



**Accelerating Climate Resiliency Grant Proposal
Manchester-by-the-Sea ▪ Massachusetts**

White Beach: Road Abandonment and Barrier Beach Restoration



**Submitted to the Metropolitan Area Planning Council
November 30, 2018**

Application Form

1. APPLICANT INFORMATION

Project name: White Beach: Road Abandonment and Barrier Beach Restoration

Lead Municipality: Manchester-by-the-Sea

Municipal Staff Project Manager (Name, Title): Mary Reilly, Grants Administrator

This is the person who will be the day-to-day contact for the project and who will represent the municipality in regular communication with MAPC.

X Please attach a signed authorization from the Chief Executive Officer identifying the individual named above. (See attached letter from Town Administrator Greg Federspiel)

Lead Municipal Address: Manchester Town Hall
10 Central Street; Manchester, MA 01944

Phone Number: 978-525-6427

Email address: reillym@manchester.ma.us

Municipal Partner(s), if applicable: N/A

Type of Mini-Grant

X Technical Assistance/Design

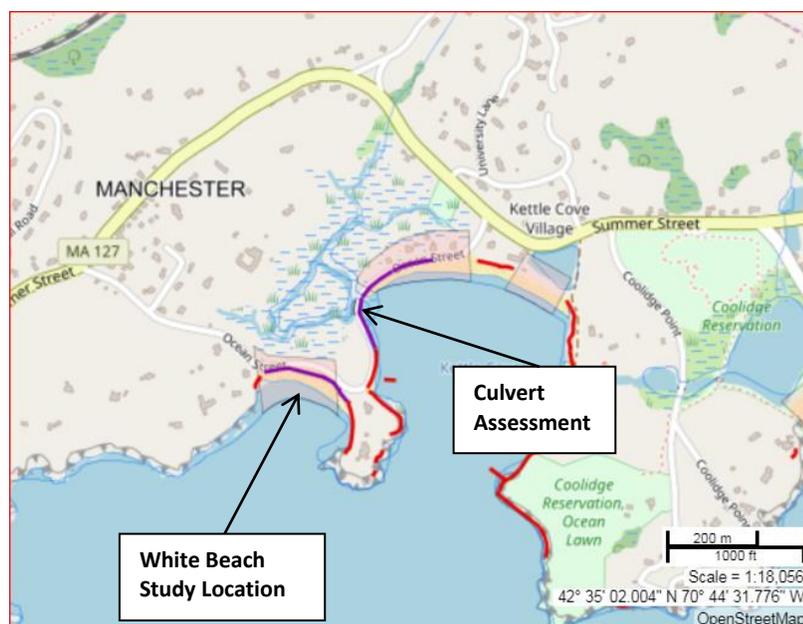
 Capital Project

 Capacity Building

Grant Amount Request: \$ (TBD)

Location/Address of the Project (if applicable):

Ocean Street in Manchester, MA



Which climate risk(s) does the proposal address? (Check all applicable)

Sea Level Rise

Extreme Heat or Urban Heat Island Impacts

Flooding

Extreme Weather Events

Other Climate Impacts. Explain: Storm Surge, Coastal Erosion

Which MAPC Municipal Mini-Grant Program Priority Areas does the proposal address? (Check all applicable)

Nature-based solutions for climate resilience such as Green Infrastructure (GI), Low-Impact Development (LID), climate-smart parks, urban forestry, carbon trading, eco-roofs, and rain gardens;

Municipal climate resiliency regulations, zoning, financing, or infrastructure;

Climate coalitions or convenings, such as stormwater partnerships, regional climate networks, or watershed-based climate resilience initiatives;

Improvements to social resiliency or cohesion, such as through dialogues, gatherings, and networks, particularly for at-risk or vulnerable populations and/or neighborhoods;

Synergies between climate adaptation and mitigation and other co-benefits;

Local food systems or community agriculture resiliency measures;

District-scale pilots that accelerate climate resiliency;

Public outreach, marketing, or arts and culture projects that advance climate change knowledge or action;

PROJECT DESCRIPTION

1. Provide a short summary of your project, proposed methodology, proposed use of data, if known, and anticipated outcomes.

The Town of Manchester is seeking funding for conducting a feasibility study of restoring a portion of one of Manchester's barrier beaches (White Beach). The project would involve abandoning the portion of the roadway (Ocean Street) that runs through White Beach and removing the existing seawall and restoring the dune system and possibly a portion of abutting saltmarsh (Kettle Cove marsh) with a Living Shoreline. Relocation of the existing parking lot at each end of the restored beach would be included in the study.

