

Buzzards Bay National Estuary Program  
2024 Program Evaluation Narrative Submission (Group C)  
for work plans covering federal FY18 to FY23 funding cycles  
for the period July 1, 2018 – September 30, 2023

in conformance with the U.S. EPA  
National Estuary Program  
Program Evaluation Guidance  
December 5, 2023



Prepared by the  
Buzzards Bay National Estuary Program  
submitted March 29, 2024

## **Acknowledgements**

This document was written and prepared by Joe Costa with the support of Buzzards Bay NEP staff who prepared certain sections. Special thanks to Buzzards Bay NEP Regional Planner Sarah Williams for her careful editing of the document.

## **Abbreviations Used**

<b>CCMP</b>	Comprehensive Conservation and Management Plan
<b>CZM</b>	Massachusetts Coastal Zone Management
<b>EPA</b>	U.S. Environmental Protection Agency
<b>IDDE</b>	Illicit Discharge Detection and Elimination (program part of an MS4 permit)
<b>IIJA</b>	The Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law, is a United States statute enacted by the 117th United States Congress and signed into law by the President on November 15, 2021.
<b>MS4</b>	Municipal Separate Storm Sewer System (an NPDES permit program)
<b>NEP</b>	National Estuary Program
<b>NPDES</b>	National Pollutant Discharge Elimination System (a federal discharge permit program)
<b>TMDL</b>	Total Maximum Daily Loads



March 29, 2024

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Ms. Kutschenreuter:

The documents attached to this letter (combined as an electronic file) constitute our narrative submission of the 2024 Program Evaluation of the Buzzards Bay National Estuary Program (Buzzards Bay NEP) covering NEP activities between July 1, 2018, and September 30, 2023. Because federal NEP funding is awarded near the end of the federal fiscal year, this review period principally covers Buzzards Bay NEP work plans titled *Federal FY18 Funds Work Plan and Budget* through *Federal FY22 Funds Work Plan and Budget* (five work plans), and year 1 and partial year 2 of the Bipartisan Infrastructure Law funding. This narrative submission and all supporting documents are available at the Buzzards Bay NEP website ([buzzardsbay.org/our-program/workplans/2024-program-evaluation-materials/](https://buzzardsbay.org/our-program/workplans/2024-program-evaluation-materials/)).

The U.S. EPA has outlined an approach for content of program evaluation narrative submissions in the document *National Estuary Program, Program Evaluation Guidance, Updated December 5, 2023*. Under the new guidance, EPA aligned the Program Evaluation period with the federal fiscal year (Oct. 1 – September 30). While it is the case that the Buzzards Bay NEP's work plans are proposed to begin on July 1, as a practical matter, grant approval and funding from EPA is typically not received until September, and virtually no work under the Federal FY23 workplan occurred during the summer of 2023. Other significant changes under the 2023 PE guidance were the inclusion of questions that require direct responses and reporting of activities undertaken under the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law.

Our narrative submission conforms to the 2023 guidance and includes a five-year summary of the following elements:

- NEP Program Implementation,
- NEP Environmental/Programmatic Workplan Accomplishments, and
- NEP Ecosystem and Community Status.

An important aspect of this narrative submission reflects the fact that Buzzards Bay NEP work plans and cooperative agreements include contributions and activities of two not-for-profit organizations. These partners are the municipal official organization, the [Buzzards Bay Action Committee](#), and the citizen advocacy group, the [Buzzards Bay Coalition](#). Both partners contribute time and resources in meeting our obligations (including match) under our cooperative agreements with the U.S. EPA, and the Buzzards Bay NEP in turn provides support to, and collaborates with, these organizations on specific projects.

In a broad sense, all three Buzzards Bay organizations, in one form or another have pledged to work to achieve the goals and objectives contained within the *Buzzards Bay Comprehensive Conservation and Management Plan* (CCMP). In many respects, each Buzzards Bay organization plays to its strengths.



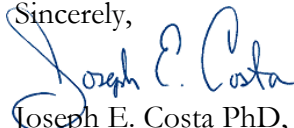
As a planning and technical assistance unit of the Massachusetts Office of Coastal Zone Management, and with the administrative support of state government, the Buzzards Bay NEP is particularly well suited to administer and oversee a municipal grant program, and to provide in depth technical information, through training workshops, meetings, and on the NEP's website. With our focus on technical assistance and position in state government, the Buzzards Bay NEP is not only an important resource used by Buzzards Bay municipalities and our partners, but we have increased their capacity to undertake projects and helped leverage additional state and federal support for projects in the Buzzards Bay watershed. Because the NEP is part of state government, we are uniquely positioned to ensure that our actions and programs are consistent with state coastal policy, and equally important, we help guide other state agency actions toward consistency with the Buzzards Bay CCMP. Much of the NEP's work is described on three websites maintained by the NEP: [buzzardsbay.org](http://buzzardsbay.org), [stormwater.buzzardsbay.org](http://stormwater.buzzardsbay.org), and [climate.buzzardsbay.org](http://climate.buzzardsbay.org).

The Buzzards Bay Action Committee compliments our efforts by providing a forum for municipal government to exchange ideas, guide Buzzards Bay NEP efforts, and create collaborations that cross municipal borders and help work toward regional solutions and regionally consistent strategies. From time to time the Buzzards Bay Action Committee applies for grants collaboratively with the Buzzards Bay NEP. An example of this was the completion of work by the Buzzards Bay Action Committee to establish the Buzzards Bay stormwater collaborative with an EPA Healthy Communities grant between 2015 and 2019.

The Buzzards Bay Coalition compliments the other organizations because they are more than a premier citizen education group. The Coalition is also a highly successful advocacy group and a leading agent of land protection, habitat restoration, water quality protection, and science in the Buzzards Bay watershed. Among the three Buzzards Bay organizations, only the Coalition can, and has, legally challenged government to act, and has even joined in lawsuits advocating for greater environmental protection action by regulators. The Buzzards Bay Coalition has also repeatedly helped draft, and publicly promote the adoption of new laws and regulations that achieve CCMP goals (see the discussion on the Coalition's comments on the Massachusetts Ocean Sanctuaries Regulations on page 8). They also implement (with modest financial support by the Buzzards Bay NEP) one of the most successful and effective citizen-based water quality monitoring programs in the country. This monitoring program is not only an essential element of our efforts to track environmental protection progress in Buzzards Bay, but their data are being used by the Massachusetts Department of Environmental Protection as the basis of establishing nitrogen TMDLs for Buzzards Bay embayments. Their more recent work in salt marsh monitoring in collaboration with the NEP is leading to a greater understanding of the threats facing Buzzards Bay salt marshes.

It is for all these reasons that we also highlight certain activities of the Buzzards Bay Coalition and the Buzzards Bay Action Committee in this document as they relate to their specific commitments in our Cooperative Agreement.

We look forward to the on-site review team's visit so that we can further highlight the successes of our program.

Sincerely,  
  
Joseph E. Costa PhD,  
Executive Director

cc: Buzzards Bay NEP Steering Committee

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## Section 1. NEP Narrative Submission Overview and Goals

The U.S. EPA has established program evaluation (PE) narrative submission requirements in the document *National Estuary Program, Program Evaluation Guidance, Updated December 5, 2023*. The U.S. EPA notes that the overarching goal of the PE is to demonstrate the value of a sustained National Estuary Program and its role as an efficient and effective instrument to convey EPA support to the local level. This goal is achieved by documenting the role of NEP's in convening stakeholders, interpreting science for management, documenting the benefits of the federal investments, documenting implementation of an estuary's Comprehensive Conservation and Management Plan (CCMP), and documenting programmatic and environmental results achieved through NEP contributions including improving or reducing pressures on coastal watersheds. Through this exercise, EPA in turn will identify areas of improvement to assist NEPs in becoming stronger and more effective programs. The last NEP program evaluation was undertaken in the spring of 2019 for activities undertaken through about June 2018 (Fig. 1).

This document reports on Buzzards Bay NEP activities between July 1, 2018, and September 30, 2023, and principally covers Buzzards Bay NEP work plans titled *Federal FY18 Funds Work Plan and Budget* through *Federal FY22 Funds Work Plan and Budget* (five work plans). It includes a concise narrative response to all required components identified in the December 2023 PE guidance, including the key topics 1) environmental/programmatic work plan accomplishments, 2) program implementation, and 3) ecosystem and community status. However, the order in which information is presented differs somewhat from the guidance. For example, PE guidance topic 2 (NEP program implementation) is discussed first because the explanation of the NEPs organizational structure and the relationship of the NEP with the partner organizations provides a better context for the information presented in subsequent sections of this report. In each section below, a narrative is first presented addressing the guidance topic, followed by answers to the questions posed by EPA in the guidance document. To provide some context for information provided in this submission, Fig. 2 illustrates the Buzzards Bay study area, municipal boundaries, wastewater facility discharges, and selected local watersheds.

The purpose of this program evaluation narrative submission is to demonstrate the successful performance and proven effectiveness of the Buzzards Bay National Estuary Program. We achieve this goal through this submission and supporting documents attached or linked on the NEP's website, or the websites of our partners. Throughout the document, we highlight successes and strengths of the program, describe our efforts to facilitate technology and information transfer, and demonstrate that stakeholder commitments and community support are being maintained and increased. Additional details on some topics are provided in the annual work plans.



Fig. 1 The 2019 Program Evaluation team for the Buzzards Bay NEP. Included in the team were (l to r) Regina Lyons, Chief Ocean and Coastal Protection Section, and Alicia Grimaldi Program Coordinator, US EPA Region I, Roberta Swann, Director of the Mobile Bay Estuary Program, NEP Director Joe Costa, and EPA Headquarters coordinator Romel Nandi.



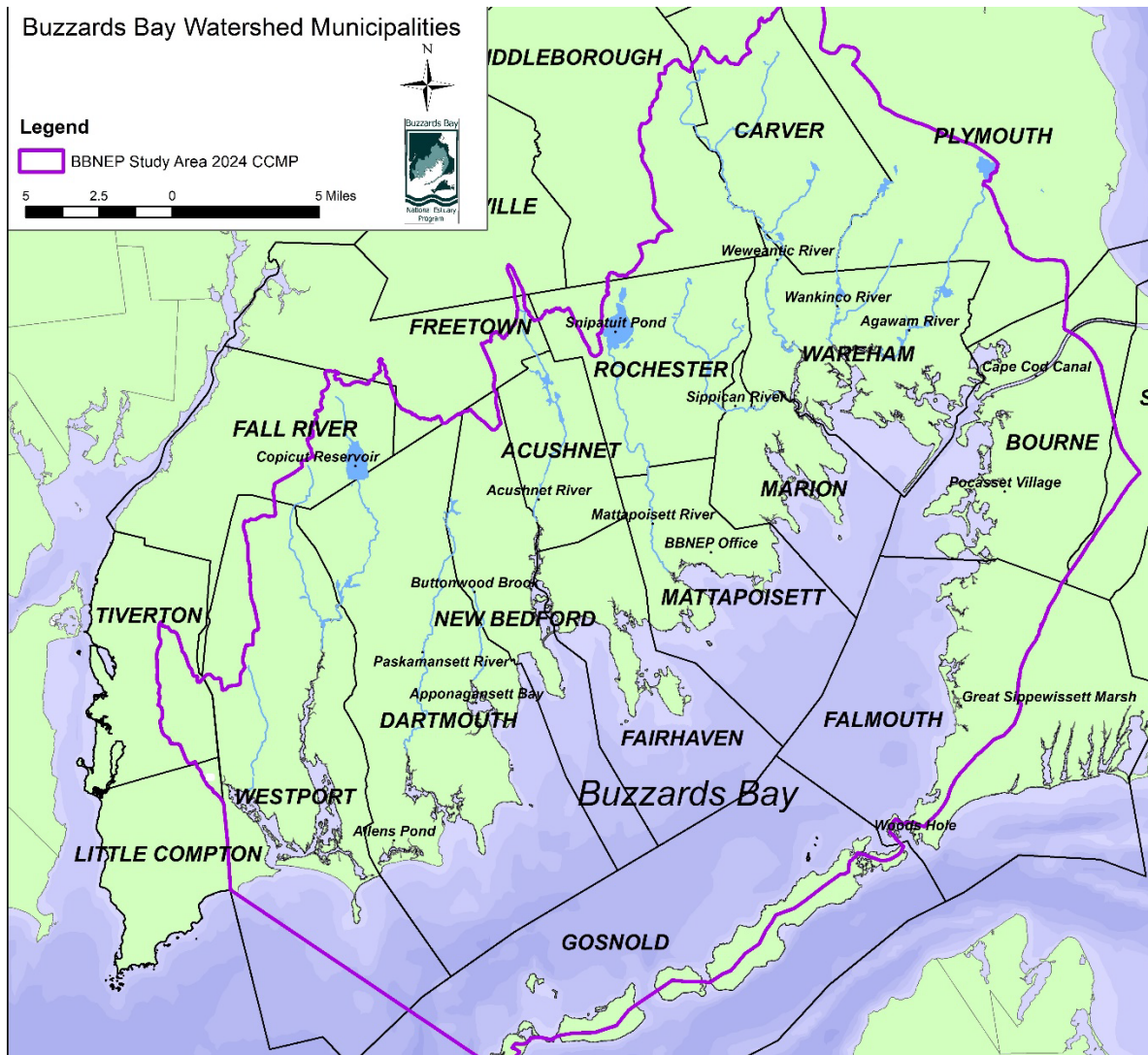


Fig. 2 Buzzards Bay Study Area, municipal boundaries, wastewater facility discharges, and selected local watersheds.

## Section 2. NEP Program Implementation (Guidance Topic 2)

### Section 2.1. Overview of organizational history, administrative, and governance structure

The Buzzards Bay National Estuary Program is an advisory and planning unit of the Massachusetts Office of Coastal Zone Management (CZM). Created in 1985 as the Buzzards Bay Project, and joining the National Estuary Program in 1987, the Buzzards Bay NEP completed its original CCMP in 1991. In 2013, the Buzzards Bay NEP completed its update to the CCMP, and in 2023, the NEP began its 2024 update of the document. Each annual work plan of the NEP describes the funding and technical assistance provided to municipalities, environmental organizations, and the public to facilitate actions that meet specific goals contained in the CCMP. Work plans and activities of the NEP are posted on the website [buzzardsbay.org](http://buzzardsbay.org), which is developed and managed by the NEP. This webpage facilitates the exchange of ideas relating to the implementation of the Buzzards Bay CCMP, and as noted on the site, the views or information contained there do not necessarily reflect the views of the Commonwealth of Massachusetts or the U.S. EPA.

Since the NEP's inception, a Policy Committee composed of the Massachusetts Executive Office of Energy and Environmental Affairs Secretary and the U.S. EPA New England Regional Administrator or their designees, is defined as the entity ultimately responsible for ensuring that the Buzzards Bay NEP meets its goals. The annual signing and approval of the state-federal Cooperative Agreement and work plan constitutes approval and endorsement of NEP activities by the Policy Committee.

Until 1992, the Buzzards Bay NEP staff was more directly guided by a Management Committee of more than 20 members representing state, federal, and regional agencies, municipalities, and citizens groups. The EPA chaired this Management Committee. The Buzzards Bay NEP also had standing technical committees, a management plan advisory committee, and other advisory committees. With the completion of the CCMP, the Management Committee replaced itself with a Steering Committee composed of those parties most interested in ensuring implementation of the CCMP. These members were CZM, the U.S. EPA, the Southeast Regional Planning and Economic Development District (SRPEDD), and two not-for-profits: the Buzzards Bay Action Committee, which is composed of municipal officials, and the Buzzards Bay Coalition, a citizen-based group. In 2008, the Massachusetts Department of Environmental Protection (DEP) formally joined the Buzzards Bay Steering Committee as its sixth member, a reflection of their central role in helping implement the Buzzards Bay CCMP (Fig. 3).

Both the Buzzards Bay Action Committee and Buzzards Bay Coalition were offshoots of the Buzzards Bay NEP's Citizen Advisory Committee, which dissolved in 1987 into the two entities, with both eventually established as independent not-for-profit organizations. Both organizations share a common goal with the NEP to protect and restore water quality and living resources of Buzzards Bay and surrounding watershed through implementation of the Buzzards Bay CCMP.

In 1997 and again in 2005 the Buzzards Bay NEP signed a memorandum of understanding (MOU) with the Buzzards Bay Action Committee and Buzzards Bay Coalition to affirm our collective goals to protect and restore water quality and living resources in Buzzards Bay and the surrounding watershed through implementation of the CCMP. The MOU expressed each organization's interests and led to improved coordination and reduced redundancy among the partners (see [buzzardsbayaction.org/mou-bb-2005.pdf](http://buzzardsbayaction.org/mou-bb-2005.pdf)). Because of the MOU, the Buzzards Bay NEP stepped back from producing educational and outreach products for the public and focused instead on providing technical and financial assistance to municipalities and other partners starting in the 1990s. Later, rather than the NEP establishing its own science advisory committee, the NEP director became a member of the Buzzards Bay Coalition's Science Advisory Committee. While the mission of the Science Advisory Committee is to guide Buzzards Bay Coalition priorities, especially with respect to research and monitoring, participation helps the NEP identify emerging issues and better understand the needs and concerns of area scientists. The Science Advisory Committee also provides the NEP with a forum for the NEP director to identify priorities and needs to meet the goals of the Buzzards Bay CCMP. An excellent example of the collaborative relationship between the NEP and the Coalition's Science Advisory Committee was that the Science Advisory Committee members provided guidance and review of the [climate vulnerability assessment](#) of the Buzzards Bay CCMP, finalized in July 2023.



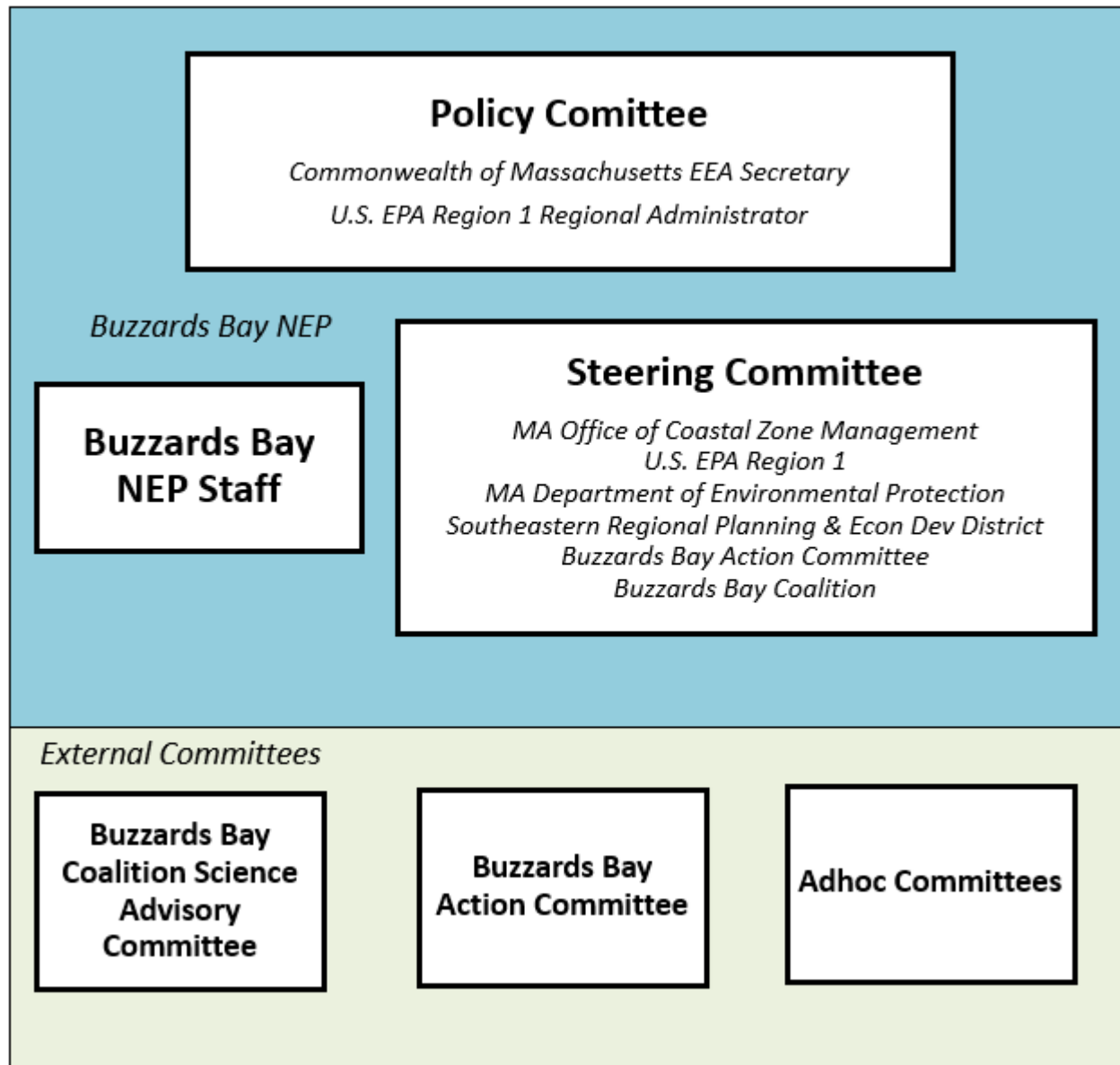


Fig. 3 Present-day Buzzards Bay NEP structure.

Another benefit of the close collaboration and partnership between the Buzzards Bay NEP and the Buzzards Bay Coalition is that other scientific assessments and public outreach typically undertaken by NEPs, like state of the bay reports, are undertaken by the Buzzards Bay Coalition with NEP input. These reports meet the Coalition’s program goals and mission and support the NEP’s mission. Under this collaborative framework, the Buzzards Bay Action Committee and the Buzzards Bay Coalition are not only collaborative partners with the NEP under its Cooperative Agreements, but the NEP is often a partner providing services on grants that the two non-profits receive from state and federal sources. For example, under two DEP 604(B) grants to the Buzzards Bay Coalition, the NEP is responsible for conducting a watershed loading assessment. In the 2015 to 2019 Healthy Communities grant that allowed the NEP and the Buzzards Bay Action Committee to establish the Buzzards Bay Stormwater Collaborative, the NEP was responsible for developing the monitoring program, creating a QAPP, and

training interns and the program coordinator. During the 2024 CCMP update process, the NEP and its partners will determine whether an update to the MOU is needed.

As noted on their website [savebuzzardsbay.org](http://savebuzzardsbay.org), the Buzzards Bay Coalition is a membership-supported organization dedicated to improving the health of the Buzzards Bay ecosystem for all through education, conservation, research, and advocacy, working to protect clean water on the Bay and on the land. The Buzzards Bay Coalition has become one of premier Massachusetts watershed organizations and one of the most effective place-based estuary not-for-profits in the country. They have effective and recognized programs supporting science, advocacy, watershed protection, and community engagement. The Buzzards Bay Coalition is a large membership organization with dozens of staff, an annual budget exceeding \$8 million, and 8,000 members (see the [Buzzards Bay Coalition 2022 annual report](#)). In the Buzzards Bay Coalition's [2015-2020 strategic plan](#), the organization recognized that people have become disengaged from their local environment. To combat this crisis of disengagement, during the past decade the Buzzards Bay Coalition committed to expand its role in connecting people to the Bay and its watershed through its network of Bay Discovery Sites and outdoor programs for youth (e.g., Fig. 4), with several initiatives focused on New Bedford where the Buzzards Bay Coalition's main office is located.

