Case Study

Municipality/Nonprofit Organization: Town of Falmouth
Project Title: Coastal Resiliency Planning for the Surf Drive Area
Grant Award: $ 109,559.48
Match: $34,772.48

Community Overview:

Falmouth is a vibrant coastal community surrounded by ~70 miles of coastline with Vineyard Sound to the south, Buzzards Bay to the west and home to 14 embayment's and coastal ponds. A distinct feature of the Town is the roadway along Vineyard Sound that stretches from Woods Hole to East Falmouth where you can enjoy the scenic view of the ocean, bluffs and beaches. The center of town is located approximately one (1) mile from the ocean and many businesses rely on the influx of seasonal residents and tourists to thrive. Falmouth is famously home to world renowned research institutions including Woods Hole Oceanographic Institution (WHOI), Marine Biological Laboratory (MBL), U.S.G.S Coastal and Marine Science Center, NOAA Northeast Fisheries Science Center, and the Woodwell Climate Research Center. Much of Falmouth's character, culture and identity is influenced by the ocean.

Description of Climate Impact:

With almost 70 miles of shoreline along Buzzards Bay and Vineyard Sound, Falmouth is particularly vulnerable to coastal flooding due to storm surge and future sea level rise. Many areas vulnerable to flooding contain public infrastructure and facilities, commercial development, and residential communities that will be adversely impacted by future climate change.

A town wide climate change vulnerability assessment and adaptation planning study completed in January 2020 identified the Surf Drive area and municipal assets as one of the most vulnerable areas in town. Surf Drive, a section of the scenic roadway from Woods Hole to East Falmouth, and the adjacent shoreline already experience significant stressors (i.e regular inundation, erosion, overtopping, and storm damage) under todays climate conditions. Climate change and sea level rise will increase the severity and frequency of these stressors resulting in increased vulnerability in the future.

The MVP Action Grant program to allowed Falmouth to study the Surf Drive area in more depth, develop flood pathways, and evaluate potential adaptations and actions the town could implement to address sea level rise impacts to municipal infrastructure, residential neighborhoods, and the adjacent natural resources.

Project Goals:

The project goals of the Coastal Resiliency Planning for the Surf Drive Area were to 1. Maintain and promote welcoming coastal resources and marine environments, which is the cornerstone of the Town's cultural identity and financial foundation; 2. Improve the resiliency of the natural resources and infrastructure along the Surf Drive coastline; and 3. Balance the use, access, and enjoyment of the coastal resources, while accounting for ecosystem shifts in response to weather related impacts and sea level rise.

Approach and Result:

The project was implemented by a series of steering committee meetings. The steering committee was comprised of members of the Coastal Resiliency Action Committee, municipal department heads (Town Planner, Assistant Town Manager, GIS Coordinator, Conservation Administrator, Town Engineer, Water and Wastewater Superintendents, and the Beach Superintendent), and representatives of three (3) local land trusts, the 300 Committee, Salt Pond Area Bird Sanctuaries, and Oyster Pond Environmental Trust all who are landowners within the project area.

To better understand how sea level rise and the storm surge would enter the upland landscape a flood pathways were developed. Although primarily based on flooding risks adaptation plans also considered storm surge and erosion. Once the pathways were created adaptations and actions were developed to provide the town a phased management approach to improve coastal resiliency of the Surf Drive area.

Two public presentations were given to inform residents on the impacts of future sea level rise to the study area, to gather specific feedback and ideas, and to present the developed adaptation measures.

Lessons Learned:

Addressing future climate change and sea level rise is a complex issue that requires a phased management approach and community participation. The Falmouth of today will not be the Falmouth of tomorrow. The community will face the difficult decision on how and what infrastructure to protect, what neighborhoods to protect, and what adaptive measures to implement. Impacted citizens may voice concern of particular adaptation measures or

management approaches that would impact their homes. Falmouth must be understanding to citizen concerns while planning for a resilient community.

Partners and Other Support:

The Coastal Resiliency Action Committee
Salt Pond Area Bird Sanctuaries
The Three Hundred Committee
Oyster Pond Environmental Trust

Project Photos:

Erosion along Surf Drive

Mitchell Bath House Surf Drive
2030 100 -yr flood depth