

Final Evaluation Findings

Massachusetts Coastal Management Program

April 2007 to June 2014

Published December 2014



Office for Coastal Management
National Ocean Service
National Oceanic and Atmospheric Administration
United States Department of Commerce

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Executive Summary

The Coastal Zone Management Act requires the National Oceanic and Atmospheric Administration's Office for Coastal Management to conduct periodic evaluations of the performance of states and territories with federally approved coastal management programs. This evaluation examined the operation and management of the Massachusetts Coastal Zone Management (MA CZM) Program by the Executive Office of Energy and Environmental Affairs (EEA), the designated lead agency, for the period from April 2007 to June 2014. The evaluation focused on three target areas: StormSmart Coasts and community resilience, community-based technical assistance and services, and ocean planning and management.

The findings in this evaluation document will be considered by the NOAA Office for Coastal Management in making future financial award decisions concerning the coastal program. The evaluation came to these conclusions:

Accomplishment: MA CZM has successfully supported local communities' hazard preparedness using a multi-pronged approach. This approach includes technical assistance and pilot community projects made available through the development of the StormSmart Coasts Program and its expansion from a small pilot program to a national network with over 1,500 members (StormSmart Communities).

Accomplishment: All coastal waters in Massachusetts were designated as No Discharge Areas, providing consistent regulations for marine vessels and improved water quality management. MA CZM achieved this designation through coordination and collaboration with the U.S. Environmental Protection Agency (EPA), extensive stakeholder engagement, and sustained technical assistance efforts.

Accomplishment: Massachusetts has become a leader in the area of marine spatial planning, and through its effective process and credible relationships, has both strengthened the Northeast regional ocean planning initiative and allowed the Massachusetts Ocean Management Plan to serve as a model for other jurisdictions. MA CZM led the development of the Ocean Management Plan and its release in December 2009—within a year of the passing of the Massachusetts Oceans Act (2008). The plan, developed with extensive stakeholder input, recognizes marine uses critical to the economy and well-being of the commonwealth, while maintaining a balance between natural resources and infrastructure.

The evaluation team also made three recommendations:

Recommendation: The NOAA Office for Coastal Management urges MA CZM to continue its coastal hazards and climate change and adaptation efforts at the local, regional, and national levels. The Office for Coastal Management also encourages MA CZM to continue to seek additional support for these efforts, and for the administrative and technical assistance

required for the state-funded resilience grants, through the addition of staff, partnerships, and additional funding sources.

Recommendation: The NOAA Office for Coastal Management urges MA CZM to continue collaborative work with state and federal agencies and other appropriate entities to develop a long-term plan for maintaining the No Discharge Area (NDA) program, including pumpout stations, to ensure that local boaters comply with the NDA designation.

Recommendation: The NOAA Office for Coastal Management encourages MA CZM to continue using ecosystem-based approaches to ocean management, and to continue to include climate change and adaptation data in subsequent plan updates and revisions.

This evaluation concludes that EEA is satisfactorily implementing and enforcing its federally approved coastal program, adhering to the terms of the federal financial assistance awards, and addressing the coastal management needs identified in section 303(2)(A) through (K) of the Coastal Zone Management Act.

Program Review Procedures

The NOAA Office for Coastal Management evaluated the Massachusetts Coastal Management Program in fiscal year 2014. The evaluation team consisted of Sacheen Tavares-Leighton, evaluation team lead; Carrie Hall, evaluator; Betsy Nicholson, northeast lead; Rebecca Newhall, site liaison; and Michelle Jespersen, federal programs manager, California Coastal Commission. The support of the coastal program staff was crucial in conducting the evaluation, and their support is most gratefully acknowledged.

NOAA sent a notification of the scheduled evaluation to the secretary of Energy and Environmental Affairs, published a notice of “Intent to Evaluate” in the *Federal Register* on April 17, 2014, and notified members of Massachusetts’ congressional delegation. The coastal program posted a notice of the public meeting and opportunity to comment in the *Boston Globe* on April 16, 2014.

The evaluation process included a review of relevant documents, a survey of stakeholders, the selection of three target areas, presentations by staff members about the target areas, and focus group discussions with stakeholders and program staff members about the target areas. In addition, a public meeting was held on Thursday, June 5, 2014, at 4:30 p.m. at the Executive Office of Energy and Environmental Affairs, 2nd Floor Conference Room D, 100 Cambridge Street, Boston 02114, to provide an opportunity for members of the public to express their opinions about the implementation of the coastal program. Stakeholders and members of the public were given the opportunity to provide written comments via email or U.S. mail through Friday, June 13, 2014. The summarized comments and the NOAA Office for Coastal Management’s response are in Appendix A. The Office for Coastal Management then developed

draft evaluation findings, which were provided to the coastal program for review, and the coastal program's comments were considered in drafting the final evaluation findings.

Final evaluation findings for all coastal programs highlight the coastal program's accomplishments in the target areas and include recommendations which are of two types:

Necessary Actions address programmatic requirements of the implementing regulations of the Coastal Zone Management Act (CZMA) and of the state coastal program approved by NOAA. These must be carried out by the dates specified. Failure to address necessary actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in CZMA §312(c).

Recommendations are actions that the office believes would improve the program, but which are not mandatory. The state is expected to have considered the recommendations by the time of the next evaluation or by the dates specified.

Evaluation Findings

The Massachusetts Coastal Zone Management (MA CZM) Program is a multi-dimensional program that is a regional and national leader in climate change adaptation and in ocean planning and management. The program has strong relationships within the Executive Office of Energy and Environmental Affairs (EEA) and across the entire administration, as well as across New England. This results in strong, collaborative working relationships with state agencies and departments, regional organizations and local governments, and has built community support across stakeholder sectors for many program initiatives, including ocean planning and the creation of no-discharge areas. An extensive, thoughtful stakeholder engagement process has helped MA CZM build and maintain its respectful relationship with communities, nonprofits, and industry. MA CZM is exemplary at translating current science into a usable format for decision makers, and at providing much-needed technical assistance. As such, the program is the primary and preferred resource for agencies, municipalities, and organizations, resulting in increasing demand on program resources (funding and staff). To meet this demand, the program will need to increase its staffing level. Since funding for the annual cooperative agreement has not been increasing, the program is encouraged to continue to apply for additional competitive funds that NOAA or other agencies may have in the future, as well as explore additional partnerships and funding sources.

