

Application for Funding Under the Community Preservation Act

Project Title:***Application Date***

A Strategy to Acquire, Create, and Preserve Open Space for Salt Marshes

10/25/2022

Project Description:*

The Energy and Climate Action Committee (ECAC) of the Town of Chatham requests \$120,000 for the first year of its effort to acquire open-space property to facilitate salt-marsh migration in response to predicted sea-level rise.

Salt marshes are a major natural resource of Chatham [1]. They provide much of the scenic charm of the town. They protect surrounding properties from the worst threats of storm surge and provide a wealth of ecological services to the flora, fauna, sea life, and water quality [2]. Significant efforts are already underway to preserve some of Chatham's major salt marshes from current conditions, such as Muddy Creek, Jackknife Bay, Frost Fish Creek and Cackle Cove [3, 4]. (See Appendix G for references cited in [1].)

However, many marshes will be at risk from increased flooding in the coming decades and it is prudent to foresee that and prepare for it. The current proposed project takes initial steps in that direction.

Salt marshes are threatened by escalating climate change, particularly sea-level rise. Recent studies show that the waters around Chatham are warming and rising faster than in other parts of the world and faster than previously predicted [5]. A new predictive model of local sea-level rise has recently been developed [6]. This Massachusetts Coastal Flood Risk Model projects that sea levels will rise 2.57 feet by 2050, and close to 8 feet by the start of the next century along the Cape [7].

Salt marshes have two natural defenses to sea-level rise, assuming the marsh is healthy (filled with native salt-marsh grasses) and unrestricted. One is to gradually rise in place by building up the soil level. The other is to migrate to slightly higher land nearby via an available migration path. The alternative is for the marsh to drown, merge into the open sea, and lose much of its ecological value [8].

This project will systematically overview Chatham's system of salt marshes to project likely futures. In particular, the project will use existing GIS data and sea-level-rise models to project sea-level rise at a fine grain around each marsh. It will then try to predict if the marsh can withstand that sea-level rise either by the marsh raising its floor or by migration to a nearby area through a migration path. In cases of potential migration, the project will look for possible barriers and issues, such as tidal restrictions or private ownership of land in the migration area and connecting pathways. Where there are such barriers and restrictions, the project will target possible future acquisition or conservation restrictions for the parcels or partial parcels in question. The currently proposed project may investigate the potential acquisition of land, but actual acquisition would be carried out in subsequent projects.

This project is an initial step in a larger effort to preserve Chatham's salt marshes as part of the Energy and Climate Action Committee's charge to enhance the Town's long-range resiliency in the face of climate change. The work on salt marshes is being conducted in collaboration with the Town's Natural Resources and Community Development Departments and several other entities, some of whom are included in the list of collaborators in Appendix F.

Specific Objectives:

1. To map the area around the salt marshes in Chatham using the Massachusetts Coast Flood Risk Model (MC-FRM) [6] to determine projected probability and depth of flooding – both currently and in the future (i.e., 2030, 2050 and 2070). Maps will include Town parcel ownership information and topological features.
2. To assess and rank priority of the marshes in terms of ecological health, sea-level-rise threat and migration potential by reviewing previous marsh surveys [e.g., 9, 10, 11, 12] and collecting data for a rapid assessment protocol [such as 13, 14].
3. To identify potential upland migration areas and associated migration paths through careful analysis of the maps and other data.
4. To target parcels or partial parcels for open-space acquisition to facilitate future salt-marsh migration.
5. To prepare for the acquisition of targeted parcels for open-space donation, acquisition or conservation restriction (CR). This includes discussion with parcel owners, surveying, possible subdivision of parcels and arrangements for future acquisition.
6. To plan for activities in future years with subsequent funding: including further research of the salt marshes, preparation of management plans for the open space and actual acquisition of parcels to be purchased.

Organization Name:*

Energy and Climate Action Committee of the Town of Chatham

Address:*

Chatham, MA 02633

Website:

<https://www.chatham-ma.gov/348/Energy-and-Climate-Action-Committee>, <https://www.chatham-ma.gov/QuickLinks.aspx?CID=75>

Federal Tax ID Number (if non-profit):

NA

Names of Governing Board, Trustees, Directors or Members:*

Robert Wirtshafter (Chair), Gerry Stahl, Katherine McClellan, John Scott, Brian Miner, Rachel Derrane, Sarah Griscom, Mike Schell (Select Board Liaison), Terry Whalen (Staff Liaison).

Relevant Town Committee (if applicable):

Energy and Climate Action Committee of the Town of Chatham

Which of the following goals of the CPA does this project address?*

- The acquisition, creation and preservation of Open Space.
- The acquisition, preservation, rehabilitation and restoration of Historic Resources.
- The creation, preservation and support of Community Housing for individuals and families at 100% or below area median income.
- The acquisition, creation, rehabilitation and preservation of Recreational Resources.
- Rehabilitation, or restoration of such open space, historic buildings, or community housing that is acquired or created with CPA funds.

How does this project impact Chatham's citizens and address a current need?

This project will help the Town preserve healthy salt marshes in Chatham, including providing for their migration in response to sea-level rise. This will help to protect properties in Chatham from storm surge, flooding and increasingly severe storms. It will also provide increased sequestration of green-house gases (e.g., CO2 and methane) and multiple ecological services for local flora, fauna and sea life.

What is the estimated or target number of people this project will benefit/affect?

This project will benefit the Town of Chatham as a whole, particularly the many people who live near salt marshes. It will also help preserve the scenic beauty of the town for residents and visitors.

