

Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: Town of Winthrop

Project Title: Belle Isle Marsh: Evaluating Nature Based Solutions to Protect Abutting Communities and Critical Shorebird Habitat from Coastal Inundation

Award Year (FY): FY22

Grant Award: \$145,307

Match: \$ 54,500

Match Source: In kind and Cash match for creation of hydrodynamic model

One or Two Year Project: Two-year

Municipal Department Leading Project: Town of Winthrop

Project Website URL: <https://mysticriver.org/belleislemarsh>

Community Overview: Belle Isle Marsh is surrounded by Environmental Justice communities in Revere and East Boston, as well as neighborhoods in Winthrop. Just inland of the marsh on its northwest edge is the MBTA Blue Line, which connects the North Shore of Massachusetts to downtown Boston and beyond.

Project Description and Goals:

- Where was the project located? Belle Isle Marsh
- What climate change impacts did the project address? The marsh is threatened by rising sea levels, increasingly intense coastal storms, and dense development along its inland borders. Relative sea level has already increased by a foot over the last century, and is projected to rise as much as 10 feet by 2100. King tides currently result in water levels well above the marsh platform, destroying the nests of saltmarsh sparrows, a rapidly declining endemic species. Inland development and the abutting MBTA Blue Line track present additional challenges to potential marsh migration.
- What were the specific goals and tasks of the project as stated in your application? The team explored a range of potential nature-based and hybrid solutions using combined model outputs, looking for management scenarios that both optimize marsh health and longevity and protect inland residential neighborhoods and the MBTA Blue Line. The project team facilitate monthly meetings involving Belle Isle landowners, abutters, and stakeholders to ensure coordination moving forward.
- Did your project meet the goals set forth in your application in terms of:
 - Employing nature-based solutions: Yes, prioritized as potential solutions as possible
 - Improving equitable outcomes for and fostering strong partnerships with EJ and other Climate Vulnerable Populations: Community Advisory Group formed to deepen community engagement.

- o Providing regional benefits: Prioritized projects all cross multiple jurisdictions, providing regional benefit.
- o Implementing the public involvement and community engagement plan set forth in your application: Yes
- o Finishing the project on time: Yes

Results and Deliverables:

- Describe, and quantify (where possible) project results (e.g. square footage of habitat restored or created, increase in tree canopy coverage, etc.). Report out on the metrics outlined in your application.

Assuming this project is successful in identifying viable nature based flood protection strategies, we will pursue funding, permitting, and construction. Once the flood mitigation strategy is in place, the project team will work with Mass DCR managers and community volunteers on the science monitoring needed to inform adaptive management through time. Metrics to be monitored include:

- Vegetative cover of the marsh
 - Salt marsh sparrow breeding pairs
 - Sediment accumulation
 - Inland flooding
 - Impact and height of King Tides
- Provide a brief summary of project deliverables with web links, if available. Link to deliverables [here](#).

Lessons Learned:

- What lessons were learned as a result of the project? Focus on both the technical matter of the project and process-oriented lessons learned.
 - o Scheduling monthly meetings with municipalities, state agencies, and community-based organizations was useful for both building trust/ collaboration and informing the evolving adaptation concepts.
 - o Convening a Community Advisory Group of residents in addition to holding public meetings was a positive way to move towards more authentic community engagement.
 - o Finding a win-win solution that protects communities and the marsh - while also being permissible - is challenging.

- What is the best way for other communities to learn from your project/process? We invite you to take a look at our final public meeting. Materials [here](#). Recording [here](#).

Partners and Other Support:

- Municipalities of Boston, Revere, and Winthrop
- MA-DCR
- MBTA
- MA-DOT
- Friends of Belle Isle Marsh
- Mystic River Watershed Association
- The Nature Conservancy
- Members of the Community Advisory Group

Project Photos:

- In your electronic submission of this report, please attach (as .jpg or .png) a few high-resolution (at least 300 pixels per inch) representative photos of the project. Photos should not show persons who can be easily identified, and avoid inclusion of any copyrighted, trademarked, or branded logos in the images. MVP may use these images on its website or other promotional purposes, so please also let us know if there is someone who should receive credit for taking the photo.

Please feel free to use images from the public presentation, found [here](#).