The Buzzards Bay Coalition is involved in a wide range of programs including education, water quality monitoring, and land protection (e.g., Fig. 5). The program raises funds through membership, donations, grants, and in public awareness and fund-raising events like their annual Buzzards Bay Swim and the Watershed Ride for bicyclists. Other activities are described in Buzzards Bay Coalition annual reports contained in the supplementary document package.

In contrast to the Buzzards Bay Coalition, the Buzzards Bay Action Committee is a small not-for-profit organization composed of municipal officials concerned with state, local and federal environmental regulations and policies that affect Buzzards Bay and its surrounding watershed. With a \$30,000 annual budget and a part-time executive director, the mission of the Buzzards Bay Action Committee is more narrowly focused to improve collaboration among watershed municipalities and to expedite the



Fig. 4 With a 2022 National Oceanic and Atmospheric Administration Bay and Watershed Educational Experience (B-WET) grant, the Buzzards Bay Coalition will provide 620 6th and 7th-grade students the opportunity to participate in marine science enriching field trips at the [Coalition's Onset Bay Center](#). *Photo courtesy of the Buzzards Bay Coalition.*



Fig. 5 Buzzards Bay Coalition land protection efforts often include habitat restoration or public access projects like this [New Boston Trail](#) in Fairhaven, created in the summer of 2018 on land acquired with previous support by the Buzzards Bay NEP. This site is one of two dozen land protection projects in the Mattapoissett River Valley supported by the Buzzards Bay NEP in the past 20 years to help protect municipal drinking water supplies and important wetlands habitat. Many of these properties are part of the Coalition's [Mattapoissett River Reserve](#). Recent NEP grants in the valley include Tripps Mill Brook Headwaters II Conservation Project in 2020 and the Conservation of Alves Riverfront Parcel in 2021. *Photo courtesy of the Buzzards Bay Coalition.*

exchange of information and ideas that will enhance the region’s ability to implement sound and resilient environmental regulations and by-laws to protect and enhance a mutual resource, Buzzards Bay. The tagline of the organization is “communities united to preserve and protect Buzzards Bay”.

The Buzzards Bay Action Committee guides the NEP as to the needs of Buzzards Bay municipalities in their efforts to protect the environment. The Buzzards Bay Action Committee hosts monthly meetings with invited speakers (Fig. 6) to which the NEP director and staff participate. the Buzzards Bay Action Committee Executive Director also participated in other annual events like the Westport River Day. Most Buzzards Bay Action Committee meetings focus on educating municipal officials about changing state and federal regulations, grant opportunities, and sharing local environmental program strategies, bylaws, and models.

Included in Fig. 3 are ad hoc committees that are periodically established by the NEP or its partners on an as needed basis. For example, through 2019, the Buzzards Bay Action Committee managed a stormwater workgroup in setting priorities for the Stormwater Collaborative when they managed the program. In 2020 and 2021 the Buzzards Bay Coalition organized a series of meetings to identify climate resiliency issues and needs as part of the Climate Vulnerability Assessment for the Buzzards Bay CCMP. In 2024, the NEP formed a work group to help review updates to the Buzzards Bay CCMP.

Buzzards Bay NEP staff consist of three full-time and two part-time state employees, or an equivalent of 3.8 full time employees. Dr. Joe Costa is Executive Director of the Buzzards Bay National Estuary Program. Besides overseeing and administering the program, he provides technical assistance on nitrogen loading assessment and management, water quality analysis, watershed planning, build-out and watershed nitrogen loading analysis, data analysis, salt marsh mapping and elevation surveys, GIS support, and use of LiDAR data. Joe’s research in Marine Ecology, particularly nitrogen loading effects on eelgrass beds and coastal ecosystems was used to establish the Buzzards Bay Coalition’s citizen water quality monitoring program Baywatchers, and he was the lead in the creation of the Massachusetts Alternative Septic System Test Center, operated by Barnstable County Health since 2001. He was also the lead in establishing the Buzzards Bay Stormwater Collaborative in 2017, and the long-term salt marsh monitoring program in 2019.

Kevin Bartsch is one of the program's Stormwater Specialists. He has a master’s degree in Watershed Science and over 30 years of experience in GIS and natural resources. Kevin has a wealth of knowledge in MS4, public utility infrastructure, asset management, soil erosion, natural resource management, and open space protection. At the Buzzards Bay NEP, he works with municipalities and the Buzzards Bay Stormwater Collaborative to document and



Fig. 6 The Buzzards Bay Action Committee meets monthly to discuss topics of interest to Buzzards Bay municipalities. At this May 2022 meeting, MassDEP Deputy Commissioner for Policy and Planning, Paul Locke discusses new state regulations for closing open soil and gravel pits. *Photo by Elizabeth Leidhold.*



manage stormwater structures, maintains water quality data collected for stormwater monitoring, and provides NEP project support.

Bernadette Taber is the other Stormwater Specialist. A long-time former employee of the USDA Natural Resource Conservation Service detailed to the Buzzards Bay NEP office since 1991, Bernie re-joined the Buzzards Bay NEP after leaving federal service in 2015. Bernie evaluates and develops engineering solutions for stormwater remediation in both agricultural and urban environments. Bernie has reviewed many engineering plans at the request of Buzzards Bay municipalities and has also developed the preliminary stormwater and habitat restoration designs identified in collaboration with Buzzards Bay municipalities and their contractors.

Sarah Williams is the BBNEP's Regional Planner. She aids municipalities and program partners on land use and watershed planning, land conservation, build out analysis, habitat restoration, and mapping. She is also responsible for the administration of the Program's Municipal Grant Programs. Sarah was also a former member of the Fairhaven-Acushnet Land Preservation Trust.

Dave Janik is the BBNEP's Grants Facilitation Specialist. He assists municipalities develop project ideas for applications to state and federal grant programs. When needed, he also provides strategic assistance and advice to municipalities as they implement some of their grant-funded projects. As the former CZM South Coast Regional Coordinator, Dave brings with him a wealth of knowledge and a strong relationship with municipal staff and officials.

## Section 2.2. Benefits of partnerships in achieving CCMP goals

The early separation of roles among the NEP's partners enabled the Buzzards Bay NEP to focus its limited resources (staff and funding) more narrowly on where it could achieve the most benefit -- specifically, technical, and financial assistance to municipalities and non-governmental organizations to implement projects to achieve CCMP goals. This narrow approach is possible because of the strength and success of the Buzzards Bay Coalition. Few estuary-focused non-profits in the U.S. can compare to the Buzzards Bay Coalition with its diverse programs, and its growing network of discovery sites, education centers, and conservation reserves in the Buzzards Bay watershed. Partnership with the Buzzards Bay Coalition enables the Buzzards Bay NEP to implement the Buzzards Bay CCMP more effectively.

While the 1997 and 2005 Buzzards Bay MOUs led the Buzzards Bay NEP to more narrowly define how it would facilitate implementing the Buzzards Bay CCMP, it also allowed the NEP to incorporate work conducted by the Buzzards Bay Action Committee and certain activities of the Buzzards Bay Coalition to be counted as tasks in its annual work plan and budget under each EPA Cooperative Agreement. This approach helped spread the impact and reach of the NEP, and achieve several goals, including helping the NEP meet the federal funding 1:1 match requirement.

Our partners also benefited by receiving NEP funding and technical assistance on collaborative tasks. As mentioned previously, the NEP completed tasks including watershed loading analyses and GIS analysis of salt marsh loss that were part of Buzzards Bay Coalition grants from DEP, EPA, and science foundations. The Buzzards Bay NEP prepares high quality map graphics used for proposals, website postings, events (Fig. 7), signage (Fig. 8), and publications by the Buzzards Bay Coalition and other partners. The magnitude of the NEP's GIS support to the Buzzards Bay Coalition is illustrated by the fact that 350 of 450 digital or paper GIS map products produced by the NEP Regional Planner in 2022 were made at the request of Buzzards Bay Coalition staff. Other direct technical support to the Buzzards Bay Coalition included GIS and elevation analysis in support of three salt marsh studies in Buzzards Bay.

Although collaborations between the NEP, Buzzards Bay Coalition, and the Buzzards Bay Action Committee represent an important part of the NEP's work, other NEP tasks are more demanding of staff time. Between 2018 and 2023, the NEP awarded and administered \$3.37 million dollars in 60 grants and subawards, mostly through the Buzzards Bay municipal grant program. During the same period, considerable staff resources were dedicated to assisting municipalities to map, monitor, and manage their stormwater networks and discharges through the expanding Buzzards Bay Stormwater Collaborative. The NEP also assisted municipalities to meet requirements for their federal stormwater permits (MS4). In other efforts, the NEP's partners played key roles. Buzzards Bay Action Committee members helped facilitate payments to Massachusetts Maritime Academy, a Massachusetts specialized college in the Massachusetts state university system, to fund co-op students to participate in the Buzzards Bay Stormwater Collaborative. The Buzzards Bay Coalition helped municipalities to prepare many of the grant applications funded by the NEP's municipal grant program, particularly applications related to land protection and habitat restoration. A review of the Buzzards Bay NEP work plans in this narrative submission illustrates some of the other collaborative efforts and symbiosis among the three Buzzards Bay organizations.

### Section 2.3. EPA Questions on Administration and Governance Structure

*How does the NEP organizational structure provide a clear and transparent decision-making process for actions based on both stakeholders' priorities and good science, facilitate decision-making autonomy for the Management Conference from the host entity, and allow the NEP to be seen as a leader in watershed management?*

As described in detail in the section above, the benefits of the NEP's organizational structure and collaboration with the Buzzards Bay Coalition, Buzzards Bay Action Committee, other non-profits, and municipal officials help guide the NEP to select the appropriate priorities and science focus within the constraints of available funds and staffing. Draft NEP work plans and budgets are circulated to the Steering Committee for comment and guidance.



Fig. 7 In 2018, Buzzards Bay Coalition staff member holds a Buzzards Bay NEP produced map showing lands they hope to purchase on Cuttyhunk Island. The NEP was one of many grantees that supported the acquisition in 2019. *Photo from [Cape Cod Times article by Steve Heaslip](#).*



Fig. 8 The map on this sign at Town of Rochester and Rochester Land Trust Doggett Brook Conservation area was prepared by the Buzzards Bay NEP. The NEP awarded grants in support land protection in 2010 with a second 2021 grant to protect the adjacent [Doggett Brook Farm](#). *Photo courtesy of the [Jean Perry and the Wanderer](#).*



With respect to leadership, the NEP is widely recognized as expert in many areas including nitrogen and stormwater management. Much of the current work on salt marshes in Buzzards Bay, and the long-term monitoring program were initiated because of NEP collaborations with the Buzzards Bay Coalition. With respect to autonomy, while staff are state CZM employees, the NEP is a semi-independent technical assistance sub-unit, and isolated from of tasks and responsibilities defined Under the NOAA grant supporting the state CZM program. The independence of the NEP is expressed in many ways ranging from the use of non-state stationary and using a website ([buzzardsbay.org](http://buzzardsbay.org)) to communicate information independent of the views of the EPA or the Commonwealth of Massachusetts. Even in the matter of Environmental Justice Policies and goals, as permitted under agency guidelines, the NEP was allowed to build up the state's EJ policies to include additional support and focus on Title 1 schools.

*How is the NEP ensuring that its Management Conference includes input from diverse populations and interests?*

Because of the partitioning of roles between the Buzzards Bay NEP, Buzzards Bay Coalition, and the Buzzards Bay Action Committee, the NEP's primary focus is to provide funding and technical assistance to municipal government and non-governmental organizations. In this regard, input from the Buzzards Bay Coalition staff, the Buzzards Bay Coalition Science Advisory Committee and the Buzzards Bay Action Committee are important avenues for identifying stakeholder priorities and prioritizing the areas of science. Because the NEP does not directly meet with the public, to get better input from diverse populations and interests, the NEP has taken a twofold approach. First, under the municipal grant program, projects that benefit disadvantaged populations and communities are favored in the grant scoring. The NEP has also encouraged municipal points of contact to identify projects serving disadvantaged populations. This approach has directly increased the amount of grant funding and technical assistance from the NEP provided to disadvantaged communities.

*How does the NEP's staffing structure and planning promote stability and continuity of succession within the organization?*

Buzzards Bay NEP staff are state employees that work as a planning unit under the Massachusetts Office of Coastal Zone Management. Staffing structure, job grades, salary, pay increases, and especially the state retirement benefits and policies are well-defined and are managed by the agency's human resources department according to state policies and equal opportunity guidelines. There are also mechanisms in place to deal with issues like government shutdowns. This framework promotes staff commitment and longevity, allowing staff to gain institutional knowledge that has benefited the NEP. However, if an employee leaves, their position is publicly posted, and a multi-member review team including a representative from human resources is involved with each hire. Positions and priorities are defined under the workplan and by the leadership of the program Executive Director. Because the Buzzards Bay NEP Executive Director reports to the Massachusetts CZM Director, the CZM Director can appoint an interim NEP director until the position is filled. CZM staff are also resources that the NEP can draw upon to assist the NEP with specific projects.

*How does the NEP plan to continue operations during emergencies?*

Because the NEP is part of state government, mechanisms are in place to address financial, administrative, and programmatic emergencies. For example, the NEP has weathered federal government shutdowns and dramatic funding cuts in the past. Specific action has included continuity of staff salaries through the comptroller office and state legislative action to meet federal cutbacks. Because federal funds are awarded to NEPs at the end of federal fiscal years, generally there are 12 months to plan for any dramatic changes in state or federal administration of programs. Costs of unexpected departures of staff through disability or family emergencies are covered by the state's disability program, extended illness leave bank, and the family leave program, freeing up NEP grant funds to hire temporary employees to cover unplanned departures. During the Covid pandemic, the

state provided all employees with laptops and staff were converted to hybrid positions, enabling everyone to work remotely from home when necessary.

*Highlight particularly beneficial characteristics as well as areas for improvement.*

The Buzzards Bay NEP collaboration between the Buzzards Bay Coalition and the Buzzards Bay Action Committee represents one of the most beneficial characteristics of the Buzzards Bay Management Conference. Continuing to forge new partnerships improves the NEP's effectiveness. The success of this approach is illustrated by the partnership between the NEP and Massachusetts Maritime Academy, from 2019 to present, to implement the Buzzards Bay Stormwater Collaborative (see this [fact sheet](#)), and to integrate the effort into the school's co-op student curriculum. Another example is the partnership with the Woodwell Climate Research Center. The NEP had long sought to promote stream flow and nitrogen load monitoring in the Buzzards Bay watershed to support management action and watershed nitrogen loading monitoring to help develop and evaluate watershed nitrogen total maximum daily loads (TMDLs). Such a program was beyond the scope of the Buzzards Bay Coalition's water quality monitoring program in terms of equipment and volunteer participation. The NEP saw an opportunity to establish a program when a stream monitoring proposal by the Woodwell Climate Research Center went unfunded. The NEP took the opportunity to fund this effort using a subaward written into the NEP's work plan and budget. In the first year of the monitoring program, eight streams were monitored, and in year two this was expanded to twelve. The program will be supported for a third year in 2024. Similarly, in 2021, the NEP formed a partnership with the New Bedford public schools to provide tuition waivers to students in financial need to allow them to participate in the summer school marine science program Sea Lab. The funding also sponsors field trips, teaching aids, and a plastic bottle reduction program proposed by a student that included water bottle filling stations and branded reusable water bottles for the students. The Sea Lab partnership also contributed to the NEP's progress toward environmental justice goals.

These partnerships and the process of developing new initiatives through subaward tasks in the NEP annual work plan have proven effective. The NEP needs to identify other promising initiatives, including areas of emerging concern and support for disadvantaged populations in the watershed.

## Section 2.4. Budget Summary

During the PE review period, the NEP received EPA Section 320 base funding (\$600,000 under the Federal FY18 work plan increasing to \$750,000 under the federal FY22 workplan), one headquarters grants (\$10,000 for CCMP climate vulnerability assessment funding in the FY20 workplan), and EPA Southeast New England program funds averaging \$250,000 per year (but \$500,000 in the FFY18 workplan and zero in the FFY19 work plan), and year 1 and year 2 Infrastructure legislation funds. These funding sources are summarized in Fig. 9. The base funding principally covers the cost of staff and program operations, with a portion going to municipal grants. All the SNEP funding is directed to municipal grants and targeted subawards (Fig. 10). Fig. 11 provides a graphic budget summary showing how year 1 and year 2 of the Infrastructure Law funds were spent.

The effects of the addition of the SNEP funding and the later Infrastructure Investment and Jobs Act funding were profound and transformational in the focus and direction of the NEP. With near level funding of Section 320 base awards for over 15 years, to maintain staffing levels (salary, cost of living increases and programmatic increases including fringe rate), the municipal grant program was diminished to \$85,000 or less annually. This grant program, besides sponsoring projects beneficial to meeting CCMP goals, was also a tool to ensure municipal engagement with the NEP. The reduction in funding of the municipal grant program was degrading the NEP's ability to leverage new and innovative actions and funding. SNEP funding changed the financial landscape and NEP priorities. Initially half or more of the SNEP funding was dedicated to the municipal grant program, and the other half to

funding special initiatives, like expanding and changing how the Stormwater Collaborative operates. Prior to the Infrastructure Investment and Jobs Act funding, the municipal "minigrants" program was limited to funding small projects, or just designs for larger ones. With the additional funding, the NEP created the new Infrastructure and CCMP Support Grant Program, which could fund designs for larger projects, and the SNEP funding could be increasingly used for targeted awards. These targeted awards included establishing a long-term program to monitor stream flows and nitrogen loads on 10 Buzzards Bay streams, a partnership with a university to use drones to map salt marsh loss and elevation changes, and the establishment of a scholarship program for disadvantaged students to attend a marine science summer school in New Bedford (Sea Lab).

As an entity organized within state government, the NEP benefits from being housed within state government and the CZM office. With respect to grants administration and procurement, because CZM is an office within a cabinet Secretariat (Executive Office of Energy and Environmental Affairs) the NEP has support from both CZM financial staff and access to legal and financial staff of Environmental Affairs. This support includes the procurement, grant management and auditing services of the Comptroller's office and the Operational Services Division, as well as the Human Resources department for the administration of personnel. The state's indirect rate (11.2% to 14.4% during the PE period) covers all these services. With increasing migration to electronic and digital administration, and the retirement of the NEP's administrative assistant, the NEP eliminated the administrative staff position beginning in the FY19 workplan. Moreover, because the state charges no indirect costs on grants or subawards, for the NEP's federal infrastructure grants, only one-half of one percent of the grant was expended on indirect charges, less than 1% on fees, and 0% on fringe (Fig. 11). This low overhead and efficiency at disbursing federal funds is unmatched by any other NEP and has improved the cost-effectiveness of dollars spent.

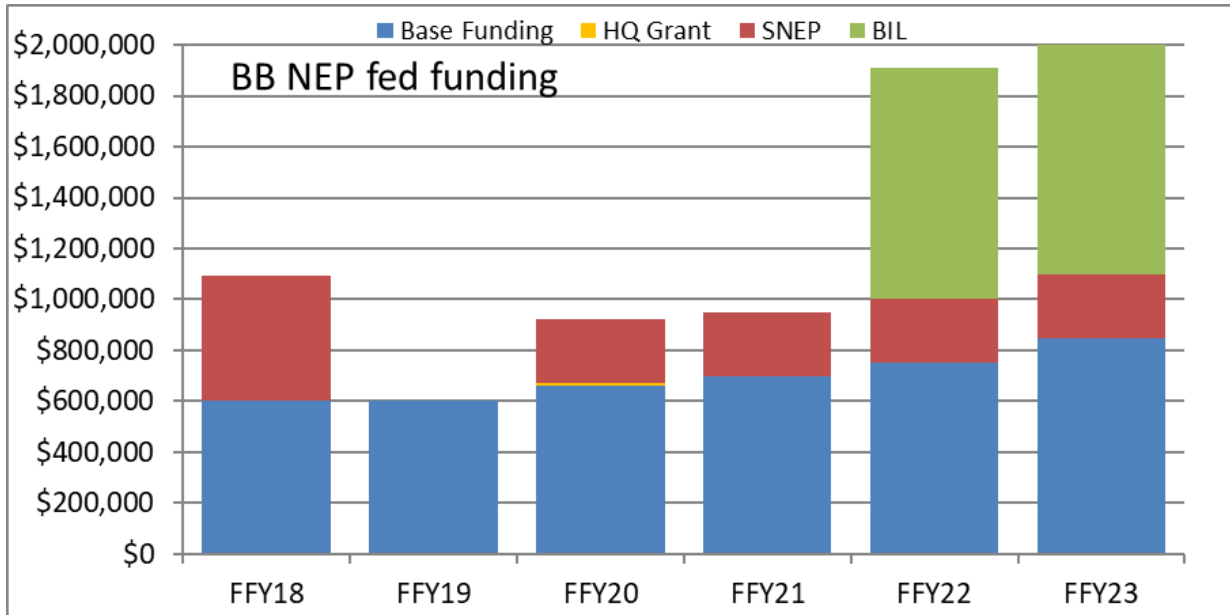


Fig. 9 All federal funding to the NEP in workplans coinciding with Federal FY18 through Federal FY23. The FY23 data is included because infrastructure legislation year 2 was largely expended during the PE evaluation period.

