

The crossings weaken the dune by lowering its

Conservation chief offers explainer on dune restoration, flood protection

By Chris Krahforst

The town of Hull continues the process for completing designs to enhance the resiliency and protective value of the coastal dune system on North Nantasket Beach (Phipps Street to X Street). Currently, improvements are being developed by the town with the support of a coastal resilience grant from the Massachusetts Office of Coastal Zone Management and consultants from Kleinfelder and the Woods Hole Group, two firms that specialize in climate resilience engineering and coastal processes modeling. The primary goal of these improvements is to protect the health, safety, and welfare of town residents from the impacts of future flooding and storm damage.

Hull is exposed to the open waters of Massachusetts Bay, Boston Harbor, and Hingham Bay. Because of its unique location, Hull residents are highly vulnerable to coastal flooding, long-term impacts of sea level rise, and increased coastal storm activity. The residential infrastructure within the town has experienced significant damage due to storm surge and coastal flooding over the years. Statewide Hull ranks as one of the communities with the highest numbers of repetitive flood insurance claims. This project, which proposes to restore a continuous dune system along North Nantasket Beach, will provide residents with added protection against this increasing threat of flooding.

Beach and dune systems are the interface between water and developed land. They are naturally dynamic, fluctuating in size and form due to the impacts of wind, waves, tides, and storm

deterring the process. Two public meetings are planned for later this month. Input from full-time and summer residents will be encouraged.

Central Street playground complex. "The tennis and pickleball courts are open, and as the state allows we will reopen other facilities," he said. HT



Street flooding due to dune overtopping caused by low dune volume at Phipps Street. [Courtesy photo]

events. It is this dynamic response that helps absorb energy and water movement during coastal storm events. This "system" returns to rebuilding the beach and dunes by sand movement onto the shore during quiet, low-energy times (as in the summer) and from the deposit of wind-blown sand. The town's Municipal Vulnerability Preparedness Community Resilience Building Workshop and Coastal Vulnerability Assessment and Adaptation Planning Study identified North Nantasket Beach and its dune system as the highest priority resource for adaptation to coastal flooding, storm damage, and sea level rise. These resources are the first line of flood defense for many residents, homes, and critical infrastructure assets. Unfortunately, the dune's health and function are degraded.

The most vulnerable dune areas were previously identified as part of an earlier CZM coastal resiliency grant and have been in the process of restoration. This project is consistent with the town's Beach Management Plan, its Climate

Vulnerability Assessment, as well as the town's Hazard Mitigation Plan. Restoring the dune is a cost-effective measure to meeting the goal to provide greater storm and flood protection for people, property, infrastructure, and emergency services of the town.

In addition to the ongoing efforts to build resiliency of the town overall, Hull is currently working on a design for a restored dune at the corner of A Street and Beach Avenue which includes a readily accessible pedestrian crossover ramp and redesigned emergency vehicle access. Related, the project also focuses on closing and restoring the dune at nonpermitted crossings that contribute to flood pathways for wave penetration and storm surge. These crossings are footpaths that beachgoers use to cut through the dune without required town and state approvals.

These nonpermitted crossings lower the dune's height, reducing flood protection, and destroy beach vegetation that serves to trap sand

• Continued on next page

niers to learning that these students face, such as technology or an inability by school officials to reach their families, and to develop individual strategies to help them be successful. One of the committee's charges is ensuring the safety and well-being of all students and their families. "We set up for success and have had success," Shaw said.

Everything has changed due to the coronavirus, Turk said, noting that "one of the big stand-out pieces is what engagement means. It's different for each student."

School Committee member Stephanie Peters wondered what will happen in the fall if some students have fallen behind academically and what measures can be taken to "ensure continuous improvement with everybody in this crazy environment.

"I feel overwhelmed as an adult, and I can't imagine what the effects on kids are now, with always having to wash their hands and having no friends [to play with]. It's important to reach out to our students."

School Superintendent Judith Kuehn said that "closing the gaps will be really important. I think students are resilient and will return to school and welcome the connections that they have there."

necessary steps to reopen the Jacobs, Memorial, and high schools.

"This is an exciting opportunity," Kuehn said. "Our small number of students will be a gem [combined] with the extra space in our buildings [with respect to social distancing]. I love solving problems. Things will be different, but we will get through it."

DeGennaro reported on the initial phased reopening plan, operating in conjunction with the working group, which involves: custodians returning to the buildings to begin summer projects; secretaries in each building with alternate schedules for one or two days a week; and the same with principals and central office staff, all on a staggered schedule.

The custodians will receive additional training about cleaning and disinfecting the schools for summer programs and the fall.

Kuehn and DeGennaro will walk the buildings together with the principals "to maximize space for social distancing purposes," he said.

Staff and students will be required to wear face masks, with extra paper masks available for those who need them.

Several items were adjusted to arrive at the 1.36 percent increase, down from the initial 2 percent proposed increase, as requested by Town Manager Philip Lemnios mostly because of current COVID-19-related budget constraints.

These adjustments include: savings in out-of-district tuitions; the replacement of a retiring special education teacher position at Jacobs with a paraprofessional; a reorganization that involves hiring a director of student services rather than an assistant superintendent (resulting in a salary savings); a reduced professional development budget; reducing the number of summer custodians; and savings realized from a maternity leave.

"I was surprised at the 1.36 percent increase the schools are getting," committee member Lucas Patenaude said. "I think it's a sign of good faith in our schools."

Town meeting has the final say on all town and school budgets.

- The community walking track will reopen Monday, June 8. The hours will be 6 a.m. to 6 p.m. on weekdays. "There will be no weekend or holiday hours for the time being," DeGennaro said. HT

Dune restoration

Continued from page 4

and hold the dune together during storms.

The town aims to enhance the function of the dune by restoring nonpermitted crossings to typical local dune height and width. The improvements will restore the dune at nonpermitted crossings using compatible sediment and vegetation, installation of fencing along landward edge of dune to discourage inappropriate pedestrian access, and installation of signs that encourage use of public crossings and discourage use of nonpermitted crossings.

Future work includes the development of a longer-term beach and dune nourishment plan for North Nantasket Beach. The town's working group on this project includes Town Manager Philip Lemnios, Director of Community Develop-

ment and Planning Christopher Dilorio, Building Commissioner Bartley Kelly, Conservation Administrator Christian Krahforst, members of the Beach Management Committee, as well as officials from the fire and police departments. It is the working group's hope that residents will participate in the upcoming online public meetings. Online meetings will take the place of in-person engagement; this new method of meeting is being used widely in the face of social distancing protocols necessitated by the coronavirus. Despite these changes in how the town reaches out to its residents, it is important that community members have a chance to see the proposed improvements to the North Nantasket Beach dune, provide feedback, and lend their support to this effort and help reduce Hull's vulnerability to impacts of climate change.

The town will present details about the proposed improvements and seek public feedback

at three upcoming public meetings to be held online, at least initially, on June 16 and June 18, and an additional meeting to be scheduled in late July. Note that a presentation of this project took place on May 28 as a joint meeting of the Board of Selectmen and Conservation Commission. (See related news story on Page 4.)

Ultimately the proposed improvements will provide important flood protection and contribute to the restoration and health of north Nantasket Beach, which is cherished by our residents. This project is generously funded by the Massachusetts Office of Coastal Zone Management. More information about the project can be found at <https://www.town.hull.ma.us/conservation-department/pages/north-nantasket-beach-resilience>.

Chris Krahforst is Hull's conservation administrator. HT