How will you measure the success of this project?

1. The project will be successful if it produces detailed maps of Chatham, displaying MC-FRM projections for future decades.
2. The project will be successful if it identifies and maps the major salt marshes of Chatham.
3. The project will be successful to the extent that it determines which salt marshes have reasonable potential for upland migration in response to sea-level rise and identifies associated migration paths.
4. The project will be successful to the extent that it identifies target parcels or subdivided parcels for potential future acquisition, donation or CR.
5. The project will be successful to the extent that it contacts owners of targeted parcels and prepares for acquisition of some of those parcels.
6. The project will be successful to the extent that it explores and applies for possible funding to continue work to preserve Chatham's salt marshes in future years. In addition to funds to purchase targeted parcels, this would include support for further research of the salt marshes and preparation of management plans for the open space.

Projected Action Plan and Time line, including anticipated completion date. List steps needed to complete the project

1. Summer 2023: Using existing Town GIS layers and maps created by the MC-FRM Model, the project will create projected flooding layers for Chatham for 2030 and 2050 to determine probability and depth of flooding projected. This will identify:
 1. Parcels near salt marshes in Chatham likely to be affected by sea-level rise and storm surge in the coming decades – e.g., 2030, 2050 and 2070. (See Appendix A. Description of MC-FRM and Appendix B. Figure 1.)
 2. Sea-level rise effect on existing salt marshes.
 3. Potential up-land migration areas for affected salt marshes and paths to those areas.
 4. Parcels or partial parcels to target for open-space acquisition to facilitate future salt-marsh migration and removal of tidal restrictions.
2. Summer 2023: Assess and rank priority marshes in terms of threats to ecological health, risks of sea-level rise, and potentials for migration. Assessment of all the major salt marshes in Chatham using a multi-dimensional comparison protocol based on initial study, both on-site and using maps. This assessment will rank the priority marshes in terms of sea-level threat and migration potential.
3. Fall 2023: Identify potential upland migration areas and associated migration paths. (See Appendix C. Figure 2.)
4. Fall 2023: Target parcels or partial parcels for open-space acquisition to facilitate future salt-marsh migration and removal of tidal restrictions. (See Appendix D. Figure 3.)
5. Winter 2023: Prepare for the acquisition of targeted parcels or subdivisions of parcels for open-space donation, acquisition of conservation restriction (CR). (See Appendix E. Figure 4.)
6. Winter 2023: Plan for activities in future years with subsequent funding. This includes future CPA grants for specific properties, Chatham Land Bank purchases of specific properties, donations to or purchases of properties by the Chatham Conservation Foundation, and other state and federal grant opportunities.

Total amount of the project:

\$120,000 (see Appendix H for full budget)

Other revenue sources including private/public/in-kind:

This project will be conducted by the Energy and Climate Action Committee of the Town of Chatham and Chatham Town staff. Committee members will provide in-kind services helping to conduct all phases of the project and reviewing findings. In addition, Town staff will supervise the project and advise and collaborate on specific activities. Other revenue sources will be investigated for purchase costs of properties and for extending project activities in subsequent years.

Financial sustainability to secure project after the grant?

Objective #6 is focused on project sustainability to continue salt-marsh preservation efforts after the 2023 grant. Some of the continuing activity will be assumed by Town staff, as will be specified in salt-marsh Management Plans. Purchasing of targeted parcels can be undertaken in the future by organizations such as by CPA grants for specific properties, by Chatham Land Bank purchases of specific properties, and by donations to or purchases of properties by the Chatham Conservation Foundation. In addition, several state and federal grant opportunities are now available to support activities like salt-marsh preservation for purposes of green-house-gas sequestration, flood mitigation and town resiliency.

Annual costs/expenditures once the project is operational, if any:

There are not any necessary costs after the grant period. However, it is likely that a successful project will lead to subsequent projects that extend the work of this project.

Potential revenue from project on an annual basis, if any:

There are no projected revenues from the project, although it may lower costs to residents from storms and sea-level rise.

What entity will collect and control future revenue?

NA. All project finances will be controlled by Town staff and procedures.

What is the basis for your budget? What are the sources of information you used?

Most of the project tasks will be conducted by consultants like the Woods Hole Group for mapping or the Association for the Preservation of Cape Cod for salt-marsh evaluation. Experience contracting for services from such consultants at Frost Fish Creek and Cockle Cove/Bucks Creek suggests that the requested budget will suffice for substantial achievement of the project tasks. Experience with parcel surveying, subdividing and CRs suggests that a number of parcels can be prepared for acquisition with the proposed budget.

Are there any legal ramifications/impediments to this project?

Much of the land around salt marshes in Chatham is currently owned by the Chatham Conservation Foundation; they have agreed to collaborate with the Energy and Climate Action Committee in studying and preserving salt marshes in Chatham.

Is the project compatible with the Town's Comprehensive Plan?

The Energy and Climate Action Committee is working closely with the Town's staff, Select Board and other relevant Town committees to ensure that the project is compatible with the Town's Comprehensive Plan, its goals and its procedures.

Electronic Signature Agreement

By checking the "I agree" box below, you agree and acknowledge that 1) your application will not be signed in the sense of a traditional paper document, 2) by signing in this alternate manner, you authorize your electronic signature to be valid and binding upon you to the same force and effect as a handwritten signature, and 3) you may still be required to provide a traditional signature at a later date.

I agree.

Electronic Signature

Stahl