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# Association To Preserve Cape Cod To Redesign Boat Ramps To Reduce Runoff

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The boat ramp on Sandwich's Oakcrest Cove property

CHARLOTTE TALLEY/ENTERPRISE

In an effort to manage the stormwater runoff that has been impacting bodies of water on Cape Cod the Association to Preserve Cape Cod (APCC) has selected and identified improvements to be made at 20 potential sites across the region—including at Peters Pond in Sandwich.

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The selections, which were announced during two virtual meetings this week, are an important milestone in the organization's ongoing project to manage stormwater at public boat ramps, which is titled: "Ramps Are For Boats – Not Runoff."

Project partners are the Towns of Barnstable, Bourne, Brewster, Dennis, Falmouth, Harwich, Mashpee, Orleans, Sandwich, Yarmouth, the Massachusetts Department of Fish and Game and the Horsley Witten Group, which is helping to provide engineering expertise.

Stormwater runoff is rain or snowmelt that flows across land rather than being absorbed into the ground. The water collects pollutants such as oil and nutrients as it flows to a larger body of water.

While water that is absorbed into the ground is filtered by soil and vegetation, stormwater is completely untreated. The large influx of nutrients such as nitrogen and phosphorous is particularly harmful to bodies of water, causing algae and cyanobacteria blooms, polluting shellfish areas and fisheries and forcing beaches to be closed.

"Boat ramps are places of direct discharge," said restoration ecologist Jordan Mora at the public meeting this week. "It just rushes down, untreated, into the receiving water body."

The purpose of the meeting was to share and receive feedback on the proposed designs and their site rankings.

The 20 proposed sites were chosen from a list of more than 100 and were ranked by their pollutant removal potential, cost of construction, ease of being implemented and any additional benefits such as habitat improvements or public education.

Field studies were conducted this summer at each site, allowing the association to customize improvements to the needs and specific topography of each.

According to the APCC's 2021 State of the Waters Report, 87 percent of the coastal embayments and 35 percent of the freshwater ponds on Cape Cod have been deemed to be in an unacceptable state, due to nutrient pollution.

The APCC is proposing to use permeable pavement—porous paving surfaces that reduce runoff—to control areas with significant erosion or damage, plant areas with native species that can filter stormwater naturally, remove excess pavement and divert flows using speed tables to send water into existing or new leaching basins made of shale or loamy soil.

A key element of the proposed improvements is maintenance. Some attendees at the meeting questioned the cost and upkeep requirements of permeable pavement; however, the association was adamant that when bought in bulk and installed correctly in areas where it is effective, permeable pavement requires very little upkeep and is cost-effective.

The APCC highlighted that the solution is not to stop runoff from entering the waterways, but rather to have as much of it as possible be treated before that happens, especially the first inch of rainfall.

“The first inch is the most polluted. If we can treat that first inch, we will have made a significant improvement,” said Michelle West, senior water resources engineer at the Horsley Witten Group.

Another critical element of the redesigns is trying to stop the pollution at the source. This can mean addressing where the pollution is leaching from or educating the public to minimize their impact. However, the APCC is aware this must be done tactfully.

“We want to avoid sign fatigue, where people will see so many, they just ignore all of them,” Ms. West said.

While there are many more boat ramps contributing to the stormwater problem, the APCC’s funding sources can only be utilized on public boat ramps and not private ones.

In Sandwich, the site that has been selected is Oakcrest Cove at Peters Pond.

Improving the site is complicated because of how steep the topography is. The site has been experiencing tremendous erosion, with the recreation department reporting that the basketball courts are often covered in sediment after a heavy rainfall.

The APCC has proposed that a stepped bioretention system be built to help combat the steep flow of rainwater near the pond. A benefit of renovations at the site would be the removal of many overgrown invasive species.

In Mashpee, three sites were identified: Ockway Bay Landing, Wakeby Pond and Johns Pond.

Leaching basins were recently installed at Ockway. The main parking lot runoff flows away from the boat ramp. The APCC’s efforts at this location will focus on removing excess pavement, as well as better directing runoff flow. To accomplish this, they will install a speed table at the ramp to direct water to a catch basin.

Wakeby has a large parking lot and a busy boat ramp. The APCC's plans seek to improve the bioretention at the edge of the parking lot and to control pollution at the source by improving the location of portable toilets and dumpsters.

The APCC proposed removing pavement that has been installed for trailer parking that is rarely used, due to the geometry of the upper lot at Johns Pond.

"We don't want to get rid of parking spaces," emphasized Ms. West.

The area will be made smaller and reserved for car parking. The renovations will prioritize underground absorption through loamy soil and shale, as well as a speed table. Due to nearby trees and dead leaves, which clog absorption areas, the site will require more upkeep than most.

In Falmouth, Waquoit Bay Landing is already listed for upgrades due to the eroded and damaged pavement. Efforts to improve drainage management are going to be complicated by the proximity of abutters.

The proposed improvements would include repaving and regrading the road to better direct runoff to shale drainage areas on the sides and a bioretention area at the base of the parking lot. An existing trench drain has long been clogged with sediment.

The required upkeep of trench drains means that the association is not intending to install any new ones.

At Ashumet Pond, the APCC is hoping to use regrading of pavement and shale drainage areas to help manage runoff, as well as to convert some of the parking lot to permeable pavement.

A sandy area, which is often used as a beach, will be replanted and converted to a bioretention area. According to state regulations, there should not be beaches near state-owned boat ramps.

In Bourne, the site at Barlows Landing is split into two separate sites. It is the only deep water ramp on the Cape side in Bourne.

The proposed changes would improve direct water flows with a speed table into newly planted bioretention areas. An existing leaching basin will be used to help with overflow. Permeable pavement will also replace a gravel parking lot to help stabilize erosion near the water.

At Electric Avenue, the site is defined by a ramp which is much wider than necessary. The site needs a wind break to help prevent erosion.

The APCC will remove some of the boat ramp's pavement, as well as replacing a clogged trench drain with a speed table to redirect water into leach basins. Coastal vegetation will be planted to provide a windbreak. An effect of the improvements is that pedestrian access to the nearby kayak rack and pier will be improved.

The 20 sites that have been selected are currently at the 10 percent design phase of the project timeline, meaning that 10 percent of the design specifics have been worked out.

By the end of the year, the association plans to have the top sites selected, which they will move to 25 percent design development by next summer. During this time, they will be applying for more funding to continue designing and eventually begin building the improvements by the end of 2023.

The final selection will be six to eight sites, with more possible funding available.