



Massachusetts Bays

NATIONAL ESTUARY PARTNERSHIP

Margherita Pryor
U.S. Environmental Protection Agency, Region 1
5 Post Office Square
Boston MA 02109

June 15, 2024

Dear Margherita:

MassBays is pleased to submit Massachusetts Bays National Estuary Partnership (MassBays') application for funding under the Infrastructure Investment and Jobs Act of 2021 (here referred to as the Bipartisan Infrastructure Law, or BIL), to implement this Federal Fiscal Year 2024 workplan. With this letter and following workplan, we request a three-year incremental award to expend the remaining funds appropriated to the National Estuary Programs under the law.

We were pleased to receive approvals of both our Long-term BIL Plan and Equity Plan during the past year; those documents have guided the development of this current document. Over the next three years BIL funds will be used to:

1. Reach historically overburdened and underserved communities, with impact and efficiency, through our Regional Service providers. Beginning in Federal Fiscal Year 2023, and continuing with this incremental award through FFY2026 we will provide an annual \$100K subaward for an RSP-identified project that meets EJ community needs.
2. Establish two infrastructure-reliant programs: a) installing continuous water quality monitoring buoys and b) constructing flow-through seawater tanks for eelgrass seed production and storage. Both of these investments will advance our CCMP goals on a faster timeline, and leverage future funding for habitat restoration.

MassBays' Management Committee reviewed and approved the components of this application. Please do not hesitate to contact us if you have any comments, suggestions, or concerns.

Sincerely,

Pam DiBona
Executive Director
Massachusetts Bays National Estuary Partnership
pamela.dibona@umb.edu
339-368-0608 (cell)

Juliet Simpson
Management Committee Chair

cc: Bob Chen, Interim Dean, UMass Boston School for the Environment

Massachusetts Bays National Estuary Partnership

Proposed Workplan

Bipartisan Infrastructure Law Federal Fiscal Years 2024-2026 Funding

Contents

A. Summary	Page 3
<i>Background</i>	
<i>2022-2024 Projects</i>	
<i>2024-2025 Proposed Work and Staffing</i>	
B. Completed major projects and activities	Page 5
<i>Listed by CCMP Strategy</i>	
<i>Justice 40 Accounting</i>	Page 10
C. Proposed projects and activities	Page 12
<i>Listed by CCMP Strategy</i>	
D. Budget Narratives	Page 16
<i>Budget Narrative and Budget Table, FFY24</i>	Page 16
<i>Budget Narrative and Budget Table, FFY25</i>	Page 20
<i>Budget Narrative and Budget Table FFY26</i>	Page 23
Attachment A. Total Budget Worksheet, FFY24-26	

A. Summary

Background

MassBays' planning area is large, stretching 1100 coastal miles and a watershed including more than 50 coastal municipalities from the New Hampshire border to Provincetown at the outer end of Cape Cod. Within this area, we have a range of infrastructure and environmental justice-related needs. For example:

- **Building resilient communities.** MassBays has described the diversity encompassed by our planning area in terms of demographics and exposure to toxins, geohydrology, and environmental stressors and resources. Any effort to improve community health and resiliency requires interdisciplinary approaches.
- **Responding to climate change.** The Gulf of Maine will see among the highest increases in sea level rise on Earth over the next decades, and increased frequency and severity of storms has already been observed in our region. While the Commonwealth has invested significant capital monies in programs to assist municipalities to plan for and address the impacts of these changes, some are not able to take full advantage of those resources due to lack of local capacity.
- **Addressing regional issues.** Massachusetts is a home-rule state, and any response to cross-municipal issues – from dam removals to stormwater and wastewater management – requires deliberate coalition-building on a town-by-town basis. MassBays seeks to make local responses part of a regional plan, our CCMP.

MassBays has and will continue to apply BIL funds to respond to these needs, through planning and implementation of infrastructure improvements with municipalities including EJ communities, habitat restoration alongside community partners, and building monitoring infrastructure that will serve all of these efforts.

2022-2024 Projects

MassBays distributed a significant portion of the first year of BIL funding (FFY22 monies) to subawardees for projects to be implemented over multiple years in EJ communities, while FFY23 monies have enabled us to launch new infrastructure to support monitoring and restoration in the Bays. Accomplishments include:

- Mystic River Watershed Association (MyRWA) was awarded \$260,000 from BIL FFY22 for a project that has significantly built up capacity of the City of Malden to improve their stormwater management program for the benefit of the Malden River. Malden is an Environmental Justice community within MassBays' Equity Plan. Initially scheduled to be a two-year project, MyRWA has requested a no-cost extension to provide more hands-on training and assistance to the city's Department of Public Works which will enable them to independently install and manage green infrastructure "trenches" across the watershed to reduce flooding and improve water quality.
- Merrimack River Watershed Council (MRWC) also received \$260,000 under BIL FFY22 to engage EJ communities in watershed planning for the Shawsheen and Spicket Rivers. A plan has been completed and approved for the Shawsheen; MRWC has requested a no-cost extension to replicate the process with Spicket River watershed communities.
- MassBays worked closely with our Regional Coordinators and Science and Technical Advisory Subcommittee (STAC) to identify five locations for deployment of continuous monitoring buoys. The selected sites take into account questions about habitat condition; results of past, discrete monitoring; gaps in existing monitoring; and the potential for longer-term comparisons with National and Massachusetts Coastal Condition Assessments (NCCA and MCCA) data sets. With \$250,000 FFY23 BIL funds, we have engaged USGS to purchase and deploy buoys in two sites during the summer of 2024.
- In collaboration with the Massachusetts Division of Marine Fisheries, MassBays applied FFY23 BIL funding to construct new flow-through tanks, dedicated to eelgrass seed storage for restoration efforts, in their Cat Cove facility in Salem. This investment of \$16,997 has already

leveraged additional grant funding from Woods Hole Sea Grant for a pilot project to include field testing. An additional benefit of this initiative is employment of a student from Salem State University, a minority-serving institution.

Status and accomplishments of these projects are described in Section B.

2024-2025 Proposed Work and Staffing

Proposed work under this year's BIL funding will be led by MassBays' Central Staff based in Boston, and will include engagement with partners. Projects include:

- **Amending MassBays' Equity Plan** to define buffer zones and develop an approach to quantify and track non-monetary co-benefits of BIL investments.
- **Improving local management of tide gates** to support marsh health, beginning with structures prioritized as high-impact.
- **Conducting discrete sampling** to validate long-term, continuous monitoring at two sites in the Bays.
- **Piloting seed-based restoration of eelgrass** in Massachusetts embayments, potentially expanding the effort (with NOAA funding) with partners from Maine to North Carolina.
- **Devising Habitat Potential Indices** (postponed from FFY23) for inclusion in the Ecohealth Tracking Tool, as a means for communicating about the State of the Bays and progress toward our CCMP habitat goals to multiple audiences.

Programmatic outcomes

MassBays' CCMP calls for programs that will deliver on the following three programmatic outcomes, all of which will be addressed by this year's workplan:

- **Information about habitat conditions across the Bays is documented and disseminated via a targeted communications strategy.** State of the Bays reporting is a requirement of §320, and a focus of MassBays' outreach and communication efforts. Habitat Potential Indices will provide a new means for communication about habitat conditions and the potential for restoration in individual embayments.
- **A majority of MassBays municipalities implement habitat protection and restoration practices, informed by diverse stakeholders, including underserved communities.** MassBays' RSPs will work with communities to identify and implement restoration and protection efforts that are grounded in scientific research and best practices, as well as local expertise and EJ considerations.
- **Measurable progress toward target conditions across the MassBays planning area.** At the same time, funding dedicated to provide technical support to tide gate owner-operators will expand healthy marsh area and demonstrate the importance of sound management.

