**THE COMMONWEALTH OF MASSACHUSETTS**
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
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October 15, 2021

Margaret Allen
Coastal Management and Digital Coast Fellowship Coordinator
2234 South Hobson Avenue
Charleston, SC 20405

RE: Massachusetts Proposal for 2022-2024 Coastal Management Fellowship

Dear Ms. Allen,

On behalf of the Massachusetts Office of Coastal Zone Management (CZM), I am very pleased to provide this proposal for the 2022-2024 NOAA Coastal Management Fellowship. CZM's proposal entitled "Investing in Shoreline Restoration for More Resilient Environmental Justice Communities" addresses the "Healthy Coastal Ecosystems" and "Resilient Coastal Communities" strategic focus areas. The fellow would lead our engagement with Environmental Justice communities for and increase the capacity of our StormSmart Coasts Program to expand implementation of nature-based shoreline restoration projects to increase coastal resilience.

Thank you for your consideration. We are eager to work with another talented fellow. Please contact me if you or the selection panel have any questions.

Sincerely,

Lisa Berry Engler
Director

# MA CZM Coastal Management Fellowship Project Proposal

## *Investing in Shoreline Restoration for More Resilient Environmental Justice Communities*

**Background and Introduction**

The ability of shoreline environments to buffer coastal storms and sea level rise has been impacted by development. As a result, coastal communities in Massachusetts are increasingly vulnerable to erosion and flooding and are losing recreational opportunities and access to the shoreline. The Massachusetts Office of Coastal Zone Management (CZM) has been promoting the protection of residents, businesses, and public infrastructure with healthy, functioning coastal resources—particularly beaches, dunes, coastal banks, and fringing salt marsh systems. Restoration and enhancement of natural shoreline environments can address erosion and flooding while providing recreational opportunities, wildlife benefits, and other ecosystem services.

In 2016, Governor Baker issued Executive Order 569 to establish an integrated climate change strategy for the Commonwealth. Among Governor Baker's mitigation and adaptation directives is a call for "…strategies that conserve and sustainably employ the natural resources of the Commonwealth to enhance climate adaptation, build resilience and mitigate climate change." The 2018 State Hazard Mitigation and Climate Adaptation Plan fulfilled the Governor's requirements for a climate adaptation plan and underscores the importance of nature-based solutions for hazard mitigation and climate adaptation. CZM's Coastal Resilience Grant Program, which launched in 2014, is highlighted for providing financial and technical support for nature-based projects.

A need exists to expand implementation of nature-based shoreline restoration projects to increase coastal resilience in Massachusetts. A Coastal Management Fellow will have the opportunity to learn and build on best practices generated through CZM's Coastal Resilience Grant Program, a NOAA-funded coastal resilience effort to implement and promote living shoreline projects across New England, and other initiatives like the Northeast Regional Ocean Council's Living Shorelines Group to help address this need. In the last five years, CZM has funded design, permitting, construction, and monitoring of coastal dune, fringing salt marsh, and cobble berm projects in the communities of Duxbury, Kingston, Salem, and Winthrop (Figure 1). CZM and peers at other state coastal programs in the region, The Nature Conservancy, and the Northeast Regional Ocean Council developed a state-of-the-practice report and workshops on living shorelines. The regional team implemented a range of living shoreline projects to address coastal erosion and flooding and is continuing to monitor these projects to refine approaches and communicate benefits. The fellow will increase the capacity of CZM's StormSmart Coasts Program to proactively work with coastal communities on balancing competing uses along the shoreline and enhancing adaptation.

**Figure 1.** Two former NOAA Coastal Management Fellows are happy about the restoration of the Coughlin Park shoreline and management of erosion in Winthrop.