StormSmart Coasts and Community Resilience

StormSmart Coasts

The StormSmart Coasts program was developed to promote effective management of coastal landforms and to assist communities and people working and living on the coast—by providing information, strategies, and tools to address challenges arising from erosion, flooding, storms, sea level rise, and other climate change impacts. Launched in 2008 after a recommendation from the Coastal Hazards Commission Report (2007), StormSmart Coasts began as a pilot hazards communication program, providing information, strategies, and tools for identifying and mapping coastal hazards, coordinating emergency management services, and providing resilience standards, infrastructure, education, and outreach. Very quickly, StormSmart Coasts expanded from a small pilot program to a national network with over 1,500 members—StormSmart Communities—that has been adopted by states around the country.

In 2009, StormSmart Communities started five pilot projects, working directly with the communities of Boston, Hull, Nantucket, Oak Bluffs, and a team from Duxbury, Marshfield, and Scituate to implement StormSmart tools and techniques. Ranging from coastal inundation mapping and regulatory review to coastal hazards awareness, these pilot projects resulted in the development of tools and case studies that could be used by other communities. The new tools and products included sea level rise maps, freeboard incentive, storm surge visualization tool, multi-hazard mitigation plan (draft), revised local regulations and laws, and workshops and outreach materials aimed at improving coastal floodplain development trends.

EXAMPLE: Nantucket Natural Hazards Planning

The StormSmart Communities pilot project to develop a multi-hazard mitigation plan for Falmouth included the development of recommendations for coastal zone issues across the island of Nantucket with respect to coastal property. MA CZM worked with the natural resources, planning, and fire departments, as well as other town boards and departments, to help identify coastal hazards and provide lessons learned and best practices on managing erosion, linking this information to the existing infrastructure. MA CZM worked with these entities to hold public meetings in which over 250 citizens helped identify hotspots that would require additional attention from the municipality, and developed discrete and actionable recommendations which addressed 80 percent of the of the action items.

Through StormSmart Communities, MA CZM has been able to successfully support local communities' hazard preparedness through a multi-pronged approach that includes technical assistance and pilot community projects. Working hand-in-hand with these communities has led not only to successful case studies, but also to the communities' trust and buy-in. As the pilot projects come to a close, MA CZM continues to maintain relationships with local officials through technical assistance, community workshops, and help in pursuing grants that will assist in addressing recommendations. The evaluation team encourages MA CZM to continue this practice. The commonwealth has focused on climate adaptation and mitigation, providing funds for two new resilience grants: (1) Green Infrastructure for Coastal Resilience projects (\$1.3 million) and (2) Coastal Community Resilience projects (\$1 million). MA CZM will administer these grants through the StormSmart Coasts program.

Another initiative of the StormSmart Coasts program is StormSmart Tools, which help property owners and communities assess vulnerability to storm waves and flooding. Through this initiative, MA CZM has assembled technical tools and information related to erosion rates, floodplain maps and flood insurance, storm surge and coastal inundation, sea level rise, and storm tracking. Among these tools are the Shoreline Change Viewer, Coastal Structures Inventory, Storm Reporter, Coastal Inundation Maps (Scituate), and StormSmart Property Fact Sheets. These tools were recommended by the Coastal Hazards Commission Report (2007), or they arose from community needs discerned by MA CZM. The tools have enabled communities to better understand their vulnerabilities and plan accordingly. StormSmart Tools also encourage collaborative relationships across agencies and communities, which serve to strengthen communities' approach to coastal hazards.

EXAMPLE: StormReporter

Developed in 2009 by MA CZM through StormSmart Coasts and the National Weather Service (NWS), StormReporter is an online and mobile tool that allows state and local officials, as well as citizens, to document almost-real-time coastal storm damage information for use by decision makers and emergency management personnel. During storm events, an interagency team reviews standardized field data sheets that are completed after visual assessment. This information is provided to the NWS, Federal Emergency Management Agency (FEMA), Massachusetts Emergency Management Agency (MEMA), and other agencies that use it to update information in almost-real time; e.g., NWS uses it to help refine forecasts. To increase

local participation, a user's guide and mapping tool have been added, and training on the tool is also available. Through support from the Northeast Regional Ocean Council (NROC), the StormReporter has been expanded across New England and will provide data that in the long term will support local permitting and planning decisions.

Because all planning in Massachusetts is localized and StormSmart Coasts has become the pillar for FEMA's community rating system, the evaluation team encourages MA CZM to continue updating and developing tools that enable local communities to better understand hazards and risks, as well as plan for and implement climate and hazards adaptation measures. MA CZM should continue to partner with NWS, FEMA, and MEMA for preparing for and responding to hazards.

Community Resilience

In focusing on sea level rise and coastal storm impacts resulting from climate change, MA CZM excels at translation of science into management actions and best practices for communities. This is facilitated by the presence of regional coordinators and provision of more sustained technical assistance through incentives and grants. Through technical assistance, MA CZM has assisted eight municipalities in completing climate change adaptation projects during the review period (Metric 2). Additionally, MA CZM has offered educational activities and training events related to coastal hazards during the evaluation period, reaching a combined 3,790 individuals, including regional, state, and local decision makers, state and federal agency staff members, floodplain and emergency managers, lawyers, journalists, and citizens, among other stakeholders.

EXAMPLE: Sea Level Rise Guidance Document

Released in 2014, "Sea Level Rise: Understanding and Applying Trends and Future Scenarios for Analysis and Planning" was developed with assistance from the Army Corps of Engineers (ACOE), National Geodetic Survey, and University of New Hampshire with the goal of making the range of global sea level rise (SLR) projections more relevant across Massachusetts and providing key planning information for other state agencies. Leveraging information from the National Climate Assessment (NCA), the guidance document describes SLR trends and looks at recent SLR acceleration rates before transitioning to the global information presented in the NCA, and how that information can be applied. The SLR document provides guidance on setting parameters for projects and how communities can use the results of their vulnerability assessment for next steps. Communities can use the SLR document to help evaluate the level of risk and the need for selecting a worse (or less) case scenario.

