

Critical Advances for Our Estuaries 2020-2022



The Piscataqua Region Estuaries Partnership (PREP) and our partners have worked for many years to address threats to the health and vitality of the Great Bay Estuary. Through initiatives such as Great Bay 2020 and others, we have made strategic investments in high-priority, successful efforts to reduce pollution, improve water quality, and increase the resilience of the estuary and the communities in our region. Yet if our collective efforts are to reach the scale of impact needed to move in the right direction, we need additional resources to build on our current work in the most effective ways possible.

PREP partnered with the Town of Durham to design a three-year initiative to focus new resources on areas of critical need identified by PREP, its partners, and the 52 communities of the Piscataqua Region watershed. The four-part plan outlined in this document is intended to provide high-level guidance that PREP and our Management, Executive, and Technical Advisory committees can use as we collaborate to develop detailed project plans and budgets to support this initiative in the coming years. Although our work is targeted at improving the Great Bay Estuary, as a National Estuary Program, it is our mandate to undertake work that benefits the Great Bay Estuary, the Hampton-Seabrook Estuary, and all 52 communities. Therefore, whenever possible, we will produce work that can be used to advance the health, resilience, and vitality of the Piscataqua Region's estuarine resources.

Addressing Critical Needs through “In Reach” Solutions

This plan is focused on four critical needs that, if addressed, will greatly strengthen the ability of PREP, our partners, and our communities to protect the health of our estuaries: 1) a holistic approach to the research and monitoring initiatives currently managed by diverse partners; 2) enhanced capacity to manage, synthesize, and share monitoring data; 3) science-based metrics to calculate regulatory credit for nonstructural best management practices (BMPs); and 4) a coordinated communication strategy to ignite the growing sense of stewardship among the region's communities.

To identify strategies to address these needs, PREP collected input from our Management, Executive and Technical Advisory Committees and from the following organizations through additional resource specific meetings in 2019: New Hampshire Department of Environmental Services' Watershed Management Bureau and Coastal Program, New Hampshire Fish and Game, Great Bay National Estuarine Research Reserve, The Nature Conservancy-NH Chapter, Trout Unlimited, United States Environmental Protection Agency, University of New Hampshire's Stormwater Center and Jackson Estuarine Lab, United States Natural Resource Conservation Service, Conservation Law Foundation, Farrell Strategic Group, and Stout Heart. This input helped shape the strategies articulated below:

A. Create an integrated research and monitoring plan:

PREP and our partners study many aspects of the Great Bay Estuary ecosystem. However, to better understand the condition of the estuary's priority habitats and the dynamics that influence their success or decline requires a more holistic approach. Using goals for fish, oysters, eelgrass, and salt marsh from the region's Comprehensive Conservation and Management Plan (CCMP), we will collaborate to design an integrated research and monitoring plan to track the protection, restoration, and recovery of these vital resources. The plan will articulate expected milestones along the path of recovery and address specific concerns for Great Bay communities. Ultimately, it will provide long-term value in the form of baseline information on the conditions of key habitats and an agreed-upon prioritization of monitoring and research that helps us track recovery and guide future restoration investments.

B. Advance technical capacity to manage and share data:

Many organizations collect a diverse array of data to support the science-based management of natural resources in the Piscataqua Region. However, there is a widely-acknowledged need to manage the quality of this data, synthesize it in ways that support key

management and research questions, and to improve access for communities, managers, and scientists. This strategy will bring a new member to the PREP team to assist the coastal scientist in working with partners to prioritize and execute data management tasks to support a range of critically important projects and to build on our shared monitoring efforts.

C. Improving accounting metrics for nonstructural BMPs:

Nonpoint source pollution is a pervasive problem that can be addressed in part by the effective use of nonstructural BMPs at the community scale. Until recently, however, communities could not receive regulatory credit for such BMPs under their stormwater permits. An expert scientific panel convened by regional partners developed recommendations for assigning regulatory credit to constructed and restored buffers, which have been accepted by USEPA Region 1. This strategy will build on that project to convene a panel with regional and national expertise to develop science-based recommendations to assign regulatory credits for nonstructural BMPs (to be specified later). The panel will be supported by the UNH Stormwater Center, the Pollution Tracking and Accounting Project, and municipal staff. We anticipate that the continued use of expert panels to define credits for effective nonstructural BMPs will lead to New Hampshire becoming a model for other New England states.

D. Empower Every Drop as a long-term engine for stewardship:

Individual stewardship is critical to the health of our region's unique natural resources and can only be achieved by leveraging the shared values of the people who live here. In 2019, PREP and partners launched a clean water initiative, Every Drop, to address this need. Every Drop connects people and the aspects they inherently love about living in our region to small, personal actions they can take to help be part of the solution. We have the foundational tools to measure the preliminary impact of this community and values-based social marketing effort and to support its scale-up. This strategy will support implementation of Every Drop's current work in 2020, as we work with the Advisory Committee to develop a plan for the initiative's sustainability and growth.