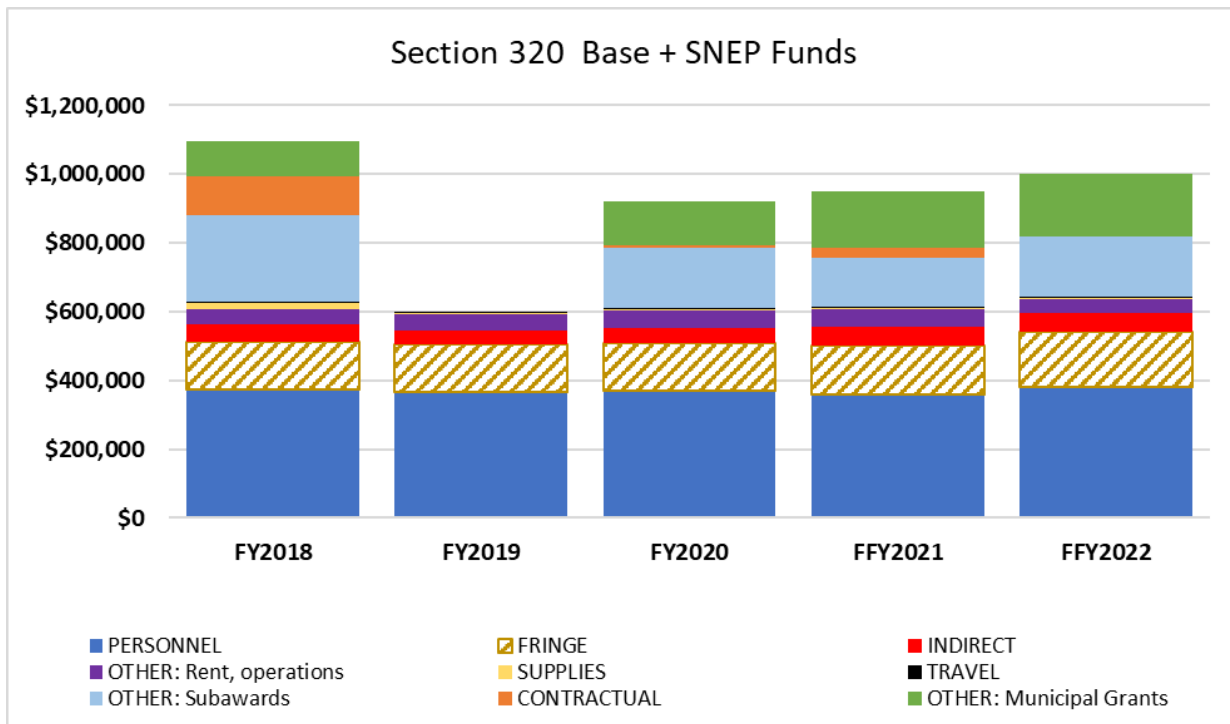
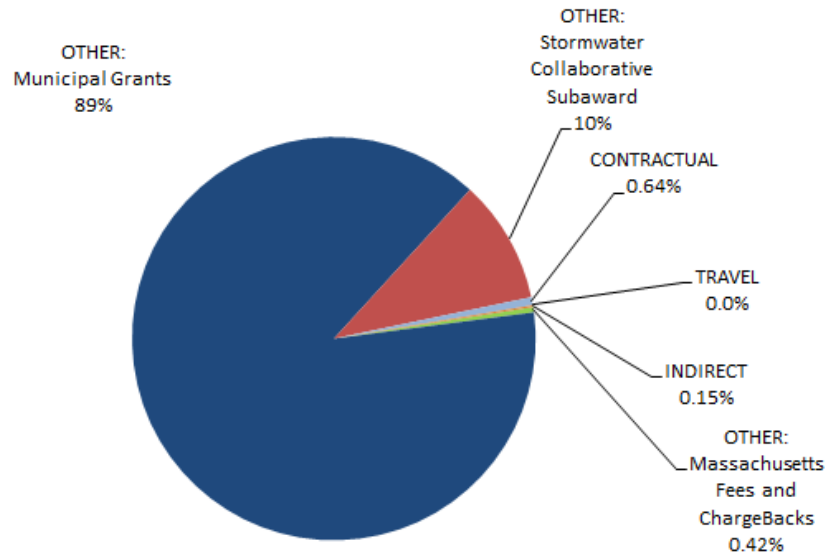


Fig. 10 Section 320 funding for federal FY 2018 through Federal FY 2022, by EPA budget category, with OTHER further broken down by grants, subawards, and operations.

Buzzards Bay NEP FFY22 BIL (YR1) Budget, \$909,800



Buzzards Bay NEP FFY23 BIL (YR2) Budget, \$909,800

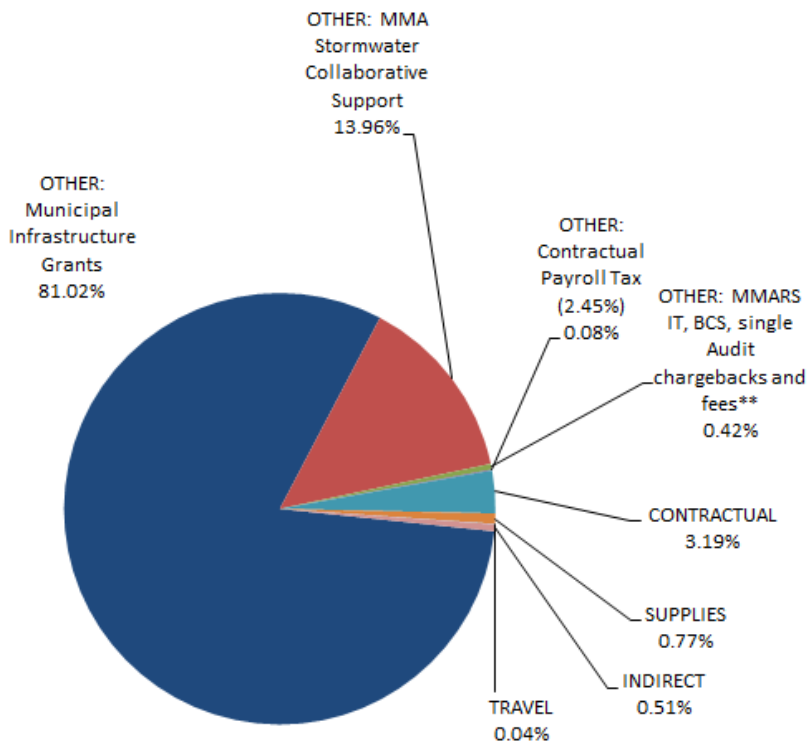


Fig. 11 Pie chart of expenditures under IIJA/BIL funding in year 1 (top) and Year 2 (bottom).



## Section 2.5. EPA Questions on Grant Obligations and Finance

*Has the NEP consistently met all its EPA §320 (Base) and Bipartisan Infrastructure Law grant obligations?*

During the PE period, grants were completed as proposed mostly within a two- or three-year window. Cooperative Agreements with appreciable funding in subawards and grants often took three years because of the turnaround needed to solicit for proposals, and for municipal design and construction projects to complete all tasks. Not all infrastructure year 2 funds were awarded in the second grant round, and the unawarded grant funds will be rolled into the year 3 grant round to be announced in the Spring of 2024.

**Table 1** Cooperative Agreements active during the program evaluation period

<b>Work Plan Title</b>	<b>Cooperative Agreement</b>	<b>Award</b>	<b>Duration</b>	<b>Comments</b>
FY2016	CE-00A00189-1	\$575,000	7/1/2016 - 9/30/2018	Grant close-out during PE period
FY2017	CE-00A00189-2	\$600,000	7/1/2017 - 6/30/2019	Grant close-out during PE period
FY2018	CE-00A00456	\$1,095,000	7/1/2018 - 3/31/2021	Grant close-out during PE period
FY2019	CE-00A00515	\$600,000	7/1/2019 - 6/30/2021	Grant close-out during PE period
FY2020	CE-00A00623	\$912,500	7/1/2020 - 9/30/2022	Grant close-out during PE period
FY2021	CE-00A00860	\$950,000	7/01/2021 - 1/31/2024	Grant close-out during PE period
FY2022	CE-00A00887	\$1,000,000	7/01/2022 - 6/30/2024	will be extended to January 2025
FY2022 IJJA 1	4T-00A00900	\$909,800	7/01/2022 - 9/30/2024	Most funds awarded & obligated
FY2023	CE-00A01217	\$1,050,000	7/01/2023 - 1/30/2026	Subawards and grants obligated
FY2023 IJJA 2	4T-00A01214	\$909,800	7/01/2023 - 1/30/2026	700K awarded and obligated

*Have there been any challenges or problems encountered with cost sharing or implementing its federal NEP award?*

The greatest challenge during the past five years has been the added administrative and personnel time burdens associated with the infrastructure law funding, including reporting requirements, development of an equity plan, additional cooperative agreement management, and additional rounds of municipal grants. The Buzzards Bay NEP chose not to increase staffing to maximize the benefit of the additional funding, and successfully met this challenge by continued completion of work plan tasks.

With respect to cost sharing, the NEP has always met its match obligations. While the minimum match for the Buzzards Bay municipal grants funded by Section 320 base funding is only 33% of the award, grant recipient frequently exceeds this match, both because grant scoring considers over match, and because the NEP communicates that project match provided helps meet the NEP's match obligations. This is illustrated by Table 2, showing grants and subawards totaling \$3.4 million. While the match total is currently \$1.4 million, that is only the match for \$1.6 million in closed projects. In general, the municipal grant program, funded by federal base program funds or SNEP, often averages close to the federal 1:1 match requirement. The remaining \$1.8 million in open projects in Table 2 generates additional matching funds for base funded projects or leveraged funds for the infrastructure funding, which does not require match.

**Table 2** Summary of grants awarded between 2018 and 2023, including final match for closed projects (NC=not closed, match not yet finalized).

Award Year	Grantee	Short Title	Award	Source	Final Match
2023	City of New Bedford Health Lab	Buzzards Bay Stormwater Testing - Lab Contract	\$4,000	IJJA	\$0
2023	Envirotech Laboratories, Inc.	Buzzards Bay Stormwater Testing - Lab Contract	\$4,000	IJJA	\$0
2023	Fairhaven	Salt Winds Conservation Project	\$25,000	SNEP	\$50,000
2023	Buzzards Bay Coalition	Buzzards Bay Water Quality Monitoring	\$60,000	SNEP	\$60,000
2023	Massachusetts Maritime Academy	Stormwater Collaborative - Year 2	\$90,206	IJJA	\$88,296
2023	Bourne	Queen Swell Pond Watershed Action Plan	\$183,500	IJJA	NC
2023	Buzzards Bay Coalition	Benthic Flux Monitoring in Red Brook Harbor to Support TMDL Development	\$46,000	SNEP	NC
2023	Dartmouth	Reduction of Nitrates into Buzzards Bay from WWTP Outfall	\$250,000	IJJA	NC
2023	Fairhaven	Jerusalem Road Stormwater Remediation Project Construction	\$125,000	IJJA	NC
2023	Massachusetts Maritime Academy	Stormwater Collaborative - Year 3	\$127,042	IJJA	NC
2023	New Bedford	Buttonwood Park Green Infrastructure	\$375,000	IJJA	NC
2023	New Bedford	Marine Education Support to Sea Lab - Year 3	\$25,889	SNEP	NC
2023	New Bedford	Marine Education Support to Sea Lab - Year 2	\$22,604	SNEP	NC
2023	New Bedford	Riverside Park Salt Marsh Restoration	\$93,531	IJJA	NC
2023	Wareham	Neighborhood-scale Nitrogen Reductions at Little Harbor, Wareham, MA	\$40,000	IJJA	NC
2023	Wareham	Wareham Water Pollution Facility Denitrifying Woodchip Bioreactor Field Trial	\$275,000	IJJA	NC
2023	Westport	Town of Westport MS4 Investigations	\$25,000	IJJA	NC
2023	Woodwell Climate Research Center	Determining Nitrogen Inputs to Buzzards Bay from Coastal Rivers - Year 3	\$45,948	SNEP	NC
2022	City of New Bedford Health Lab	Buzzards Bay Stormwater Testing - Lab Contract	\$2,000	SNEP	\$0
2022	Envirotech Laboratories, Inc.	Buzzards Bay Stormwater Testing - Lab Contract	\$2,000	SNEP	\$0
2022	New Bedford	Marine Education Support to Sea Lab - Year 1	\$27,496	SNEP	\$0
2022	University of Massachusetts Dartmouth	Use of Unmanned Aerial Systems to Monitor Salt Marsh Loss from Climate Change and Other Factors - Year 1	\$49,411	SNEP	\$9,536
2022	Westport	Snell Creek Conservation Project	\$30,000	SNEP	\$9,900
2022	Mattapoisett	Shipyards Lane Stormwater Master Plan	\$35,000	SNEP	\$10,982
2022	Woodwell Climate Research Center	Determining Nitrogen Inputs to Buzzards Bay from Coastal Rivers - Year 2	\$44,616	SNEP	\$16,400
2022	Carver	Support for Tasks to Achieve MS4 Compliance in the Town of Carver	\$12,500	SNEP	\$20,000
2022	Rochester	Mattapoisett River Valley Water Supply Resilience Project	\$70,000	SNEP	\$23,100
2022	Buzzards Bay Coalition	BayWatchers Monitoring Program Support	\$40,000	SNEP	\$40,000
2022	University of Massachusetts Dartmouth	Use of Unmanned Aerial Systems to Monitor Salt Marsh Loss from Climate Change and Other Factors - Year 2	\$53,308	SNEP	\$53,308
2022	Mattapoisett	Conservation of Lopriore & Defelice Properties	\$35,000	SNEP	\$80,000
2021	Massachusetts Maritime Academy	Stormwater Monitoring Collaboration - Year 1	\$25,000	SNEP	\$1,275
2021	Rochester	Doggett Brook Buffer Conservation Project	\$41,586	SNEP	\$13,723
2021	Carver	Great South Meadow Cedar Swamp Conservation Project	\$45,000	SNEP	\$14,850
2021	Mattapoisett	Conservation of Alves Riverfront Parcel	\$45,000	SNEP	\$180,000
2020	City of New Bedford Health Lab	Buzzards Bay Stormwater Testing - Lab Contract	\$1,800	SNEP	\$0
2020	Envirotech Laboratories, Inc.	Buzzards Bay Stormwater Testing - Lab Contract	\$2,200	SNEP	\$0
2020	Horsley Witten Group	Engineered Design Plans for Stormwater Remediation at 6 sites in the Buzzards Bay Watershed	\$106,940	SNEP	\$0

Award Year	Grantee	Short Title	Award	Source	Final Match
2020	Marine Biological Laboratory	Wareham Water Pollution Facility Permeable Reactive Barriers Test Facility, Phase II	\$27,375	SNEP	\$0
2020	Rochester	Stuart Bog Cedar Swamp Land Preservation Project	\$20,946	SNEP	\$0
2020	University of Massachusetts Dartmouth	Stormwater Investigations and Design Collaboration	\$41,719	SNEP	\$0
2020	Westport	Participation in BCDHE Online Reporting for I/A Septic Systems	\$10,214	SNEP	\$3,375
2020	Acushnet	Tripps Mill Brook Headwaters II Conservation Project	\$15,000	SNEP	\$4,950
2020	Carver	Creating a TDR Program to Preserve Priority Protection Areas	\$8,500	SNEP	\$8,532
2020	Woodwell Climate Research Center	Determining Nitrogen Inputs to Buzzards Bay from Coastal Rivers - Year 1	\$56,945	SNEP	\$13,060
2020	Buzzards Bay Coalition	Buzzards Bay Water Quality Monitoring & CCMP Climate Vulnerability Assessment Support	\$50,000	SNEP	\$50,032
2020	Marion	Hoff Property CR Acquisition	\$50,000	SNEP	\$183,250
2020	Carver	Griffith Forest Conservation Project	\$20,946	SNEP	\$190,000
2019	City of New Bedford Health Lab	Buzzards Bay Watershed Stormwater Testing - Lab Contract	\$3,500	S320	\$0
2019	Envirotech Laboratories, Inc.	Buzzards Bay Watershed Stormwater Testing - Lab Contract	\$6,500	S320	\$0
2019	Dartmouth	Dike Creek Conservation Project	\$35,000	SNEP	\$11,550
2019	Gosnold	Cuttyhunk Island Land Conservation Project	\$20,418	SNEP	\$20,418
2019	Rochester	Gifford's Mill Pond Land Preservation Project	\$45,000	SNEP	\$28,115
2019	Mattapoisett	Buzzards Bay Water Quality Monitoring	\$30,000	SNEP	\$31,066
2018	Buzzards Bay Coalition	Salt Marsh Loss Study	\$30,000	SNEP	\$1,555
2018	Gosnold	Cuttyhunk Vessel Pump-out Station	\$13,920	SNEP	\$5,497
2018	Marine Biological Laboratory	Evaluation of PRB Technology for remediation of residual nitrate in treated wastewater in Wareham	\$60,531	SNEP	\$17,889
2018	Buzzards Bay Coalition	Buzzards Bay Coastal Monitoring & Evaluation (BayWatchers)	\$40,000	SNEP	\$31,845
2018	Acushnet	Tripps Mill Brook Land Protection and Restoration (Machado)	\$35,000	SNEP	\$35,000
2018	Rochester	Walnut Plain Cedar Swamp (White Cedar Preserve) Conservation Project	\$35,000	SNEP	\$35,000
2018	Mattapoisett	Old Hammond Quarry	\$35,000	SNEP	\$37,500
2018	Dartmouth	Cow Yards Salt Marsh Restoration - Phase II	\$35,000	SNEP	\$38,954
2018	Massachusetts Maritime Academy	Stormwater Monitoring Collaboration	\$160,000	SNEP	\$81,552
<b>TOTAL</b>			<b>\$3,373,091</b>		<b>\$1,500,510</b>

*What were the sources of the required non-federal cost share of the NEP award?*

The NEP continues to successfully meet the required 1:1 match to our federal grants. Much of the NEP's match is provided through in-kind services provided by our partners, particularly the Buzzards Bay Coalition. Some of the NEP's match is met by state grants to Buzzards Bay municipalities. NEP staff or the CZM South Coast Regional Coordinator are often involved with many of these grants. Table 3 and Table 4 summarized proposed match versus actual match received for two cooperative agreements closed during the evaluation period and are representative of the NEP's recent match sources.

**Table 3** Proposed versus actual match for the FFY18 work plan (Cooperative Agreement FC00A00456)

<b>Activity</b>	<b>Proposed</b>	<b>Actual*</b>
1. Coalition WQ Monitoring Program	\$278,209	\$262,378
2. Buzzards Bay Action Committee dues	\$10,400	\$13,579
3. Buzzards Bay Action Committee, other municipal meetings, workshops	\$14,300	\$49,335
4. Municipal Match to the Stormwater Collaborative	\$25,000	\$0
5. Other Coalition Support	\$172,091	\$172,091
6. CZM Coastal Resiliency Grants (\$745,785 awarded; \$366,608 used as match)	\$495,000	
Massachusetts 2018 Coastal Resilience Grant to Mattapoisett (\$498,750 awarded, \$132,142 held in reserve)		\$366,608
Massachusetts 2018 Coastal Resilience Grant to Marion (\$93,660 award; entire award held in reserve)		
Massachusetts 2018 Coastal Resilience Grant to Wareham (\$153,375 awarded, entire award held in reserve)		
7. Municipal Match to BBNEP grants	\$100,000	\$130,043
8. Uncategorized Match – FY18 Work Plan Contracts		\$100,966
TOTAL (actual needed: \$1,095,000)	\$1,095,000	\$1,095,000

**Table 4** Proposed versus actual match for the FFY19 work plan (Cooperative Agreement FC00A00515)

<b>Activity</b>	<b>Proposed</b>	<b>Actual</b>
1. Coalition WQ Monitoring Program	\$278,209	\$294,449
2. Buzzards Bay Action Committee dues	\$10,400	\$18,105
3. Buzzards Bay Action Committee, other municipal meetings, workshops	\$14,300	\$20,729
4. Other Coalition Support	\$172,091	\$172,091
5. CZM Coastal Resiliency Grants (\$270,627 awarded, \$94,626 used as match)	\$125,000	
Massachusetts 2019 Coastal Resilience Grant to Mattapoisett (\$119,487 awarded, \$24,852 held in reserve)		\$94,626
Massachusetts 2019 Coastal Resilience Grant to Wareham (\$151,140 awarded, \$151,140 held in reserve)		
TOTAL (actual needed: \$600,000)	\$600,000	\$600,000

*Have grant dollars been drawn down promptly in accordance with the terms and conditions of the grant for implementation of the EPA-approved workplan?*

As shown by Table 1, the NEP generally closes grants within a two- or three-year period. The actual work period for these grants, which have a July 1 start date, is rarely met because federal awards are often not made until August and September. Where grant extensions were needed, it was because some number of municipal grant subawards could not be completed during the initial award period.

Generally, recurring expenditure categories like personnel salary, fringe, and rent are expended down during the initial 18 months of any grant.

*Are strategies in place for obtaining additional funding beyond the EPA Section 320 (Base) and Bipartisan Infrastructure Law funds to implement CCMP actions (i.e., financial strategy)?*

During past cuts in federal funding, the NEP has sought and successfully received federal or state grants to undertake our mission, programs, or sustain staff. However, during the current program evaluation period, the NEP's approach has been to assist NEP partners to develop grant applications and assist in the implementation of grant tasks, rather than the NEP being the direct recipient of funds. This strategy avoids dependency on "soft money" for NEP core functions and is more cost effective. This approach was illustrated when the NEP established and supported the Buzzards Bay Stormwater Collaborative when Section 320 base funding was insufficient for the task. The Stormwater Collaborative began in 2016 when the NEP assisted the Buzzards Bay Action Committee to prepare a proposal and secure an EPA Region 1 Healthy Communities grant to map stormwater networks and monitor discharges in five Buzzards Bay communities. In 2019, after buy-in to the program by municipalities, and when the Buzzards Bay Action Committee no longer wanted to administer the program, the NEP worked with the Massachusetts Maritime Academy to manage the program and provide students to participate and earn curriculum co-op credits. The NEP then prepared additional grant applications, securing funding from the EPA SNEP program, supplemented by NEP support. When the SNEP funding ended, the NEP prepared a grant application to Massachusetts DEP's Municipal MS4 Partnerships Grant Program. The Massachusetts Maritime Academy successfully received three years of funding through this program which allowed for the creation of a shared IDDE trailer for municipal investigations and training. The NEP also created a billing system for municipalities to pay for units of student time. This municipal funding continues, with the Stormwater Collaborative receiving between \$55,000 and \$80,000 annually from the municipalities to fund student participation. The municipalities also contribute municipal staff and vehicle use for the field investigations. This adaptive approach illustrates how the Buzzards Bay NEP has secured additional funding beyond that provided by EPA.

*Highlight particularly successful efforts and approaches as well as unique institutional challenges or difficulties in obtaining funding.*

Each annual work plan highlights the previous year's accomplishments. With respect to meeting financial challenges, the NEP has a strong history of leveraging grants and other funding to meet program goals by providing seed funding or technical services that have appreciable value and would otherwise be challenging for partners to fund. Listed below are some examples of how the NEP leveraged larger efforts and helped meet the challenge of securing funding for initiatives.

- **Long-term salt marsh study:** Because of concerns by residents about salt marsh loss, the NEP began a collaboration with the Buzzards Bay Coalition to evaluate salt marsh loss in the Westport River in 2015, partly funded with EPA headquarters Climate Ready Estuaries funding. Because of the increased awareness of marsh loss elsewhere in Buzzards Bay, in 2018, the NEP worked with the Buzzards Bay Coalition to establish a long-term salt marsh monitoring program at 12 sites around Buzzards Bay. This involved modest funding from the NEP with a headquarters Climate Ready Estuaries grant, matched by a \$30,000 private donation used to fund an aerial survey of Buzzards Bay in November 2018. In 2019, the NEP developed a QAPP for the monitoring program in partnership with the Buzzards Bay Coalition and the Woodwell Climate Research Center. The NEP's role was to conduct GIS evaluations of historical marsh loss, install elevation survey benchmarks, collect marker positions and elevations using GPS, train partners on the use of the NEP's barcode laser leveler, and maintain a GIS and elevation database. The NEP oversaw students from



Massachusetts Maritime Academy to install NGS rod benchmarks at each site, and the NEP oversees the annual collection of elevation surveys at each site. The preliminary work, and commitment of participation by the NEP, helped its partners secure a \$298,598 [2019 SNEP grant](#) and a \$350,000 2020 [Northeast Climate Adaptation Science Center grant](#). The NEP contributed to and is a participant in the runnel study QAPP. In 2020, the NEP also initiated a program with the University of Massachusetts Dartmouth to conduct aerial surveys using drones to prepare orthometric maps and digital elevation models at each site using SNEP funding.