As part of the feasibility study, the Town will consider improvements to the culvert on Ocean Street (adjacent Black Beach) for possible benefits to the abutting salt marsh.

(Please see *Manchester Project Map* below.)

Over the last few years, the increased number and intensity of storms has repeatedly damaged the roadway and revetment along Ocean Street which has been costly for the Town. During and after storm events DPW staff must manage several tons of beach sand material that is deposited from White Beach onto Ocean Street making it unpassable. During these events, the material is moved to the side of the roadway using a large front end loader construction vehicle. After the storm, the material must be moved back to the beach. Most recently during the March 2018 storm event, this resulted in 113 man-hours (approx. \$3000) of dedicated DPW personnel as well as nearly \$8,000 dollars in fees to private contractors.

It is clear that continuing to maintain Ocean Street is not sustainable in the long term due to more frequent and intense storms, flooding, sea level rise, and storm surge. Returning White Beach to a natural barrier beach with protective dunes and a functional salt marsh would enhance coastal protection and also provide a more viable habitat for shellfish and fish, birds and other wildlife that typically inhabit barrier beaches and their surrounding environs.

Specifically, the feasibility study would examine or result in the following:

- Impact of removing the roadway and seawall along White Beach including:
 - Effect on existing water pipe and electrical utilities beneath the current roadway
 - Impact on resident access, fire truck and police access (if any)
 - Potential for parking at either end of the beach, adjacent to where the roadway would be removed, for public access to White Beach. Look at potential effects (e.g., erosion caused by adjacent hard structures, etc.).
 - ADA accessible walkways and possible stairways, using BMPs for barrier beaches
- Impact of removing hard revetment structures (large boulders) along the beach
- Evaluation of Alternatives and Selected Conceptual Plan:
 - what restoration would entail, e.g., additional sand, beach grass plantings, installation of sand-filled coir rolls, etc.
 - permits that would be required for the work (Wetlands, Water Quality, Chapter 91, etc.); engage federal and state agencies in preliminary reviews
- Assessment of culvert on Ocean Street at Black Beach

The deliverables resulting from the feasibility study would include an evaluation of the alternatives and recommendation for one or more conceptual plans as well as a written report, addressing the parameters outlined above.

The conceptual plans would be used as a basis for discussions with the public and for obtaining additional funding to create detailed designs, obtain required permits and ultimately restore White Beach as a naturally functioning barrier beach.

2. *Describe how the project meets the goals or achieves implementation of an existing climate plan (e.g., Climate Change Vulnerability Assessment, Municipal Vulnerability Preparedness Plan, Coastal Resilience Plan, Hazard Mitigation Plan). If your municipality does not have a climate plan, describe how this project will accelerate your community's resiliency to climate change.*

Both Black and White Beach (and Ocean Street) were identified as hazard areas in Manchester's Hazard Mitigation Plan (HMP), 2018. The HMP included a study of climate change impacts which was funded by a separate FEMA/MEMA grant, examining the effects of sea level rise, storm surge and increased precipitation on the Town for the years 2025, 2050 and 2100. In addition, Manchester also participated in the Municipal Vulnerability Preparedness program and is now certified as an MVP community. The resulting study identified Ocean Street as an area of concern.

Manchester's 2018 Master Plan recommends comparing the cost, impacts and sustainability of developing living shorelines in areas where they are feasible. The Plan also specifically calls for the Town to evaluate the long term viability of Ocean Street and other low lying coastal roads in light of rising sea level, and to identify retrofits including potential alternatives for access in the future.

3. *Describe how the project improves community or cross-jurisdictional climate resiliency.*

The resulting feasibility study is a necessary step to restore White Beach as functioning barrier beach which will provide inland protection from climate change impacts as well as public access for passive recreation.

In addition, the restoration of the barrier beach through the use of "living shoreline" techniques will provide an example to other coastal communities on the North Shore and elsewhere and also serve as a pilot for abandoning infrastructure (part of Ocean St.).

4. *Describe how the proposed project would address one or more of MAPC's eight Mini-Grant Program Priority Areas.*

This project addresses the following program priority areas:

- *"Nature-based solutions for climate resilience such as Green Infrastructure (GI), Low-Impact Development (LID), climate-smart parks, urban forestry, carbon trading, eco-roofs, and raingardens"*
This project is proposing using a nature-based solution to sea level rise, storm surge and more frequent and intense storms by restoring a barrier beach with a Living Shoreline, resulting in a more resilient and sustainable natural resource.
- *Synergies between climate adaptation and mitigation and other multiple benefits;*
Using a nature-based solution, especially one that restores a natural resource area, provides coastal protection in the face of climate change. In addition, the restoration of White Beach to a functioning barrier beach will protect other public interests as defined in the Mass WPA: protection of marine fisheries, wildlife habitat and land containing shellfish.
- *District-scale pilots that accelerate climate resiliency*
This project will act as a pilot and an example for other North Shore coastal communities for coastal resiliency and restoration. To our knowledge, no other community on the North Shore has proposed road abandonment and a full restoration of a barrier beach. The project would provide other communities with the details of the planning process, permitting and eventual implementation.