MA CZM has become a regional and national leader in coastal hazards and climate change and adaptation work. StormSmart Coasts has become the primary and preferred resource for decision makers trying to address climate change impacts. The ability of the SLR guidance document to distill global scenarios to local conditions has been critical to local planning efforts across the commonwealth and has provided the needed platform on which to base such efforts. The program's "boots-on-the-ground" approach and dedication to working closely with

scientists have resulted in the collection of baseline data, which is helpful for addressing current issues and planning for future scenarios. These data are being used by other agencies as well. MA CZM places a strong emphasis on regional involvement, placing regional coordinators across the state and ensuring the presence of staff members at all relevant community events. In addition to building community support and trust, regional placement also provides a mechanism for communication and an opportunity for MA CZM to enhance the information provided to local communities about risk of hazards and long-term implications of decisions. Regional coordination also ensures that people at the right levels are taking part, leading the program to work closely with other agencies on various projects, which results in strong, collaborative working relationships with state agencies and departments, organizations, and local governments.

Stakeholders place high value on the contributions of MA CZM, with one person stating, “We really value the contribution of MA CZM and what they have to offer,” a sentiment that was echoed throughout the evaluation at the stakeholder meetings. They view the program as multi-dimensional and feel that it has high visibility, not only within the EEA, but also across the entire administration. The program’s translation of best management practices is essential, and its willingness to reach out to other states in New England while not overstressing its bounds is also viewed favorably, reinforcing its reputation of regional expert in this area. Stakeholders regard MA CZM as a leader in climate adaptation and resilience efforts on the national stage, and believe that the state is moving in a direction of institutionalizing resilience language because of the information, technical assistance, and tools that MA CZM has provided.

As a result of MA CZM’s expertise in climate change and adaptation strategies, many state and regional (across New England) agencies rely heavily on the program. While this demand is manageable at this juncture, the need is growing and it is likely that eventually this need will take the program away from its core mission. For this reason, the evaluation team encourages the program to evaluate adding staff to support its climate change and adaptation efforts, as well as the administrative and technical assistance required for managing the state-funded resilience grants, building partnerships, and securing additional funding.

MA CZM relies on support from and cooperative relationships with state and federal agencies, as well as other organizations, and tries to identify where they can add value. Over the next five years, MA CZM is interested in developing more technical tools and in looking at the science that informs best management practices, especially in the areas of shoreline change and inundation tracking and modeling, but is cognizant that it will need additional funding to do so.

Accomplishment:

MA CZM has successfully supported local communities’ hazard preparedness using a multi-pronged approach. This approach includes technical assistance and pilot community projects made available through the development of the StormSmart Coasts Program and its expansion from a small pilot program to a national network with over 1,500 members (StormSmart Communities).

Recommendation: The NOAA Office for Coastal Management urges MA CZM to continue its coastal hazards and climate change and adaptation efforts at the local, regional, and national levels. The Office for Coastal Management also encourages MA CZM to continue to seek additional support for these efforts, and for the administrative and technical assistance required for the state-funded resilience grants, through the addition of staff, partnerships, and additional funding sources.

Community-Based Technical Assistance and Services

For many Massachusetts communities, coastal issues are at the forefront of the issues they face. MA CZM supports these communities through multiple approaches: placement of regional coordinators, availability of technical and program staff, and state grant programs to fund local projects.

In the Commonwealth of Massachusetts, coastal communities are governed by home rule—most towns and cities have planning and zoning boards that make decisions at the local level. MA CZM’s regional presence helps to make connections with these boards. Each region has a regional coordinator, some of whom are co-located with other state partners. These regional coordinators are the primary point of contact for municipalities and local governments, and they often participate at the community level, working directly with communities on their own initiatives. Regional placement has also made the program excellent at stakeholder engagement, resulting in strong, collaborative working relationships with state agencies and departments, organizations, and local governments, as well as strong community support. MA CZM supports communities through the availability of technical and program staff who bring capacity to areas that may need more support, for example, regarding NDAs (No Discharge Areas), hazards, and port planning.

A significant outcome of these technical assistance services is the designation of all coastal waters in Massachusetts as NDAs, which provides consistent regulations for marine vessels and improved water quality management throughout state waters. This accomplishment was made possible through the program’s coordination and collaboration with the U.S. EPA and extensive engagement of municipalities, marine industries, and the boating and yachting communities (and their subsequent support). Also instrumental to this accomplishment were sustained technical assistance efforts, such as funding municipalities through the Coastal Pollution Remediation Grant Program, as well as the development of pressure washing guidance, marina compliance workshops, and information on and assistance with pumpout facilities for both recreational and commercial vessels, among other items. During the review period, MA CZM provided over \$49,000 to municipalities for the design, construction of, or repairs to pumpout facilities. A U.S. EPA staff member noted that MA CZM’s priorities align with those of the EPA and considers the program “a very important partner” that provides a great deal of assistance with permit conditions and setting discharge levels.

Stakeholders acknowledge that MA CZM has taken a leadership role in the statewide designation of NDAs, addressing challenges and bringing the majority of stakeholders on board

with the initiative. One challenge, as discussed above, was providing pumpout services for commercial vessels. MA CZM was able to address this through collaboration with the EPA and worked with different municipalities using available funding through the state Coastal Pollution Remediation Grant Program. Funding remains a major challenge in ensuring the continued availability and maintenance of pumpout facilities. In order to ensure compliance of the NDA designation by local boaters, MA CZM should work with other state agencies, federal partners, and other partners to develop a long-term plan for maintaining the NDA program, including pumpout station maintenance.

MA CZM, through its Port and Harbor Planning Program, has also assisted local communities in the development and modification of municipal harbor plans (MHP) and designated port areas (DPA). These plans allow communities to balance different desired waterfront uses. According to a representative of the Boston Harbor Association, “MA CZM’s work on harbor planning is crucial—not only for Boston, but for outlying areas as well.” The program has provided a plethora of resources and technical assistance for communities seeking to engage in waterfront planning activities, assisting five communities in the development or update of waterfront redevelopment plans, policies, and ordinances during the review period. There is an ongoing need to educate local coastal communities on waterfront planning as they change local staff members and officials. As many communities embark on redevelopment efforts or seek to better enhance industrial areas, the program will likely face many technical assistance requests about this issue. To address this, MA CZM should help constituents navigate the use of MHPs and DPAs by clarifying how these regulatory tools work with existing state building codes, and continue targeted outreach and communications on MHPs. Additionally, an opportunity exists for the program to continue to provide interagency advisory technical input as resilience standards are incorporated into the state building code.