B. Completed Major Projects and Activities (July 1, 2023 to June 30, 2024)

MassBays' BIL Workplan for FFY2023 was guided by the **Goals and Strategies** of our CCMP:

Goal 1. MassBays provides new resources to support research and management in the Bays.

Strategy 1.1 Make new data available, especially to address gaps in knowledge

Strategy 1.2 Support valid (QA/QC) data collection and use

Strategy 1.3. Analyze and present existing data in multiple formats to document baselines and trends

Goal 2. MassBays reaches all planning-area municipalities with actionable information about coastal habitats

Strategy 2.1 Support and conduct research to address gaps in knowledge and inform policy and actions regarding ecosystem conditions and functions

Strategy 2.2 Provide education, training, and technical support; share case studies (successful and not); and support collaboration and cooperation on specific topics

Strategy 2.3 Facilitate access to decision making forums, and increase influence on decision making by underserved communities

Goal 3. MassBays provides regular and locally informed State of the Bays reporting that reflects the unique characteristics of MassBays assessment units (embayments, rocky shore, barrier beach), and documents progress to inform local action and progress toward target conditions.

Strategy 3.1 Establish target (improved) water quality and habitat conditions tied to desired uses and ecosystem services, and document progress toward those targets.

Strategy 3.2 Guide local action to expand habitat and improve water quality according to targets

Strategy 3.3 Maintain MassBays' National Estuary Program status

All activities fall under the **BIL-supported tasks** listed in the funding guidance, which are:

- 1) Accelerate and more extensively implement the CCMP
- 2) Ensure that benefits reach disadvantaged communities (expanded in our Equity Plan to be defined as Environmental Justice [EJ] communities)
- 3) Build the adaptive capacity of ecosystems and communities relative to climate change

The following list of accomplishments is organized according to the CCMP Strategies included in our CCMP and completed by June 30, 2024. Each project description includes the following:

Title

BIL-supported Tasks: Per list (1-3) above

Objective: Project-specific objective

Partners: Collaborators not directly funded by MassBays/BIL funds

Status: as of June 2023

Accomplishments and Deliverables: completed products

Strategy 1.1 Make new data available, especially to address gaps in knowledge

Title	Initiate long-term monitoring for MassBays’ study area (Central Staff)
BIL Task	(1) Accelerate and more extensively implement the CCMP
Objective	Initiate planning for deployment of sensors to implement continuous water quality monitoring
Partners	STAC, USGS
Status	<i>Ongoing</i> STAC and RCs collaborated to determine priority sites for continuous monitoring; implementation will proceed with FFY23 funding.
Accomplishments and deliverables	
STAC engagement in monitoring plan	STAC reviewed and provided input to monitoring design via two online meetings. A steering committee (consisting of STAC members) was convened to develop the details of the monitoring design and planning.
RCs’ contributions to site selection	STAC solicited input from the RCs for high-priority monitoring areas. Based on priority questions that the communities need to address, the RCs made recommendations of potential sampling sites.
Collaboration with USGS	USGS was selected as the entity to develop the continuous water quality part of the long-term program with MassBays. Two sites were selected for 2024: at the mouth of the DKP embayments and at the mouth of the Danvers River. A proposal was developed by MassBays to USGS. USGS developed a draft workplan and QAPP for 2024 to be reviewed and finalized with MassBays (expected June 2024).
Collaboration with NROC	The Northeast Regional Ocean Council (NROC) provided \$70,000 to MassBays to enhance the continuous monitoring program by including pCO ₂ sensors on each buoy to collect OA data.

Title	Restoring eelgrass using innovative approaches in a regional collaboration
BIL Task	(1) Accelerate and more extensively implement the CCMP
Objective	Collaborate on eelgrass restoration efforts with other NEPs, academic, agency and NGO partners across the East coast. Convene partners regarding grant pursuits both underway and upcoming. Continue to provide technical guidance regarding the implementation of previously developed protocols and experimental designs (e.g., the Carr and Colarusso Eelgrass Flowering Phenology Survey Protocol, 2023).
Partners	NEPs from Maine to North Carolina, National Parks Service, USGS, NWF, academic institutions (Northeastern, BU, Stony Brook, UMCES, VIMS, UNCW, UMES); NGOs (Schoodic institute, others TBD)
Status	<i>Ongoing</i>
Accomplishments and deliverables	
Proposal submitted 11/17/23	Proposal submitted to NOAA Transformational Habitat Restoration grant program for a seed-based eelgrass research and restoration project titled “HEAT: Helping Eelgrass Adapt to Temperature”, proposed by a coalition of entities with RAE as a lead applicant. Requested total \$15,912,696; MassBays portion 2,109,960 to serve on the project steering committee, oversee New England regional coordination, oversee and assist Massachusetts implementations at Duxbury and Pleasant Bay sites, supervise a graduate student’s field and outreach assistantship, co-plan and lead partner meetings, organize and host community outreach events, lead StoryMap product development, assist RAE with reporting and project deliverables,

	administer Massachusetts contracts, and lead presentations and other disseminations arising from the project.
Developed and expanded tank infrastructure for restoration	Planned, implemented and monitored the construction of new flow-through tank infrastructure dedicated to eelgrass seed storage for restoration efforts. Partner with MA DMF using their Cat Cove Marine Lab in Salem, MA. Interviewed and assisted in training work-study undergraduate students to work in the lab and process plants. Tanks will continue to be used to support grant-funded research and restoration projects, including the WHOI grant project described below.
Secured funding for seed-based eelgrass restoration pilot program	MassBays received a WHOI Sea Grant grant for a project titled <i>Modeling and piloting a new seed-based approach to large-scale eelgrass restoration in Massachusetts</i> to run from 2024 to 2026, with a total award of \$197,538. Project objectives are to fill knowledge gaps pertaining to large-scale seed-based restoration of eelgrass in Massachusetts waters, i.e., 1) when and where reproductive eelgrass shoots should be harvested; 2) potential impacts of seed harvest on a donor meadow; 3) the quantity, quality, and germination rate of Massachusetts seeds; and 4) the regulatory processes needed to permit large-scale routine harvest and seeding.

Strategy 2.2 Provide education, training, and technical support; share case studies (successful and not); and support collaboration and cooperation on specific topics

Title	Develop Habitat Potential Indices
BIL Task	(6) Protecting coastal waters through the National Estuary Program
Objective	Water quality-based indices for habitat health to be incorporated into the ETT to facilitate interpretation of water quality data presented in the Tool, and provide water quality-based targets to meet the CCMP habitat goals. This project will build on previous work done to identify WQ thresholds for inclusion in the ETT.
Partners	EPA ORD, DMF, Cape Cod Extension Service, MIT Sea Grant, STAC
Status	Ongoing Target completion date of June 30, 2025. This task was expanded to include coordinating derivation of a BCG-based target for diadromous fish, increasing the funds directed to this contract
Accomplishments and deliverables	
Contract in place	CEI (Consultant) retained, and kick-off meetings held to scope and schedule timelines for all tasks.
BCG completed	ORD researchers presented findings of historical data analysis and trends in both extent of migration routes and upstream spawning/habitat areas.
Diadromous fish expert subgroup convened	The subgroup surveyed existing modern data sets to determine the preferred parameters for habitat targets (proposed are miles of migration access, acres of habitat, and population numbers).