**Diversity, Equity, Inclusion, and Justice**

CZM is proactively working to increase the success of Environmental Justice (EJ) communities with the Coastal Resilience Grant Program. This effort aligns with the June 2021 release of an updated Environmental Justice Policy for the Massachusetts Executive Office of Energy and Environmental Affairs (EEA). EEA agencies including CZM have been directed to develop their own EJ strategies. The Coastal Resilience Grant Program is one of CZM's focus areas. The goal is to increase the number of proposals from EJ communities and strengthen selection criteria for proposals that are led by EJ representatives and directly benefit EJ neighborhoods. Coastal communities from Salem to Quincy have many neighborhoods with minority, low income, and language isolation populations (Figure 2). Within this area, the communities of Lynn, Saugus, and Revere have not been active in the Coastal Resilience Grant Program; however, opportunities exist in these communities to improve shoreline management using restoration approaches. CZM would like to better engage with these communities and promote access to and fair distribution of grant funding as well as technical assistance to increase coastal resilience. More EJ neighborhoods should be involved in the development of shoreline restoration projects and be able to enjoy the many environmental benefits of these projects that address erosion and flooding.

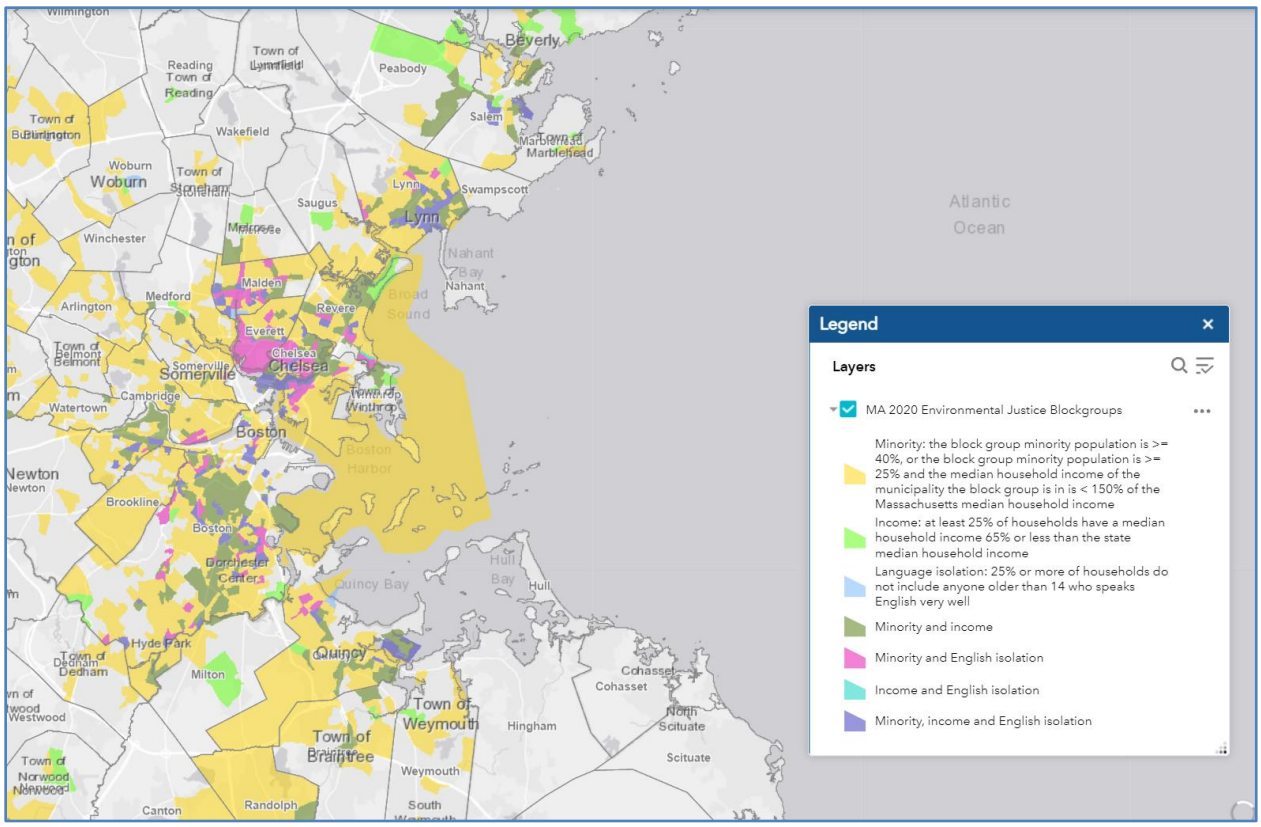


**Figure 2.** Environmental Justice populations across the greater Boston area.

**Goals and Objectives**

The goal of this Coastal Management Fellowship project is to meaningfully engage with three identified Environmental Justice communities, increase awareness of shoreline restoration opportunities and benefits in urban environments, and support the application of at least one project for funding through CZM's Coastal Resilience Grant Program. In the long term, CZM would like to see additional proposals from EJ communities and support implementation of successful projects. The fellow will be building on technical information and best practices developed since the launch of the grant program in 2014.