Stakeholder feedback indicates that the technical assistance services provided by MA CZM are invaluable—because there is no other entity that considers coastal resources, economic needs, protection of the natural environment, and industry all at the same time. The program has been characterized by one agency as, “one you can count on—cooperative, and making every effort to have others sit at the table,” a comment that was heard many times in stakeholder meetings. Technical assistance in the areas of climate change adaptation, ocean planning, and water quality has had a large impact and resulted in collaborative working relationships with the U.S. EPA, Army Corps of Engineers, and other state agencies.

Accomplishment: All coastal waters in Massachusetts were designated as No Discharge Areas, providing consistent regulations for marine vessels and improved water quality management. MA CZM achieved this designation through coordination and collaboration with the U.S. Environmental Protection Agency (EPA), extensive stakeholder engagement, and sustained technical assistance efforts.

Recommendation: The NOAA Office for Coastal Management urges MA CZM to continue collaborative work with state and federal agencies and other appropriate entities to develop a

long-term plan for maintaining the NDA program, including pumpout stations, to ensure that local boaters comply with the NDA designation.

Ocean Planning and Management

MA CZM serves as the lead state agency for ocean planning and management, and on behalf of EEA, led the planning process and development of the Massachusetts Ocean Management Plan upon passage of the Massachusetts Oceans Act (2008). This presented a huge challenge for the program as the Massachusetts Oceans Act required development of the Ocean Management Plan within a year of its passing, which in turn required engagement with many stakeholder groups.

MA CZM convened six working groups and consulted with two formal advisory groups created by the Act—the Ocean Advisory Commission and the Science Advisory Council—to develop goals and strategies. Additionally, the program embarked upon an extensive stakeholder engagement process, which was open and transparent with ample opportunity for participation and forums to address concerns. The program held over 100 stakeholder meetings, including listening sessions and public meetings, providing opportunities during the planning and implementation stages for those who wanted to engage. These combined efforts led to state agencies working closely together and garnered strong support from industry and the public. In December 2009, MA CZM released the Massachusetts Ocean Management Plan—within a year of the passing of the Massachusetts Oceans Act (2008). The plan, which consists of two volumes, recognizes marine uses that are critical to the economy and well-being of the commonwealth, while maintaining a balance between natural resources and infrastructure. The first volume addresses the administration and management framework, establishing three categories of management areas—prohibited areas, renewable energy areas, and multi-use areas. The second volume consists of the baseline assessment and science framework.

In accordance with the Massachusetts Oceans Act (2008), MA CZM initiated a plan review and update in January 2013 (five years later). This is an excellent example of how ocean planning should work, and the program is to be commended for continuing to collect and analyze data, engage with stakeholders, and have experts provide critical input and ground-truth the data collected. Through partnership with the EPA, the coastal program was able to conduct three years of ground-truthing missions on Ocean Survey Vessel (OSV) *Bold*. These missions provided applicable and much-needed data to fill some of the gaps identified during the development of the science framework in 2009. Additionally, major improvements were made to the Massachusetts Ocean Resource Information System (MORIS), an online mapping tool with specialized viewer capability. MORIS provides users with over 625 data layers and is now 100 percent open-sourced—accessible by anyone for downloading data layers to use in GIS or Google Earth and for making or sharing maps electronically. According to one stakeholder, “(The) Ocean Plan and policy are only as good as the data, and MA CZM staff are very serious about data quality. They challenged our agency (federal) to step up our techniques, and use better technology and improve our data collection techniques.”

The decommissioning of OSV *Bold* has left a gap for a platform to collect applicable and much-needed data. That gap will become even more noticeable as routine updates of the Ocean Management Plan approach and MA CZM needs updated habitat information. MA CZM has a clear need for more ship time and is seeking opportunities to fill that gap. Stakeholders have also emphasized the need for such a platform. The NOAA Office for Coastal Management encourages MA CZM to continue to collect data and information for ocean plan updates and refinement through in-kind and partner resources. This would involve pursuing opportunities for long-term access to research vessels—federal or otherwise. Additionally, the program should explore additional management applications of data and encourage use by others.

The Massachusetts Ocean Management Plan has also helped MA CZM further its mission to balance the impact of human activities with the protection of coastal and marine resources through planning, public involvement, education, research, and sound resource management. The ocean plan provides basic information about what activities are restricted or where potential activities may be allowed. Since multiple state agencies with permitting responsibilities for ocean uses collaborated on the plan, potential project proponents are given a better sense of where an activity may be approved. For example, someone who is interested in building a wind turbine could use the plan to determine a location that is more likely to be approved by the state. Through this streamlined regulatory approach, the plan requires interagency coordination for project planning and review. Additionally, the plan provides project proponents with enough information so that they can adequately prepare an informed proposal, resulting in efficiencies (costs and time).

EXAMPLE: Martha’s Vineyard Hybrid Cable Installation

The first submarine cable project reviewed under the new Massachusetts Ocean Management Plan called for a half-inch diameter fiber-optic cable, run from Falmouth to Martha’s Vineyard. A second request was made to co-locate a five-and-a-half inch electricity cable. Existing cable corridors ran through complex areas, and the project team identified an alternate route that would work, except for a 100-meter boulder field. This new route involved horizontal directional drilling rather than trenching through eelgrass. The hydro-plow method was used with relatively minor impact.

The ocean plan specifies cable siting and performance standards that both project proponents had to meet. This required a great deal of coordination, and the project proponents discussed contingency plans with MA CZM in interagency meetings before and during the MEPA review. Because of cable siting and performance standards, the cable route had to be refined. Upon successful completion of the MEPA review, the project was changed to a hybrid cable that bundled electricity with fiber-optic cables. Combining the two cable projects and revising the initial approach minimized the impacts. Additionally, the Environmental Business Council recognized project proponents and MA CZM with the Outstanding Collaboration award, made possible by the ocean management plan.

From the perspective of a proponent of the hybrid cable project: “The Ocean Management Team worked well, and provided a means to talk about and work out issues constructively. The ocean planning review facilitated rigorous review and allowed support by locals. Having the ocean planning team was invaluable. It eliminated the need to go to each individual agency for [permitting] resulting in time and effort saved.”