Strategy 2.3 Increase influence of underserved communities on decision making

Title	Expand and implement Equity Plan
BIL Task	All BIL tasks
Objective	Finalize an Equity Plan to guide implementation of BIL activities
Partners	Mystic River Watershed Association, EPA Region 1
Status	Complete Approved by EPA December 18, 2023; Ongoing Implementation of two sections planned for 2024
Accomplishments and deliverables	
Final Equity Plan submitted to EPA Region 1 and HQ for approval	Final submission incorporates Massachusetts’ EJ policy and associated EJ Mapper, as well as EPA’s EJ Screen and EJ Screen SDI; assessed EPA’s baseline analysis of MassBays’ Justice40 investments (based solely on NEPORT reporting); and proposed key activities to meet our goal of 40% under Justice40. (Attachment A)

Strategy 3.2 Guide and assist local action to expand habitat and improve water quality according to targets

Title	Advancing stormwater management to improve water quality and address flooding in the City of Malden (Mystic River Watershed Association)
BIL Task	(2) Ensure that benefits reach disadvantaged communities (expanded in our Equity Plan to be defined as Environmental Justice [EJ] communities)
Objective	To promote the development of a stormwater management program that reduces nutrient runoff and improves anadromous fish habitat, among other benefits, using a variety of tools, including updated Stormwater Ordinances and Regulations; a comprehensive gap analysis of municipal practices across departments; a proposal for funding schemes; and other best management practices
Partners	City of Malden, Horsely-Witten Group
Status	Ongoing No-cost extension granted through December 2025 with a minor scope adjustment to respond to Gap Analysis findings, specifically the need for more capacity building.
Accomplishments and deliverables	
Malden is in compliance with MS4 permit	New Stormwater Ordinance, including amendments to municipal stormwater drainage system, stormwater management and land disturbance regulation, approved by City Council September 5, 2023.
Permit process and checklists developed	Working with Malden Engineering Department, and including the Conservation Commission in decision-making, produced and documented a standard permitting process and components for consistency across departments and over time.
Gap analysis findings documented	In summary: <i>Informal processes work reasonably well</i> Few SOPs or succession planning (need met by documenting process and generating checklists) Challenges may arise if the volume of development increases significantly. <i>Strong internal communication and relationships</i> Roads and Construction meetings with the mayor and all relevant players seem to work well.

	<p><i>Connection between stormwater and land use is not as strong</i> E.g. Certain processes need to be made clearer to Town Planner.</p> <p><i>Capacity building is needed, especially:</i> Staff education re: new ordinance and regulations, and potential future improvements. Planning for the future, including expected increased development in the city, and climate change impacts.</p>
--	--

Title	Develop solutions to flooding and water quality impairments in Merrimack River tributaries (Merrimack River Watershed Council)
BIL Task	(2) Ensure that benefits reach disadvantaged communities (expanded in our Equity Plan to be defined as Environmental Justice [EJ] communities)
Objective	Goals include: 1) Integrate community input into watershed planning and solutions to flooding and water pollution on the Spicket and Shawsheen Rivers; 2) Complete the watershed planning necessary to prepare municipalities and communities for development and prioritization of specific infrastructure improvements; 3) Facilitate inter-municipal collaboration, data-sharing, and project prioritization; and 4) Deliver the benefits of flood mitigation and pollution remediation to communities, with a prioritized focus on EJ communities
Partners	Cities of Lawrence and Methuen, neighborhood groups, volunteers
Status	Shawsheen River watershed plan and BMP designs are complete; no-cost extension through 6/30/25 granted for completion of Spicket River watershed plan
Accomplishments and deliverables	
Spicket River watershed plan completed	The Watershed-Based Plan for the Spicket River was submitted to Mass DEP in December 2023, and responses to DEP comments dated March 2024 will be provided by June 30, 2024. An approved WBP will open access to S.319 funding for implementation of stormwater mitigation and improvement projects in the Spicket River watershed.
Conceptual designs for two Spicket River BMPs completed	Coordination across town lines and public engagement activities (include education regarding the benefits of water quality and climate resilience, including how to implement nature-based solutions on their own properties) resulted in two project designs that optimize multi-benefit solutions for water quality and flood resilience.

Justice40 Accounting

MassBays has set a goal of 40% benefit to be realized by EJ communities in our planning area (see EPA-approved Equity Strategy, Attachment A). A task for the coming year will be to develop an approach to quantify and track non-monetary and co-benefits of BIL investments. In the meantime, we provide preliminary estimations of benefit provided to EJ communities via FFY23 efforts in the following table.

Project name	BIL funds invested	Project status	Target population/area	Estimated benefit to MassBays-defined EJ communities
Initiate long-term monitoring for MassBays' study area	\$250,000	STAC and RCs collaborated to determine priority sites for continuous monitoring; implementation will proceed with FFY23 funding.	Entire MassBays planning area	58% (per Equity Strategy)
Produce Equity Strategy	\$50,000 est. salaries and fringe		EJ areas as defined by the Strategy	100%
Advancing stormwater management to improve water quality and address flooding in the City of Malden (MyRWA)	\$260,000	Gap analysis completed, MS4 requirements met; additional capacity-building efforts planned	City of Malden (Figure 2)	100%
Develop solutions to flooding and water quality impairments in Merrimack River tributaries (MRWC)	\$260,000	Shawsheen River watershed plan and BMP designs are complete; no-cost extension through 6/30/25 granted for completion of Spicket River watershed plan	City of Lawrence, City of Methuen (Figure 3)	100%
Eelgrass restoration pilot program (SSU)	\$13,000	Salem State University work-study students hired	Undergraduates receiving financial aid	100%
Total investment and Justice 40 benefits	\$833,000 invested			\$688,000 (83%) benefits EJ populations