Strategy A: Create an Integrated Research and Monitoring Plan

This strategy will rely on the best available scientific expertise—from our region and beyond—to develop the first integrated research and monitoring plan to guide and assess recovery in the Great Bay Estuary. Clearly outlining our collective scientific goals and activities will bring diverse stakeholders together as we monitor the impacts of our interventions, react to changes in the ecosystem, and communicate key messages to the public.

Working with our Technical Advisory Committee and using established Comprehensive Conservation and Management Plan (CCMP) goals as a guide, PREP will follow a five-step process to identify the science and monitoring that is most needed to assure the recovery and protection of the estuary’s key biological resources: oysters, eelgrass, salt marsh, and fish. Because this strategy focuses on the CCMP’s priority habitats, some indicators tracked in the State of Our Estuaries report will not be included (i.e., impervious cover, and conserved lands).

This process will begin in early 2020 and conclude in 2021. It will detail a monitoring and research strategy for each resource, including a list of prioritized needs. (See Figure 1). These steps will focus and support partner efforts to obtain funding for monitoring, research, and restoration. The steps are as follows:

1. Use external technical expertise, when necessary, to confirm and elaborate on goals for each resource. For example, the CCMP’s goal for eelgrass is 2,900 acres, but the goal lacks detail on metrics of habitat health, such as shoot density. Similarly, with regard to fish, we rely on population estimates, but know less about health measures, such as size and reproductive capacity.
2. Articulate the highest priority research questions to better understand the condition of each resource and which variables have the most significant impacts.
3. Establish interim metrics for each resource to track recovery and progress against goals in a more holistic and meaningful way.
4. Identify methods for collecting the data to track these metrics and answer specific questions about relationships between ecosystem components.
5. Prioritize research questions and activities to better direct funding for scientific activities.