> **Outcome:** *Municipal staff and residents in EJ communities have a greater understanding of nature-based shoreline restoration approaches, opportunities, and benefits.*
>
> **Objective:** *By spring 2023, at least one EJ community will be prepared to submit a proposal to CZM's Coastal Resilience Grant Program to advance design and permitting of a shoreline restoration project through June 2024.*
>
> **Long-term Outcome:** *Erosion and flooding in EJ communities will be better managed through the restoration of shorelines using compatible sediment and native vegetation.*

**Milestones and Outcomes**


**Project Description**

The specific tasks of this project are flexible and will be based on the skills and interests of the fellow as well as the needs of the communities of Lynn, Saugus, and Revere. The StormSmart team will refine the list of tasks below with the fellow and communities. The list serves as a general guide to the overall process to ensure suitable sites for shoreline restoration projects are identified and supported.

- Engage with municipal staff (e.g., planning, conservation, parks, engineering, and public works departments), Conservation Commissions, neighborhood groups, and the Saugus River Watershed Council on opportunities for shoreline restoration (Figure 3).
- Conduct desktop assessment of suitable shoreline restoration sites using CZM's shoreline change and public access data, Massachusetts Coast Flood Risk Model outputs, and other available data and reports. Evaluate locations using the Resilient Massachusetts Action Team's Climate Resilience Design Standards Tool.
- Conduct field assessments of site conditions.

- Plan site walks with key community stakeholders in EJ neighborhoods to identify priorities for shoreline restoration. Recruit volunteers to record observations of flooding and erosion using the MyCoast tool.
- Identify community information needs for proposal development and assist with compilation of information including in-kind match to meet the 25% requirement of the grant program.
- Conduct broad community outreach on shoreline restoration benefits, approaches, and options with translation services and any other necessary accommodations.
- Work with communities to post outreach materials on their webpages.
- Work with StormSmart team to review and refine Coastal Resilience Grant Program EJ criteria for selection of proposals.
- Assist with the review of proposals for FY24 and FY25 grant funding.
- Provide ongoing technical assistance on funded shoreline restoration projects. If EJ communities do not submit proposals for FY24 support for design and permitting of shoreline restoration projects, identify barriers and possible options for the FY25 grant opportunity. Identify additional EJ communities to support in year two of the fellowship if necessary.
- Develop lessons learned document and presentation for CZM staff to better engage with and support EJ communities.