- **Support to establish a long-term river nitrogen load monitoring program:** In partnership with the Woodwell Climate Research Center, the NEP provided funding to initiate a long-term stream monitoring program to track stream flows and total nitrogen concentrations in 12 Buzzards Bay watershed rivers and streams to quantify annual nitrogen loading to Buzzards Bay from these sources. The program provides a better understanding of the nitrogen loading pathways to Buzzards Bay, helps support TMDL development, and will help evaluate the effectiveness of actions to control watershed nitrogen loading.

**Buzzards Bay Stormwater Collaborative:** As described above, the Buzzards Bay Stormwater Collaborative is an example of how the NEP brings in outside funding to sustain an NEP core program. The Buzzards Bay Stormwater Collaborative is also an important programmatic success for the NEP and fulfills a vital need for Buzzards Bay municipalities. With the completion of the original grant in 2018, and after considering the [lessons learned in the implementation of the Buzzards Bay Stormwater Collaborative](#), the NEP provided SNEP funding to expand the Stormwater Collaborative through the new partnership with the Massachusetts Maritime Academy. This new initiative added three additional municipalities and expanded the program to include illicit discharge detection investigations. These activities are required under municipal stormwater permits with the EPA (MS4 permits) and are also among the costliest tasks for towns to undertake. Under the Stormwater Collaborative partnership, the NEP guides participants, provides data management support, manages the online interactive map, and funds laboratory testing and university administrative costs. The university provides staff support and co-op and work-study students, who work directly with the municipalities and conduct field investigations and collect water samples. Municipalities fund the students participating in the program. Municipalities also provide in-kind services of the public works staff who participate in the investigations and provide access to infrastructure and traffic control where needed. Students participating in the Stormwater Collaborative meet the school's environmental degree requirements for co-op experience and develop practical skills they can apply in their careers. The NEP further supported this program by assisting the Massachusetts Maritime Academy obtaining a SNEP grant in 2019 and three MS4 Municipal Assistance Grant Program awards from DEP from 2019 to 2022. The DEP funding to the Stormwater Collaborative supported the construction and outfitting of an illicit discharge detection and elimination (IDDE) investigation trailer and conducting IDDE training for municipalities including a workshop series in 2022 (Fig. 12). Training included [YouTube IDDE videos](#). Municipalities outside the Buzzards Bay watershed, including Rhode Island, attended the IDDE training workshops. Under the Stormwater Collaborative partnership, the NEP guides participants, provides data management support, manages the online interactive map, funds laboratory testing, and finances Massachusetts Maritime Academy administrative costs. The NEP also developed a contract system for municipalities to enter into agreements with the university to fund students as the workforce for the program. Students participating in the Stormwater Collaborative meet environmental degree requirements for co-op experience and develop practical skills they can apply in their careers. The school provides staff support and students who work directly with the municipalities by conducting field investigations and collecting water samples.

Municipalities also provide in-kind services of the public works staff who participate in the investigations and provide access to infrastructure and traffic control where needed.



## PRACTICAL ILLICIT DISCHARGE DETECTION AND ELIMINATION FREE ONE-DAY WORKSHOP

The Buzzards Bay National Estuary Program and the Massachusetts Maritime Academy are hosting one-day IDDE workshops. This free training includes field demonstrations in mapping, sampling, inspecting structures, and using investigation equipment. Participate in a comprehensive assessment of a stormwater catchment. This workshop prepares you to provide IDDE training to others and fulfills MS4 permit training requirements. This workshop will help propel your IDDE program forward.

Training applicable for anyone involved with an MS4 permit  
Workshops will take place 8 AM to 4 PM at the scenic MMA Campus  
Refreshments and lunch will be provided  
Dates: March 24<sup>th</sup>, April 19<sup>th</sup>, April 21<sup>st</sup>, or May 3<sup>rd</sup> (Rain Date: May 5<sup>th</sup>)  
[View promotional video here](#)  
[Take this 3-minute survey to receive priority scheduling](#)  
To RSVP or for more information email: [Kevin.Bartsch@mass.gov](mailto:Kevin.Bartsch@mass.gov)

Fig. 12 The flyer for the NEP's 2022 IDDE workshop series.

## Section 2.4 Opportunities for Improvement and NEP Priorities

*How has the NEP addressed challenges (referred to in this guidance as opportunities for improvement) identified in the previous PE?*

The 2019 Program Evaluation Team's found that the NEP continued to make significant progress in implementing the CCMP and passed the Program Evaluation. The 2019 PE Team also identified five specific opportunities for improvement in five topic areas. Below are the actions the NEP undertook to meet these challenges.

a) *Enhance Support from Host Organization:* *The NEP should consider strategizing with its host organization, MA CZM, to explore potential new ways of supporting the BBNEP from the main Boston Office. While the Program benefits from a close relationship with its MA CZM Regional Coordinator, and MA CZM provides financial assistance for the BBNEPs office space, additional technical assistance may be available to BBNEP from the Boston office. The MA CZM and the BBNEP should explore efficient ways for the Program to access this potential additional support.*

Since 2019, the NEP continued to work with CZM Boston to improve coordination, financing, and program management. In 2019 and 2020, EEA handled all costs related to administering and financing the move of the NEP offices from the Town of Wareham to the Town of Mattapoisett. After the move, the state began covering all data, internet, and phone service to the NEP's offices. This is a financial benefit with a current value of about \$2,300 annually. Beginning in the Summer of 2022, with the Federal FY2022 funding, CZM finance was able to eliminate a technology chargeback by EEA called "Core Tech. Serv. & Security Fees" which equaled 0.96% of all account expenditures. Because this change coincided with the arrival of IJA funds, where base funding + SNEP funding + IJA funding totaled roughly \$1.8 million, this reduction of fees saved the NEP \$18,000 annually in its budget. With the onset of Covid and remote work, EEA provided all NEP staff with laptops, monitors, docking stations, and all program software costs including Office 365, and ArcGIS licenses are now covered by EEA. In 2024, EEA provided all NEP staff with iPhones.

Besides these new financial benefits, the NEP has leveraged programmatic resources. CZM and EEA assists the NEP in all tasks related to our grant program including postings on the state procurement website COMMBUYS, review of grant materials by EEA legal staff, and preparation and dissemination of press releases for the grant program. The NEP was also able to build its Equity Plan based on and integrated with CZM's plan. The NEP continues to leverage cash match from CZM grant programs. The NEP also coordinates with CZM Boston staff on GIS technology and on the NEP's salt marsh monitoring efforts.

b) *Finance Plan and Increased Funding:* *The current BBNEP CCMP does not articulate funding priorities or propose actions or strategies for garnering new resources other than listing potential funding sources. Consistent with EPA's FY2017 – FY2019 Clean Water Act §320 National Estuary Program Funding Guidance, the program should update its finance strategy no later than the planned 2023 CCMP update. The program should further explore options for dedicated state funding. Finally, the BBNEP should look at diversifying funding options, consistent with what is allowable under EPA's funding guidance and as a state-hosted organization.*

The NEP is developing a new finance plan as a companion document to the 2024 CCMP now under development. The NEP will explore options for dedicated state funding and look at diversifying funding options, consistent with what is allowable under EPA's funding guidance and as a state-hosted organization. As a unit within a Massachusetts state agency, there is no mechanism for accepting funds from the public, or from private entities, but the NEP will work with finance departments to overcome the issue of the federal government, including the U.S. EPA) privatizing its grant programs.

c) *Ecosystem Status and Trends – Assessment and Monitoring:* *Perform a climate change vulnerability assessment. The EPA's NEP Funding Guidance calls for integrating climate change vulnerability assessment findings and planned*



*response approaches into an updated CCMP.... This vulnerability assessment should be consistent with the EPA NEP Funding Guidance. Doing a full assessment will allow the Program to clarify climate-related impacts and prioritize what to address. The vulnerability assessment should be completed by September 2021....*

The work for the climate vulnerability assessment was delayed because of the Covid crisis. The draft climate vulnerability assessment was completed in March 2022 and finalized in July 2023. The report is posted at: [buzzardsbay.org/management-solutions/2022-climate-vulnerability-assessment/](https://buzzardsbay.org/management-solutions/2022-climate-vulnerability-assessment/).

*d) Program Implementation and Reporting – Outreach and Public Involvement: Increasing visibility and highlighting accomplishments: The program should highlight its accomplishments and increase visibility of the BBNEP both locally and at the national level, which can benefit the Program in terms of technical resources and exchange with partners it may not otherwise have any contact with. For example, the BBNEP should participate in the EPA’s NEP StoryMap to highlight some of its programmatic successes. Given the BBNEP’s strengths in assisting its local communities, the program should tout its environmental successes, share lessons learned in how to work with local communities, and explain how that has benefited the program itself. The Buzzards Bay Coalition’s existing strategic communications plan should consider how to more effectively tout the BBNEP’s successes, such as displaying the Program’s contributions clearly on their website.*

At the national level, the Buzzards Bay NEP is highlighted in [NEP StoryMap](#) and the NEP provided material for EPA’s [National Estuary Program 2022 Accomplishments](#). In 2023, the NEP participated in EPA’s Spring NEP EJ Community of Practice Meeting where the director made the presentation *Buzzards Bay NEP’s “Alternative” Definition of Disadvantaged Communities*. Locally, the NEP posts important announcements and events on its website [buzzardsbay.org](https://buzzardsbay.org), and press releases issued by CZM or EEA (for example this [October 2023 grant announcement](#)) on grant awards clearly identify the NEP’s role and always include quotes of the NEP’s director. Partner publications, like the Buzzards Bay Coalition’s [2022 State of Buzzards Bay](#) and the 2023 [Buzzards Bay Salt Marshes: Vulnerability and Adaptation Potential](#) reports clearly articulate the NEP’s role and contributions.

*e) Program Implementation and Reporting – Program Planning and Administration: Partner with neighboring NEPs: Finally, we suggest the BBNEP explore opportunities to work more closely with the Narragansett Bay NEP and Massachusetts Bay NEP. Buzzards Bay, Narragansett Bay, and Massachusetts Bay have many similar issues, share geographic proximity, and work with Massachusetts partners. Working together jointly on issue-specific areas can multiply programmatic impact, and joint proposals may also increase opportunities for funding within these shared issue areas.*

The Buzzards Bay NEP has always strategically collaborated with both the Massachusetts Bays National Estuary Partnership and Narragansett Bay Estuary Program wherever the need arose. When EPA established SNEP, and the NEP had not yet established fiscal authority to disburse competitive funds, the Buzzards Bay NEP and Narragansett Bay Estuary Program closely collaborated to establish a SNEP grant program with consistent criteria that met the goals of our CCMPs and SNEP. After Restore America’s Estuary Program, and during the current program evaluation period, both estuary programs participate on many SNEP committees, and the Directors communicate independently to ensure SNEP continues to meet our program goals, as well as on other topics, like communication with legislators.

With respect to the Massachusetts Bays National Estuary Partnership, until 2022, both NEP’s were hosted by Massachusetts office of Coastal Zone Management and the NEP directors participated with other CZM staff in the same biweekly staff meeting where coastal management, wetlands, and water quality policies, approaches, rule changes, and funding opportunities were routinely discussed, and guests spoke on topics of interest. Even though the Massachusetts Bays National Estuary Partnership has moved to a new host, the NEP directors remain in communication.

*What kind of obstacles, if any, has the NEP faced with CCMP implementation (political, institutional, etc.) and what has the NEP done to overcome those obstacles? How can the EPA (Regions/HQ) support the NEP's efforts to address these obstacles?*

The biggest challenge for any NEP is how to apply limited resources (funding or staff time) to the expansive universe of problems identified in a Comprehensive Conservation and Management Plan. In the case of the Buzzards Bay CCMP, dozens of goals and objectives are identified, and the cost of fully implement those goals cost many billions of dollars. Many of the larger costs and obligations are the responsibility of municipalities. These costs include expanding sewerage to meet watershed nitrogen TMDLS (likely more than 8 billion dollars) and managing stormwater to meet federal permit requirements and bacterial TMDLs (several more billion dollars). In this context, the strategy of the Buzzards Bay NEP is to undertake tasks and activities where its limited resources can be amplified and leverage the work and resources of NEP partners and Buzzards Bay municipalities. A decade ago, the NEP recognized the challenges and needs faced by municipalities in meeting requirements of the newly enacted MS4 stormwater permits issued by the U.S. EPA. This challenged the NEP to create the Buzzards Bay Stormwater Collaborative, which has been one of the NEP's primary focuses during the current program evaluation period. The NEP could not have built the program without the strong support of U.S. EPA Region I, including through funding (Healthy Communities and SNEP grants), and support of MS4 staff in the development of the monitoring program QAPP.

A broader issue facing all environmental agencies in Massachusetts is the privatization of federal grant programs. Increasingly, many federal agencies are using non-profits as pass throughs for their environmental grant programs. This is true at the national level at EPA, which runs its NEP watershed grant program through the non-profit Restore America's Estuaries. Similarly, EPA Region 1 runs SNEP funds through the Restore America's Estuaries. This is problematic because state agencies are unable to apply to these programs because of comptroller rules and how the non-profits manage these delegated grant programs. While it is relatively easy to establish a federally funded grant account, where the state makes expenditures, which are then drawn down in the federal financial system, no such system exists for the receipt of "grants" from private entities. The state does not view the funds coming from these non-profit organization accounts as federal funds, even though that is the source of the funding. Specifically, any state agency receiving gifts, donations, or grants from any entity other than the federal government must comply with comptroller regulations that require the funds be placed in expendable trust accounts as described in [801-CMR-50.00: Expendable-trust-regulation](#). The regulation requires the Secretary of Environmental Affairs to establish a board of trustees to oversee these expenditures. While complying with this requirement is onerous for a small grant, it is achievable. However, the more problematic issue is that the state requires the funding to be deposited up front to establish the account, and expenditures cannot be made unless there are available funds in the account. In contrast, non-profits that are acting as federal pass throughs emulate the federal grant programs by only releasing funds on a reimbursement basis. This makes it impossible for an agency to accept funds from a non-profit unless it is willing to co-mingle the grant funds in an existing trust account already funded by fees, fines, or donations.

The NEP director has raised this issue with Restore America's Estuaries NEP Coastal Watersheds Grant Program Director, the National Fish and Wildlife Foundation grant manager, and state agency finance staff including the chief fiscal officer at MA Fish and Wildlife. The consensus solution is that the issue must be elevated within the Executive Office of Energy and Environmental Affairs to work with the Comptroller to change the regulations. To achieve that goal will require multiple agencies to work together to develop a common message.

With respect to the problem in advancing stormwater treatment system River View Park neighborhood in Acushnet because of town concerns about potential contamination with PCBs at the site as

described in Section 3.1.4.1, the Buzzards Bay NEP requests assistance from EPA to address this problem, as it involves complications and legalities that relate to the New Bedford PCB Superfund Site. The site is adjacent to an environmental justice area and illustrates the kinds of problems that arise when trying to implement projects in urbanized watersheds.

*How can the EPA (Regions/HQ), states, and/or other Federal agencies support the NEP's efforts to address climate and equity priorities more effectively?*

At all levels of government, staff resources and funding are primary limiting factors to achieving climate and equity goals. NEP staff time and funding represent a tiny fraction of these available resources. Many of the actions needed to meet the goals and objectives of the CCMP are voluntary, and not mandated by law or regulation. Consequently, the application of funding and technical assistance must be judicious at all government levels to leverage resources to the greatest extent, and to set grant conditions to meet climate and equity goals. Where there are management and regulatory systems in place, such as MS4 permits and TMDLs, it is incumbent upon EPA to set conditions and timelines so that progress is made. Without meaningful and timely enforcement and compliance by EPA and other federal agencies, action toward CCMP goals will languish.

*What difficulties or priorities does the NEP anticipate during the next five years?*

The two greatest challenges facing the NEP over the next several years will be the expected retirement of several long-time staff, and a dramatic drop in funding after the termination of the Infrastructure Investment and Jobs Act. The NEP will overcome the first challenge because of the strong support system within Massachusetts Office of Coastal Zone Management and the Executive Office of Environmental Affairs Human Resources Department will select a highly qualified candidate to lead the program into its next phase. In turn, the new director will be able to fill at least one staff position to meet that individual's goals for the program and define new directions for the program.

With respect to program funding, the NEP will remain in a strong position with the opportunity for continued funding through SNEP. At the same time, the new director can pursue grant funding to support existing or new initiatives, as CZM has a strong financial administration base to support the receipt of federal funds.

## **Section 3: Environmental / Programmatic Workplan Accomplishments (Topic 1)**

### **Section 3.1 - Workplan Accomplishments**

As noted in the 2023 Program Evaluation Guidance, funding provided through Section 320 of the Clean Waters Act is provided to NEPs to restore and maintain the ecological integrity of estuaries of national significance by addressing the quantity and quality of their waters, habitats, and living resources with the goal of making waters fishable and swimmable. More specifically, after the characterization and monitoring of trends in water quality and habitat in an estuary, and the development of a CCMP, each NEP management conference is then required to monitor the effectiveness of actions taken to implement the CCMP, and to develop plans with state, federal and local conference members to implement the CCMP (33 U.S. Code § 1330 (b)).

Achieving the broad goals of the CWA, or even the goals of the Buzzards Bay CCMP, could involve a myriad of potential activities and projects. Given that section 320 funding to NEPs totaled \$700,000 to \$1,000,000 annually during 2018-2023, and NEP staff average 3.8 full time employees during much of the period, each annual workplan developed by the Buzzards Bay NEP represents a balance of undertaking activities to meet program needs, maximizing the skill sets of staff, and leveraging resources of partners. This is achieved through the NEP's grant and technical assistance programs, and

a focus on seven to 13 tasks. The NEP's technical assistance efforts and staff activities, in turn, are driven by our municipal grant program, which, due to its nature involves an ever-changing landscape of projects and initiatives. This focus was expanded dramatically in the FY18 to FY23 work plans with supplemental funding of hundreds of thousands of dollars through the EPA SNEP program and two years of infrastructure law funding awarded.

Individual workplan goals and activities fit into each of the following three categories and reflect on the key accomplishments during the review period, specifying the NEP's role. These categories are broad to allow each NEP to fit its individual workplan goals and activities more easily into each of them. Please consider how climate resiliency plays a role in these areas as appropriate.

### **Section 3.1.1 Base funding grants awarded, including SNEP funds**

Table 2 summarizes all grants awarded and administered by the NEP during the five-year grant review period. While many of the titles are self-explanatory, the following synopsis of grants awarded under the base funding grant illuminate how the NEP's grant program supports goals of healthy ecosystems and clean waters, and how the NEP helps municipalities and other partners achieve the goals and objectives of the CCMP.

- The Town of Gosnold received \$13,920 to purchase a stationary, self-service boat waste pump out unit for the Cuttyhunk Vessel Pump Out Station. The pump out, which is being operated and maintained by the Town's partner, the Coalition, is made available at no cost to recreational boaters. It is located at the dock entrance to Cuttyhunk Harbor and available seasonally from Memorial Day to mid-September. Boat sewage may contain bacteria and viruses, nutrients and chemicals that can be harmful to water quality and public health. With the nearest boat waste pump out facility more than nine miles away, this project provided the opportunity to prevent the discharge of raw sewage into Cuttyhunk Harbor and Buzzards Bay by providing pump out options to the thousands of summer boaters in Cuttyhunk.
- The Town of Dartmouth received \$35,000 to perform a restoration study to determine the causes of deterioration in the 16.6-acre Cow Yards salt marsh, located at the mouth of the Little River in Dartmouth. The salt marsh, owned and permanently protected by the Dartmouth Natural Resources Trust, is experiencing an extensive loss of vegetation and subsidence of the marsh surface. The Town has hired an engineering firm to assess existing conditions and hydrology within the salt marsh, identify restoration recommendations and evaluate feasibility of implementing the recommendations.
- The Town of Dartmouth received \$35,000 to permanently protect 73 acres of undeveloped land fronting on Dike Creek. The property contains wetlands, saltmarsh, and upland forest, and is designated as habitat for rare species. Surrounded on three sides by 380 acres of existing permanently protected land, protection of this parcel fills an existing gap in the protection of the Dike Creek watershed. The Town's partner, the Coalition, acquired and permanently protected the property, which was then sold to the Dartmouth Natural Resources Trust. The Town of Dartmouth Conservation Commission holds a conservation restriction on the 73 acres. The purpose of the project was to permanently prevent development of the property and provide passive recreational opportunities to the public.
- The Town of Rochester, and its partner the Rochester Land Trust, received \$45,000 to purchase and permanently protect 20.9 acres of undeveloped land in the Mattapoissett River aquifer, which provides drinking water to four communities in the Buzzards Bay watershed. The property, which is mostly wooded with a perennial stream, contains designated habitat for rare species. Now acquired and protected, the land is owned and managed by the Rochester Land Trust, which plans to provide access to the public for passive recreational activities.



- The Town of Mattapoissett, and its partner the Coalition, received \$30,000 to continue the Baywatchers monitoring program, which measures nutrient pollution in Buzzards Bay. For 27 years, this long-term monitoring program has collected basic water quality, nutrient, and algal pigment information at over 200 locations around Buzzards Bay during the summer months. The program also educates the public on their local water quality. The data collected is used by both state and local natural resource managers to make informed water quality related decisions.
- The Town of Gosnold, and its partner the Coalition, received \$20,418 toward the permanent protection of over 300 acres of undeveloped land on the island of Cuttyhunk. The funding was used to help match other state grants to acquire and protect 79 acres of privately owned, undeveloped land and secure a permanent conservation restriction on approximately 230 additional donated acres. The project area contains designated habitat for rare species. This project also protected more than 5 miles of coastal shoreline and the island's only drinking water supply.
- The Town of Acushnet received \$15,000 to purchase and permanently protect several parcels of undeveloped forest land, for a total of 99 acres. This land is in the headwaters region of Tripps Mill Brook—an important tributary to the Mattapoissett River, which is the primary source of drinking water for Acushnet and four surrounding towns.
- The Town of Carver received \$8,500 to revise its existing Transfer of Development Rights bylaw to better position the town to preserve land and encourage appropriate and balanced development.
- The Town of Carver received \$20,946 to purchase and permanently protect two parcels of forested land totaling 32 acres. The properties are located over medium and high yield drinking water aquifers, lie along a tributary of Indian Brook in the Upper Weweantic River watershed, and abut existing conservation lands.
- The Town of Marion received \$50,000 to protect more than 36 acres of land in the Aucoot Cove watershed through a combination of land acquisitions and conservation restrictions. Protection of these lands, which contain designated habitat for rare species, builds on a larger block of existing conservation land.
- The Town of Rochester received \$20,946 to purchase and permanently protect 232 acres of land located within a large contiguous undeveloped forest area at the headwaters of the west branch of the Sippican River. The property includes Atlantic White Cedar Swamp, important state-designated habitat, and 65 acres of cranberry bogs.
- The Town of Westport received \$10,214 to join the Barnstable County Department of Health and the Environment's Innovative and Alternative Septic System Tracking Program. These innovative septic systems are designed to release significantly less nitrogen than conventional Title 5 septic systems but are also more complex and require regular monitoring to ensure they are meeting established nitrogen standards.
- The Town of Mattapoissett received \$45,000 to work with its partner, the Mattapoissett Land Trust, to purchase and permanently protect a forested 4-acre parcel of riverfront land. The property is located on the west bank of the Mattapoissett River and contains important state-designated habitat, including habitat for rare species.
- The Town of Carver received \$45,000 to work with its partner, the Coalition, to purchase and permanently protect 28 acres of undeveloped forest land on the southern side of the 600+ acre Great South Meadow Cedar Swamp. The property contains important state-designated habitat and lies over the Plymouth/Carver Sole Source Aquifer.
- The Town of Rochester received \$20,640 to work with its partners, the Coalition and Rochester Land Trust, to purchase a conservation restriction that permanently protected 20.5 acres along Doggett Brook, a principal tributary of the Sippican River. The property contains important state-designated habitat, including habitat for rare species.

