Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: Town of Oak Bluffs
Project Title: North Bluff Preservation project
Grant: $1,088,451
Match: $362,818

Community Overview:
Provide a general description of your community as a brief introduction to the project.

Oak Bluffs is a vibrant year-round and summer resort community on Martha's Vineyard with miles of public shoreline including beaches, ponds and salt marshes, coastal roads, infrastructure and historic buildings.

The North Bluff Preservation Project is the final phase of a resiliency project designed to protect Sea View Avenue Extension, a major Island transportation hub for ferry pick-up and drop-off. The original project consisted of a new seawall to replace a failed seawall, built four feet higher than the old one to protect against sea level rise, an ADA accessible public boardwalk above the seawall, and restoration of the coastal bank.

This final phase consisted of dredging Sengekontacket Pond and placing the nourishment in front of the new seawall to reestablish a beach at the site (a former beach had eroded over the years) to protect the seawall, boardwalk, coastal bank and road, and to re-create a recreational beach. The project included the rehabilitation of five deteriorated wooden groins on the beach to help keep the nourishment in place for longer than it would otherwise remain. A revised project scope allowed for the planting of 2,000 Rosa rugosa plants to help stabilize the coastal bank after a system of mixed plantings failed to establish on the bank.

Description of Climate Impact:
Address the community's current and potential future vulnerability to climate change impacts. What are the specific threats to the project area/site and reasons for applying to the grant program?

Oak Bluffs is located on an island and also juts out into the sea like an extended thumb. Our entire diverse shoreline (barrier beaches, salt marshes, banks, armored sites) is at risk from climate change impacts. Our historic downtown is low-lying and partially in the flood plain. Currently the coast is impacted by storms, storm surge, flooding and erosion. This will get worse as the sea continues to rise. Our economy is based on the values of our shoreline. For the future we will need to closely consider what sites are suitable for adaptation versus managed retreat.

This grant was applied for to complete a climate resiliency project for the North Bluff section of the downtown, an important transportation corridor between the Oak Bluffs Harbor and the Steamship Authority dock. The coastal bank and seawall were at risk of collapsing. Once the seawall was rebuilt and the bank revegetated the Town applied for this MVP grant to renourish the beach to protect the site while at the same time enhancing a recreational beach. The Town of Oak Bluffs is unique in that we have a walkable downtown waterfront and in-Town beaches. This project both protects and enhances a critical portion of our downtown waterfront.

Project Goals:
What were the specific goals of the project?

The goal of this project was to finalize a climate resiliency project for a vulnerable portion of the downtown shoreline. The site now has a new, higher seawall, a beach to protect the seawall, boardwalk, coastal bank, road, and homes, and a restored coastal bank. The dredging of Sengekontacket Pond helped improve pond circulation, water quality and shellfish habitat. This grant was extremely valuable for the Town. Now that this site is successfully protected we can look at addressing other vulnerable coastal locations.

Approach and Result:
How did the project team implement the project? Describe the methodology or your approach to achieve the project goals. Describe, and quantify (where possible) project results (e.g. square footage of habitat restored or created). Provide web links, if available, to your project deliverables.

The Town and Foth Engineering managed the project. We came to an agreement with the Town of Edgartown to use their dredge to dredge material from Sengekontacket Pond. Dig It Construction transported the material to the North Bluff, placed it on the beach, rehabilitated the beach groins, removed material that had shifted into the harbor channel, and realigned some boulders at the south harbor jetty to keep the new sand from migrating into the harbor inlet. 16,476 cubic yards of sand was placed in front of the new seawall. Five deteriorated wooden groins were rehabilitated Two thousand Rosa rugosa plants were planted to stabilize the coastal bank. In addition to providing storm protection and a recreational beach the new sand has created habitat for shore birds and other coastal wildlife. The dredging of the pond helped improve shellfish habitat.

Lessons Learned:
What lessons were learned as a result of the project? Focus on both technical matter of the project and process-oriented lessons learned.

It is risky to attempt a coastal restoration project on a Northeast facing beach in the winter months due to storm conditions. We were fortunate that weather conditions did not disrupt the project. We overestimated the cost of the project; this was a matter of taking worst-case conditions into consideration during the budgeting phase of the application.

Partners and Other Support:
Include a list of all project partners and describe their role in supporting/assisting in the project.

MA MVP - funding and overall support
Town of Oak Bluffs – property owner, grant applicant, project coordinator, matching funds
Foth Engineering – project design plans and permitting, project supervision
Edgartown Dredge Committee – dredged material from Sengekontacket Pond
Dig It Construction – beach nourishment, groin rehabilitation
Crossland Landscaping – planting and watering of coastal bank vegetation