Through its ocean management plan, Massachusetts has become a leader in the area of marine spatial planning and has built strong relationships that have been critical for the regional ocean planning processes (NROC and Northeast Regional Planning Body), while also providing a model for other jurisdictions or regions pursuing ocean plans. Many stakeholders have attributed the momentum of the regional ocean planning effort to leadership by the MA CZM staff. They view the entire state planning process as transparent and inclusive, with MA CZM making an “outstanding” effort to engage the community and respond to their needs. The establishment of the Massachusetts Oceans Act caused a great deal of discord, but stakeholders credit MA CZM with the fact that state agencies worked, and continue to work, very closely together. Program staff members acknowledge that sustaining the effort is a challenge and that their commitment to the advancement of the plan has been due in part to the NOAA cooperative agreement and in-kind support from the state. MA CZM views coastal management programs and the Massachusetts Oceans Act as key to the effort of integrating the ocean plans into the regional framework, but realizes that integration may be challenging, especially when states have specific plans and regulatory domains (Massachusetts and Rhode Island). MA CZM staff members realize that they have a responsibility to continue to partner, coordinate, and cooperate with other entities, and that this represents an opportunity to share resources and find common ground. In light of this, NOAA encourages MA CZM to continue to work collaboratively with federal partners, the regional planning body, NROC, and peers in other jurisdictions to leverage the work and lessons learned from the MA Ocean Management Plan to benefit other ocean planning efforts.

Overall, stakeholders are highly complimentary of MA CZM, its leadership, and its staff. They find great value in the ocean planning and management work pursued by the state (especially data and habitat mapping), which provides information that they will continue to apply to future policies and decision-making. Challenges identified by stakeholders include the continuity of the ocean planning and management effort with the upcoming change in administration. Mass Audubon has proactively briefed candidates in an effort to address this and ensure continuity. Sand and gravel mining was also mentioned as an emerging issue. Identification of appropriate offshore sediment sources is a priority, as is support for additional work and data collection that will enhance understanding of the challenges involved in dredging and beach nourishment. These issues must balance competing interests—controlling erosion, obtaining adequate material to maintain beaches, and mitigating for coastal structures, among others. In addressing this issue, MA CZM should leverage well-developed relationships with the Bureau of Ocean Energy Management and NROC to foster regional discussions about sand and gravel mining.

Stakeholders also recognize climate change and sea level rise as challenges and believe that long-term monitoring is needed for adaptation planning and mitigation. They would also like to ensure that the data being collected can provide information that would help determine the impacts and value of the Massachusetts Ocean Plan. The five-year plan review and update cycle (as required by the Massachusetts Oceans Act of 2008) is an iterative and adaptive approach to track plan implementation and measure progress toward achieving the requirements of the Act (*Review of the Massachusetts Ocean Management Plan*, January 2014). MA CZM has already completed its first review cycle. During development of the Ocean Plan, the program worked with the Massachusetts Ocean Partnership to develop a list of socioeconomic and environmental indicators that now provide information on the progress and implementation of the plan and inform reviews of, and updates to, the baseline assessment. These indicators must identify and help track both short- and long-term impacts resulting from the ocean plan into the future. In accordance with stakeholder and partner comments in *Review of the Massachusetts Ocean Management Plan* (January 2014), the NOAA Office for Coastal Management encourages MA CZM to continue using ecosystem-based management approaches, and to ensure more inclusion of climate change and adaptation data in subsequent plan updates and revisions.

Accomplishment: Massachusetts has become a leader in the area of marine spatial planning, and through its effective process and credible relationships, has both strengthened the Northeast regional ocean planning initiative and allowed the Massachusetts Ocean Management Plan to serve as a model for other jurisdictions. MA CZM led the development of the ocean management plan and its release in December 2009—within a year of the passing of the Massachusetts Oceans Act (2008). The plan, developed with extensive stakeholder input, and it recognizes marine uses critical to the economy and well-being of the commonwealth, while maintaining a balance between natural resources and infrastructure.

Recommendation: The NOAA Office for Coastal Management encourages MA CZM to continue using ecosystem-based approaches to ocean management, and to continue to include climate change and adaptation data in subsequent plan updates and revisions.

Evaluation Metrics

Beginning in 2012, state coastal management programs began tracking their success in addressing three evaluation metrics specific to their programs. The evaluation metrics include a five-year target and provide a quantitative reference for each program about how well it is meeting the goals and objectives it has identified as important to the program.

METRIC 1. OCEAN PLANNING

Goal: The ocean resources of Massachusetts are comprehensively managed to: Balance and protect the natural, social, cultural, historic, and economic interests of the marine ecosystem through integrated management; Protect biodiversity, ecosystem health, and the

interdependence of ecosystems; Support wise use of marine resources, including renewable energy, sustainable uses, and infrastructure; Incorporate new knowledge as the basis for management that adapts over time to address changing social, technological, and environmental conditions.

Objective: By 2017, the majority of the seafloor within commonwealth coastal and marine waters will be mapped.

Performance Measure: The percentage of area of Massachusetts seafloor mapped.

Target: By 2017, 75 percent of Massachusetts seafloor mapped.

Cumulative Data (Years 1 and 2) Total:

Note: Total area of Massachusetts coastal waters = 6,561 square kilometers (km²); total area of Massachusetts coastal waters deeper than 30 feet = 3,639 km²; and total area of Massachusetts coastal waters shallower than 30 feet = 2,922 km².