- The Town of Carver received \$12,500 to hire an engineer, to achieve and remain in, Municipal Separate Storm Sewer System (MS4) compliance. The engineering firm performed the necessary fieldwork and to produce an updated storm drain map to allow the town to prioritize direct outfalls that pose the most significant threat to the Weweantic River and thus to Buzzards Bay.
- The Town of Rochester received \$70,000 to work with the Towns of Mattapoisett, Fairhaven, Marion, and Acushnet, along with the Coalition, to purchase and permanently protect 240 acres of land important to protect the Mattapoisett River Valley aquifer. This land acquisition was part of a larger coordinated project that aimed to protect thousands of acres in the Mattapoisett River Valley. The land protects a multitown public drinking water supply resource, as well as wetlands, fields, forests, and habitat for fish and wildlife, and it provides outdoor recreational opportunities for the public. In addition, the project benefits the resiliency of the aquifer by preventing land use change and associated activities that impact water quality and disrupt groundwater recharge.
- The Town of Mattapoisett received \$35,000 to establish a strategic master plan for stormwater management in the Shipyard Lane area, which lies east of Mattapoisett Village and is a town priority for stormwater remediation. Stormwater runoff from this area discharges into Mattapoisett Harbor and contributes to shellfish bed closures. The town inventoried the existing infrastructure and developed a master stormwater plan specifically for the Shipyard Lane area. This master plan will serve as a vital planning tool for the design and construction phase. The project focused on mapping the watershed to identify target areas for stormwater treatment prior to discharge into Mattapoisett Harbor.
- The Town of Mattapoisett received \$35,000 to work with the Mattapoisett Land Trust to purchase and permanently protect two parcels of undeveloped land totaling 14 acres in the Brandt Island Cove area of Mattapoisett. The properties consist of forested wetlands and upland coastal forest and contain important state-designated habitat, including habitat for rare species. The Mattapoisett Land Trust is working to create a trail system, which will connect to a larger network of trails, as well as a small parking area on the property to allow for public access.
- The Town of Westport received \$30,000 to work with the Coalition to purchase and permanently protect 25 acres of land associated with the headwaters of Snell Creek, a tributary of the East Branch of the Westport River. Snell Creek is one of only a handful of cold-water streams in Westport that support a native population of sea run brook trout, a climate vulnerable species that is declining throughout its range due to land use changes, habitat loss, and interactions with nonnative species. Coldwater streams, such as Snell Creek, and their habitats are particularly sensitive to temperature increases, which could greatly impact sea run brook trout populations. Protection of this property ensures the vegetated shading of the stream remains, as well as protecting vital habitats, wetlands, and water quality of Snell Creek.
- The Town of Fairhaven received \$25,000 to work with the Coalition to permanently protect 9 acres of land that provide a key upland buffer to wetlands and that protect important wildlife habitats, including state-designated habitat. Protection of the land will also ensure existing saltmarsh can migrate to an undeveloped area as sea level rise begins to flood adjacent low gradient, low elevation uplands. The land is open to the public for passive recreational purposes and provides coastal public access to outer New Bedford Harbor.

### **Section 3.1.2 - Healthy Ecosystems**

Task 1 in the FY18-FY23 work plans focuses on wetlands and habitat protection and restoration. Most of the accomplishments under this task are met through the continued support of Buzzards Bay municipalities with the Buzzards Bay Coalition (Coalition), area land trusts, and municipalities in their ongoing effort to protect and restore valuable wetlands and upland wildlife habitat throughout the

Buzzards Bay watershed. NEP financial support is primarily offered through work plan Task 3 - NEP Technical Assistance and Municipal Grant Program. Through this effort, the NEP provided maps, helped develop state and federal grant applications, wrote letters of partnership and support to granting agencies, and through the municipal grant program, provided mini-grant funds that help meet match requirements for leveraging grants from other programs. As required by U.S. EPA headquarters, each September the NEP reports on wetland and habitat protected or restored with support of the NEP in our annual Government Performance Results Act (GPRA) report submitted through the National Estuary Program Online Reporting Tool (NEPORT).

Buzzards Bay municipalities, area lands trusts, and the Coalition are the primary leaders in these efforts. In many instances, the Coalition was the actual project lead in developing grant applications and making presentations to town meetings and boards. To a large degree, the NEPORT outcomes are the result of the NEP's long-term relationship with the Coalition and the organization's capacity to shepherd projects and aggregate funding from many sources. Fig. 13 sums the acreage and habitat category of the parcels protected or restored as reported in the GPRA reports to EPA between September 2019 and September 2023. These totals represent only those projects in the watershed in which the NEP provided some supporting role, mostly in the form of technical or financial assistance. The total open space in the Buzzards Bay watershed protected by these entities between 2019 and 2023 totaled 4,348 acres. The 1,903 acres reported in the GPRA reports total about 49% of the total parcel acreage permanently protected during the reporting periods<sup>1</sup>.

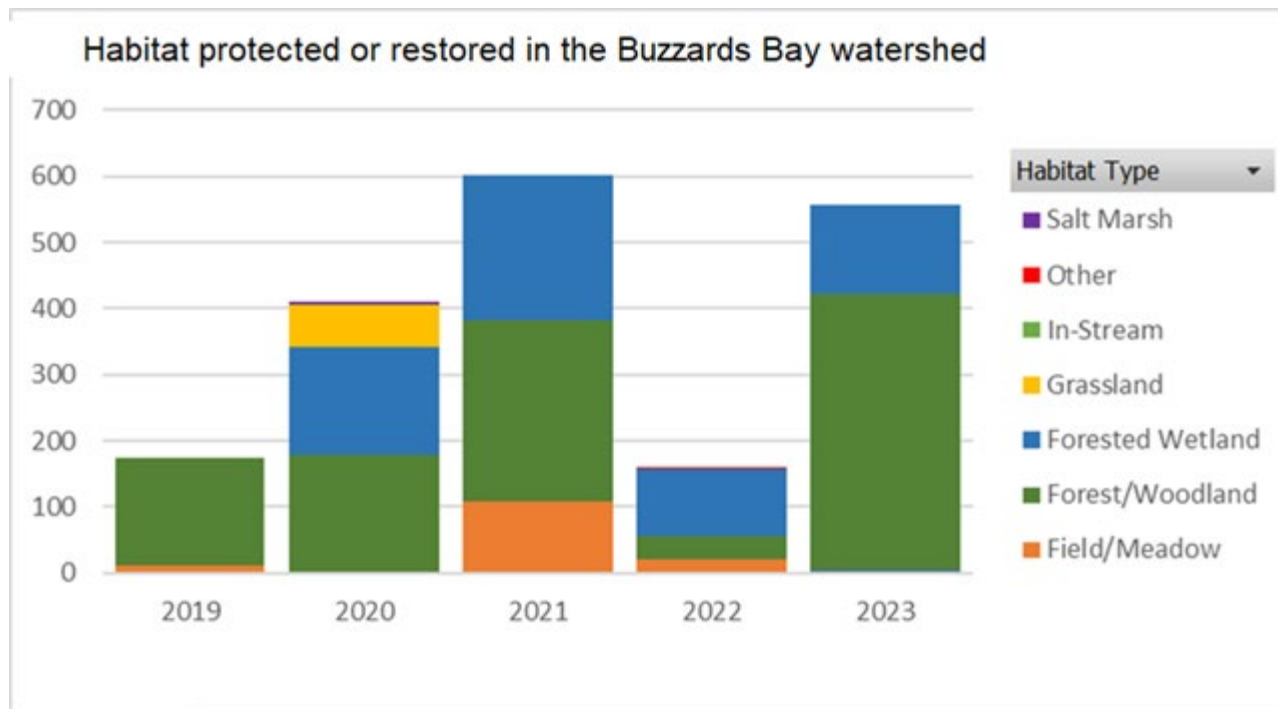


Fig. 13 Cumulative total of acres protected and restored, and breakdown by habitat type for the years covered in the PE cycle

<sup>1</sup> During the reporting periods, all habitat restored were with within the reported parcel areas permanently protected. Metrics like opening of shellfish beds are not included in these statistics.

The Buzzards Bay NEP has posted all land and habitat protect or restored with some form of NEP financial or technical assistance as reported on NEPORT since 2003 at: [buzzardsbay.org/bbnep-gpra-reports.html](https://buzzardsbay.org/bbnep-gpra-reports.html). By clicking on the map markers on this page the user can see a description of projects the NEP supported to protect or restore habitat, wetlands, and water quality in the Buzzards Bay watershed.

Selected outcomes recognized in past workplans include:

- The Hamlin Crossing restoration (FY18 work plan outcome; Fig. 14) where the Coalition with town support removed collapsed structures, junk, and restored a riverbank to create nine acres of wildflower fields, quiet woodlands, and river views open to the public.
- The Coalition again had great success in 2019 coordinating grant efforts on several projects in the Buzzards Bay watershed, many of which received supporting funding or technical support by the NEP. However, a special call-out is warranted in the Coalition's efforts to coordinate funding and local legislation over several years as part of an effort to protect 300 acres of undeveloped land on the island of Cuttyhunk in the Town of Gosnold (Fig. 16; see [savebuzzardsbay.org/news/10-reasons-why-2019-was-another-great-year-for-buzzards-bay/](https://savebuzzardsbay.org/news/10-reasons-why-2019-was-another-great-year-for-buzzards-bay/)). By the summer of 2020, the final property acquisitions and land protection easements were recorded in the county deeds office.
- In 2021, the Coalition partnered with the Town of Rochester and the Rochester Land Trust (RLT) to permanently protect 20.5 acres along Doggett Brook, a principal tributary of the Sippican River. The project is part of a larger effort to protect a 58-acre undeveloped parcel along a principal road to the central village area of Rochester.
- In 2022, the NEP funded four land protection projects (three of which the Coalition was a partner).

Related activities that support shellfish, eelgrass, and wildlife populations are supported by other tasks like the stormwater management support of the NEP to Buzzards Bay municipalities and the NEP's support of salt marsh loss and eelgrass reporting in the State of the Bay report discussed below. For example, under Work Plan Task 12 – Salt Marsh Loss Assessment Collaboration with Coalition, and Runnel Study with Coalition and Woodwell Climate Center. Between 2019 and 2021, the Buzzards Bay NEP executive director oversaw the installation of NGS rod type elevation benchmarks at 12 long-term salt marsh study sites in Buzzards Bay (Fig. 15), and subsequently oversaw field training or marsh elevation surveys. The NEP remains a key partner to the Coalition in implementing the long-term study of salt marsh in Buzzards Bay and maintains the elevation-GIS database in support of the program. The NEP director is also a coauthor on the study of the utility of marsh runnelling as a tool to mitigate short-term impacts of sea



Fig. 14 Ribbon cutting ceremony at Hamlin Crossing, Acushnet. This project, was the result of a partnership between the Town of Acushnet, the Coalition and volunteers from Tabor Academy in Marion and service from members from AmeriCorps Cape Cod, TerraCorps, and the Commonwealth Corps.



level rise in Buzzards Bay<sup>2</sup> and a coauthor on the Coalition’s report [Buzzards Bay Salt Marshes: Vulnerability and Adaptation Potential](#)<sup>3</sup>.

### Section 3.1.3 - Clean Waters

The Buzzards Bay NEP's focus on Clean Waters revolves around activities to protecting drinking water, managing point and non-point sources of pollution, especially from nutrients, and bacterial and pathogen sources. While some of these activities, like protecting drinking water supplies in the Mattapoissett River valley, are supported by the Buzzards Bay municipal grant programs, considerable NEP staff time technical assistance focuses on managing stormwater runoff and developing watershed nitrogen total maximum daily loads. These efforts are manifested in Work Plan Task 2 - Stormwater Remediation and Technical Assistance and Work Plan Task 11 – Scientific collaboration on nitrogen TMDLs, climate impacts, and water quality impacts on natural resources.



Fig. 15 Between 2019 and 2021, the NEP oversaw the installation NGS rod type elevation benchmarks at 12 long-term salt marsh study sites in Buzzards Bay.

About 40% of staff time is focused on supporting the Buzzards Bay Stormwater Collaborative to map stormwater networks, monitor stormwater discharges, and undertake illicit discharge detection and elimination (IDDE) investigations. GIS and water quality data collected by the Stormwater Collaborative directly supports municipal compliance and reporting for their federal MS4 permits, and the data is publicly available online (Fig. 17).

Two NEP Stormwater Specialists (Kevin Bartsch and Bernadette Taber) guide the collaborative, which is implemented through the Massachusetts Maritime Academy, the lead in completing Stormwater Collaborative tasks with guidance from the NEP. The school provides students and staff to assist eight Buzzards Bay watershed municipalities participating in the program, and in conducting the IDDE investigations. Along with the full time Massachusetts Maritime Academy staff person, five to ten cadets complete their cooperative assignments annually with the Stormwater Collaborative. The cadets gain valuable experience and can

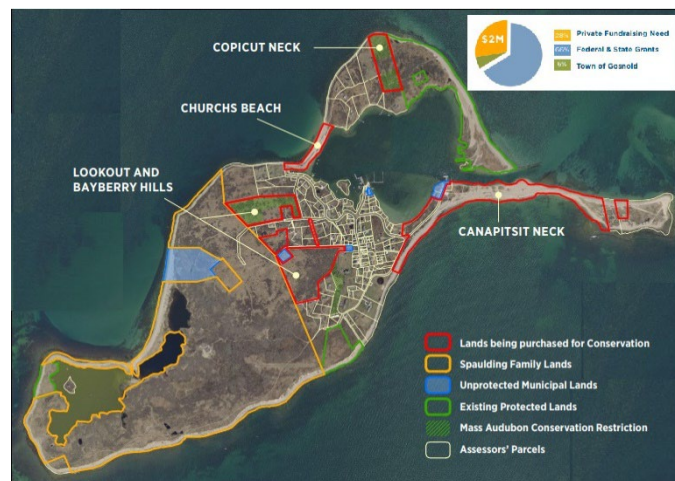


Fig. 16 Cuttyhunk Land Protection Project.

<sup>2</sup> Alice F. Besterman, Rachel W. Jakuba, Wenley Ferguson, Diana Brennan, Joseph E. Costa & Linda A. Deegan. 2022. Buying Time with Runnels: A Climate Adaptation Tool for Salt Marshes. *Perspectives* 45:1491–1501 (<https://link.springer.com/article/10.1007/s12237-021-01028-8>)

<sup>3</sup> Jakuba, R. W., Besterman, A., Hoffart, L., Costa, J. E., Ganju, N., Deegan, L. 2023. Buzzards Bay Salt Marshes: Vulnerability and Adaptation Potential. 32pp.



Fig. 17 Screenshot of the Buzzards Bay Stormwater Collaborative Interactive Map.

enter the workforce with sought-after skills. During the past five years the NEP developed proposals and workplans that secured two SNEP grants and four DEP stormwater grants, and dozens of students have participated in the programs.

The NEP is responsible for many Stormwater Collaborative tasks, including training, GIS support, and data management. During the program evaluation period the NEP continued to update monitoring guidance documents, update the EPA approved quality assurance project plan (QAPP), and dozens of students have participated in the program. Beginning in 2023, the NEP enacted an interagency service agreement with Massachusetts Maritime Academy to support the fulltime coordinator and part-time administrative staff. This allowed funding from the municipalities to exclusively fund students participating in the program.

In May 2023, the NEP completed an update of the QAPP. This comprehensive update documents the modifications in sampling protocols and other IDDE procedures. This update adds Massachusetts Maritime Academy into the organizational structure of the Collaborative and enhances details for additional sampling parameters.

The inclusion of IDDE investigations and training have become a core element of the Stormwater Collaborative. The NEP was a partner on the first DEP grant in January 2020 which resulted in the specification and construction of the trailer and the development of the techniques for effective catchment investigations. The trailer continues to be an effective asset in comprehensive IDDE work. From July 2022 to June 2023 an additional 400 catchments were evaluated. An illicit connection has been identified and corrected by the affected town and several smaller issues have been addressed throughout the watershed. Other Collaborative work includes 125 stormwater outfalls inventoried and over 75 stormwater samples collected. The [Buzzards Bay Stormwater Collaborative page](#) has additional information about the Stormwater Collaborative, and these and useful stormwater monitoring training videos are on the Stormwater Collaborative's [Monitoring Discharges page](#).

As this IDDE work continues, participating towns will eventually complete the bulk of their MS4 IDDE requirements. This is the case for the Town of Marion, so efforts have been directed to more GIS analysis to detect troubled sites and rate potential solutions. During the winter session, when fieldwork was at a low, the Collaborative professional staff performed a GIS analysis for the Town of



Marion. This analysis resulted in ranking outfall pipes and their catchments by environmental importance and then identified an approach to treatment.

The Stormwater Collaborative online map service, introduced in January 2022, has expanded and improved this fiscal year. This ArcGIS Online map developed by the NEP and hosted by Massachusetts Maritime Academy provides a clearing house for all the data and mapping efforts collected to date. This online map complies with standards set by the MS4 permit for features required to be illustrated on a map. This map is an asset for the Stormwater Collaborative communities and provides a tool for them to evaluate their outfalls and catchments. Several towns now use this tool as their primary source of information.



Fig. 18 BBNEP Stormwater Specialists Kevin Bartsch and Bernadette Taber lead a hands-on IDDE training at the Massachusetts Maritime Academy.

Besides the Stormwater Collaborative support, the NEP aids towns on stormwater issues in several ways. First, we review stormwater designs proposed by towns for remediation projects, or at the request of a town board as part of local permitting or site plan review. Second, we prioritize storm drain outfalls to assist municipalities in making management decisions, fund and assist in developing assessment reports and fund and develop stormwater remediation designs for high priority discharges. The NEP further helps towns prepare grant applications for federal and state monies to help fund implementation of these stormwater designs. Third, we assist towns to develop and implement stormwater management plans, like the Phase II MS4 National Pollutant Discharge Elimination System (NPDES) municipal plans. Finally, we work with town boards to adopt local stormwater regulations and Low Impact Development (LID) strategies.

In early April 2021, the NEP helped each of the towns prepare model grant proposals that will assist the towns in applying for state and federal funds to help construct the stormwater treatment facilities, which include green infrastructure like biofilter, sand filters, and swales. Support from grant efforts continue to fund the construction of these designs.

Beginning in early 2023, the NEP is participating in an EPA/SNEP initiative to make ambient water quality data available to other researchers and the public. The Water Quality Exchange (WQX) program collects and standardizes data from Network Partners and provides a web tool for searching, understanding, and downloading the data. WQX is the primary framework for compiling and sharing data at the national level. The NEP has collected over 6000 stormwater related measurements since 2016 and is now providing that data to WQX.

### Section 3.1.4 - Program Success and Strong Communities

Each Buzzards Bay annual work plan consists of 12 to 15 discrete tasks that identify outputs and outcomes, both for the previous year's work plan, and expected accomplishments for the proposed



annual activities. The success of many of these tasks relies on the concept of strong communities. Elements that define strong communities include environmental justice, water equity, investment of resources into the local economy, technical assistance to communities, long-term stakeholder relationships, integration of projects into the fabric of the community, and conservation of water, land, and natural resources. In the sections below we highlight these themes and summarize key environmental and programmatic accomplishments, completed work plan activities, and highlight noteworthy lessons learned, and success stories from the past five years.

*Section 3.1.4.1 Base funding grant, municipal grant award highlights.*

The NEP's base funding cooperative agreement work plan Task 3 - NEP Technical Assistance and Municipal Grant Program includes funding for the Buzzards Bay municipal grant program. We summarize those awards in Table 2 and Section 3.1. However, that information does not reveal NEP activities and collaborations in 2020 and 2021 that were initiated to address changes in government operations caused by the COVID pandemic. In the FY18 workplan, funding was set aside for a request for proposals for municipal stormwater designs. Because the Stormwater Collaborative had not yet collected sufficient data to prioritize discharges for remediation designs, and the NEP was still managing grants on behalf of Region 1 for the SNEP program, the NEP decided to delay the stormwater designs request for proposals to the spring of 2020. However, the government shutdown in response to the pandemic changed those plans.

To maintain progress during the government shutdown, after reviewing results of the stormwater collaborative, and consulting with municipalities, the NEP created a list of 50 potential sites where we determined a stormwater treatment system would be both meaningful, and where municipal land was available for construction. This list was based on a review of water quality data and site investigations during the past four years, and where treating the discharge is a priority because of the potential to reduce stormwater pollutants like bacteria. Sites were selected based on several criteria. In the spring of 2020, the Buzzards Bay NEP conducted a procurement and hired Horsley Witten Group to review these 50 sites and work with the NEP to narrow this list down to 15 sites. The scope of work for the engineering and planning firm was to develop conceptual stormwater treatment plans for 15 sites, 75% designs for six sites, and final designs and permitting for three sites. Primarily, consideration was given to water quality testing results. However, we also weighed potential interest from municipal staff to address those specific locations, and we considered the amount of space available at each site for potential treatment options. Other considerations were given to size of catchment and expected soils and water table elevation (based on NRCS's Soil Surveys). After preparing a report identifying the preliminary designs for fifteen sites, the NEP notified the five towns where these 15 sites were located to further evaluate soils and at these sites (this [letter to the Town of Dartmouth](#) is representative). After the site investigations were complete, the NEP released the [final conceptual stormwater designs for 6 sites](#). Using that report, and after confirming interest with the participating municipalities, the NEP identified three sites in the towns of Wareham, Acushnet, and Fairhaven where the NEP would work with the town to prepare final designs and obtain permitting with the town's conservation commissions (this [letter to the Town of Fairhaven](#) is representative).

Concurrent with these activities, the NEP set aside a portion of the stormwater design funding in the FY18 workplan to support two projects with the UMass Dartmouth Civil and Environmental Engineering Department. In one of these projects, the NEP funded a master's student to undertake an assessment of land use and watershed discharges along a Buzzards Bay stream. NEP staff provided this student with training, data, and guidance. This project resulted in a master's thesis titled [How Land Use Affects Water Quality Characteristics of Stormwater: A Study of Tub Mill Brook \[Mattapoisett, MA\]](#).