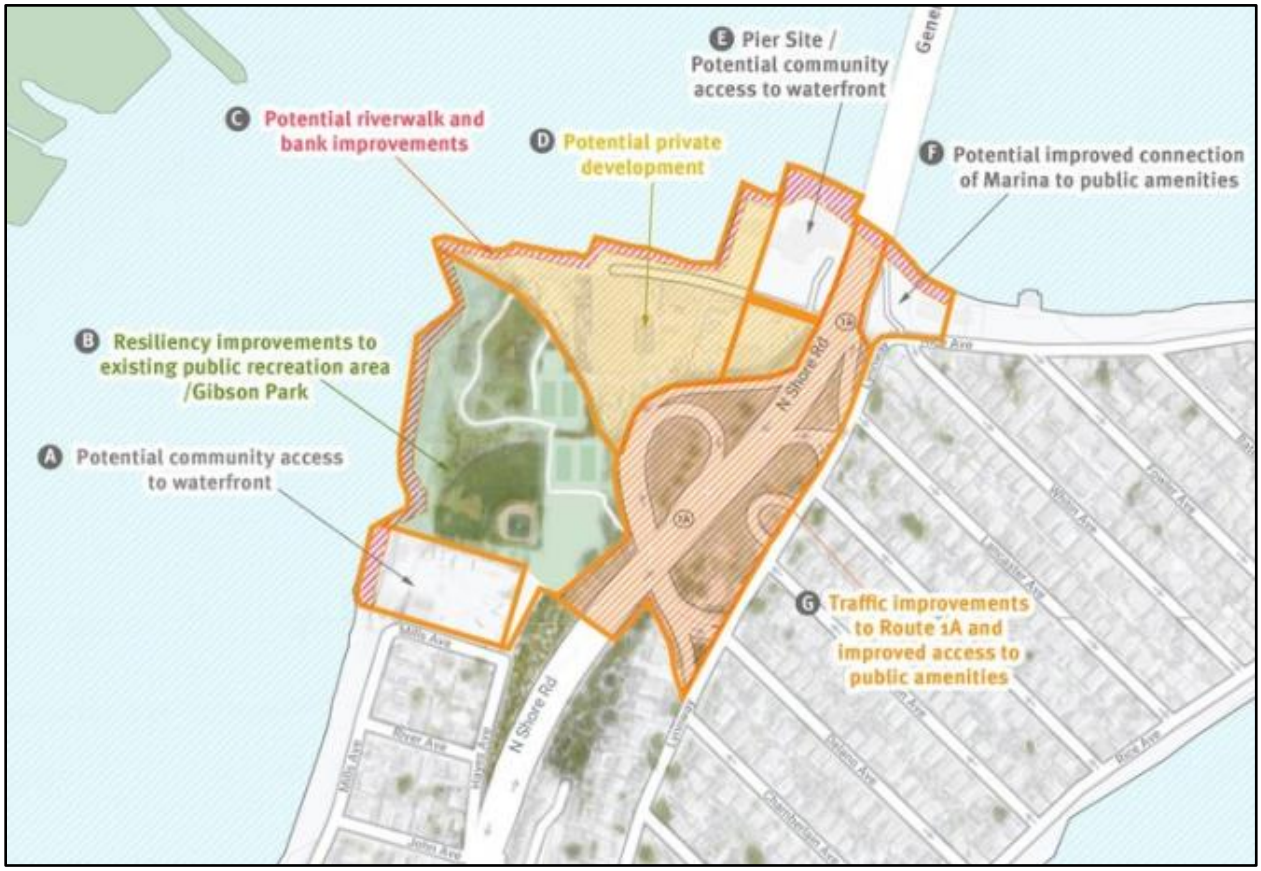


**Figure 3.** The City of Revere has identified flooding at Gibson Park as a concern and possible focus for coastal resilience improvements. Gibson Park is located within a low-income neighborhood.

**Fellow Mentoring**

CZM will serve as the host organization for the Coastal Management Fellow. The fellow will work primarily with CZM's StormSmart Coasts Program—a small team of coastal geologists and coastal resilience specialists who provide information, strategies, and tools to help communities address the challenges of erosion, flooding, and sea level rise. All four members of the StormSmart team have been involved with the Coastal Management Fellowship Program either as former fellows, mentors, or both. The team highly values the fellowship opportunity and will ensure the fellow is involved in a variety of coastal shoreline and floodplain management opportunities for educational purposes and professional development.

The mentor for the fellow will be Julia Knisel, CZM's Coastal Shoreline and Floodplain Manager. Julia co-chairs the Northeast Regional Ocean Council's Coastal Hazards Resilience Committee, which coordinates activities related to coastal hazards resilience and climate adaptation in New England. She serves on the Coastal Hazards Planning and Adaptation Work Group of the Coastal States Organization. She also provides her expertise on the Scientific Advisory Committee of the Stone Living Lab to inform research on nature-based approaches to climate adaptation, coastal resilience, and ecological restoration. Prior to joining CZM in 2006, Julia worked for the U.S. Geological Survey's Coastal and Marine Geology Program (2004-2006) and was a Coastal Management Fellow in North Carolina (2002-2004). Over the last 15 years, Julia has been directly involved in three fellow projects with the StormSmart team. Julia's experience as a former fellow and mentor (2013-2015) gives her unique insight and ability to ensure a successful fellowship experience. In her role as manager of the StormSmart team, Julia will be the point of contact for NOAA and provide mentoring and day-to-day supervision of the fellow who will be fully integrated into this well established and productive team.

