would go to private-property owners who had bid to buy what has become an increasingly critical resource for seaside homeowners.



Sand slurry dredged and pumped from the entrance of Saquatucket Harbor is deposited on Red River Beach. *Jeannette Hinkle*

The Harwich dredging project, scheduled to be finished by Wednesday, will mark the end of the Barnstable County Dredge Program's 25th season.

Following a few rough years during which equipment failures and other problems caused serious delays, this season represented a kind of relaunch.

After soliciting a review by engineering consulting company Foth, the county last year hired more crew and a new director, Ken Cirillo, who was assigned the job of overhauling a program Cape towns depend on to keep navigation channels clear and beaches sandy.

Dredge rates increase

One of Cirillo's most urgent tasks was updating the rates towns pay to use the dredging service, rates that hadn't changed since 2005, according to the county.

Consulting with Foth staff, Cirillo proposed higher rates to County Commissioners last fall, and though commissioners gave their approval, Cape town representatives serving on the dredge subcommittee put the brakes on the plan.



Barnstable County dredge Manager Ken Cirillo, left, and Dredge Superintendent Jason Bevis stand on the deck of the Sand Shifter on Dec. 30, 2020, as they wait for the dredging to get underway in Bourne.
Merrily Cassidy/Cape Cod Times

Dredge subcommittee members were unhappy over the swiftness of the proposed rate increase, which several members said would not allow towns time to incorporate the spike into municipal budgets.

“Nobody's surprised at the fact that the organization needs more funding, and we want to get there, but we have to get there with the understanding that our budgets are already set,” said Rex McKinsey, subcommittee chairman.

Subcommittee members also balked at the original proposal's 10% mobilization fee for medium- and large-volume projects. That fee — standard in private dredging operations, according to Foth — was intended to offset the cost of moving the dredge from town to town, a complicated process that can take several days.

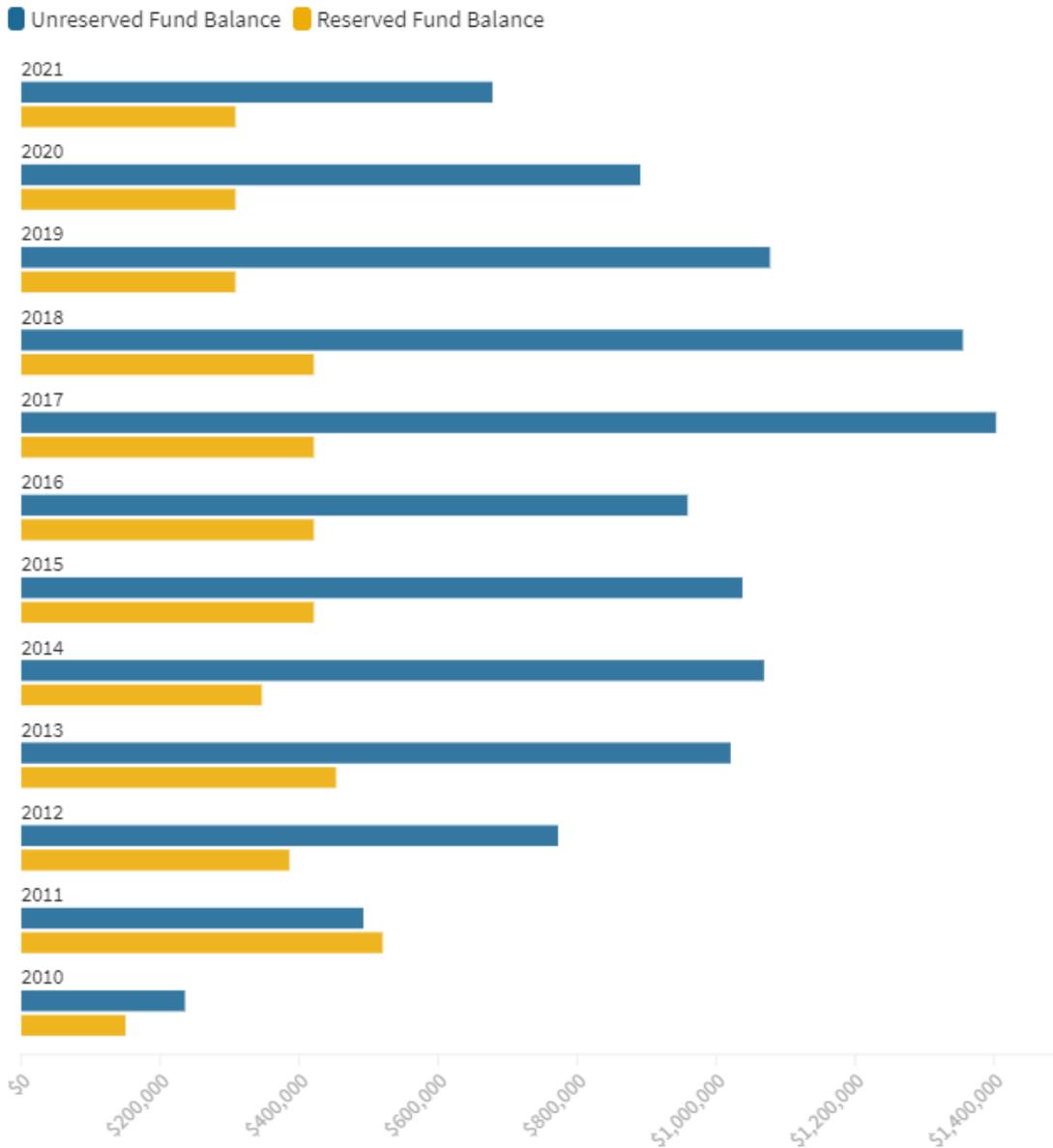
For cash-strapped coastal towns that need clear navigation channels and healthy beaches to survive, that cost was too great, subcommittee members said.