5. *How do you intend to involve key stakeholders or the public in the process, including vulnerable populations?*

The Town will announce the project in local newspapers, on the Town website and on social media. The resulting conceptual plans and report will be used to hold discussions with abutters to White and Black beaches as well as interested residents. Assuming the project moves forward, voter approval at an open town

meeting to abandon a portion of an existing town road will be required. Pre-town meeting presentations and information forums will be held prior to a town meeting vote.

6. *How will the knowledge, procurement materials, stakeholder engagement, and study or other project outputs be replicable, scalable, and/or transferable?*

The resulting study and conceptual plans would serve as a model of a Living Shoreline on the North Shore and serve as an example of a successful retreat of public infrastructure from coastal flooding.

7. *Who will comprise the project team? Describe the roles of each member of the team, including partners.*

- Gregory Federspiel, Town Administrator, will provide project oversight and direction
- Mary Reilly, Grants Administrator, will act as Project Manager and will assist with research, writing and editing the feasibility report
- Charles Dam, P.E., DPW Director, will provide support services to consultants where needed and advise the team on matters of public infrastructure and past issues with the roadway and retaining walls
- Barbara Warren, Executive Director, Salem Sound Coastwatch, will provide technical assistance with a focus on Living Shoreline techniques
- Kathryn Glenn, MA CZM North Shore Regional Coordinator, will provide technical support for coastal restoration methods
- The Town's Coastal Resilience Advisory Group (CRAG), formed in 2015, is comprised of municipal staff, non-profits and residents. The group has provided technical assistance and guidance for coastal resiliency projects including the 2018 FEMA Hazard Mitigation Plan and incorporation of climate change impacts into the plan; the Sawmill Brook Watershed studies resulting in proposed projects to alleviate future climate change impacts; involvement in a feasibility study for removing a tide gate and enlarging a culvert on Sawmill Brook; and becoming a Municipal Vulnerability and Planning Preparedness community. The Town is now in the process of planning for the removal of the tide gate, replacing and widening the culvert and restoring the "pond" area of Sawmill Brook. (Both Barbara Warren of Salem Sound Coastwatch and Kathryn Glenn of MA CZM are members of the CRAG.) The CRAG will act in an advisory role as needed.



Manchester Project Map

PROJECT TIMELINE AND BUDGET

The budget below contains costs for consultant work. In addition, the Town will contribute in-kind labor through the project management, administrative tasks, participation on the CRAG, editing and writing portions of the feasibility report.

3 - 4. Proposed Timeline and Budget

Date	Task	Responsible Party	Consultant Cost
1/14/19 – 1/31/19	- Finalize scope of work with MAPC - Select/hire consultant	Town	0
2/11/19	- Kick-off meeting with CRAG to discuss SOW; present and discuss project; make task assignments	Town; Consultants; CRAG	\$500.00
2/1/19 – 5/14/19	- Research, plans and report work – field and desktop evaluation and alternatives research - Administrative work	Town; Consultants	\$10,500.00
5/15/19 – 6/15/19	- Consultants submit first draft conceptual plan to Town – complete first round of edits with Town/CRAG	Town; Consultants; CRAG	\$4,750.00
5/15/19 – 6/15/19	- Consultants submit first draft feasibility report to Town – complete first round of edits with Town/CRAG	Town; Consultants; CRAG	
6/15/19	- Submit 6-month progress report to MAPC	Town	0
6/15/19 - 11/1/19	- Research, plans and report work—conceptual plans and permitting - Administrative work	Town; Consultants	\$10,000.00
11/1/19 – 11/15/19	- Circulate final draft feasibility report and final draft conceptual plan to CRAG; incorporate edits	Town; Consultants; CRAG	\$4,750.00
11/15/19 – 11/29/19	- Submit final draft feasibility report and plan to MAPC; incorporate edits - Submit final progress report to MAPC	Town; Consultants	
12/9/19	- Consultants present final report and conceptual plans to Town (meeting)	Consultants	\$2,000.00
TOTAL			\$32,500.00

CRAG = Manchester Coastal Resilience Advisory Group