Duxbury Beach Reservation, Inc. is a 501(c)3 non-profit organization

DUXBURY BEACH RESERVATION, INC.

Coastal Flooding & Stormwater Management

Project Overview

Duxbury Beach is exposed to a variety of coastal impacts, including heavy rain, overwash, and flooding. Water flow and pooling along the beach roadway threaten the integrity of the barrier beach and access. As part of the comprehensive planning and permitting program for Duxbury Beach, DBR worked with scientists and engineers at Woods Hole Group to develop nature-based solutions to address coastal flooding and stormwater scouring and other adverse impacts to adjacent wetlands. The Reservation implemented this work in Spring 2022 by installing five stormwater drainage areas and raising the road around High Pines to bring it above the high tide line. These projects include traffic calming components to make travel on Duxbury Beach safer for pedestrians, wildlife, and motorists.

High Pines Roadway Project

PRIOR TO CONSTRUCTION

POST CONSTRUCTION WORK

Project Specs

1,375'

Roadway raised 3ft to 9ft elevation

5,206

Tons of material to raise the roadway and create side slopes

1.09

Culms American beach grass and 300 woody shrubs planted to stabilize and restore

650

Additional salt tolerant plants to be added in Fall 2022 to the west side of the road

2,300'

Erosion control blankets

$192,100

Funded by DBR to elevate the roadway and protect future access

Stormwater Management Project

Project Specs

5

Stormwater drainage areas and speed bumps created over 2.6 miles

15

Tons of crushed stone to create catchment basins

25

Tons of cobble to create drainage channels

60

Tons of gravel used to create speed bumps

$11,091

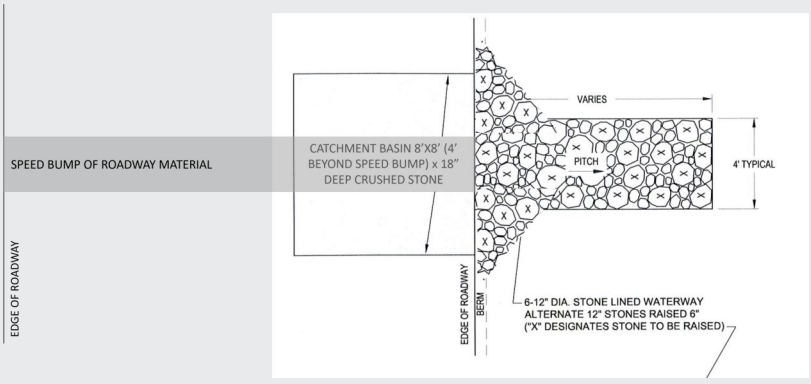
Funded by DBR to improve stormwater drainage and safety

PRIOR TO CONSTRUCTION

POST CONSTRUCTION WORK

Next Steps

Duxbury Beach is constantly changing due to the impacts of water and wind, as well as human use. Therefore, no project on Duxbury Beach is truly *done*—ongoing maintenance is always part of DBR's plan. The ability to **maintain** projects and **respond** to the changes on the beach is a key component of DBR's comprehensive plan for the resilience of the barrier beach. For example, stormwater drainage areas are now part of DBR's toolbox and can be installed in new areas as need arises, while existing areas must be maintained in order to function properly.



Engineering plans for catchment basins and drainage channels, placed at low points in the road to direct water and slow velocity of flow rather than allowing stormwater to punch through and damage both the road and adjacent wetlands.

Images by: Brynna McGlathery (front-top), Woods Hole Group