Figure 1: Applying the Planning Process to Oysters and Sediments

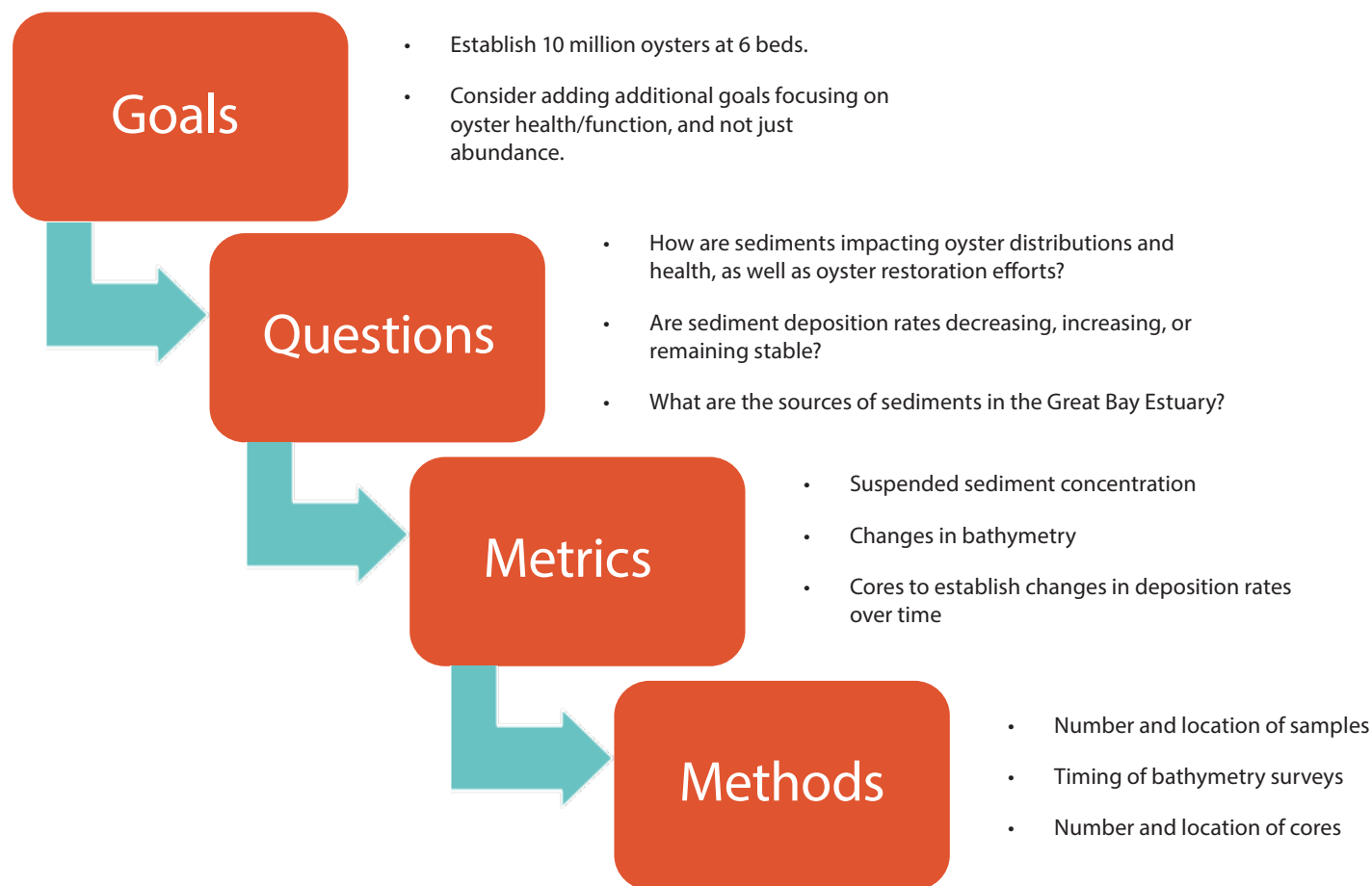


Table 1: Creating an Integrated Research and Monitoring Plan Objectives, Deliverables, Process, and Clarifications

Objectives	Deliverables/Process	Clarifications
Provide a comprehensive, credible document that partners can use to guide monitoring decisions and research projects.	A detailed project plan, drafted by PREP by 2021.	The plan will not specify management interventions or pollution reduction targets.
Generate a nonregulatory plan for protection of critical habitats and ecosystem components that are important to the Great Bay Estuary.	New goals to supplement existing goals and/or incomplete goals. A TAC subgroup will make recommendations on these.	The plan will not reopen established CCMP goals.
Develop highly credible, specific science-based recommendations on which core indicators and variables to track; the most recommended methods; spatial and temporal frequencies that will help us to reach our goals; and other research that will provide critical insight.	Interim goals and metrics for fish, shellfish, eelgrass and salt marsh. These will be guided by a) conceptual models that represent these resources and the variables that most impact them and b) questions designed to help us understand the condition of the resources and trends in variables.	The plan will not weigh in on regulatory issues or develop a water quality assessment of the estuary.
Leverage external experts to complement local expertise.	Optimal methods, activities, and scales for monitoring and research that answers articulated questions.	
Position PREP and our partners to seek additional funding to leverage our current work and implement new science and monitoring projects.	Prioritized activities so partners can make informed investment decisions and pursue the most impactful monitoring and research. A TAC sub-group will recommend how activities should be prioritized.	

Strategy B: Advance Technical Capacity to Manage and Share Data

Quality assured, synthesized, accessible data is essential to the science-based management of the Great Bay Estuary. This strategy will expand PREP’s capacity to work with monitoring data generated by organizations throughout the region to support this critical need. This capacity will position PREP and our partners to be more effective in implementing highest-priority CCMP Action Plans. It will also yield substantial outputs in the form of quality-assured/quality-controlled data, data analysis, and data synthesis that moves these priority topics forward. In addition, it will increase PREP’s capacity to generate competitive research proposals that target research and management questions.

To implement this strategy, we will add a member to the PREP team whose focus will be quality assurance/quality control, analysis of

backlogged-data, filling data gaps, and synthesizing existing datasets and research to better understand the larger picture for given parameters. In addition, the new team member will focus on improved data management to increase efficiencies in how data is stored, accessed, and used for analysis.

Available funding will support a two-year commitment to increasing staff capacity that addresses the needs noted above and to assist in the development of the integrated research and monitoring plan (Strategy A). This strategy will be particularly valuable to our work in that it will provide increased access to usable data, clearly identify gaps and needs for highest priority issues, and assist in developing and implementing a more responsive monitoring approach.

Table 2: Advancing Technical Capacity Objectives, Deliverables, Process, and Clarifications

Objectives	Deliverables/Process	Clarifications
Increase regional capacity for technical work.	Quality-assured/quality-controlled data.	Will not duplicate existing roles or efforts at PREP or across partner organizations.
Make additional data sets accessible to inform research, restoration, and decision-making.	Data sets.	

Strategy C: Improving Accounting Metrics for Nonstructural Best Management Practices (BMPs)

This strategy will enhance the capacity of communities in the Piscataqua Region to reduce nonpoint source pollution by developing a common calculus to estimate the pollutant load reduction of nonstructural BMPs and receive regulatory credits for implementing these practices under MS4 stormwater permits. While this presents clear benefits to our MS4 communities, the impacts of this will be felt throughout the region, including Maine communities, those that operate with Administrative Orders of Consent (AOCs), and those without stormwater permit requirements, in the form of improved water quality.