At the same time, the NEP sponsored the a [Capstone Program](#) team in the UMass Dartmouth Civil and Environmental Engineering Department. In the Capstone Program, College of Engineering seniors work in small teams on "real-world, industry-specific challenges that demand analysis, proposals, prototypes, and solutions.... The college works with partners in industry and government to develop both product and process projects—as relevant to the specific engineering disciplines" and requires mentorship to help students devise solutions that meet actual sponsor needs. In this NEP sponsored Capstone Program project, the team's Civil Engineering Department seniors selected one of the three Buzzards Bay stormwater design sites that did not advance to the final design phase, and they advance the selected project to at least a 75% design phase. The team's work was overseen by a professor, Chair of the University department, and received guidance from Horsley Witten Group (as part of their contract), and the NEP. The team completed their work in 2021 with the completion of the [Complete Street Concept for Water Street in Dartmouth, MA](#) (Fig. 19).

Among the three full designs funded by the NEP, the Jerusalem Road project has received funding from both the Buzzards Bay NEP and from CZM. The Besse Park stormwater project has stalled because of concerns that the construction of a 10,000 sq. ft biofilter will result in the loss of public area in the waterfront park. The River View Park neighborhood project in Acushnet has also stalled because the stormwater biofilter is near the Acushnet River. Although the site is not in a designated PCB Superfund area, the NEP recommended soil testing during excavation of the site. The town was concerned that if they found PCBs on the site, they would bear the responsibility of financing the

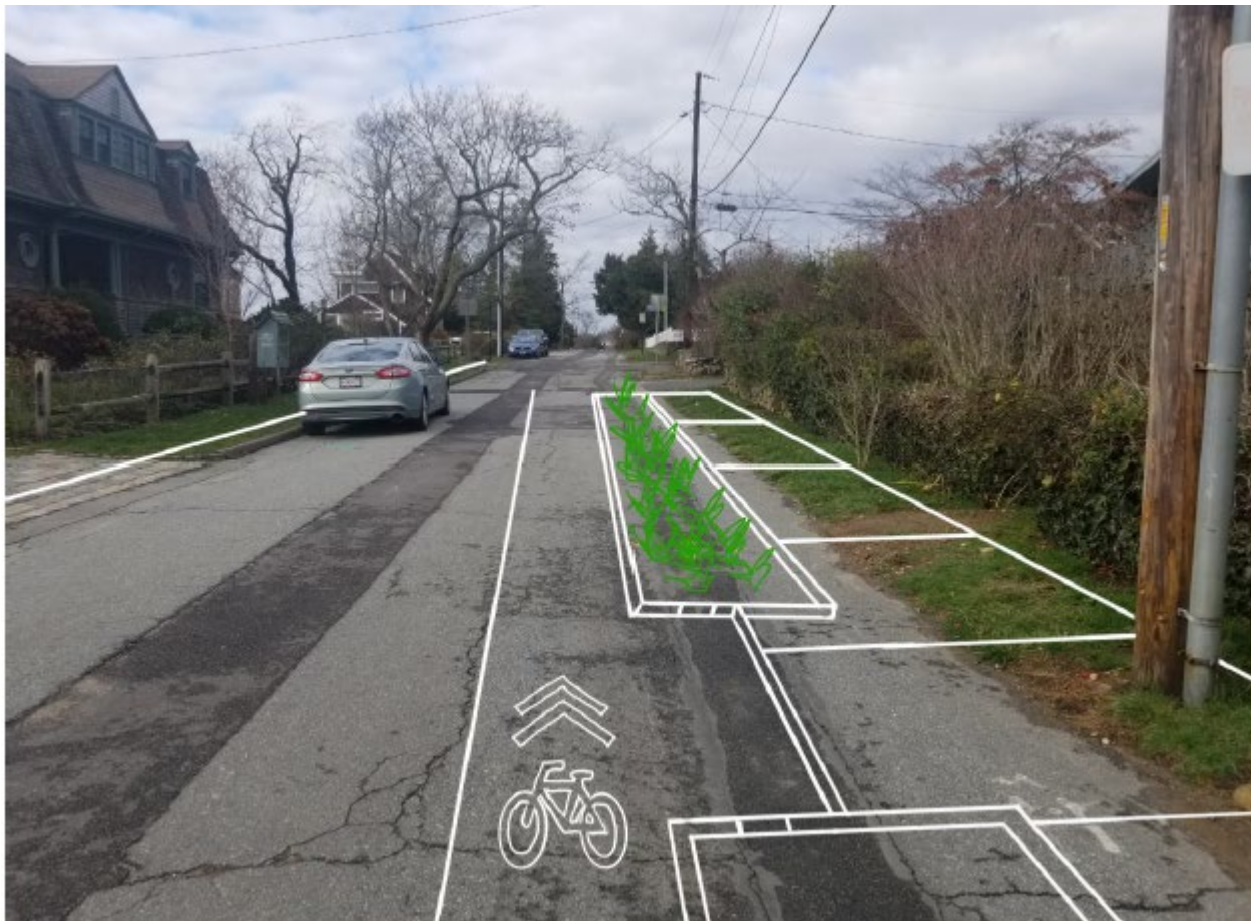


Fig. 19 Design sketch for Water Street in Padanaram Village, Dartmouth from a UMass Dartmouth Senior Capstone Program project team report sponsored by the Buzzards Bay NEP.

clean-up. The town wanted a written guarantee that the NEP would pay for clean-up costs if PCBs were found on the site.

These initiatives with the UMass Dartmouth Civil and Environmental Engineering Department led to a new initiative in 2022 to have a different group of students conduct drone surveys to support the long-term salt marsh study as described elsewhere in this report.

#### *Section 3.1.4.2 NEP support to disadvantaged communities*

EPA has required that NEP expenditures under IIJA help meet national goals of the Justice40 initiative. Similarly, the Commonwealth of Massachusetts, through the Executive Office of Energy and Environmental Affairs (EEA), maintains a policy of Environmental Justice to better serve the environmental needs of the Commonwealth's most vulnerable residents. EEA's EJ Policy and Executive Order 552 require that EEA agencies develop their own strategies to "proactively promote environmental justice in all neighborhoods in ways that are tailored to their agencies' mission." To meet all these needs and goals, the Buzzards Bay NEP developed an Equity Strategy that details how the Buzzards Bay NEP will contribute to the national program-wide goal of ensuring that at least 40% of the benefits and investments from IIJA funding flow to disadvantaged communities and advance state EJ goals and policies. The [Buzzards Bay NEP Equity Strategy](#) adopts the following definition of disadvantaged communities for its grant and technical assistance programs: 1) any area identified by the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs EJ community mapping tool, 2) any area identified by EPA Supplemental Demographic Index (Census block groups with an SDI score of 80 in EPA's EJ Screen Tool), and 3) any project that is either on the property of a Title 1 school (schools where at least 40% of enrollment is from low-income families), or benefits that school. Fig. 19 shows the federally defined disadvantaged communities and Fig. 20 shows the Commonwealth of Massachusetts Environmental Justice designations, together with the NEP addition of Title 1 schools and walking distance to any of the areas. Because map-based tools based on census block groups do not always capture disadvantaged communities, site specific projects within 2000 feet (walking distance) of any of these areas are considered as benefitting a disadvantaged community. Projects that benefit dispersed town-wide or region-wide disadvantaged populations (e.g., a proposal that targets low-income populations), or non-mapped communities (e.g., tribal properties), will also receive additional consideration under the NEP's grant and technical assistance programs. The U.S. EPA approved the Buzzards Bay NEP's equity strategy in July 2023, and it is posted below. EEA finalized its draft EJ Policy in February 2024.

In the section below, we describe how the NEP exceeded the environmental justice target of 40% of funding benefiting disadvantaged communities for the IIJA funding. In support of Justice40 goals, under the NEP's base funding work plan, the NEP initiated a partnership with the New Bedford School Department to support the Kalisz Sea Lab Marine Science Education Center. Sea Lab is a marine and aquatic educational summer school program supported through tuition and a local education agency. Sea Lab serves grade four through nine and is located on the Fort Rodman peninsula, close to the City's public beaches. A science curriculum covers oceanography, limnology, meteorology, geology, marine biology, and chemistry as they relate to the marine environment (Fig. 20). Course work includes laboratory work and field studies along the Massachusetts and Rhode Island coastlines. As noted on the [Sea Lab website](#), teaching materials are developed to achieve a balance between the introduction of basic scientific concepts and the discussion of observable phenomena with a focus on high interest, hands-on, intensive study designed to appeal to the serious student. Simone Bourgeois, Sea Lab Facilitator, has noted the program's emphasis is on experiential learning, with science content classes complemented by field studies and hands-on activities, focusing on scientific inquiry and observations. The Program has been nationally recognized with past support from the National Oceanic and Atmospheric Administration and the Naval Research Center. The curricula



include collaboration with area universities, and Sea Lab students have had the opportunity to participate in on-going scientific research.

To participate in this voluntary summer program, the families of resident children must pay \$400 tuition plus certain field trip fees. This tuition covers the costs of teacher salaries, some supplies, and some field trip costs. Sea Lab is also supported by a parent/teacher organization, the Sea Lab Keel, which raises money to buy and repair equipment, defray the costs of field trips, provide snacks for the children, purchase trophies and awards, and award scholarships to Sea Lab alumni as they go off to college. Several other individuals and organizations provide support to keep the Sea Lab program viable. However, these funding sources are insufficient to meet all the needs of disadvantaged communities. To assist the school, for the past three years, the Buzzards Bay NEP has been providing \$22,000 to \$28,000 annually to fund several tasks, including Tuition Waivers for disadvantaged students, costs for Material and Supplies for Curriculum Expansion including testing equipment, supplies, plastic bottle reduction program, and supporting Field Trips like whale watches and the study of the Cuttyhunk Island ecosystem.



Fig. 20 Top: Bottom: Grade 4- level 2 Sea Lab students study the historical significance of land-based and water-based lighthouses or light stations, and the use of lenses in light beacons. Level 7 New Bedford High School freshmen and sophomores are introduced to design engineering and technology in their Sea Lab summer Program curriculum.

### *Section 3.1.4.3 Leveraged funding*

The NEP also reports leveraged funds for the years covered in the PE cycle. These are characterized as the NEP either having "primary" or "significant" leveraging roles and are summarized in Table 2. A large portion of the leveraged funds were reported as match to NEP grants. Where the NEP provided funding, the NEP role was characterized as primary, even if matching funds exceeded NEP funds. The preponderance of funds reported in this table are associated with land protection projects where other sources of non-federal funding were leveraged by the applicant, with actions often leveraged by the Buzzards Bay Coalition.

**Table 5** Summary of funds Leveraged annually by the NEP compared to EPA base funding.

<b>Year</b>	<b>Role</b>	<b>\$ Leveraged</b>	<b>EPA funds (Section 320)</b>	<b>Primary Ratio</b>
<b>2019</b>	Primary	\$3,431,289		
	Significant	\$3,080,550		
	Total, Primary Ratio	\$6,511,839	\$600,000	5.7
<b>2020</b>	Primary	\$7,074,699		
	Significant	\$7,145,899		
	Total, Primary Ratio	\$14,220,598	\$600,000	11.8
<b>2021</b>	Primary	\$2,657,130		
	Significant	\$8,416,925		
	Total, Primary Ratio	\$11,074,055	\$662,500	4
<b>2022</b>	Primary	\$2,663,343		
	Significant	\$1,071,500		
	Total, Primary Ratio	\$3,734,843	\$700,000	3.8
<b>2023</b>	Primary	\$9,855,756		
	Significant	\$4,338,500		
	Total leverage, Funding, Ratio	\$14,194,256	\$750,000	13.1



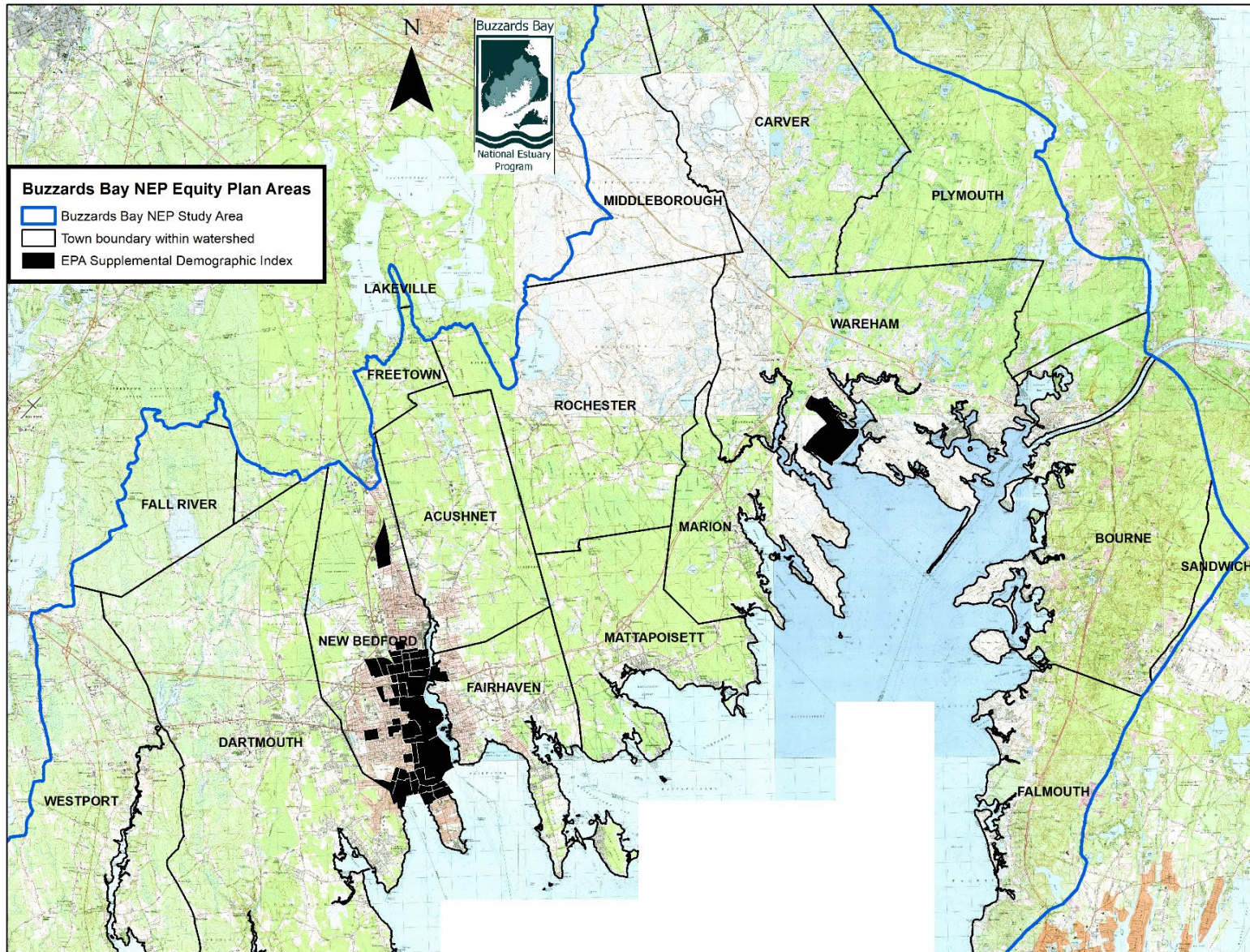


Fig. 21 EPA EJ Screen defined disadvantaged populations (Supplemental Demographic Index mean percentiles equal or greater than 80).



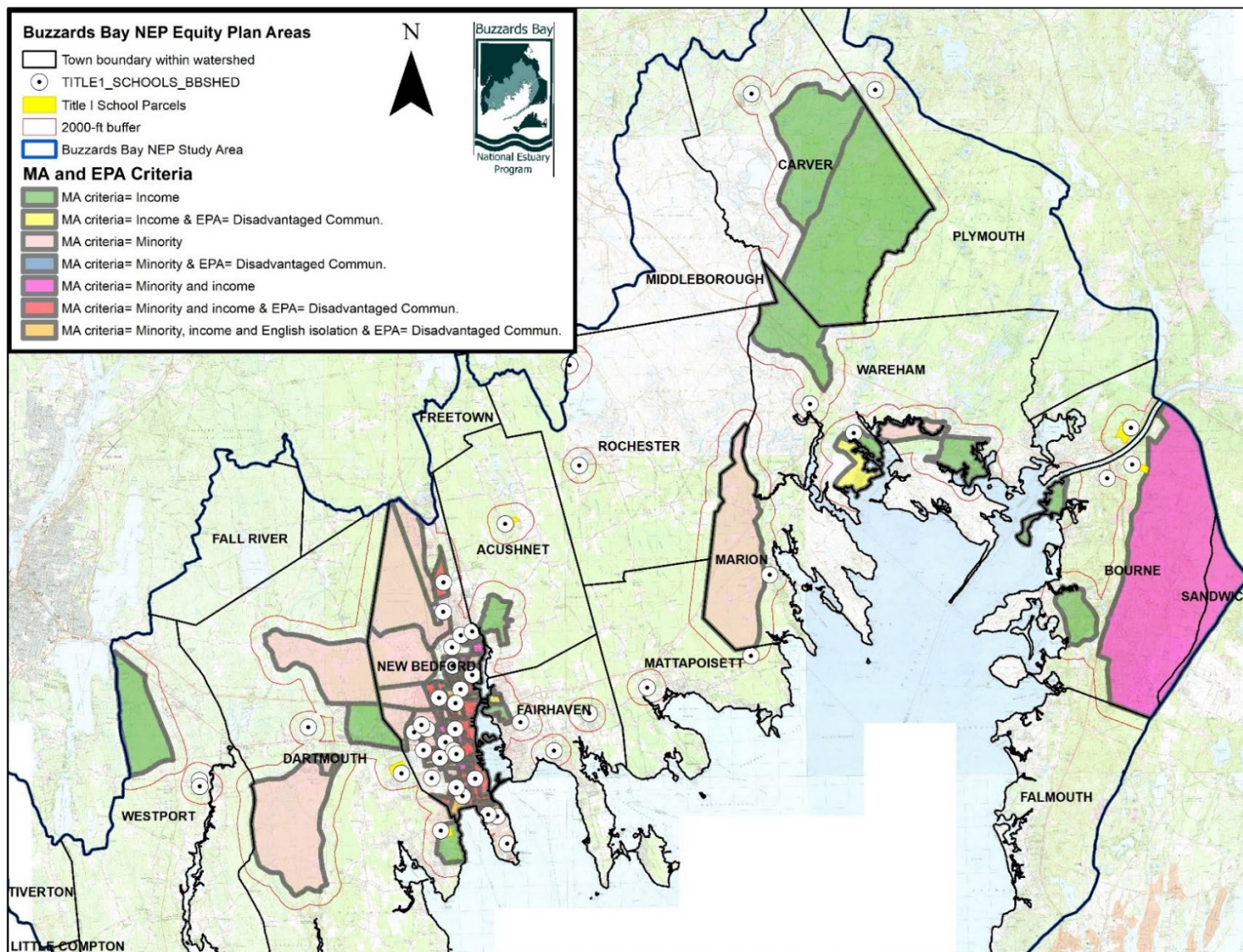


Fig. 22 Buzzards Bay NEP Equity Plan target areas within the Buzzards Bay watershed study area. Data from Massachusetts 2020 Environmental Justice Populations Viewer, MA Department of Education Title 1 schools, and the U.S. EPA Supplemental Demographic Index. The EPA populations are wholly a subset of the state designations.



### Section 3.1.5 -Infrastructure Investment and Jobs Act Funding

The 2021 Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law, is providing \$132 million to the 28 National Estuary Programs for fiscal years 2022 through 2026, or \$908,600 annually to each NEP for five years. A core emphasis of the NEP Bipartisan Infrastructure Law funding is the acceleration of environmental and community goals identified in each NEP's CCMP. As articulated in the program evaluation guidance, NEP projects funded through bipartisan infrastructure law should seek to: accelerate and more extensively implement CCMPs, ensure that benefits reach disadvantaged communities, build the adaptive capacity of ecosystems and communities, and leverage additional resources. To meet this goals, the NEP developed a IIJA [Long Term Plan](#) and an [NEP Equity Strategy](#). EPA approved these documents in 2023 ([August 2023 approval letter](#)). In the sections below are examples of how the Buzzards Bay NEP used Infrastructure Investment and Jobs Act funding to meet work plan goals and activities that fit programmatic objectives of healthy ecosystems, clean waters, and strong communities including support for climate resiliency and providing benefits to disadvantaged communities.

***Section 3.1.5.1 Accelerate and more extensively implement CCMPs:*** *Multi-year Bipartisan Infrastructure Law funds provides an opportunity for NEPs to execute long-term projects within communities they serve, leverage additional resources, and work with stakeholders to advance a wide range of projects identified in CCMPs.*

An example of the Buzzards Bay NEP sustaining a long-term project is funding of core support functions of the Buzzards Bay Stormwater Collaborative by the Massachusetts Maritime Academy. Through the Infrastructure and CCMP Support grant program, the NEP is now funding multi-year infrastructure projects. At the same time, the NEP is supporting multifaceted long-term projects, like the Buzzards Bay Coalition's Buttonwood Brook and Apponagansett Bay Restoration project, which began as a SNEP pilot watershed initiative in 2021. The NEP is a partner on the latter project and is undertaking a watershed loading assessment as part of an EPA-approved QAPP.

***Section 3.1.5.1. Ensure that benefits reach disadvantaged communities:*** *Ensure that the benefits of federal investments are shared equitably by communities benefiting from estuary program projects. Each estuary program was required to develop an Equity Strategy outlining approaches to contribute to the nationwide NEP Justice40 target. Both the NEP Program and the Bipartisan Infrastructure Law NEP funds are covered under the Justice40.*

The NEP set a target that 40% of grants and subawards would benefit disadvantaged communities. As noted earlier, the NEP Director worked with the New Bedford School Department to provide funding to support financially disadvantaged students to attend the Sea Lab summer school science program under the NEP's base funding work plan and is funded by SNEP. To achieve the goal for the NEP's grant program, the NEP changed scoring criteria for grant requests for proposals to provide bonus points for projects in the geographic target areas of the NEP's [equity strategy](#). This approach was used in both the base funding grant program, and in the Infrastructure and CCMP Support grant program, funded by the IIJA. Because most of the disadvantaged population resides in the greater New Bedford area, the NEP Director also reached out to City of New Bedford officials and staff to identify or develop new projects that would benefit disadvantaged communities. The targeted subaward programs, like the Buzzards Bay Stormwater Collaborative, are already assessing stormwater networks in disadvantaged areas, with 46% of the stormwater field investigations within a disadvantaged area of the NEP's equity plan. The NEP's approach has paid off, in that 56% of the value of IIJA grants, subawards, and contracts benefited disadvantaged communities (Table 6).

**Table 6** NEP grants, subawards and contracts awarded with year 1 and year 2 IJA subawards. (Most awards are currently open, and leveraged funding totals are not finalized. Approximately \$186,000 of unawarded Round 2 grant funds will be added to Round 3 of Infrastructure and CCMP Support grant program.)