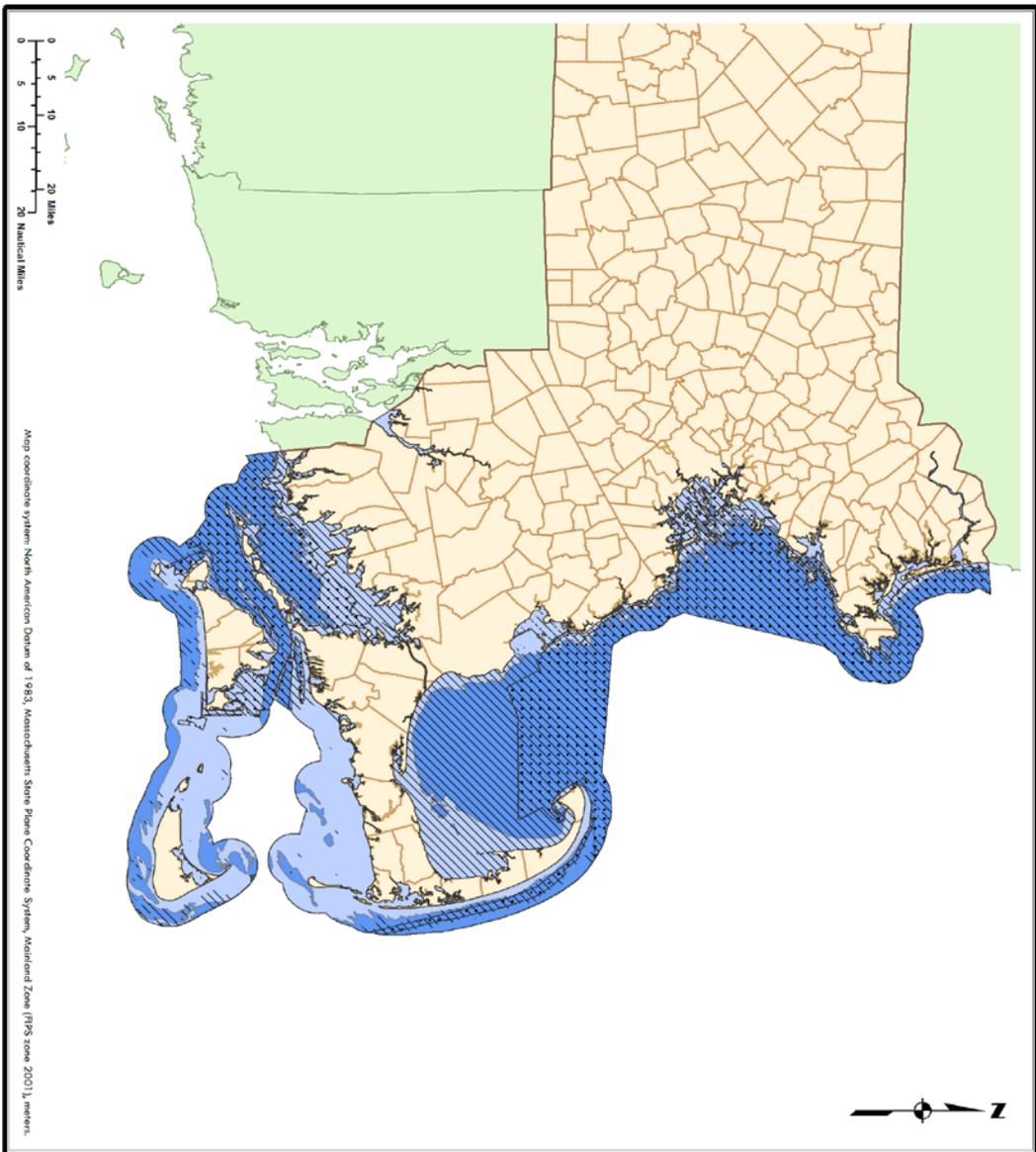
For areas deeper than 30 feet:

1. High-resolution bathymetric data = 62% complete (2,242 km² mapped)
2. High-resolution backscatter data collected by sonar = 62% complete (2,242 km² mapped)
3. Sediment type = 87 km²
4. Potential habitat type = 0 km²

For areas below mean lower low water (MLLW) to 30 feet:

1. Sediment type = 48 km²
2. Potential habitat type = 0 km²

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Legend

- Hi res bathymetry & backscatter
- Sediment
- Depth greater than 30ft
- Depth less than 30ft

Cumulative Data Total:
 Total area of Massachusetts coastal waters = 6,561 km²
 Total area of Massachusetts coastal waters deeper than 30ft = 3,639 km²

For areas deeper than 30 feet:

1. High resolution bathymetric data = 62% complete (2,242 km² mapped)
2. High resolution backscatter data collected by sonar = 62% complete (2,242 km² mapped)
3. Sediment type = 87% complete (3,157 km² mapped)
4. Potential habitat type = 0 km²

For areas below Mean Lower Low Water to 30 feet:

1. Sediment type = 48% complete (1,407 km²)
2. Potential habitat type = 0 km²

Note: Although all Massachusetts waters have been mapped by sediment type, only high confidence mapping units are shown.



Massachusetts Office of Coastal Zone Management
 Executive Office of Energy & Environmental Affairs
 7/22/2014

**SECTION 312 PERFORMANCE REVIEW
 OCEAN PLANNING**

Map 1 of 1

Discussion: MA CZM has made progress in the percentage of area of Massachusetts seafloor mapped, primarily in areas deeper than 30 feet. Of note is the completion of geophysical survey work south of Martha's Vineyard and Nantucket between Tuckernuck Island and Great Point. It is likely that the program will achieve the five-year target for mapping the majority of the Massachusetts seafloor.

METRIC 2 CLIMATE CHANGE ADAPTATION

Goal: Local communities are prepared to adapt to coastal challenges arising from climate change.

Objective: By 2017, 10 community-level projects that address sea level rise, storm damage protection, or other climate change adaptation issues will be successfully completed.

Performance Measure: The number of climate change adaptation projects completed at the local level with CZM assistance.

Target: By 2017, 10 climate change adaptation projects completed at the local level with CZM assistance.

Cumulative Data (Years 1 and 2) Total: Five local adaptation projects completed and two ongoing as of June 30, 2014.

Discussion: Through technical assistance, MA CZM has assisted eight municipalities in completing projects ranging from beach management plans to climate vulnerability assessment and adaptation plans. MA CZM is making good progress toward achieving the five-year target for completing 10 climate change adaptation projects at the local level with CZM assistance.

METRIC 3 COASTAL WATER QUALITY PROTECTION

Goal: The coastal waters in Massachusetts are clean and healthy.

Objective: By 2017, 10 Nonpoint source (NPS) pollution control projects will be successfully completed (i.e., constructed and operating) through the Coastal Pollutant Remediation (CPR) Grant Program.

Performance Measure: The number of NPS pollution control projects completed at the local level through the Coastal Pollutant Remediation Grant Program.

Target: By 2017, 10 NPS pollution control projects completed at the local level through the Coastal Pollutant Remediation Grant Program.

Cumulative Data (Years 1 and 2) Total: Five CPR projects in fiscal year (FY) 13 and five CPR projects in FY14 = 10 completed CPR projects as of June 30, 2014.

Discussion: Through the Coastal Pollutant Remediation Grant Program, MA CZM has provided \$625,445 in state funding to fund design and construction projects with a total cost of \$866,110 in eight municipalities. MA CZM has met, and will likely exceed the five-year target for completing ten NPS pollution control projects at the local level through the Coastal Pollution Remediation Grant Program.

Conclusion

For the reasons stated herein, I find that the Commonwealth of Massachusetts is adhering to the programmatic requirements of the Coastal Zone Management Act and its implementing regulations in the operation of its approved Massachusetts Coastal Zone Management Program.

