



Photo by Dean Geddes

**FIRST SHOT:** Nantucket Cottage Hospital emergency medicine physician's assistant Maria Carey receives the island's first dose of the COVID-19 vaccine from nurse Aline Womack last Thursday morning.

# Re-imagining the waterfront as sea-level rise seen as inevitable

**By Brian Bushard**  
I&M Staff Writer

Marty Hylton has seen the numbers. He has seen the flood waters. He knows what is coming as far as sea-level rise, and he knows it will only get a lot worse over the next few decades.

“There is no stopping sea-level rise even if we cut carbon emissions tomorrow completely,” said Hylton, director of The University of Florida’s Preservation Institute. “So how do we respond to it? We’re not going to save everything, so how do we recreate Nantucket?”

The projections tell two stories. There is the National Oceanic and Atmospheric Administration map, which shows future coastal flooding inundating streets downtown.

There’s also a new set of Federal Emergency Management Agency

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maps showing toppling bluffs and escalating erosion around the island in the next 80 years.

Neither are regulatory maps. They only lay the groundwork for future town planning, coastal re-

silience coordinator Vince Murphy said.

Mary Longacre, of the newly-created Coastal Resilience Advisory Committee, said the next step is developing an island-wide coastal resilience plan. That plan is expected to be completed next fall.

“You can use sea walls, but they would need to be 16 feet high. You can use a living shoreline, but that only gets you so far, or you can relocate,” Longacre said. “I’m looking for a plan that doesn’t lay out just one prescription, but all the options from hard-armoring to green infrastructure, and for the community to say if it’s worth it.”

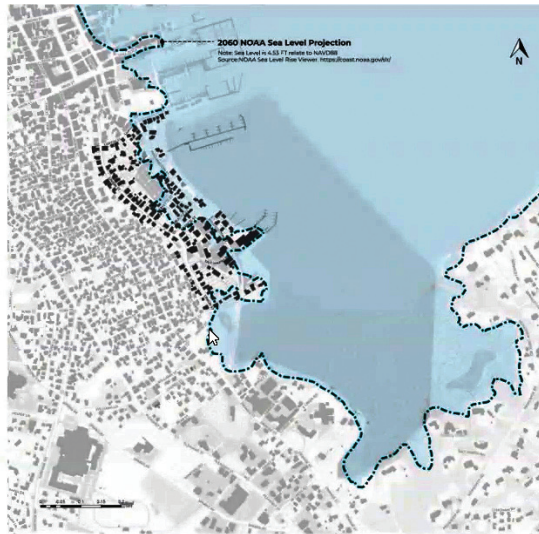
Climate change and sea-level rise responses often fall into two categories: Run to higher ground, or engineer a solution. The engineering solutions can be elaborate – sea

**SEA-LEVEL RISE, PAGE 6A**

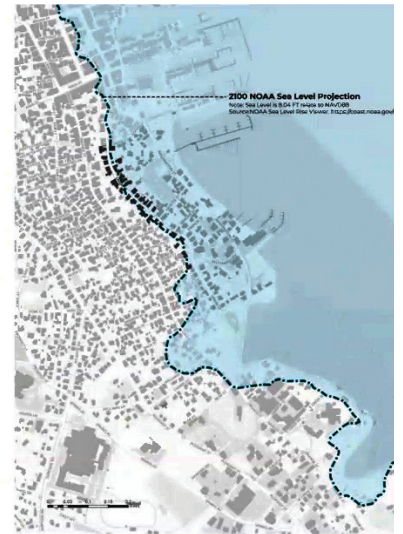
# Sea-level Rise: Living shorelines touted as way to address climate change



2030 Sea Level Rise Projection



2060 Sea Level Rise Projection



2100 Sea Level Rise Projection

(Continued from page 1A)

walls with huge gates have been outlined and ultimately rejected in Boston – to gently natural, like restoring and protecting saltwater marshes to absorb storm surges.

Hylton advocates for the creation of something called a living shoreline.

On Nantucket, that means converting the grassy areas on the harbor side of Washington Street to salt marshes that can absorb stormwater before it batters the shore, replacing impervious asphalt in the town parking lot with an alternative that allows water to seep through, and creating rain gardens on the Maria Mitchell Association properties on Washington Street, where Hylton already sees the front lawn regularly turning into more of a wetland than a grassy area during flooding.