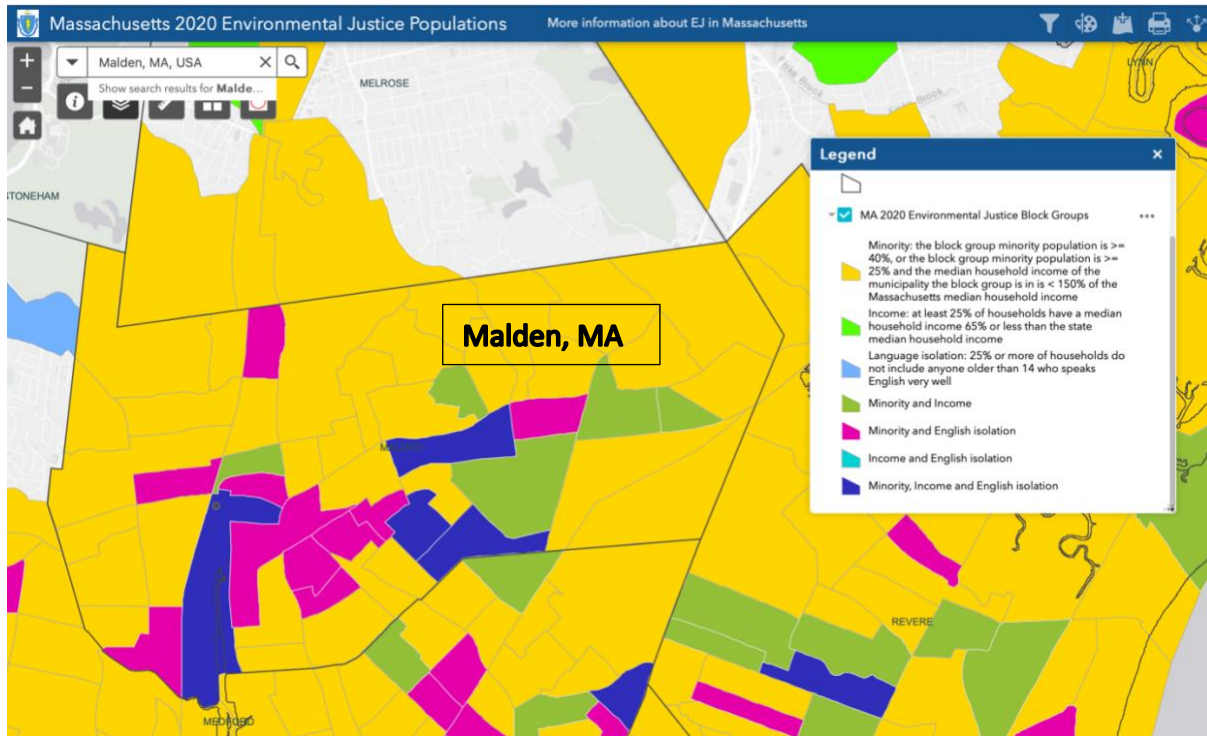


Figure 2. Malden MA EJ Populations. These data layers obtained from <https://www.mass.gov/info-details/massgis-data-2020-environmental-justice-populations>

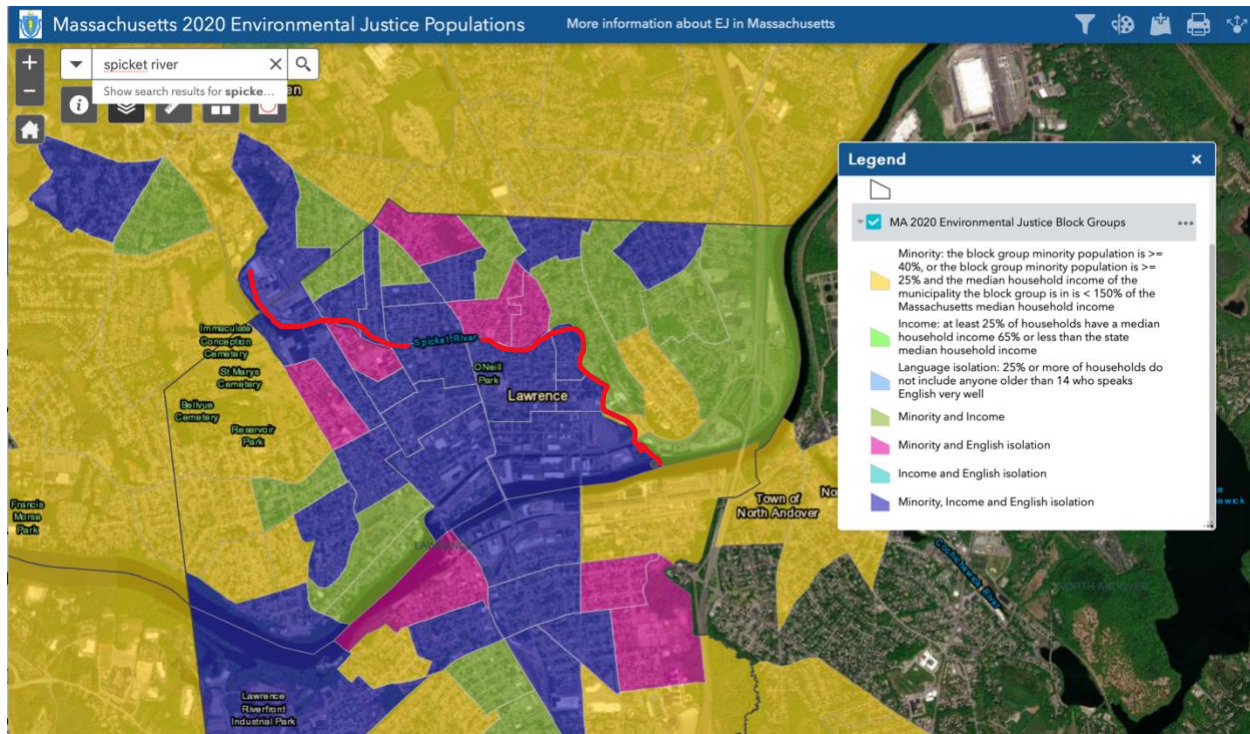


Figure 3. Spicket River (marked in red), a tributary to the Merrimack River, with surrounding EJ communities. EJ data layers were obtained from <https://www.mass.gov/info-details/massgis-data-2020-environmental-justice-populations>

C. Proposed Projects and Activities

This workplan includes details for projects and activities for FFY2024 only; we will submit yearly workplans under this incremental award, budgeting \$909,800 per year for three years, a total of \$2,729,400. A three-year budget is attached here as Table 1, and budget narratives for each are provided in Section D. Our proposed work with funding under Federal Fiscal Year 2024 are aligned with and driven by the following Goals and Strategies described in the CCMP:

Goal 1. MassBays provides new resources to support research and management in the Bays.

- Strategy 1.1 Address data gaps
- Strategy 1.2 Support valid (QA/QC) data collection and use

Goal 2. MassBays reaches all planning-area municipalities with actionable information about coastal habitats

- Strategy 2.1 Support research to inform policy and actions
- Strategy 2.2 Technical support and communications
- Strategy 2.3 Increase influence of underserved communities on decision making

Goal 3. MassBays provides regular and locally informed State of the Bays reporting that reflects the unique characteristics of MassBays assessment units (embayments, rocky shore, barrier beach), to document progress and inform local action and progress toward target conditions.

- Strategy 3.1 Establish target (improved) water quality and habitat conditions tied to desired uses and ecosystem services, and document progress toward those targets
- Strategy 3.2 Guide local action for expanded habitat and improved water quality
- Strategy 3.3 Maintain MassBays' National Estuary Program status

Our proposed activities fall under the BIL-supported tasks listed in the funding guidance, which are:

- 1) Accelerate and more extensively implement the CCMP
- 2) Ensure that benefits reach disadvantaged communities (expanded in our Equity Plan to be defined as Environmental Justice [EJ] communities)
- 3) Build the adaptive capacity of ecosystems and communities relative to climate change

They will also contribute to the following CCMP long-term outcomes:

- A) Sustainable NEP
- B) Improved habitat continuity and restored hydrology
- C) Improved water quality
- D) Resilient coastal habitat, including nature-based coastal protection
- E) Restored natural communities
- F) Robust interagency and interdisciplinary collaboration and partnerships
- G) Well-informed, multisector input to decision making which includes underserved communities

The tables of proposed activities below, organized according to MassBays' CCMP Strategies, include the following:

Title (Region), Budget/LOE: Activity name and MassBays geographic region in which it will be carried out, and Level of Effort

Description: Status (New or Ongoing), project activities and objectives

BIL-supported Task: Per list (1-3) above

Long-term CCMP Outcome: Per list (A-G) above

Partners: Collaborators not directly funded by MassBays/BIL funds

Timeline & Deliverables: Product(s) expected, and the quarter (Q1-Q4) projected for their completion