“It seemed to penalize certain projects that had larger volumes when in fact, often it's the larger projects that are more advantageous for revenue generation than the smaller projects. ... There was sort of a disincentive to have larger projects for various communities,” said Ted Keon, subcommittee vice chairman and coastal resources director for Chatham, which needs annual dredging to keep Stage and Chatham harbors operational.

After a few meetings with the subcommittee, Cirillo came back with a new rate structure intended to bring the program — which had been spending down its reserves for years — closer to solvency.

Barnstable County Dredge Program Reserve Fund Balance

In overhauling the rate structure used to bring in revenue to the Barnstable County dredge program, the county wants to ensure the program doesn't continue to deplete its reserve funds. Unreserved funds can be used as needed, while reserved funds are typically used for emergencies and capital investments. The use of both funds requires the sign-off of the County Commission and Assembly of Delegates.



Source: Barnstable County Dredge Program • Graphic By Jeannette Hinkle

A Flourish chart

The rates for county dredging projects approved this spring, which will be staggered over the next two fiscal years, are more simply structured than the volume-based tiered rates proposed in the fall.

Beginning Thursday, the rate per cubic yard of dredged sand will rise from \$9 to \$10. For projects that require a booster station, which extends the distance sand can be pumped, the rate per cubic yard will jump from \$13 to \$14.50.

Next fiscal year, the rates per cubic yard will increase again.

The rate will rise from \$10 to \$12 per cubic yard for projects that don't require a booster. The rate for projects requiring a booster will increase from \$14.50 to \$18 per cubic yard.

When the 2022 rates go into effect, the county's fees for dredging will have increased by roughly 33% over current rates for projects that don't require a booster and by roughly 38% for projects that do require one.

Fee increases fund needed investment

The new rates — which were approved by the dredge subcommittee, County Commissioners and the Assembly of Delegates — represent a mutually agreeable investment in a program that is vital for Cape towns, subcommittee members said.