All of those ideas, of course, depend on funding. Hylton did not estimate how much they would cost.

“The federal government is investing in larger metropolitan areas like Miami, New York and Boston, but it’s these smaller communities

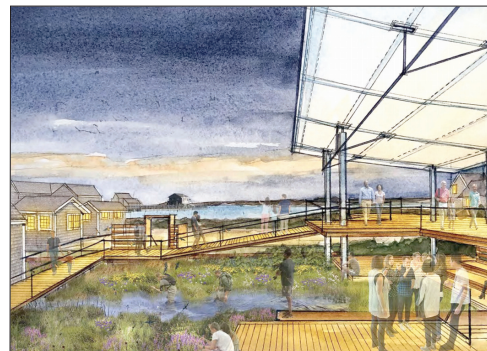
like Nantucket that are going to struggle to get the funding,” he said, adding that such projects might require private donations or funding from the Community Preservation Committee.

Specific plans for a living shoreline have yet to make it to a town regulatory board for review.

One advantage of a nature-based design, Hylton said, is that it’s significantly cheaper than large-scale projects like sea walls. Sea walls and raised roads are not only expensive but need to be repaired whenever they break, he said. On the other hand, if the town installs oyster beds within a living shoreline, it could also be promoting an industry around shellfishing in the process.

Select Board member Matt Fee supported the idea of a living shoreline, but agreed that funding would be one of the biggest challenges.

“Do we all pay for it? Do the neighborhoods pay for it?” he asked. “Doing something to retain downtown is an easy thing and everyone says ‘yes.’ But are we going to spend \$10 million or \$20 million to keep three homes in place for a



Courtesy of Preservation Institute: Nantucket

A rendering of what the Maria Mitchell Association’s property on Washington Street could look like if the area became a living shoreline to address sea-level rise.

decade or do you move them? What about a whole neighborhood?”

The question in front of Hylton is how the town can preserve its historic buildings and streetscapes from rising sea levels. The seven largest flood events in the island’s history have occurred since 2013, he said. They had once been (and in many cases still are) called 100-year storms.

Three months ago, the Preservation Institute presented an updated series of Washington Street sea-level-rise projections, one year after

it presented a series at an island conference called Keeping History Above Water.

The projections describe a Washington Street 30 years from now, submerged under two feet of water on an ordinary high tide. NOAA sea-level-rise statistics predict that by 2060, the street will be completely submerged, permanently. By 2100, the water is up to the first floor of houses on Union Street every day, according to the projections.

Hylton is working on the design concept with Bob Mik-

los, a preservation architect from DesignLAB Architects.

Miklos said the intent of a living shoreline is to turn the focus away from development or hard-armored projects, and toward adaptive solutions like saltmarshes or rain gardens that fit into the natural landscape.

The area along Washington Street had been an extension of the harbor creeks before it was developed in the 19th and early 20th centuries, Miklos said.

“There’s an opportunity for it to take on a different character now,” he said. “Maybe it’s one where the landscape is dominant again.”

The living shoreline is one strategy among a list of possibilities, which range from raising and wet-proofing houses to moving those houses away from the shore.

To Nantucket Preservation Trust executive director Mary Bergman, protecting buildings does not necessarily mean relocating them. They just need to be able to handle the flooding.

She pointed to a one-story building on South Beach Street where Tobias Glidden runs his companies ACK Smart Solar and Wheels of

Delight. Three years ago Glidden wet-proofed the interior, allowing floodwater to rise four feet without damaging the structure or anything inside it.

“The natural world and the built environment are going to have to work together and not fight one another,” Bergman said. “It’s about trying to create a system that works in harmony.”

Another part of the equation is keeping the conversation about coastal resilience at the forefront of town politics, Fee said.

In the short-term, Hylton said a living shoreline could be a first step.

“(Preparing for sea-level rise) is the biggest challenge the world faces,” Hylton said. “You can either panic when you see the visualizations or you can start to problem-solve. We have 30 years to prepare. It was urgent 10 years ago.”

“There’s a time for fear and there’s a time to start thinking about solutions,” he said. “Our approach is nature-based. How it goes back to being a wetland is what we’re focused on. A living shoreline is something we could do in the next 10 years.”