CZM has benefited greatly from Coastal Management Fellows in the past and has a strong commitment to, and proven track record of, providing fellows with a professional work experience and environment. CZM fully integrates fellows into the agency. Throughout the two-year experience, the fellow will be a member of the StormSmart team and work with CZM Regional Coordinators and the Coastal Habitat Program. The fellow will also have opportunities to collaborate with the EEA Climate Team. The fellow will attend monthly CZM staff meetings and participate in training opportunities and staff retreats. CZM promotes career development and advancement of fellows including full-time employment opportunities when resources are available. CZM looks forward to continued success for both our agency and the 2022-2024 fellow.

**Cost-Share Description**

CZM will cover the cash match for the fellow through state capital funding. The $15,000 match requirement will come from Capital Investment Plan item EO50 (Critical Coastal Infrastructure and Resilience Grants). CZM will ensure that the fellow receives all necessary support to have a successful fellowship experience and complete the project.

**Office Environment**

Since the start of the pandemic in March 2020, CZM has supported the 78 coastal communities of the Commonwealth while teleworking. Staff have been productive and found collaboration with municipal officials, residents, and other partners to be efficient and effective using video conferencing. Field visits have been conducted in person when necessary. Throughout the pandemic, EEA has been developing policies, tools (e.g., Microsoft Teams and SharePoint), and practices that will support the Executive Branch's adoption of a hybrid work model—a mix of telework and in-office work.

By spring 2022, CZM will be moving from 251 Causeway St. to 100 Cambridge St. in downtown Boston. CZM will have a reduced office footprint, which will support about half of CZM's staff at any time using shared seating arrangements. The StormSmart team and other staff will coordinate schedules with the fellow to maximize in-office time for orientation, training, brainstorming, building of relationships, and other support. CZM will provide the fellow with a standard laptop bundle including a mouse and monitor, general office supplies, and field equipment. If any accommodation is needed, CZM will identify resources to meet the need. Between office visits, the mentor and fellow will maintain close communication via email, phone, and video conferencing to ensure telework time is productive. Remote and in-person networking opportunities including regional meetings and conferences will also be identified and fully supported. Overall, CZM staff and the fellow will benefit from upgrades in the office environment and be able to maintain positive aspects of flexible schedules and teleworking including reduced commuting time.

**Project Partners**

CZM maintains strong partnerships across coastal communities, nonprofit organizations, consulting firms, academia, and other government agencies. CZM's five regional coordinators have long-standing relationships with coastal communities and provide technical assistance, coordinate local and regional initiatives, and serve as liaisons between municipalities and state and federal programs. The communities of Revere, Saugus, and Lynn are in the North Shore Region. Engagement with the planning, conservation, and engineering departments of these three communities is critical to the success of the project. The StormSmart team has a network of coastal engineering and bioengineering consultants who often assist with shoreline restoration projects through grant funding and pro-bono services. In addition, CZM and MIT Sea Grant are working to strengthen our partnership and the fellow project is an excellent opportunity to collaborate with MIT Sea Grant's coastal ecologist on community engagement and shoreline assessments. The mentor will ensure the fellow connects with relevant partners when appropriate throughout the project.

**Strategic Focus Areas**

This fellow project will build partnerships and advance local and state management efforts focused on *Healthy Coastal Ecosystems* and *Resilient Coastal Communities*. Restoration or enhancement of beaches, dunes, coastal banks, and fringing salt marshes increases coastal habitat value, can improve coastal water quality, and will reduce impacts from coastal storms and sea level rise over time. Outreach opportunities focused on communication of shoreline restoration best practices will help municipal

officials, residents, and other stakeholders in EJ communities understand living shorelines and select effective approaches to manage erosion and flooding and support coastal habitats and ecosystems. This proposed project represents an excellent opportunity for a fellow to strengthen collaboration with EJ communities, conduct shoreline assessments and suitability analyses for shoreline restoration, and summarize coastal hazards information to support Coastal Resilience Grant Program proposals and implementation of projects. The fellow will also be provided other professional development opportunities to continue to grow and become a leader in the field of coastal management.