Strategy 1.1 Make new data available, especially to address specific gaps in knowledge

Title (Region/Staff), BIL funds + LOE	Description	BIL Task CCMP outcome	Partners	Timeline & Deliverables
Establish long-term monitoring network for MassBays' region (Senior Scientist) \$257,000 + 500h	Ongoing Work with USGS to deploy sensors at two sites (Saugus River and Duxbury Bay) as prioritized by the STAC and aligned with State of the Bays data gaps. Manage sample and data analysis	(1) Accelerate and more extensively implement the CCMP (C) Improved water quality	USGS, Center for Coastal Studies, EPA Region 1 Lab (Chelmsford)	(Q1), Deploy sensors (buoys) at identified locations, manage discrete sampling; (Q2) finalize data management protocols; (Q3) plan for next stage of deployment (one to two additional sites)
Restoring eelgrass using innovative approaches in Massachusetts and via a regional collaboration (Coastal Data Scientist) BIL \$25,000 + 1000h WHSG \$197,538 NOAA \$2.5M (pending)	Ongoing Implement WHOI-funded pilot program to address the questions of 1) when and where reproductive eelgrass shoots should be harvested, 2) potential impacts of seed harvest on a donor meadow, 3) the quantity, quality and germination rate of Massachusetts seeds, and 4) the regulatory processes needed to permit large-scale routine harvest and seeding. New Pending NOAA funding, Lead new eelgrass restoration efforts in collaboration with other NEPs, academic, agency and NGO partners across the East coast. Convene partners and lead grant pursuits for the regional collaboration. Develop and implement a standardized experimental design and protocols.	(1) Accelerate and more extensively implement the CCMP (E) Restored natural communities (D) Resilient coastal habitat, including nature-based coastal protection	Ongoing DMF, SSU, WHOI New NEPs from Maine to North Carolina, National Parks Service, USGS, NWF, academic institutions (Northeastern, BU, Stony Brook, UMCES, VIMS, UNCW, UMES); NGOs (Schoodic institute, others TBD)	(Q1-Q3) Convene partners, develop regional project concept and prepare grant proposals. (Q3-Q4) Further develop experimental designs and begin permitting conversations where appropriate.

Strategy 2.2 Provide education, training, and technical support; share case studies (successful and not); and support collaboration and cooperation on specific topics

Title (Region/Staff), BIL funds + LOE	Description	BIL Task CCMP outcome	Partners	Timeline & Deliverables
Develop Habitat Potential Indices (Director) \$89,000 + 250h	Ongoing Develop water quality-based indices for habitat health to be incorporated into the ETT. The indices will facilitate interpretation of water quality data presented in the Tool, and provide water quality-based targets to meet the CCMP habitat goals. This project will build on previous work done to identify WQ thresholds for inclusion in the ETT	(6) Protecting coastal waters through the National Estuary Program All CCMP outcomes	EPA ORD, UHI, STAC	(Q3-4) HPIs determined for salt marsh, eelgrass, tidal flats, and diadromous fish habitat

Strategy 2.3 Increase influence of underserved communities on decision making

Expand and implement Equity Plan (Director, Coastal Data Scientist) 220h	New (1) Develop an approach to quantify and track non-monetary and co-benefits. (2) Define a buffer area abutting, connecting, or otherwise associating EJ and climate vulnerable communities with habitat and water quality infrastructure improvements within a range of distance from the areas defined by Massachusetts' EJ policy and EPA's EJ Screen to encompass the benefits realized by those who do not live immediately adjacent to improved habitat and water quality resources.	All BIL tasks All CCMP outcomes	MyRWA, EPA Region 1, EEA EJ program staff	(Q3) Amend Equity Plan with new measures and GIS layers as needed
---	--	--	---	---

Strategy 3.2 Guide and assist local action to expand habitat and improve water quality according to targets

<p>Provide technical support to tide gate owners (Senior Scientist)</p> <p>\$55,000 + 100h</p>	<p>New To supplement funding under the NEP Watershed Grant, MassBays has committed to providing one-on-one assistance to entities responsible for high-priority tide gates that are impacting salt marsh extent and condition.</p>	<p>(1) Accelerate and more extensively implement the CCMP</p> <p>(E) Restored natural communities</p> <p>(D) Resilient coastal habitat, including nature-based coastal protection</p>	<p>Tide gate owners TBD, CEI Inc., RCs</p>	<p>(Q1) Identify dedicated CEI staff to lead outreach and technical support; (Q2) initiate outreach to owners of priority sites, with assistance from RCs; (Q4) tally and documentation of support provided and potential implementation actions for FFY25 spending.</p>
<p>Develop solutions to flooding and water quality impairments in Merrimack River tributaries (MRWC)</p> <p>\$260,000 (FFY22 funds)</p>	<p>Ongoing Produce DEP-approved Watershed-Based Plan for the Shawsheen River, in consultation with municipalities. Develop stormwater BMP designs aligned with community input and accompanied by community education regarding water quality and flooding.</p>	<p>(2) Ensure that benefits reach disadvantaged communities</p> <p>All CCMP outcomes</p>	<p>Cities of Lawrence and Methuen, neighborhood groups, volunteers</p>	<p>(Q4) Complete all tasks for the Shawsheen River.</p>
<p>Advance stormwater management to improve water quality and address flooding in the City of Malden (MyRWA)</p> <p>\$260,000 (FFY22 funds)</p>	<p>Ongoing Reporting on findings to date to the Mayor and City Council. Finalize a gap analysis and GIS-based assessments to support a model municipal stormwater utility. Work alongside city DPW to demonstrate installation of stormwater trenches, building local capacity for future implementation.</p>	<p>(2) Ensure that benefits reach disadvantaged communities</p> <p>All CCMP outcomes</p>	<p>City of Malden</p>	<p>(Q2) Present proposals for stormwater infrastructure investments to City Council (Q4) Completed stormwater retrofit analysis, demonstration trench installation (including training for DPW)</p>

D. Budget Narratives

Note – This narrative includes individual spending proposals for each year of a three-year incremental award. A cumulative budget is included as Attachment A.

Assumptions – BIL funding allocation to MassBays will be \$909,800 for each of years FFY24, FFY25, and FFY26. MassBays requests direct allocations to USGS for installation and maintenance of continuous monitoring buoys as described in the workplan and as indicated in each year’s budget narrative. Subawards to Division of Marine Fisheries (DMF) and Salem State University (SSU) are based on existing, scopes of work previously executed and renewable for the three-year period of this incremental award.

FFY24 Proposed Spending

These notes refer to Table 1, MassBays National Estuary Program Proposed BIL Budget, FFY24. We request reimbursement of pre-award costs, up to 90 days, for the work included in this plan.

U.S. Geological Survey: MassBays requests reassignment of \$198,600 from MassBays’ BIL allocation to USGS to install one (1) and maintain three (3) total continuous monitoring buoys through June 30, 2026.

Salaries for three staff: Executive Director (0.22.46FTE), and Staff Scientist (0.531FTE), and Coastal Data Scientist (0.605FTE). In addition, MassBays will bring on Graduate Field Assistant(s), assumed two semesters part-time (9h/week for 36 weeks) and two summers full-time (600h/summer) at \$31.41/h.

