

Overview of the Nantucket Hazard Mitigation Plan

HMP Overview

- Hazard Mitigation Plan was completed and accepted by the Town in March 2019.
- It took 1 year to complete and cost \$37,000
- Looked at all the potential natural hazards that the Island faces and what responses were needed
- HMP had 59 individual recommendations
- Used the STEPLEE scoring system to evaluate the necessity of each recommendation
- Recommendations were in 8 different categories including
 - All Hazards (18)
 - Flooding (26)
 - Hurricanes and Tropical Storms (3)
 - Sea Level Rise, Shoreline Change and Erosion (4)
 - Summer Storms and Tornadoes (2)
 - Winter Storms (2)
 - Wildfire (2)
 - Earthquakes (2)

HMP Overview

- Approximately 29 are directly related to Coastal Resilience
 - Arguable that all recommendations are a support or at least indirectly related to CR
- Only going to look at the directly related recommendation for now
 - Advise that all CRAC members should read the HMP

Knowing that these action items are in the HMP, they do not need to be duplicated in the CRP – they are already dealt with!

Some items are very similar to items that will be in the CRP and will therefore be approached differently

Important to note, higher STEPLEE score items are already in progress or complete

All Hazards

Action Number	Action Description	STEPLEE	Status
A6	Develop a comprehensive checklist that cross-references bylaws , regulations, and codes related to natural hazard damage prevention that may be applicable to proposed development project.	6	In Progress
A7	Identify potential locations and costs, in collaboration with the Steamship Authority, for development of an alternative shipping terminal and navigation channel capable of accepting high-capacity ferries and/or freight boats to maintain critical access to the mainland in case of blockage of the main channel. Outline steps to follow to develop such a terminal.	4	
A10	Conduct a targeted hazard vulnerability assessment of historic structures , and offer technical assistance to property owners.	7	In Progress
A18	Develop a public outreach program that target public school teachers and students (K-12) and works to add appropriate climate science, sea level rise, hazard mitigation and coastal resilience planning to the curriculum.	3	

Flooding

Action Number	Action Description	STEPLEE	Status
F2 (now F4)	Conduct Master Drainage Study for the Downtown area and its watershed. Identify needs for storm water drainage improvement, including backflow devices at outfalls at the harbor. Develop an operations & maintenance policy for retention/detention and water quality treatment (Stormceptors) systems for Town and privately owned facilities	6	In progress
F3	In the Downtown area (including Brant Point to Orange St.), complete CCTV inspection and Storm Water Management Program . Prioritize improvements to reduce flooding.	5	Underway
F5	Complete Consue Springs project (including Orange St. and Pleasant St. systems) to improve drainage and outfall discharge in that area. The outfall serves a drainage area of 36 acres with several retention/detention systems. The project scope has been revised to address the restoration of the pond and creek to improve water quality.	6	In Progress

Flooding

Action Number	Action Description	STEPLEE	Status
F6	Develop a comprehensive storm water management plan that addresses needs and priorities to reduce flooding and improve drainage. Include a funding model and possible revenue sources to sustain ongoing maintenance and capital improvements. The Plan should review policy and regulations that govern the discharge of water into the Town's ROW and those that have direct connection to the Town's storm drainage system. The rising sea level and water table is leading to more sump pumps discharging into the drains or on the roadway.	7	In Progress
F8	Adopt a set of design guidelines to encourage flood proofing and elevation of structures while maintaining their historic characters . The NFIP Floodplain Management Bulletin FEMA P-467-2, "Historic Structures," may be referenced.	6	In Progress
F9	Complete repairs to Children's Beach storm water pump and outfall to improve reliability, and reduce/eliminate backflow into the pump and drainage system during high tides. This system support a drainage area of more than 150 Acres.	6	In Progress Temporary solution in place. Long term solution in review

Flooding

Action Number	Action Description	STEPLEE	Status
F11	Educate residents, developers, and regulators about the zoning regulation allowing height limitations in “one-hundred-year” flood zones to be defined based on the first floor elevation as required by floodplain management regulations [updated 7/12/2016]. Target repetitive loss property owners for this education.	6	In Progress
F12	Extend the above height exception to any building elevating its first floor for flood mitigation purposes, even if outside current flood zone.	3	
F13	Adopt local freeboard standards that include AE zones when regulating development in flood zones.	6	