These evaluation findings contain three recommendations that must be considered before the next regularly scheduled program evaluation, but they are not mandatory at this time. Program recommendations that must be repeated in subsequent evaluations may be elevated to necessary actions.

This is a programmatic evaluation of the Massachusetts Coastal Zone Management Program that may have implications regarding the state's financial assistance awards. However, it does not make any judgment about or replace any financial audits.



Jeffery Payne, PhD, Acting Director
Office for Coastal Management

12/9/14

Date

Appendix A: NOAA Office for Coastal Management’s Response to Written Comments

A.J. Castilla

East Boston, Massachusetts

Comment: Mr. Castilla wrote to express his concern that, “the shoreline history of native Indians, British & Colonial military unit forts and a French Marines hospital; clipper, steam, steel hulled and Ironclad U.S. Navy monitor ship and barrel building; international emigration; major operating railroads and ferryboat lines, a sunk British gunship HMS *Diana*, etc. has not had a fair chance of being properly investigated, sought, excavated, dived for, and like-wise preserved by our Commonwealth or federal government . . . as it should be.” He stated that, “urban renewal continues to haphazardly and recklessly bury our irreplaceable American history,” and questioned whether there have been historic digs or dives conducted at state or federal request.

Mr. Castilla revealed that he had recovered numerous historic East Boston artifacts during the timeframe of May 18 to June 1, 2014, and submitted fact-supporting photos. He fears that without prompt action, even more East Boston American history will be lost, and notes that the City of Boston’s history-noting plaques, “while well meaning, do not factually replace the better benefit of actually recovered priceless historic sites, ships, and artifacts that are being buried in the name of progress.” Mr. Castilla also encouraged continuation of the search to recover the HMS *Diana* before any future Chelsea Creek dredging or waterfront projects of any type. He advocated for better enforcement of “community, Commonwealth and nation-vital historical artifacts” by the Commonwealth and federal government [if laws already exist to protect our artifacts along or in East Boston shoreline/waters], or initiation of legislation to do so.

NOAA Office for Coastal Management’s Response: The NOAA Office for Coastal Management thanks Mr. Castilla for providing written comments and concurs that it is important that full consideration be given to cultural and historical values. The Massachusetts Historical Commission has the primary oversight for the identification, evaluation, and protection of important historical and archaeological assets of the commonwealth and may be able to provide assistance for the specific areas of interest identified. In accordance with Section 106 of the National Historic Preservation Act, federal agencies are required to consider the effects of their activities on historic properties, and to consult with the state historic preservation officer and appropriate parties if such activities might affect historic properties. NOAA provides federal funds to the commonwealth that allows the commonwealth to implement its approved coastal management program. NOAA funds have not been used on any activities during this review period that could potentially affect historic resources. Mr. Castilla’s comments were shared with the Massachusetts Coastal Management Program.

Ronald H. Hardaway
East Boston, Massachusetts

Comment: Mr. Hardaway is interested in knowing if MA CZM is tracking (a) the lawsuit centered on the destruction of clam beds resulting from fuel spills around Boston Logan International Airport, (b) the FAA-proposed runway safety areas that protrude into the water, and (c) the spread of turkey- or lionfish from the West and Florida coastal waters. He believes that “more stringent laws and severe penalties must be passed and enforced to protect all types of our sea life and plants from careless operators.” Mr. Hardaway also inquired about additional publicity and educational programs regarding newly appearing invasive fish life provided by MA CZM.

NOAA Office for Coastal Management’s Response: The NOAA Office for Coastal Management thanks Mr. Hardaway for providing written comments. Although it is familiar with the lawsuit centered on the destruction of clam beds resulting from fuel spills around Boston Logan International Airport, the Massachusetts Coastal Program is not currently tracking that issue. The program has reviewed the FAA-proposed runway safety areas that protrude into the water through MEPA and has been part of an interagency team that has been discussing eelgrass and wetland mitigation for the project. MA CZM currently leads the Massachusetts Aquatic Invasive Species (AIS) Working Group, which works to prevent new introductions and manage the impact of AIS already established in the commonwealth. The AIS Working Group focuses on prevention and education; early detection, monitoring, and species identification; data and information sharing; rapid response; and control. MA CZM states that current literature and studies of distribution suggest that turkey- or lionfish are unable to overwinter in the coastal waters of Massachusetts. There have been anecdotal records of a few juveniles as far north as Westport, Massachusetts, but those have not or will not survive Massachusetts winter water temperatures. However, invasive species have been able to adjust their tolerances and, given potential changes due to climate change, it is a situation that the program will continue to monitor. Mr. Hardaway’s comments were shared with the Massachusetts Coastal Management Program.

Benjamin R. Wetherill
University of Massachusetts–Boston

Comment: Mr. Wetherill wrote to express that in his opinion, the Massachusetts Coastal Management Program was doing a lot of very worthwhile things. He commented that it seemed like an oversight that the coastal management program did not have any reference to water quality. He expected that a major component of the program would have been water quality monitoring and mapping, and suggested that it may be time to include this in the scope of the Massachusetts plan.

NOAA Office for Coastal Management’s Response: The NOAA Office for Coastal Management thanks Mr. Wetherill for participating during the public meeting and providing written

comments. The Massachusetts Coastal Management Program has a **Coastal Water Quality** program area that includes the following components: the Coastal Pollutant Remediation Grant Program, Coastal Nonpoint Source Pollution Program, Clean Boating and Marina Management, and Project Review. More information can be found at www.mass.gov/eea/agencies/czm/program-areas/coastal-water-quality/.

Mr. Wetherill's comments were shared with the Massachusetts Coastal Management Program.

David Dow

Cape Cod and the Islands Group – Sierra Club

Comment: Mr. Dow submitted comments on behalf of Robert F. Murphy and the Cape Cod and the Islands Group – Sierra Club (CC&I Group), outlining the serious challenges from eutrophication and the effects of climate change faced by the Cape, and stating that Cape Cod was unable to address the challenges on its own and needed to “find holistic solutions to these problems that are cost efficient.” The CC&I Group acknowledged that “there are larger scale planning/permitting/regulatory processes at the state/federal level for ocean health–land use interactions.” They used examples ranging from wastewater mitigation to the impacts of sea level rise on coastal erosion to make the point that MA CZM should be involved in the habitat aspects of Cape Cod’s wastewater mitigation challenge, and provide the technical expertise on the effects of climate change and eutrophication that the town and county governments on Cape Cod lack. The examples also illustrated how wastewater and climate change challenges are interlinked at a number of levels. The CC&I Group opined that, “Unfortunately the state/federal bureaucracies treat these as separate problems which make it hard to develop holistic solutions on Cape Cod to protect our environment and promote sustainability as we move into the future,” and suggested that it would be helpful if NOAA and MA CZM “could coordinate their efforts in the areas of climate change and eutrophication impacts (both environmentally and socioeconomically)” and support the towns in areas where the Cape Cod and the Islands Planning Commissions lack expertise.