Fringe benefits: Fringe benefits are negotiated annually between the Commonwealth of MA, UMB and the Department of Health and Human Services (DHHS). Fringe benefits are costs associated with employee related expenses including health plan, pension plan, and workman's compensation expenses among others. UMB has four fringe rates in accordance with the University’s FY2024 Fringe Benefits and Payroll Tax Rates memorandum and NICRA.

- Rate #1 General Fringe, 43.20%
- Rate #2 Health and Welfare, \$33 Bi-weekly/FTE
- Rate #3 Payroll Tax, 2.11%
- Rate #4 Worker’s Compensation Insurance, 0.26%

These rates are applied based on the personnel appointment type, benefitted/non-benefitted status, period of service and salary rates. In this case the appointment, benefits status, period of service and applicable rates are as follows:

Personnel	Appointment	Period of service	Applicable Rates
PI Pam DiBona	Professional Benefitted	Calendar	Rates 1, 2, 3, 4
Senior Scientist Prassede Vella	Professional Benefitted	Calendar	Rates 1, 2, 3, 4
Data Scientist Jill Carr	Professional Benefitted	Calendar	Rates 1, 2, 3, 4

An additional \$795 Fringe is applied for the Summer Graduate Assistant; no fringe is applied for academic-year Assistantships.

Equipment/Equipment lease

Equipment: MassBays will purchase an EXO2 Sonde from Zylem, for depths 0 to 100 meters, with sensors to measure Temperature, pH, DO, Total Algae, and Turbidity. Cost is based on a quote from Xylem which expires 7/6/24.

Equipment lease: As part of our work to ground-truth aerial surveys of eelgrass in Massachusetts waters,

MassBays will lease a boat from SSU for 17 days at a rate of \$100/day. A rental truck will be used to trailer the boat to put-in locations, estimated \$500/week for 6 weeks over the summer.

Travel

No travel funds are requested.

Supplies

No funds for supplies are requested.

Contractual

- Comprehensive Environmental, Inc. CEI will update the ETT to incorporate Habitat Potential Indices and diadromous fish layers and targets. In addition, they will provide technical support to municipalities as they identify and implement best practices for local tide gate management. A budget according to tasks is provided in Table 2. A portion of this expense is already accounted for in carry-over from BIL FFY23 funding; a total of \$143,815 will be billed against this FFY24 award, specifically the Tide Gate Technical Assistant, ETT Updates and Website Support, and a portion of the HPI Data Visualization in ETT.

Subawards

- Division of Marine Fisheries. DMF provides access to and onsite assistance at a wet lab and flow-through tanks located on Cat Cove, Salem. This is critical to a region-wide collaboration initiated by MassBays to establish seed production for eelgrass restoration in the Northeast. A detailed budget is provided in Table 3.
- Salem State University. SSU professor Ted Maney recruits and supervises a coop student to monitor and maintain optimal conditions for our eelgrass set-up in the Cat Cove facility (see budget Table 4).
- Regional Justice40 Project. MassBays will provide funds to one Regional Service Provider for a “ready-to-go,” locally prioritized project to be managed by the Regional Coordinator. The project will advance our efforts to meet a 40% goal under Justice40 in accordance with our Equity Plan.

Indirect Charges

The University of Massachusetts Boston has a Facilities and Administrative overhead rate of 36.4%, which is a federally negotiated indirect cost rate agreement between University of Massachusetts Boston and the Department of Health and Human Services effective 10/02/2020. The indirect rate is charged to expenditures relating to direct costs excluding equipment, and on the first \$25,000 of subawards. Since all of the subawards planned under the FFY24 workplan will be amendments to existing subaward agreements and have already exceeded \$25,000 in previous years, no indirect is charged.

Matching Funds

Matching funds are not required under this cooperative agreement.

Table 1. Proposed spending, Federal Fiscal Year 2024

Bipartisan Infrastructure Law Grant Application (FFY24) Massachusetts Bays National Estuary Program Proposed Expenditures	
Reassignment (Interagency Agreement) to USGS (subtract from total available)	\$ 198,600
Personnel	
subtotal, salaries	\$ 196,688
Fringe benefits	
<i>UMass Boston negotiated yearly rate</i>	\$ 71,317
subtotal, fringe	\$ 71,317
total, salaries + fringe	\$ 268,005
Equipment/Equipment lease	
Sonde (Xylem)	\$ 20,790
truck rental (Enterprise) (\$500/wk * 6wk)	\$ 3,000
boat lease (Salem State U.) (17 d @ \$100/d)	\$ 1,700
subtotal, equipment, equipment lease/rental	\$ 25,490
Travel, Supplies	
<i>none</i>	\$ -
subtotal, travel & supplies	\$ -
Contractual	
Comprehensive Environmental, Inc. (ETT, Y1 Tide gates)	\$ 143,815
subtotal, contractual	\$ 143,815
Subawards	
Division of Marine Fisheries (Cat Cove)	\$ 11,853
Regional Service Provider TBD (J40 infrastructure project)	\$ 100,000
Salem State University student coop	\$ 5,506
subtotal, subawards	\$ 117,359
Total Direct	\$ 554,669
Indirect	
36.4% (salaries+fringe, equipment lease, contracts, HE grants, supplies)	\$ 151,614
36.4% (On subawardees' first \$25K)	\$ 4,917
subtotal, indirect	\$ 156,531
Total Request, FFY24	\$ 711,200

Table 2. Contract budget: Comprehensive Environmental, Inc.

HPI/ETT2 Project – FFY24 Budget

Task	FFY24 Budget
1. Develop HPIs	\$93,655
2. HPI Data Visualization in ETT Phase 2	\$97,460
3. Diadromous Fish Targets	\$0
4. Additional ETT Updates	\$2,760
5. Website Support	\$5,200
Total	\$199,075

Tide Gate Technical Assistant – FFY24 Budget

Tide Gate Technical Assistant	\$55,000
-------------------------------	----------

Table 3. Subaward budget: Division of Marine Fisheries

Line item	Cost (\$)
Salaries F. Schenck (160 hours at \$32.3015/h)	\$ 5168
Fringe (45.81% on Salaries)	\$ 2368
Payroll tax (2.45% on Salaries)	\$ 127
Supplies Build second tank (aerators [10 @\$50ea], upweller [\$1292], thermometers [5 @\$15ea], misc tools & parts [\$1000])	\$ 2867
Indirect Costs (25.59% on salaries)	\$ 1323
Total	\$ 11,853

Table 4. Subaward budget: Salem State University

Line item	Cost (\$)
Salaries Ted Maney, Biology Instructor/Researcher, supervisory time 1 hr/week * 18 weeks (18 hours/year at \$47.62/h)	\$ 857
Salaries <i>Student Co-op Lab Technician</i> 10 hr/week * 18 weeks (180 hours at \$15/h) + 16 hrs of field work at \$15/hr	\$ 2940
Fringe Benefits, 2.45% on wages Ted Maney, .0245*\$857 = \$21 Student, .0245*\$2,940 = \$72	\$ 93
Indirect Ted Maney (68.1% on salaries; \$583.73 per year) Student (35.1% on salaries (off-campus); \$1,031.94 per year)	\$ 1616
Total	\$ 5506

FFY25 Proposed Spending

These notes refer to Table 5, MassBays National Estuary Program Proposed BIL Budget, FFY25. We anticipate some adjustments to this budget, to be described in the FFY25 workplan due June 1, 2025.