In support of this goal, we will build off the success of the expert panel process used by its partners in the *Credit for Going Green* project. As defined by that project, this process “synthesizes the expert opinions of a group of authorities on a subject around which there is uncertainty due to data that is insufficient and/or unattainable because of physical constraints or lack of resources.”

Working with the Pollutant Tracking and Accounting Project (PTAP), the UNH Stormwater Center, and the Seacoast Stormwater Coalition, PREP will convene a panel of state and regional regulators, experts in stormwater management, and municipal representatives to develop recommendations for assigning updated nutrient and sediment removal rate credits to one or more nonstructural BMPs. The specific BMPs considered will be finalized with the expert panel. Recommendations from the panel will be incorporated into community Nutrient Control Plans to more accurately allocate community resources to reach water quality goals.

Additionally, the project will identify if pollutant load reductions - as they relate to conventional practices (i.e., operations and maintenance) - can be enhanced. The project may also leverage resources for additional accounting efforts for other nonstructural best management practices moving forward.

Table 3: Improving Accounting Metrics Objectives, Deliverables, Process, and Clarifications

Objectives	Deliverables/Process	Clarifications
Help MS4 communities meet pollutant load reduction targets through improved, science-based crediting for BMPs.	Technical memo with performance curves and credit calculations for a nonstructural BMP(s) and outreach materials to support sharing of information with nontechnical audiences .	Acceptance of these curves and associated credits must be endorsed by USEPA.
Encourage implementation of performance curves of nonstructural stormwater BMPs in communities across the region.	Outreach materials that communicate the science-based effectiveness of nonstructural BMPs in protecting water quality.	Will not focus on testing new BMPs that are not already implemented.
Consider incentives for improved operations and maintenance of existing stormwater best management practices with focus on failing systems.	Work with PTAP to implement accounting metrics developed through this strategy (e.g., municipal Nutrient Control Plans and stormwater management operations and maintenance plans).	

Strategy D: Empower Every Drop as a Long-term Engine for Stewardship

This strategy seeks to solidify and sustain Every Drop, while aligning it with the needs of the region's communities as they engage their citizens in clean water initiatives. Municipalities will be able to tap into a coordinated, collective platform for communications and products. Building a regionwide audience around clean water messages will incentivize the private sector to participate, furthering Every Drop's reach, effectiveness, and sustainability. This will support the continued enjoyment and protection of our region's water resources.

Building off the collaborative development and the 2019 rollout of the Every Drop brand, PREP will work with the campaign's Advisory Committee to increase its integration with municipal and private

sector partner communication efforts. Municipal input will inform the adaptation of existing Every Drop messages, products, and marketing calendars to better fit their collective needs. Wherever possible and appropriate, this effort will dovetail with, and enhance, MS4-required outreach. In addition, we will develop public-private partnerships to expand the brand and connect people to personal actions to protect water quality through social and recreational activities.

Alongside continued support for the campaign, its growth, and partner integration, we will conduct critical assessments of the public's values (i.e., why people care about clean water), how Every Drop's messaging is resonating, and use this information to continue to update and refine messaging.

Table 4: Empowering Every Drop Objectives, Deliverables, Process, and Clarifications

Objectives	Deliverables/Process	Clarifications
Strengthen the sustainability and growth of the Every Drop campaign and brand.	Plan for brand sustainability and governance.	
Support a platform for communities to coordinate and communicate clean water enjoyment and protection messages with citizens.	Products including "Tip of the Week" emails, quarterly giveaways, website events calendar, small events.	This will not provide direct communications support for municipalities.
Continue to develop metrics to assess the reach and effectiveness of Every Drop messaging and adapt as necessary.	Post-launch evaluation.	
Capitalize on opportunities to expand the breadth of Every Drop partnerships into the private sector.		

General Budget Allocations by Strategy (2020-2022)

Strategies	Budget
<p>Strategy A: Create an integrated research and monitoring plan. Includes funding for plan development supported by technical expertise as needed. Small research grants for highest priority items will be funding dependent (e.g., a sediment source study).</p>	\$200,000
<p>Strategy B: Advance technical capacity to manage and share data. Includes enhancement of regional monitoring efforts through increased staff capacity to address data analysis needs and other identified gaps.</p>	\$150,000
<p>Strategy C: Improve accounting metrics for nonstructural best management practices (BMPs). Includes funding for technical review and analysis of specific conventional nonstructural BMPs that may result in significant pollutant reduction across the watershed in close coordination with PTAP and development of recommendations in the form of a technical memo and outreach products.</p>	\$125,000
<p>Strategy D: Empower Every Drop as a long-term engine for stewardship. Includes support for the Every Drop Campaign, to continue with rollout, materials production, metrics collection and analysis, and campaign sustainability.</p>	\$50,000
<p>TOTAL BUDGET</p>	\$525,000