Grantee	Project Name	Contract		Prop. Leverage.	% EJ benefit	EJ Value
		Amount	BIL YR			
Bourne	Queen Sewell Pond Watershed Action Plan	\$183,500	1	\$10,000	0.00%	\$0
Dartmouth	Reduction in Nitrates to BB from WWTP outfall	\$250,000	1	\$0	15.00%	\$37,500
New Bedford	Buttonwood Park Green Infrastructure	\$375,000	1	\$237,499	100.00%	\$375,000
Contractor	Grant development specialist	\$27,000	1	\$0	50.00%	\$13,500
MMA	Year 2 Stormwater Collaborative Support	\$90,206	1	\$88,296	46.00%	\$40,616
Envirotech Lab	Stormwater Testing	\$4,000	1	\$0	46.00%	\$1,840
NB Health Lab	Stormwater Testing	\$4,000	1	\$0	46.00%	\$1,840
Fairhaven	Jerusalem Road Stormwater Remediation	\$125,000	1	\$300,000	0.00%	\$0
New Bedford	Riverside Park Salt Marsh Restoration	\$93,531	2	\$0	100.00%	\$93,531
Wareham	Denitrifying Woodchip Bioreactor Field Trial	\$275,000	2	\$20,000	100.00%	\$275,000
Wareham	Neighborhood-scale N Reductions at Little Harbor	\$40,000	2	\$10,000	30.00%	\$12,000
Westport	MS4 Investigations	\$25,000	2	\$6,000	15.00%	\$3,750
Contractor	Grant development specialist	\$28,342	2	\$0	40.00%	\$11,337
MMA	Year 3 Stormwater Collaborative Support	\$127,042	2	\$94,050	46.00%	\$58,439
<b>TOTAL</b>		<b>\$1,647,621</b>		<b>\$765,845</b>		<b>\$924,353</b>

**Section 3.1.5.2. Build the adaptive capacity of ecosystems and communities:** NEPs should use Bipartisan Infrastructure Law resources to continue to expand on their climate change adaptation, hazard mitigation, and resilience activities, where appropriate, including protection and restoration of key habitats that increase resiliency.

The stormwater treatment designs of both the Buttonwood Park Green Infrastructure and Jerusalem Road Stormwater Remediation projects in Table 6 address the issue of increased precipitation associated with climate change and improving resilience of the neighborhoods to flooding. The Riverside Park Salt Marsh Restoration project will facilitate salt marsh migration with sea level rise.

**Section 3.1.5.3. Leverage additional resources:** As NEPs select Bipartisan Infrastructure Law-funded projects, the EPA expects estuary programs to collaborate with other federal agencies and new partners and identify opportunities to leverage these funds.

In Table 6, the Jerusalem Road project leveraged a CZM Coastal Habitat & Water Quality Grant (\$275,000) and municipal cash (\$25,000). The Buttonwood Park project leveraged American Rescue Plan Act (ARRA) funds (\$237,499), and the broader Buzzards Bay Coalition-led Apponagansett Bay and Buttonwood Brook Restoration project (of which the NEP is a partner) has leveraged millions more in ARRA and SNEP funds (see this [NEP Post](#)). The grant to support the Reduction in Nitrates from the Dartmouth wastewater facility adds to \$477,000 in municipal sewer enterprise funds, and the Little Harbor, Wareham Wastewater nitrogen study leveraged \$10,000 in ARRA funds.



#### ***Section 3.1.5.4. Meeting Healthy Ecosystems, Clean Waters, and Strong Communities goals***

The benefits of the Infrastructure and CCMP support grants and subawards in Table 6 toward Healthy Ecosystems and Clean Waters are often self-evident by their title, but these additional points are worth highlighting:

- The Town of Bourne's grant for \$183,500 will enable it to hire an engineering firm to address nutrient and bacteria loading to Queen Sewell Pond. The grant will fund stormwater treatment designs for a discharge near a freshwater bathing beach and develop an action plan for nine other stormwater discharges in the watershed. The pond has been impaired by harmful algal blooms and elevated bacteria levels, which have caused beach closures.
- The Town of Dartmouth received \$250,000 to make modifications to its wastewater treatment facility to better meet permitted discharge limits for certain pollutants and significantly reduce nitrogen discharges to Buzzards Bay. While the Town is not required to remove nitrogen from its discharge, adding aeration to certain tanks during this upgrade will cut nitrogen discharges in half, potentially removing more than 90,000 pounds of nitrogen pollution from the facility's discharge to Buzzards Bay each year. The nitrogen removal upgrade costs are \$475,000, and the Town will contribute the needed additional funds from their capital account.
- The City of New Bedford received \$375,000 to complete Phase II of the Buttonwood Park stormwater management project at the Buttonwood Senior Center. The project is addressing sediment erosion and pollutant discharges from the property and nearby neighborhoods. The site also has a large waterfowl population problem, notably Canada geese, whose wastes contribute to bacteria and nutrient pollution of the pond. The stormwater treatment system will consist of a biofilter raingarden, and the city will use habitat alteration techniques and barriers to exclude the waterfowl from the property. The Parks Department is working with the Conservation Commission to restore a vegetated buffer along the pond. The Senior Center also houses an adult with disabilities day care program, and Buttonwood Park abuts Environmental Justice populations and serves a diverse community in New Bedford and Dartmouth. New Bedford is providing \$237,000 toward the cost of the project through other sources.
- The \$125,000 Town of Fairhaven grant will improve water quality in Outer New Bedford-Fairhaven Harbor by reducing pollution from stormwater runoff. The grant will fund stormwater retrofits, including green infrastructure designs to treat road runoff from Jerusalem Road and leverage other state funding. The runoff currently discharges to a shellfish growing area, causing the area to be closed periodically to shellfishing after rainfall.
- The \$93,531 grant to the City of New Bedford and its partner, Groundwork Southcoast, will fund an engineering firm to conduct a feasibility study and develop design plans for creating a salt marsh habitat in a manmade pond in Riverside Park. The pond is currently overgrown with invasive species and is often used as a dumping ground. The project will return the area to a natural state and create a tidal exchange with the Acushnet River. Groundwork Southcoast and its Green Team, which employs area youth, will work with the city and residents to build environmental stewardship and help ensure that designs for the popular waterfront park meet community needs and environmental sustainability goals.
- The \$275,000 grant to the Town of Wareham and its partner, the Marine Biological Laboratory, will scale up prior pilot studies that showed nitrogen levels can be lowered and effluent quality can be significantly improved at the Wareham Water Pollution Facility by passing effluent through biofilters composed of wood chip media. The proposed Phase 2 field trials will explore how earlier pilot experiments can be scaled to 40-foot-long reactors and will

calculate flow rates and infrastructure needed to handle the municipal facility's daily flows. The Wareham Water Pollution Facility currently has stringent nitrogen limits imposed on its discharge, and the new bioreactor technology, which is more cost-effective than other approaches, would help the town further reduce its nitrogen loading to coastal waters. If successful, the new technology will allow for the increased capacity of the wastewater facility and much-needed expansion of sewerage in the town.

- The \$40,000 grant to the Town of Wareham and its partner, the Buzzards Bay Coalition, will be used to assess the feasibility of constructing a neighborhood-scale wastewater system with the purpose of reducing nitrogen pollution from onsite septic systems near Little Harbor Beach on Great Neck. The study will identify potential nearby town-owned property outside the flood zone where the facility might be sited.
- The \$25,000 grant to the Town of Westport will enable the town to hire a consultant to assist the town with monitoring and investigating municipal separate storm sewer system (MS4) discharges to comply with the town's federal stormwater permit. The proposed work will safeguard the town's waterbodies and groundwater by assisting with the control of polluted stormwater runoff, which is a major cause of water quality impairments in the town.

## **Section 4: NEP Ecosystem and Community Status (Topic 3).**

This section describes how the NEP applies and connects the everyday work of the NEP with the foundational goals of the CWA and the EPA priorities for achieving them.

### **Section 4.1 - Community and Stakeholders Engagement**

A cursory review of the Buzzards Bay NEP work plans during the past four years (Supporting Attachments listed in Appendix A) will show that many of the core activities of the Buzzards Bay NEP, as well as our collaborative work with our partners have remained constant. For example, a core focus of the Buzzards Bay NEP remains our technical and financial assistance programs to municipalities. In some projects, such as stormwater monitoring and mapping efforts in the Stormwater Collaborative, the Buzzards Bay NEP was a lead in the management and oversight of key tasks. In others, like the land protection and habitat restoration projects, we typically provide a more supporting role such as funding specific but essential tasks (e.g. land surveys), or technical support related to mapping, with the Buzzards Bay Coalition, or a local lands trust being the principal leads. Because of commitments and duties of NEP staff on specific work plan tasks the NEP relies on the community and stakeholder engagement of its partners like the Buzzards Bay Coalition because they have the staffing and capacity to do so. Nonetheless, the NEP engages the stakeholders for core programs. For example, for the Buzzards Bay Stormwater Collaborative, NEP staff coordinate and engage municipal public works staff, town, administrators, and other town staff to encourage meaningful participation in the program.

*Section 4.1.1 How does the NEP ensure that the public has access to the decision-making process and engagement opportunities?*

NEP work plans and information about the NEP is posted on the [program's website](#). Because the NEP's primary customers are Buzzards Bay municipalities, municipal staff, and local environmental groups, staff routinely engage with these stakeholders. NEP staff participation in monthly Buzzards Bay Action Committee meetings ensures the NEP is aware of issues facing municipalities and the local challenges in achieving environmental goals. The NEP director's participation in quarterly Buzzards Bay Coalition Science Advisory Committee meetings ensures the NEP has good understanding of research and monitoring issues and needs, including awareness of emerging issues.

*Section 4.1.2 How has the NEP engaged the variety of community members and stakeholders in the NEP study area, including in underrepresented segments?*

The Buzzards Bay NEP defines itself as a technical assistance and planning unit, with its primary customers being Buzzards Bay municipalities and non-profit and educational institution partners. An example of meeting these local needs is the mapping and analytical requests provided by the NEP's Regional Planner summarized in the 6-month log in Appendix B. Because of how the NEP is organized, it defers general outreach programs to partners like the Buzzards Bay Coalition, which has programs to engage [diverse communities around Buzzards Bay](#). The Buzzards Bay Coalition is headquartered in the City of New Bedford, in an area designated as a disadvantaged community by the U.S. EPA and has implemented many programs within the city. The NEP does not have the capacity, nor is it within the program's mission to implement general community engagement programs. The Buzzards Bay Coalition is one of the largest and most successful estuary-based programs in the country. Instead, to meet its programmatic goals, the NEP has taken a more direct approach to engage municipalities to implement efforts that benefit disadvantaged communities. The Buzzards Bay NEP has worked with the New Bedford parks department to identify and develop projects for funding by the NEP. Examples include the Riverside Park and Buttonwood Park projects. These efforts succeed in part because the NEP hired a grant development specialist who is working with Buzzards Bay municipalities to identify and generate project ideas within disadvantaged population centers. The NEP has also worked with the school department to develop a program at Sea Lab to help disadvantaged students participate in a summer marine science program and engage them in marine science field trips.

*Section 4.1.3 What is the level of engagement from the stakeholders and the public?*

Compared to most NEPs, the NEP's level of engagement with the public is modest. The NEP has developed a symbiotic relationship with the Buzzards Bay Coalition within its work plan and Cooperative Agreements with the EPA where the NEP defers many typical NEP public outreach activities to the Buzzards Bay Coalition. The NEP is largely defined by its web presence and press releases related to the awarding of grants to Buzzards Bay municipalities. The NEP's website is more technically focused and is recognized as authoritative. In contrast to its level of engagement with the public, the NEP's engagement with its primary customers (municipal government, non-profits, scientific community) is strong. The Buzzards Bay Coalition and Buzzards Bay Action Committee represent two of six members of the NEP's Steering Committee and have a strong voice.

*Section 4.1.4 Where and how could the level of engagement be improved?*

Actions to protect and restore the environment are largely driven by community leaders. The NEP will need to continue to build relationships with these leaders and activists.

## Section 4.2 - Education and Outreach

*Section 4.2.1 How is the NEP effectively promoting and creating widespread recognition of the Program?*

The NEP's technical and financial assistance efforts are directed principally to municipal government, non-profits, and the scientific community. The NEP maintains an email list to advertise the availability of funding, grant requests for proposals are posted on the state procurement system COMMBUYs, and announcements are made on the Southeastern Massachusetts Coastal Outreach listserv.

*Section 4.2.2 What are some of the impacts of outreach and educational activities?*

The NEP's collaboration with the New Bedford public schools Sea Lab program has enabled dozens of disadvantaged students to participate in the program that would otherwise not be able to, and the NEP's support for field trips and new equipment has enriched all participants in the program. The NEP's training workshops for municipal public works staff on MS4 permit compliance and IDDE investigations has benefited dozens of municipal staff. The superb outreach and educational activities and programs of the Buzzards Bay Coalition are widely recognized.

*Section 4.2.3 What are some ways these activities could be improved?*

For all entities, the level of effort is defined by staffing and funding. Often the best approach is to implement programmatic requirements for outreach as a condition of grant awards. The NEP is considering ways to require or encourage public facts sheets as a product of grants funded.

### Section 4.3 - Monitoring and Assessment

*Section 4.3.1 How do the NEP's monitoring plan and indicators produce data to support a comprehensive and integrated analysis of environmental conditions (e.g., environmental progress report that communicates ecosystem status and trends, aka State of the Bay/ Estuary Reports)?*

The Buzzards Bay Coalition is the lead entity for producing the State of Buzzards Bay reports, issuing a new report roughly every four years (the [2022 State of Buzzards Bay](#) report was delayed because of the COVID pandemic. The NEP is the lead analyst for two (eelgrass and bacteria/shellfish bed closures) of the nine scoring elements and is a reviewer of the entire document. In addition, the NEP is one of the lead analysts and partners on the various salt marsh studies, including the [Long-Term Buzzards Bay Salt Marsh Study](#), which the NEP helped initiate with the Buzzards Bay Coalition (see their [website](#)). The initial work resulted in the Buzzards Bay Coalition report [Buzzards Bay Salt Marshes: Vulnerability and Adaptation Potential](#). For the Buzzards Bay Stormwater Collaborative, the NEP is the lead entity in managing the stormwater monitoring and stormwater infrastructure GIS database. This information is presented here: [Buzzards Bay Stormwater Collaborative Interactive Map](#). These are just a few examples of products that the NEP has helped produce.

The role of the NEP in monitoring can be further illustrated by the NEP's intrinsic roles defined in EPA QAPPs approved during the current program review period including:

- [Buzzards Bay Stormwater Collaborative Quality Assurance Project Plan Illicit Connection Detection and Stormwater Quality Monitoring in the Buzzards Bay Watershed](#) (January 2023, update of the 2018 plan)
- [Quality Assurance Project Plan for Long-term salt marsh vegetation and elevation monitoring in Buzzards Bay Pursuant to Buzzards Bay NEP Workplan Task 12, EPA Cooperative Agreement CE-00A00456-0](#) (August 2019)
- [Quality Assurance Project Plan for Evaluating Management Actions to Promote Salt Marsh Resilience](#) (August 2020)
- [Quality Assurance Project Plan for Salt Marsh Unmanned Aircraft System Surveys Pursuant to Buzzards Bay NEP Workplan Task 12, EPA Cooperative Agreements CE-00A00860-0 and CE-00A00887-0](#) (April 2023)
- [Quality Assurance Project Plan \(QAPP\) for Use of Secondary Data and Modeling in Red Brook Harbor to Support TMDL Development](#) (May 2023)



- [Quality Assurance Project Plan for Use of Secondary Data and Modeling in Apponagansett Bay to Support TMDL Development](#) (approved February 2024, but includes development through the summer of 2023)

*Section 4.3.2 How does the NEP use monitoring results to re-direct management actions and programs implemented under the CCMP?*

The NEP has a close relationship with the scientific community and agency scientists. The NEP's participation with the Buzzards Bay Coalition's Science Advisory Committee helps the program maintain awareness of research and monitoring needs to benefit Buzzards Bay management. To meet specific nitrogen watershed TMDL development, the NEP initiated directed subawards with the Marine Biological Laboratory and Woodwell Climate Research Center on issues like nitrogen loading from cranberry bogs, nitrogen loading from Buzzards Bay streams, and remote salt marsh monitoring by a team at UMass Dartmouth.

The collaboration with the UMass Dartmouth Civil and Environment Engineering department using drones to survey marshes in the long-term salt marsh monitoring program, commenced following the successful stormwater collaboration work described in Section 3.1.4.1. This collaboration began when the NEP and its partners identified a specific monitoring need. The federal FY 2018 work plan included the task Innovative Environmental Monitoring and Assessment Approaches for salt marsh monitoring. Under this initiative, the NEP entered into a partnership with UMass Dartmouth to fund both a senior studies project and a graduate student research project. The university team is evaluating vegetation, edge loss, and elevation. Images are processed with 3D photogrammetry software to generate digital surface models and georectified true color imagery. The work is undertaken twice annually at the 12 long-term marsh study sites (Fig. 22). This task has remained in subsequent work plans.



Fig. 23 Long-term salt marsh study sites of Buzzards Bay.



*Section 4.3.3 How are research efforts used to identify missing data that warrant additional monitoring or sampling (if applicable)?*

The NEP is a key member of several teams involved with TMDL development and marsh monitoring and helps identify and guide monitoring efforts needed to complete project tasks. Participation in the Buzzards Bay Coalition's Science Advisory Committee has been instrumental in targeting subawards and supporting new initiatives to gather missing data to meet the goals of the Buzzards Bay Comprehensive Conservation and Management Plan.

#### Section 4.4 - Clean Water Act Programs Relationship

*Section 4.4.1 How does the NEP support the goals of the CWA? Highlight the best examples not already identified in previous sections. An example does not need to be provided for each CWA Program listed below.*

- **Strengthening Water Quality Standards:** The Coalition's Baywatchers program, which began in 1992 under the direction of the NEP, remains one of the most effective volunteer-based water quality monitoring programs in the country. The data is being used as the basis for updates to the state's water quality assessment and integrated list of waters standards. It is also being used in models to develop watershed nitrogen TMDLs in Buzzards Bay embayment watersheds by the DEP's Massachusetts Estuaries Project. This work, together with efforts to help towns identify problem stormwater discharges and to support efforts for treatment through technical assistance and grants, directly supports EPA goals to better control non-point source pollution on a watershed basis.
- **Improving Water Quality Monitoring:** The NEP is supporting a long-term stream nitrogen loading monitoring program in Buzzards Bay.
- **Developing Total Maximum Daily Loads:** The NEP is conducting the watershed nitrogen loading assessment for two TMDLs under development by the Buzzards Bay Coalition and other partners (Red Brook Harbor and Apponagansett Bay).
- **Controlling Nonpoint Source Pollution on a Watershed Basis:** The NEP is a key partner in the Buzzards Bay Coalition's Apponagansett Bay and Buttonwood restoration initiative.
- **Strengthening National Pollutant Discharge Elimination Systems (NPDES) Permits:** The Stormwater Collaborative reports assist Buzzards Bay towns to complete their MS4 permits.
- **Supporting Sustainable Wastewater Infrastructure:** Three Buzzards Bay grants address wastewater loading and resilience issues (Dartmouth, Wareham, and Wareham).

## Appendix A: List of Supporting Documents

All the documents below are combined in this file: [BBNEP-PE2024-Appendix-A-attachments.pdf](#)

[Work plan FFY 18](#)

[Work plan FFY 19](#)

[Work plan FFY 20](#)

[Work plan FFY 21](#)

[Work plan FFY 22](#)

[Work plan BIL YR1 FFY 22](#)

[Work plan BIL YR2 FFY 23](#)

[Buzzards Bay NEP Equity Strategy](#) (approved August 2023)

[Equity-Strategy-Approval-BBNEP.pdf](#)

[Buzzards Bay NEP IIJA Long Term Plan](#)

[NEP IDDE Workshops Flyer](#)

[Stormwater Program Monitoring Guide 2023 update](#)

[BB Stormwater facility 2021 data reports](#)

[Buzzards-Bay-NEP-Fact-Sheet-Stormwater-Collaborative.pdf](#)

[BuzzBay-Salt-Marsh-Study-site-info-13NOV2023.pdf](#)

[Lessons learned in the implementation of the Buzzards Bay Stormwater Collaborative](#)

[Buzzards Bay Salt Marshes: Vulnerability and Adaptation Potential](#)

[Buzzards Bay Stormwater Collaborative QAPP](#)

[Buzzards Bay Long-term salt marsh monitoring QAPP](#)

[Buzzards Bay Coalition Runnel Study QAPP](#)

[UMass Dartmouth Marsh Drone Survey QAPP](#)

[Buzzards Bay Coalition Red Brook Harbor TMDL Development QAPP](#)

[Buzzards Bay Coalition Apponagansett Bay TMDL Development QAPP](#)

[Buzzards Bay Coalition's 2022 State of Buzzards Bay](#)

[Buzzards Bay Coalition Annual Report 2018](#)

[Buzzards Bay Coalition Annual Report 2019](#)

[Buzzards Bay Coalition Annual Report 2020](#)

[Buzzards Bay Coalition Annual Report 2021](#)

[Buzzards Bay Coalition Annual Report 2022](#)

[Buzzards Bay Coalition Strategy 2015-2020 Executive Summary](#)

[Buzzards Bay MOU, 2005](#)

[Final Buzzards Bay NEP 2019 Program Review Evaluation Letter](#)

## Appendix B: Mapping & Data Requests Fulfilled by BBNEP's Regional Planner - January 1, 2023 - June 20, 2023

The workload is typical for the entire program evaluation period.