“*We can't go too far too fast, but there is an acknowledgment that the costs are going to go up and when they do, the towns will be more ready to absorb that in their budgets because they've been prepared for it.*

REX MCKINSEY

Projects completed by the county dredge this season cost municipalities between 65% and 96% less than they would have if completed by a private company, according to the county. Even with the increases, the county dredge is a significantly cheaper option for municipalities than hiring contractors.

“I think every town fully understood, at least those actively utilizing the services, that the program needed some influx of additional resources,” Keon said. “There was no question that the rate structure was out of date.”

Next January, the subcommittee will meet to dive deeper into how the approved rate increases will impact Cirillo's goal of building a more reliable and efficient program limited by a short work season, often made shorter by harsh weather. The subcommittee will also discuss setting rates for fiscal years 2024 and 2025.

“We can't go too far too fast, but there is an acknowledgment that the costs are going to go up and when they do, the towns will be more ready to absorb that in their budgets because they've been prepared for it,” McKinsey said. “We'll be looking again next year as those new rates come online and the projects get going as to how much farther we need to go in order to get the ship stabilized.”

There is still a lot of work to do, Cirillo said.



Big capital investments, including a building to house dredge operations, are still needed, as well as several improvements to existing equipment. Some of those are planned for this summer.

With the anticipated hiring of another deckhand, Maintenance Engineer Rich Randall will be able to move away from daily operations to establishing building and executing a preventative maintenance plan that will reduce delays caused by faulty equipment, Cirillo said.

Dredge program gets positive reviews

Although the punch list remains long, the program is now meeting the demand for its services, Cirillo said, and reviews are positive. The crew has completed 16 projects across the Cape this season.

"It was frankly quite good," Keon said. "The fact that the county did as many jobs as they did this year, I think was a testament to having two dredges that seem to be functioning well and an expanded crew to be able to run those projects."

"I think they did a fantastic job this year," said Harwich Harbormaster John Rendon, who also serves on the dredge subcommittee. "But in my mind, they've always done a good service for the town here in Harwich."

Rendon, who helped guard last week's operations from the boat traffic in and out of Saquatucket Harbor, said that without an affordable option, the town's channels and harbors would slowly fill by migrating sand.

"Allen Harbor was almost choked off, it was shoaled so bad," Rendon said. "You've got hundreds of boats that are within Allen Harbor, and if that channel is choked off, nobody's moving. It's a huge economic impact."

"The waterways are the lifeline of Cape towns. That's just a fact," he said.

Also crucial, he said, is the sand the dredging provides to towns.

"Why do people come to the Cape? A big part of it is our beaches," Rendon said. "If you don't nourish the beaches and keep quality sand available for not only our residents, but the tourists, it's a tremendous impact economically. There's a real need for beach nourishment on the Cape. You can probably talk to every harbormaster of every town and they would tell you the same thing."

Closing out an anniversary season

By midday on the Harwich work last week, the dredge crew had wrangled the pipeline into its final position, allowing the Sand Shifter to begin pumping sand slurry from the mouth of Saquatucket Harbor to Red River Beach.

Armstrong, seated comfortably at the dredge controls, moved the massive machine's cutterhead in a U-shaped motion, slowly sucking up the shoaling sand from one of Harwich's most important navigation channels.



On Red River Beach, gray sludge dotted with white shells gushed out of the pipe onto the sand, forming a dark and messy whirlpool. Curious beachgoers could both see and smell the slurry, which was chock full of organic matter long underwater. They wandered over to ask Bevis — an 11-year veteran of the county dredge — what was happening.

Since crew members do most of their work outside of beach season, it's rare that people get to see the dredge at work, Cirillo said, adding that he likes explaining to people what the men wearing T-shirts emblazoned with the word "DREDGE" in all capital letters are doing.

"It makes our work visible," Cirillo said. "It helps let people know about the service we're providing."

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