U.S. Geological Survey: MassBays requests reassignment of \$212,705 from MassBays' BIL allocation to USGS to install one (1) additional, and maintain four (4) total continuous monitoring buoys through June 30, 2027.

Salaries for three staff: Executive Director (0.213FTE), and Staff Scientist (0.5567FTE), and Coastal Data Scientist (0.658FTE). In addition, MassBays will bring on a part-time Graduate Program Assistant for the academic year (9h/week for 36 weeks) at \$31.41/h.

Fringe benefits: Fringe benefits are negotiated annually between the Commonwealth of MA, UMB and the Department of Health and Human Services (DHHS). No fringe is applied for academic-year Graduate Assistantships. Fringe benefits are costs associated with employee related expenses including health plan, pension plan, and workman's compensation expenses among others. UMB has four fringe rates in accordance with the University's FY2024 Fringe Benefits and Payroll Tax Rates memorandum and NICRA.

- Rate #1 General Fringe, 43.20%
- Rate #2 Health and Welfare, \$33 Bi-weekly/FTE
- Rate #3 Payroll Tax, 2.11%
- Rate #4 Worker's Compensation Insurance, 0.26%

We expect these rate to change for FFY25 and will provide an updated budget and narrative as needed with that workplan. These rates are applied based on the personnel appointment type, benefitted/non-benefitted status, period of service and salary rates. The appointment, benefits status, period of service, and applicable rates are as follows:

Personnel	Appointment	Period of service	Applicable Rates
PI Pam DiBona	Professional Benefitted	Calendar	Rates 1, 2, 3, 4
Senior Scientist Prassede Vella	Professional Benefitted	Calendar	Rates 1, 2, 3, 4
Data Scientist Jill Carr	Professional Benefitted	Calendar	Rates 1, 2, 3, 4

Contractual

- Center for Coastal Studies. CCS will analyze all discrete grab samples collected to verify continuous monitoring data.
- Comprehensive Environmental, Inc. CEI will collaborate with our Regional Coordinators to provide technical support to municipalities as they identify and implement best practices for local tide gate management.

Travel

No travel funds are requested.

Supplies

No funds for supplies are requested.

Equipment lease/rental

As part of our work to ground-truth aerial surveys of eelgrass in Massachusetts waters, MassBays will lease a boat from SSU for 17 days at a rate of \$100/day. A rental truck will be used to trailer the boat to put-in locations, estimated \$500/week for 6 weeks over the summer.

Subawards

- Division of Marine Fisheries. DMF provides access to and onsite assistance at a wet lab and flow-through tanks located on Cat Cove, Salem. This is critical to a region-wide collaboration initiated by MassBays to establish seed production for eelgrass restoration in the Northeast.
- Regional Justice40 Project. MassBays will provide funds to one Regional Service Provider for a “ready-to-go,” locally prioritized project to be managed by the Regional Coordinator. The project will advance our efforts to meet a 40% goal under Justice40 in accordance with our Equity Plan.
- Salem State University. SSU professor Ted Maney recruits and supervises a coop student to monitor and maintain optimal conditions for our eelgrass set-up in the Cat Cove facility.
- Municipal tide gate improvements. To meet habitat restoration goals under our CCMP, MassBays received an NEP Watershed Grant from Restore America’s Estuaries. The grant includes assessment and prioritization of needed improvements to existing tide gates, most of which are municipally owned. MassBays proposes to provide a \$110,000 grant to a municipality to demonstrate the effectiveness of those improvements for salt marsh restoration.

Indirect Charges

The University of Massachusetts Boston has a Facilities and Administrative overhead rate of 36.4%, which is a federally negotiated indirect cost rate agreement between University of Massachusetts Boston and the Department of Health and Human Services effective 10/02/2020. The indirect rate is charged to expenditures relating to direct costs excluding equipment, and on the first \$25,000 of subawards. Since all but one of the subawards planned under the FFY25 workplan will be amendments to existing subaward agreements and have already exceeded \$25,000 in previous years. The award to a municipality will be new, and thus indirect is charged on \$25,000 of that award for tide gate improvements.

Matching Funds

Matching funds are not required under this cooperative agreement.

Table 5. Proposed spending, Federal Fiscal Year 2025

Bipartisan Infrastructure Law Grant Application (FFY25) Massachusetts Bays National Estuary Program Proposed Expenditures	
Reassignment (Interagency Services) to USGS (subtract from total available)	\$ 212,705
Personnel	
subtotal, salaries	\$ 175,310
Fringe benefits	
<i>subject to change per yearly calculations</i>	\$ 76,597
subtotal, fringe	\$ 76,597
total, salaries +fringe	\$ 251,907
Contractual	
Center for Coastal Studies (sample analysis)	\$ 30,500
CEI Environmental (Tide Gate technician)	\$ 55,000
subtotal, contracts	\$ 85,500
Travel, Supplies	
<i>none</i>	\$ -
subtotal, travel & supplies	\$ -
Equipment lease/rental (field work)	
truck rental (Enterprise) (\$500/wk * 6wk)	\$ 3,000
boat lease (Salem State University) (17 d @ \$100/d)	\$ 1,700
subtotal, equipment lease/rental	\$ 4,700
Subawards	
Division of Marine Fisheries/Cat Cove facility	\$ 5,493
Regional J40 infrastructure priority project (RSP TBD)	\$ 100,000
Salem State University student	\$ 5,506
Tide gate retrofit grant (municipality TBD)	\$ 110,000
subtotal, subawards	\$ 220,999
Total Direct	\$ 563,371
Indirect	
36.4% (salaries+fringe, equipment lease, contracts, supplies)	\$ 124,527
36.4% (Subawards first \$25K) (municipal subaward only)	\$ 9,460
subtotal, indirect	\$ 133,987
Total Request, FFY25	\$ 697,093

FFY26 Proposed Spending

These notes refer to Table 7, MassBays National Estuary Program Proposed BIL Budget, FFY26. We anticipate some adjustments to this budget, to be described in the FFY26 workplan due June 1, 2025.

U.S. Geological Survey: MassBays requests reassignment of \$293,088 from MassBays' BIL allocation to USGS to install one (1) additional, and maintain five (5) total continuous monitoring buoys through June 30, 2028.

Salaries for three staff: Executive Director (0.20FTE), and Staff Scientist (0.72FTE), and Coastal Data Scientist (1.00FTE). We also anticipate hiring a Graduate Assistant for the Spring 2026 semester (9 hours per week for 18 weeks) at \$31.41/h.

Fringe benefits: Fringe benefits are negotiated annually between the Commonwealth of MA, UMB and the Department of Health and Human Services (DHHS). Fringe benefits are costs associated with employee related expenses including health plan, pension plan, and workman's compensation expenses among others. UMB has four fringe rates in accordance with the University's FY2024 Fringe Benefits and Payroll Tax Rates memorandum and NICRA.

Rate #1 General Fringe, 43.20%

Rate #2 Health and Welfare, \$33 Bi-weekly/FTE

Rate #3 Payroll Tax, 2.11%

Rate #4 Worker's Compensation Insurance, 0.26%

We expect these rate to change for FFY26 and will provide an updated budget and narrative as needed with that workplan.

These rates are applied based on the personnel appointment type, benefitted/non-benefitted status, period of service and salary rates. No fringe benefits are charged for Academic Year Graduate Assistantships. In this case the appointment, benefits status, period of service and applicable rates are as follows:

Personnel	Appointment	Period of service	Applicable Rates
PI Pam DiBona	Professional Benefitted	Calendar	Rates 1, 2, 3, 4
Senior Scientist Prassede Vella	Professional Benefitted	Calendar	Rates 1, 2, 3, 4
Data Scientist Jill Carr	Professional Benefitted	Calendar	Rates 1, 2, 3, 4

Travel

No travel funds are requested.