#	Date	Requestor	Description of Request
1	1-3-23	Garry Buckminster - Wareham Harbormaster	Shellfish bed map for Wareham for Jan 1
1	1-4-23	Dan Goulart - Buzzards Bay Coalition	Buttonwood dam removal and habitat restoration map for grant proposal, Dartmouth
2	1-4-23	Mike Huguenin - Mattapoisett Land Trust	2 open space maps for Mattapoisett (Size E and 8.5x11)
1	1-4-23	Colleen Andrews - Mattapoisett Land Trust	Edits to Mattapoisett Land Trust brochure graphic
1	1-4-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Carvalho North, Fairhaven map
1	1-5-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Stone Estate CAA map, Marion
1	1-5-23	Mark Rasmussen - Buzzards Bay Coalition	Map of Barney's Joy Farmland Preservation Project, Dartmouth (Wainer, Knight & Jordan Farm)
1	1-5-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Buttonwood dam removal and habitat restoration map for grant proposal, Dartmouth
1	1-6-23	Brendan Annett - Buzzards Bay Coalition	Standard property map of T&T Inc. property in Dartmouth
1	1-9-23	Allen Decker - Buzzards Bay Coalition	Snell Creek map (Petty property) for Westport CPC application
1	1-9-23	Ian Walsh - Buzzards Bay Coalition	Size E map of Cuttyhunk Island conservation lands
1	1-10-23	Ian Walsh - Buzzards Bay Coalition	Edits to Size E Cuttyhunk Island map
1	1-11-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Carvalho North Lots map, Fairhaven
1	1-11-23	Jennifer Dubois - Westport Land Conservation Trust	Digitize new land acquisitions from survey plans and provide shapefile to land trust
4	1-12-23	Mark Rasmussen - Buzzards Bay Coalition	4-map series for Fairhaven Meadows, LLC in Fairhaven for site visit
2	1-12-23	Jim Bride - Sippican Lands Trust	Map showing SLT lands within each subwatershed in Marion & map of Buzzards Bay watershed
5	1-17-23	Allen Decker - Buzzards Bay Coalition	5-map series for proposed CR on Little Harbor Country Club, Wareham
1	1-17-23	Joe Brennan - Buzzards Bay Coalition	Map of proposed cluster waste water system in Wareham (Little Harbor Country Club area)
1	1-17-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Wainer Farm graphic, Dartmouth
1	1-17-23	Ian Walsh - Buzzards Bay Coalition	Map of Cuttyhunk Island showing prescribed burn areas
1	1-17-23	Brendan Annett - Buzzards Bay Coalition	Map of Weston Brothers property in Carver
1	1-17-23	Nicole Kirkos - Sippican Lands Trust	Locus map of Hoff Property in Marion for MassTrails grant application
1	1-18-23	Allen Decker - Buzzards Bay Coalition	Map of Jordan Farm CR, Dartmouth
1	1-18-23	Ian Walsh - Buzzards Bay Coalition	8.5x11 version of Cuttyhunk prescribed burn map
1	1-18-23	Joe Brennan - Buzzards Bay Coalition	Zoom out version of Westport proposed cluster wastewater system map showing sentinel station
1	1-19-23	Brendan Annett - Buzzards Bay Coalition	Edits to Weston Brothers, Carver map
1	1-19-23	Colleen Andrews - Mattapoisett Land Trust	Edits to Mattapoisett Land Trust Walking Trails Locations map
1	1-19-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Herring property map (New Boston Road), Fairhaven
4	1-19-23	Brendan Annett - Buzzards Bay Coalition	4-map series for Stone Estate - Outside Gate, Marion (MVP series)
1	1-20-23	Dan Goulart - Buzzards Bay Coalition	Updated EJ map for Buttonwood Brook SNEP Project
1	1-20-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Herring property map (New Boston Road), Fairhaven
2	1-24-23	Mark Rasmussen - Buzzards Bay Coalition	2 maps of Slocums River Watershed with composting and landfill facilities
3	1-25-23	Brendan Annett - Buzzards Bay Coalition	3-map series for North Dartmouth (Acme, Inc, Reis and Costa properties)
1	1-25-23	Mark Rasmussen - Buzzards Bay Coalition	Map of Fisher Road Complex in Dartmouth
5	1-26-23	Allen Decker - Buzzards Bay Coalition	5-map series of Long Plain Forest Conservation Project (Hawes) for Conservation Partnership grant application
5	1-26-23	Allen Decker - Buzzards Bay Coalition	5-map series of Tripps Mill Brook Conservation Project (Hawes) for Conservation Partnership grant application
2	1-27-23	Allen Decker - Buzzards Bay Coalition	Edits to two Tripps Mill Brook & Long Plain Forest CP grant maps
1	1-30-23	Allen Decker - Buzzards Bay Coalition	Data calculations and shapefile for Tripps Mill Brook CP grant application
1	1-30-23	Allen Decker - Buzzards Bay Coalition	Data calculations and shapefile for Long Plain Forest CP grant application
1	1-31-23	Allen Decker - Buzzards Bay Coalition	Water Resources map for Long Plain Forest CP grant application
1	1-31-23	Allen Decker - Buzzards Bay Coalition	3 maps showing monitoring tracks for various Mattapoisett Land Trust properties
3	1-31-23	Colleen Andrews - Mattapoisett Land Trust	EJ Maps for Tripps Mill Brook and Long Plain Forest CP grant applications
2	2-1-23	Allen Decker - Buzzards Bay Coalition	

#	Date	Requestor	Description of Request
1	2-1-23	Allen Decker - Buzzards Bay Coalition	Water Resources map for Tripps Mill Brook CP grant application
1	2-1-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Stone Estate - Outside the Gate map, Marion
1	2-1-23	Colleen Andrews - Mattapoisett Land Trust	Map of Brandt Island Cove District properties, Mattapoisett
2	2-1-23	Brendan Annett - Buzzards Bay Coalition	2 versions of Little Harbor Golf Course CR, Wareham
1	2-2-23	Rachel Jakuba - Buzzards Bay Coalition	Edits to West End Pond, Naushon map
1	2-3-23	Colleen Andrews - Mattapoisett Land Trust	Map of Betsey's Meadow property in Mattapoisett
3	2-3-23	Mike Huguenin - Mattapoisett Land Trust	3-map series of Humphrey property in Mattapoisett
8	2-6-23	Mark Rasmussen - Buzzards Bay Coalition	8-map series for Douglass Tree Farm in Fairhaven
1	2-7-23	Colleen Andrews - Mattapoisett Land Trust	Map of Sparrow-Farwell Preserve in Mattapoisett
1	2-7-23	Colleen Andrews - Mattapoisett Land Trust	Map of Alves-Bucciarelli Preserve in Mattapoisett
2	2-7-23	Joe Brennan - Buzzards Bay Coalition	2 maps of Turnips Pond area of Rhode Island 6-map series for Brandt Island Cove District West CR, Mattapoisett
6	2-9-23	Allen Decker - Buzzards Bay Coalition	
1	2-10-23	Mike Huguenin - Mattapoisett Land Trust	Edits to Master Planning Map - BioMap3 and Priority Habitats
1	2-13-23	Allen Decker - Buzzards Bay Coalition	Edits to Little Harbor Golf Club CR map
		Ross Moran - Westport Land Conservation Trust	
1	2-15-23		Map of Messier property in Westport Map of DEP Natural Resource Area Nitrogen Sensitive Areas in Buzzards Bay for Women's Club presentation
1	2-15-23	Korrin Petersen - Buzzards Bay Coalition	
1	2-16-23	Allen Decker - Buzzards Bay Coalition	Edits to Little Harbor Golf Club CR map, Wareham
1	2-21-23	Mark Rasmussen - Buzzards Bay Coalition	Map of proposed Powel CR in Dartmouth
2	2-22-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Powel map and creation of new subdivision plan map
4	2-22-23	Mark Rasmussen - Buzzards Bay Coalition	4-map series for Lee Property (49 Water Street), Marion
5	2-22-23	Colleen Andrews - Mattapoisett Land Trust	5 separate monitoring maps for various MLT properties
1	2-23-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Powel CR map, Dartmouth
1	2-27-23	Jason Clermont - Buzzards Bay Coalition	Update Buzzards Bay watershed open space GIS layer Edits to Falmouth Discharge Alternative map for meeting presentation
1	2-28-23	Korrin Petersen - Buzzards Bay Coalition	
1	2-28-23	Brendan Annett - Buzzards Bay Coalition	Mattapoisett River Valley Water Supply Resilience Project Map (Red Brick Farm/Manoney) Map of Elegancia Estates property monitoring track and points, Mattapoisett
1	3-1-23	Colleen Andrews - Mattapoisett Land Trust	
1	3-1-23	Korrin Petersen - Buzzards Bay Coalition	Additional edits to Falmouth Discharge Alternative map for meeting presentation
1	3-1-23	Korrin Petersen - Buzzards Bay Coalition	Map of Nutrient Impaired Waters in Falmouth
1	3-1-23	Mark Rasmussen - Buzzards Bay Coalition	Graphic of Wainer Farm in Dartmouth Tub Mill Brook property with 15-foot LiDAR contour calculated flood area behind dam
1	3-1-23	Mike Huguenin - Mattapoisett Land Trust	
1	3-2-23	Eric Dray - Town of Marion consultant	Updates to Marion Village historic map
1	3-2-23	Mike Huguenin - Mattapoisett Land Trust	Second version of Tub Mill Brook LiDAR map, Mattapoisett
1	3-3-23	Mike Huguenin - Mattapoisett Land Trust	Third version of Tubb Mill Brokk LiDAR map, Mattapoisett
1	3-6-23	Colleen Andrews - Mattapoisett Land Trust	Map of MLT trails in Mattapoisett for children's brochure 6-map series of Cornell property in Dartmouth for DWSP grant application
6	3-7-23	Allen Decker - Buzzards Bay Coalition	
1	3-7-23	Allen Decker - Buzzards Bay Coalition	Data calculations for grant application (DWSP) for Cornell property in Dartmouth Additional map (aquifers) for Cornell property DWSP grant application
1	3-8-23	Allen Decker - Buzzards Bay Coalition	
1	3-8-23	Mike Huguenin - Mattapoisett Land Trust	12-foot contour map for Tub Mill Brook property in Mattapoisett Spreadsheet of landowners/addresses on Marion Village Boundary map
1	3-8-23	Eric Dray - Town of Marion consultant	
7	3-9-23	Allen Decker - Buzzards Bay Coalition	Edits to 7-map series for Cornell DWSP map, Dartmouth 6-map series for Matt. River Valley Water Supply Protection Project (Red Brick Farm) CPA meeting (Acushnet)
6	3-10-23	Allen Decker - Buzzards Bay Coalition	
3	3-10-23	Mark Rasmussen - Buzzards Bay Coalition	3-map series of 958 Sodom Road, Westport
1	3-16-23	Eric Dray - Town of Marion consultant	Edits to Marion Village Study Map
1	3-16-23	Colleen Andrews - Mattapoisett Land Trust	Updates to Mattapoisett Trail Locations map
3	3-16-23	Colleen Andrews - Mattapoisett Land Trust	3 property monitoring maps (Munro, Munn and Shoolman)
5	3-20-23	Mark Rasmussen - Buzzards Bay Coalition	5-map series for Keleher Property in Falmouth
2	3-21-23	Allen Decker - Buzzards Bay Coalition	2-map series for Andras property in Westport
2	3-23-23	Brendan Annett - Buzzards Bay Coalition	2-maps of Wainer Farm Proposed AEL Project, Dartmouth
1	3-23-23	Garry Buckminster - Wareham Harbormaster	April 1st shellfish bed map for Wareham
1	3-23-23	Eric Dray - Town of Marion consultant	Map of Water Street Area historic district, Marion
1	3-24-23	Allen Decker - Buzzards Bay Coalition	Edits to Andras property map, Westport 2 maps of Mare Landscaping & Construction property in Dartmouth (Buttonwood Brook)
2	3-24-23	Mark Rasmussen - Buzzards Bay Coalition	
1	3-24-23	Colleen Andrews - Mattapoisett Land Trust	Map of 25-mile Tour de Crème route (fundraiser for MLT)
1	3-27-23	Mark Rasmussen - Buzzards Bay Coalition	Map of newly proposed CR for R. Powel property in Dartmouth
1	3-27-23	Colleen Andrews - Mattapoisett Land Trust	Map of 11-mile Tour de Crème route (fundraiser for MLT)



#	Date	Requestor	Description of Request
1	3-28-23	Ross Moran - Westport Land Conservation Trust	Soils map of 958 Sodom Road, Westport
1	3-28-23	Allen Decker - Buzzards Bay Coalition	Data calculations for Red Brick Farm project, Mattapoisett/Rochester
5	3-29-23	Allen Decker - Buzzards Bay Coalition	5-map series of Red Brick Farm East , Mattapoisett/Rochester - CAPS data
1	3-29-23	Brendan Annett - Buzzards Bay Coalition	Edits to Wide Marsh Farm CR map, Fairhaven
1	3-29-23	Colleen Andrews - Mattapoisett Land Trust	Map of 42-mile Tour de Crème route (fundraiser for MLT)
1	3-30-23	Colleen Andrews - Mattapoisett Land Trust	Edits to map of 42-mile Tour de Crème route (fundraiser for MLT)
3	3-31-23	Allen Decker - Buzzards Bay Coalition	3-map series for Mattapoisett River Valley Water Supply Resilience Project (3 CR maps)
5	3-31-23	Allen Decker - Buzzards Bay Coalition	5-map series of Red Brick Farm West, Mattapoisett/Rochester - CAPS data
5	3-31-23	Allen Decker - Buzzards Bay Coalition	5-map series of Red Brick Farm South, Mattapoisett/Rochester - CAPS data
1	3-31-23	Brendan Annett - Buzzards Bay Coalition	Map of proposed divisions at 958 Sodom Road, Westport
1	3-31-23	Mark Rasmussen - Buzzards Bay Coalition	Map of landowners around Community Boating Center, New Bedford/Dartmouth
1	4-3-23	Mark Rasmussen - Buzzards Bay Coalition	Edits to Community Boating Center map, New Bedford/Dartmouth
3	4-3-23	Mark Rasmussen - Buzzards Bay Coalition	3-map series for Cornell property in Dartmouth
4	4-2-23	Mark Rasmussen - Buzzards Bay Coalition	4-map series for Munger property in Dartmouth
5	4-3-23	Mark Rasmussen - Buzzards Bay Coalition	5-map series for CBC-Azorean Maritime Campus Vision, New Bedford/Dartmouth
1	4-4-23	Colleen Andrews - Mattapoisett Land Trust	Murray Preserve monitoring map, Mattapoisett
3	4-4-23	Jennifer Dubois - Rochester Land Trust	3-map series to be used by land trust members for land analysis for conservation purposes in Rochester
3	4-4-23	Mark Rasmussen - Buzzards Bay Coalition	3-map series for Merrylegs Farm in Dartmouth
1	4-5-23	Allen Decker - Buzzards Bay Coalition	Map of Snell Creek CR (Petty), Westport
3	4-5-23	Brendan Annett - Buzzards Bay Coalition	2-map series of Zyskowski property in Acushnet/Rochester
1	4-6-23	John Chester - Buzzards Bay Coalition	Map of 443 Barneys Joy Road, Dartmouth (Wainer)
1	4-7-23	Mike Huguenin - Mattapoisett Land Trust	LiDAR map of Molly's Cove area of Mattapoisett for potential CZM grant application for culvert replacement
1	4-7-23	Mark Rasmussen - Buzzards Bay Coalition	11-map series of Sippican Lands Trust CRs
3	4-10-23	John Chester - Buzzards Bay Coalition	3-map series of red Brick Farm CRs, Mattapoisett/Acushnet/Rochester
1	4-10-23	Colleen Andrews - Mattapoisett Land Trust	Indian Cove Preserve monitoring map, Mattapoisett
1	4-11-23	Mark Rasmussen - Buzzards Bay Coalition	Map of Stone Estate in Marion
1	4-11-23	Allen Decker - Buzzards Bay Coalition	Edits to Red Brick Farm West CR map, Acushnet/Rochester
1	4-13-23	Meg Steinberg - Marion Historic Commission	8.5x11 version of Marion Village Historic District Field Map
2	4-13-23	Jennifer Dubois - Rochester Land Trust	Additional 2 maps to be used by land trust members for land analysis for conservation purposes in Rochester
3	4-13-23	John Chester - Buzzards Bay Coalition	3-map series of Corgo, LLC properties in Wareham
1	4-18-23	Brendan Annett - Buzzards Bay Coalition	Map of open space in south Dartmouth
1	4-18-23	Joe Brennan - Buzzards Bay Coalition	Spreadsheet of addresses for Craggy Ridge Development in West Falmouth
2	4-20-23	John Chester - Buzzards Bay Coalition	2 maps of Headwaters Reserve in Rochester
2	4-20-23	Mike Huguenin - Mattapoisett Land Trust	2 maps of Molly's Cove Culvert project in Mattapoisett
1	4-20-23	Allen Decker - Buzzards Bay Coalition	Edits to Red Brick Farm CR Map, Acushnet/Mattapoisett
1	4-21-23	Mark Rasmussen - Buzzards Bay Coalition	Map of Viveiros property in Fairhaven showing building envelope
1	4-21-23	John Chester - Buzzards Bay Coalition	Updates to Machado East map, Achushnet-Fairhaven
1	4-21-23	John Chester - Buzzards Bay Coalition	Edits to Salt Winds Conservation project map, Fairhaven
1	4-21-23	John Chester - Buzzards Bay Coalition	Edits to Mattapoisett River Valley Water Supply Resilience Project map
1	4-21-23	John Chester - Buzzards Bay Coalition	Edits to Hawes Family Lands II map
1	4-21-23	Mike Huguenin - Mattapoisett Land Trust	Overview map of Mattapoisett Neck Marshes project
5	4-26-23	John Chester - Buzzards Bay Coalition	5-map series of CAA areas of Wareham with landowners labeled
1	4-27-23	Allen Decker - Buzzards Bay Coalition	Send shapefile to MassGIS for Angeline Brook Headwaters II CR in Westport (LWCF grant requirement)
1	4-27-23	Mike Huguenin - Mattapoisett Land Trust	Map of Dunn West property in Mattapoisett overlaid with survey plan and CAA data
1	5-1-23	Garry Buckminster - Wareham Harbormaster	May 1st shellfish bed map for Wareham

#	Date	Requestor	Description of Request
1	5-1-23	Mark Rasmussen - Buzzards Bay Coalition	Map of protected lands in Fairhaven and Acushnet
4	5-2-23	Mark Rasmussen - Buzzards Bay Coalition	4-map series for Vaughn Hill Trust (Cervelli) properties, Rochester
1	5-2-23	Allen Decker - Buzzards Bay Coalition	Edits to Red Brick Farm West CR map
3	5-2-23	Colleen Andrews - Mattapoissett Land Trust	Edits to 3 Tour de Crème bike ride fundraising maps
2	5-2-23	Mark Rasmussen - Buzzards Bay Coalition	2 maps of Pina property in Marion
2	5-2-23	Mark Rasmussen - Buzzards Bay Coalition	Individual maps of protected open space in Fairhaven and Acushnet (2 maps)
1	5-3-23	John Chester - Buzzards Bay Coalition	Overlay plan on aerial for Wainer property in Dartmouth
1	5-3-23	Linda Vanderveer - Dartmouth Natural Resources Trust	Digitize new Booth conservation subdivisions from survey plan and provide shapefile, Dartmouth
6	5-4-23	John Chester - Buzzards Bay Coalition	6-map series of individual properties along the Agawam River, Wareham showing CAA
1	5-5-23	Mark Rasmussen - Buzzards Bay Coalition	Map of proposed CR on Douglass property in Fairhaven
1	5-5-23	Allen Decker - Buzzards Bay Coalition	Map of Salt Winds project for Fairhaven Town Meeting
2	5-5-23	Allen Decker - Buzzards Bay Coalition	2 versions of Mattapoissett River Valley Drinking Water Protection Project for Town Meetings (Fairhaven/Acushnet)
1	5-8-23	Mark Rasmussen - Buzzards Bay Coalition	Map of Pina Property in Marion with BioMap3 CAA
5	5-8-23	John Chester - Buzzards Bay Coalition	5-map series of various properties in Wareham with wetlands
8	5-8-23	John Chester - Buzzards Bay Coalition	8-map series of coastal cranberry bogs in Wareham
1	5-9-23	Brendan Annett - Buzzards Bay Coalition	Agricultural Fields License map for Red Brick Farm, Mattapoissett
1	5-12-23	Brendan Annett - Buzzards Bay Coalition	Edits to agricultural fields license map for Red Brick Farm, Mattapoissett
1	5-12-23	John Chester - Buzzards Bay Coalition	Edits to Fairhaven Protected Open Space Map
3	5-15-23	Ross Moran - Westport Land Conservation Trust	3-map series for property at 1539 Main Road, Westport
1	5-18-23	Allen Decker - Buzzards Bay Coalition	Map showing components of Red Brick Farm/Mattapoissett River Valley Water Supply Resilience project
1	5-18-23	Allen Decker - Buzzards Bay Coalition	Map of Tripps Mill Brook and Long Plain Forest (Hawes/Red Barn Farm properties)
4	5-19-23	John Chester - Buzzards Bay Coalition	4-map series of CAA areas in Marion and Wareham with landowners labeled
1	5-22-23	John Chester - Buzzards Bay Coalition	Map of Acushnet Forest Land Protection Project for Town Meeting
3	5-23-23	Allen Decker - Buzzards Bay Coalition	3-map series of Sylvia-Four Kings LLC properties in Dartmouth along Buttonwood Brook
1	5-23-23	Allen Decker - Buzzards Bay Coalition	Calculate acres of cranberry bogs in entire state vs. within the Buzzards Bay watershed
1	5-23-23	Rachel Jakuba - Buzzards Bay Coalition	Map of largest acreage landowners in Dartmouth
6	5-24-23	Mike Huguenin - Mattapoissett Land Trust	6-map series for Mattapoissett Neck Salt Marshes (Molly's Cove) CZM Coastal Habitat & Water Quality grant
1	5-25-23	John Chester - Buzzards Bay Coalition	Map of Marmelo property in Acushnet
1	5-26-23	Mike Huguenin - Mattapoissett Land Trust	Map of Mattapoissett Neck Salt Marshes (Molly's Cove) CZM grant showing SLAMM data
1	5-31-23	Mike Huguenin - Mattapoissett Land Trust	Map of Mattapoissett Neck Salt Marshes (Molly's Cove) CZM grant showing vegetated vs unvegetated ratios
1	5-31-23	Jason Clermont - Buzzards Bay Coalition	Map of Buzzards Bay Priority Restoration Sites
1	6-5-23	Brendan Annett - Buzzards Bay Coalition	Edits to Ashley property map, Acushnet
1	6-5-23	Colleen Andrews - Mattapoissett Land Trust	Trail map of Alves-Bucciarelli Preserve, Mattapoissett
1	6-6-23	Mike Huguenin - Mattapoissett Land Trust	Map of Mattapoissett Neck Salt Marshes (Molly's Cove) CZM grant showing changes in marsh boundaries
1	6-6-23	Mike Huguenin - Mattapoissett Land Trust	Edits to trail map of Alves-Bucciarelli Preserve, Mattapoissett
1	6-6-23	Mark Rasmussen - Buzzards Bay Coalition	First draft of Gidwitz Barn map (top version)

#	Date	Requestor	Description of Request
3	6-8-23	Mike Huguenin - Mattapoissett Land Trust Ross Moran - Westport Land	3 additional maps for Mattapoissett Neck Salt Marshes (Molly's Cove) CZM grant application
1	6-8-23	Conservation Trust	2023 WLCT land conservation projects in process map
1	6-8-23	Jason Clermont - Buzzards Bay Coalition	Update coastal bogs map with new properties
3	6-8-23	Jason Clermont - Buzzards Bay Coalition Ross Moran - Westport Land	Individual properties map for coastal bog properties (Knight, Fares, Puritan Bog/Hart-Moore)
2	6-12-23	Conservation Trust	2 maps of Manton LLC/Beck property in Westport
1	6-13-23	Jason Clermont - Buzzards Bay Coalition Garry Buckminster - Wareham	Map of Keese property in Plymouth
1	6-14-23	Harbormaster Ross Moran - Westport Land	Edits to June 1 Wareham shellfish bed map
2	6-14-23	Conservation Trust	2 maps of Westport Woods (2018 and 2023)
1	6-14-23	Allen Decker - Buzzards Bay Coalition	Data calculations for Red Brick Farm East, Mattapoissett/Rochester
1	6-15-23	Allen Decker - Buzzards Bay Coalition	Data calculations for Red Brick Farm West and South, Mattapoissett/Acushnet
1	6-15-23	Meg Steinberg - Marion Historic Commission	Map of Marion Historical Commission - Marion Historic Inventory Phase 3

**1/1/23 - 6/20/23**

Requests for Individual Maps	302
Requests for significant edits to maps	49
Requests for Data Calculations/Spreadsheets/Shapefiles	8
<b>Total Requests</b>	<b>359</b>