Flooding



Base Theme
Google Satellite

Aerial Imagery 7

Planning 6

Land Use

Zoning

Land Conservation

Construction

Districts

Sewer Districts

Natural Resources 5

Emergency Preparedness 3

Hazard Mitigation

Transparency

2% CHANCE

A

AE 10

AE 7

AE 8

AE 9

VE 10

VE 11

VE 12

VE 9

Flooding

Action Number	Action Description	STEPLEE	Status
F14	Increase the elevation of Madaket Road at Head of Long Pond and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise. Coordinate with culvert improvements or replacement.	5	
F15	Increase the elevation of Madaket Road at Madaket Ditch and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise. Coordinate with culvert improvements or replacement.	5	
F16	Increase the elevation of Polpis Road at Fulling Mill Brook and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise.	5	
F17	Increase the elevation of Polpis Road at Sesachacha Pond and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise.	5	Temp. sol. in place. Long term in review
F18	Increase the elevation of Wauwinet Road at Polpis Harbor and harden the embankment for wave action. Final elevation to be examined and analyzed considering sea-level rise.	5	

Flooding

Action Number	Action Description	STEPLEE	Status
F20	Investigate and implement engineered flood protection solutions for the Finance Department Building (short-term) and develop options to relocate the office to a flood proof location (long-term).	5	
F21	Investigate and implement actions that mitigate the repetitive damage to the Harbormaster's facility on the Town Pier .	6	
F22	Initiate development of plans for a long-term Harbormaster facility , incorporating sea level rise.	4	
F23	Perform a network-level inventory and condition assessment of storm water infrastructure to drive development of a dedicated cleaning and maintenance program for the drainage systems . Current approach lacks the equipment and staffing in DPW. Use the same information to identify and plan for capital and improvement projects. Integrate the information with the Town's GIS and Work Order systems.	4	In progress (partially)
F24	Install water tight sewer manholes in areas that experience regular street flooding.	4	

Flooding

Action Number	Action Description	STEPLEE	Status
F25	Develop a protocol or formal Standard Operating Procedure for opening and closing of the tide gate at Children’s Beach boat ramp . Work with local citizens to make sure they are aware of the protocol.	7	
F26	Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	5	

Hurricane and Tropical Storms

None of the three action items are directly related to Coastal Resilience – rather are all related to public and boat safety

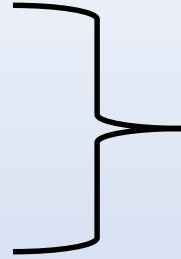
Sea Level Rise, Shoreline Change and Erosion

Action Number	Action Description	STEPLEE	Status
SC1	Complete the Community/Coastal Resilience Plan and Become an MVP Community	9	Complete. MVP complete CRP in progress
SC2	Update the Nantucket and Madaket Harbors Action Plan (HAP) to incorporate needs for Hazard Mitigation and Coastal Resilience	6	HAP in review for 2020
SC3	Implement a project to map the near shore sand and sediment transport to develop a sand-budget model for monitoring island wide coastal erosion. Side scan sonar will be used to measure bathymetry in extremely shallow water, between 0 and 20 ft. deep. Mapping in high resolution monitors the movement of sand shoals and identifies location of marine habitat on the sea floor.	4	Planned for 2021?
SC4	Implement a project to map the harbor floors (Madaket, Polpis and Nantucket) to measure and monitor sediment transport . Information will be used to develop dredging and disposal plan, as well as the Harbor management Plan. Side scan sonar will be used to measure bathymetry in extremely shallow water, between 0 and 20 ft. deep.	4	Planned for 2021?

New plans

Action Number	Action Description	STEPLEE	Status
F19	Develop a plan to relocate important hard-copies of Town records (including records in Finance Department, Health Department and Natural Resources Department) to a new storage location outside of the locations susceptible to flooding.	7	New

Summer Storms and Tornadoes
Winter Storms
Wildfire
Earthquakes.



do not have items related to Coastal Resilience