As part of its submission, the CC&I Group cited problems specific to eutrophication and climate change being experienced on the Cape, such as watershed planning and habitat restoration and protection, renewable energy, stream flow regulation, groundwater pollution, and drinking water and wastewater, along with identified opportunities for action or proposed solutions. The CC&I Group also thanked the NOAA Office for Coastal Management for consideration of its comments and reiterated hope that “this review process can identify some strategies to develop holistic solutions for the eutrophication and climate change challenges that we face here on Cape Cod.”

NOAA Office for Coastal Management’s Response: The NOAA Office for Coastal Management thanks Mr. Dow for submitting comments on behalf of Mr. Murphy and the Cape Cod and the Islands Group – Sierra Club, and concurs that community resilience is of paramount importance. The Massachusetts Coastal Management Program’s efforts to address climate change are discussed in Section III.A. of the findings, and the program’s efforts to address water

quality and assist local communities in addressing coastal challenges are discussed in Section III.B. Additional information on the program's activities in these areas can be found at www.mass.gov/eea/agencies/czm/program-areas/coastal-water-quality/coastal-nonpoint/#wetlands and www.mass.gov/eea/agencies/czm/program-areas/stormsmart-coasts/. Mr. Dow's comments were shared with the Massachusetts Coastal Management Program.

Valerie I. Nelson, PhD
Director of Water Alliance
Gloucester, Massachusetts

Comment: Dr. Nelson offered comments focused on the evaluation's three target areas: StormSmart Coasts and Resilient Communities, Community-Based technical Assistance, and Ocean Planning and Management. Dr. Nelson stated that while high-quality materials and guidance documents for StormSmart Coasts and resilient communities have been produced, the material is not getting out to the public or being adopted in local practice. Dr. Nelson also expressed concerns that guidance materials from the National Working Waterfront Network have not been conveyed to the residents and businesses of Gloucester. She also commented that the technical assistance (Community-Based Technical Assistance and Services) offered is not adequate for the needs of coastal communities and is offered to municipal government, rather than to the public more generally. Dr. Nelson also noted that MA CZM did not provide technical assistance to the public when the City of Gloucester deliberated over rezoning and permitting of a hotel in a high hazard area.

Dr. Nelson opined that the Ocean Planning and Management program is lacking in transparency and the regional planning body also does not provide for open participation for port communities and the public. Dr. Nelson recommended that the public participation and education process be substantially redesigned, particularly as it has not been effective in Gloucester, since public participation in CZM events in Gloucester was low, and that MA CZM had failed to fulfill a commitment to convene a local committee and to take public comments at meetings to discuss a Designated Port Area Boundary review. Dr. Nelson also noted that MA CZM had not addressed all the components of its five-year 309 work plan for its ocean planning strategy, and the amount of funding allocated to this strategy was too high, since ocean planning has had little impact. Dr. Nelson also recommended that MA CZM should reconsider and update priorities and approaches with extensive input from a broad array of stakeholders.

NOAA Office for Coastal Management's Response: The NOAA Office for Coastal Management thanks Dr. Nelson for providing written comment. NOAA agrees that the MA CZM has produced high-quality materials and guidance documents related to StormSmart Coasts and community resilience. The information is available on the StormSmart Coast website, and MA CZM program staff members provide technical assistance to local communities to help them incorporate the information into their decision-making. The NOAA Office for Coastal Management met with

local government partners who were using the coastal hazard information to make informed coastal management decisions and to communicate hazard issues to those in their community. The NOAA Office for Coastal Management acknowledges that the need for information is great and that while additional outreach and technical assistance would be beneficial, program staffing and funding are limited, as discussed in the findings. By ensuring that technical assistance is available to municipal governments, the Massachusetts Coastal Management Program has expanded its reach within communities, even with limited resources. StormSmart Coasts and community resilience are further discussed in Section III.A. of the findings.

The Coastal Zone Management Act of 1972 encourages public participation, and the NOAA Office for Coastal Management finds that the Massachusetts Coastal Management Program has made reasonable effort to do so, meeting the intent of the act and state notification requirements. Throughout development of the Massachusetts Ocean Plan, MA CZM implemented an extensive stakeholder engagement process that allowed for open comment and continued to do so during implementation of the plan, as noted in *Review of the Massachusetts Ocean Management Plan* (January 2014).

The president released Executive Order 13547, “Stewardship of the Ocean, Our Coasts, and the Great Lakes,” in 2010, encouraging the development of coastal and marine spatial plans and establishment of regional planning bodies. In 2008, the Massachusetts Oceans Act was signed into law, and the first ocean management plan was released in December 2009. NOAA is supportive of the implementation of this executive order and state’s efforts to engage in ocean planning. The Massachusetts Ocean Management Plan has goals and priorities that align with those of the Massachusetts Oceans Act (2008) and has provided a framework for regional and national efforts.

Every five years MA CZM has the opportunity to develop a Section 309 assessment and strategy, which includes the development of priorities and strategies for program improvements, and the process provides for public comment. Projects to be funded under Section 309 of the Coastal Zone Management Act must be identified under the *Section 309 Assessment and Five-Year Strategy for CZM Program Enhancement*. Programs with approved assessments and strategies are eligible for additional funds. Programs can include strategies that may or may not be funded. Individual tasks are negotiated between NOAA and the coastal program annually, based on available funding. Additional information on the program’s activities in these areas can be found at the following locations:

StormSmart Communities

www.mass.gov/eea/agencies/czm/program-areas/stormsmart-coasts/

Community-Based Technical Assistance and Services

www.mass.gov/eea/agencies/czm/about-czm/technical-assistance/

Ocean Planning and Management

www.mass.gov/eea/agencies/czm/program-areas/ocean-management/ocean-plan/

Dr. Nelson's comments were shared with the Massachusetts Coastal Management Program.