Supplies

No funds for supplies are requested.

Equipment lease/rental

Assuming some inflation, we expect some increase in expenses for our work to ground-truth aerial surveys of eelgrass in Massachusetts waters. Therefore we estimate that a rental truck (used to trailer the boat to put-in locations), will cost \$600/week for 6 weeks over the summer. MassBays will lease a boat from SSU for 17 days at an estimated rate of \$100/day.

Contractual

- Center for Coastal Studies. CCS will analyze all discrete grab samples collected to verify continuous monitoring data. The cost is estimated based on current rates per sample, assuming some inflation.

Subawards

MassBays anticipates securing additional grant funding to continue eelgrass restoration seeding efforts, thus we assume subawards will be limited to the following:

- Regional Justice40 Project. MassBays will provide funds to one Regional Service Provider for a “ready-to-go,” locally prioritized project to be managed by the Regional Coordinator. The project will advance our efforts to meet a 40% goal under Justice40 in accordance with our Equity Plan.
- Salem State University. SSU professor Ted Maney recruits and supervises a coop student to monitor and maintain optimal conditions for our eelgrass set-up in the Cat Cove facility.

If those anticipated funds are not awarded the budget will be adjusted as needed.

Indirect Charges

The University of Massachusetts Boston has a Facilities and Administrative overhead rate of 36.4%, which is a federally negotiated indirect cost rate agreement between University of Massachusetts Boston and the Department of Health and Human Services effective 10/02/2020. The indirect rate is charged to expenditures relating to direct costs excluding equipment, and on the first \$25,000 of subawards. Since all of the subawards planned under the FFY26 workplan will be amendments to existing subaward agreements and have already exceeded \$25,000 in previous years, thus no indirect is charged on those subawards.

Matching Funds

Matching funds are not required under this cooperative agreement.

Table 7. Proposed spending, Federal Fiscal Year 2026

Bipartisan Infrastructure Law Grant Application (FFY26) Massachusetts Bays National Estuary Program Proposed Expenditures	
Reassignment (Interagency Services) to USGS (subtract from total available)	\$ 293,088
Personnel	
subtotal, salaries	\$ 232,432
Fringe benefits	
<i>subject to change per yearly calculations</i>	\$ 105,248
subtotal, fringe	\$ 105,248
total, salaries +fringe	\$ 337,680
Travel, Supplies	
<i>none</i>	\$ -
subtotal, travel & supplies	\$ -
Equipment lease/rental (field work)	
truck rental (Enterprise) (\$600/wk * 6wk)	\$ 3,600
boat lease (Salem State U.) (17 d @ \$100/d)	\$ 1,700
subtotal, equipment lease/rental	\$ 5,300
Contractual	
Center for Coastal Studies	\$ 31,800
subtotal, contractual	\$ 31,800
Subawards	
Regional J40 infrastructure priority project (RSP TBD)	\$ 100,000
Salem State University student	\$ 5,506
subtotal, subawards	\$ 105,506
Total Direct	\$ 480,286
Indirect	
36.4% (salaries+fringe, equipment lease, contracts, HE grants, supplies)	\$ 136,420
36.4% (Other first \$25K) (all existing awards to be amended)	\$ -
subtotal, indirect	\$ 136,420
Total Request, FFY26	\$ 616,706

Attachment A: Total Budget Worksheet

The University of Massachusetts Boston
Office of Research and Sponsored Programs

Base FY: FY2024
Purpose: Public Service/Other
Location: On-Campus

Proposal Information

Project Grant #	Cover Page Not Completed	Period Start	06/01/24
Proposal ID #	743	Period End	05/30/27
PI Name	Pam DiBona		
Sponsor	U.S. Environmental Protection Agency		
Title	Bipartisan Infrastructure Law (BIL) Y3-Y5		

Budget Category	PeopleSoft Descriptor	Period 1	Period 2	Period 3	Period 4	Period 5	Cumulative Sponsor	Cumulative Cost Share	Total
6REGSALARY	Regular Salary	\$152,356	\$165,398	\$227,344	\$0	\$0	\$545,098	\$0	\$545,098
	Salaries (Benefited Employees)	\$152,356	\$165,398	\$227,344	\$0	\$0	\$545,098	\$0	\$545,098
	Summer Additional Compensation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6SPECSALARY	Special Salary	\$44,332	\$9,912	\$5,088	\$0	\$0	\$59,332	\$0	\$59,332
	Salaries (Non-Benefited Employees)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Graduate Students	\$44,332	\$9,912	\$5,088	\$0	\$0	\$59,332	\$0	\$59,332
6FRINGE	Undergraduate Students	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Fringe Benefits	\$71,317	\$76,597	\$105,248	\$0	\$0	\$253,162	\$0	\$253,162
	Total Personnel (Salaries+Fringe)	\$268,005	\$251,907	\$337,680	\$0	\$0	\$857,592	\$0	\$857,592
6TRAVELNAT	National Travel	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6TRAVELFGN	Foreign Travel	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6OPERATIONAL	Operational Costs & Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6SUPPLIES	Supplies and Materials	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6CONSULTANT	Consultant/Contract for Service (UPST, Procurement)	\$143,815	\$85,500	\$31,800	\$0	\$0	\$261,115	\$0	\$261,115
6SUBCONTRACT<= 25	Subaward/Subcontract <=25K: Sum of first \$25,000/subrecipient	\$13,509	\$25,988	\$0	\$0	\$0	\$39,497	\$0	\$39,497
6SUBCONTRACT>25	Subaward/Subcontract >25K: Sum of excess above \$25,000/subrecipient	\$103,850	\$195,011	\$105,506	\$0	\$0	\$404,367	\$0	\$404,367
6HUMANSUBJECTS	Human Subjects	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6INFRASTRUCTURE	Infrastructure & Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6EQUIPMENT	Capital Equipment (per unit cost of \$5K>)	\$20,790	\$0	\$0	\$0	\$0	\$20,790	\$0	\$20,790
6EQUIPLEASE	Equipment Lease Rent	\$4,700	\$4,700	\$5,300	\$0	\$0	\$14,700	\$0	\$14,700
6OTHERNONPER	Tuition/Fees, Fellowships	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6OTHERNONPER NOFNA	Participant Support Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6OTHEXPENSE	Other Expense (Included in BASE)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6OTHEXPENSE NOFNA	Other Expense (Excluded from BASE)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Direct Cost	\$554,669	\$563,106	\$480,286	\$0	\$0	\$1,598,061	\$0	\$1,598,061
	Base for Indirect Cost MTDC	\$430,029	\$368,095	\$374,780	\$0	\$0	\$1,172,904	\$0	\$1,172,904
	Facilities and Administrative Rate ==>	36.40%	36.40%	36.40%	36.40%	36.40%		36.40%	
	Unrecovered Indirect Costs							\$0	
6FACADM	Total Indirect Cost	\$156,531	\$133,987	\$136,420	\$0	\$0	\$426,938	\$0	\$426,938
	Total Cost of Project (Direct + Indirect)	\$711,200	\$697,093	\$616,706	\$0	\$0	\$2,024,999	\$0	\$2,024,999

