

Goal 2

Reduce nutrient pollution and its impacts, including coastal acidification

While nutrients like nitrogen and phosphorus are essential for plant growth, elevated levels in coastal waters can trigger a cascade of negative consequences—such as algal blooms, low dissolved oxygen and even fish kills. Excess nutrients also aggravate coastal acidification, which threatens shellfish and other marine organisms. Nutrient pollution poses a dominant long-term threat to Casco Bay’s health—particularly in its inshore waters, and could increase the Bay’s susceptibility to other stressors (e.g., climate change and invasive species). Nutrient pollution is likely to increase in coming decades with population growth and changes in land use.

Nitrogen is often the nutrient of greatest concern for coastal waters. Compared with other coastal bays in the Northeast, Casco Bay waters have moderately high concentrations of nitrogen, which enters the Bay through urban and suburban runoff, wastewater treatment and Combined Sewer Overflows (CSOs), atmospheric deposition from smokestacks and tailpipes, and potentially from offshore waters.

Casco Bay Estuary Partnership (CBEP) seeks to improve scientific understanding of nutrient dynamics in Casco Bay, support funding for improved stormwater management, help municipalities adopt improved land use practices, and coordinate with allied organizations on nutrient and stormwater outreach.

Strategy 2.1: Fill the gaps in scientific understanding of Casco Bay’s nutrient sources, processes and impacts that are needed to guide policy and management decisions

To effectively and efficiently address the threats that nutrient pollution poses for Casco Bay, CBEP needs to combine robust scientific understanding of nutrient processes with understanding of Bay dynamics. This approach will be iterative, with relatively simple preliminary models of nutrient processes in the Bay and watershed helping answer management questions and identify additional data collection and research needs.

Strategy 2.2: Encourage use of green infrastructure to reduce nutrient pollution from runoff

The volume of nutrients entering Casco Bay from land-based runoff could be greatly reduced by simple behavioral changes (e.g., reduced use of lawn fertilizers) and by more widespread use of “green infrastructure” and “Low Impact Development” (LID) practices. Expanded use of these technologies is best advanced by a multi-pronged approach that combines place-based planning (see Action 4.2 A) with local implementation, outreach and education. To encourage broader adoption of innovative approaches to managing runoff, CBEP can promote localized information, presentations and training materials that highlight the practical, financial and ecological benefits.

Strategy 2.3: Advance policies and regulations that minimize nutrient pollution and coastal acidification

Federal and state regulatory policies and practices are key tools to protecting water quality and ecosystem health. CBEP can serve as a venue for considering costs and benefits of alternative policies and regulations, and can apply science to inform local understanding needed to evaluate decisions and policy alternatives.

Strategy 2.4: Seek long-term solutions for funding stormwater management and constructing stormwater infrastructure

Municipalities face significant long-term water costs, particularly with stormwater management, due to new regulatory requirements, aging infrastructure, and (in some cases) a historical pattern of under-investing in that infrastructure. In addition, the region must determine how to fund stormwater management in already developed landscapes, and how to sustain water quality as population expands and stressors increase. Creative solutions to financing water programs (e.g., creation of a stormwater utility, a legal means of charging fees for stormwater management) could help communities cope with escalating costs.

Assess Casco Bay's Nutrient Sources, Cycles and Impacts

Goal 2: Reduce nutrient pollution and its impacts, including coastal acidification

Strategy 2.1: Fill the gaps in scientific understanding of Casco Bay's nutrient sources, processes and impacts that are needed to guide policy and management decisions

Purpose

Develop understanding of Casco Bay nutrient processes to better guide policy

Timeline

Begin development of loading estimates in 2016, with SEANET expecting to start model development in 2017 and complete by 2019

Key Alliances

- SEANET research consortium
- Maine Department of Environmental Protection
- U.S. Environmental Protection Agency

Other Cooperators

- Friends of Casco Bay
- Academic scientists
- National Oceanic and Atmospheric Administration
- Gulf of Maine Research Institute
- Maine Coastal Program/Department of Agriculture, Conservation and Forestry

Description

While the basic science of nutrient processes in coastal waters is well understood, how those processes play out in Casco Bay is less clear. More rigorous understanding of nutrient inputs and behavior within the Bay requires a concerted, multi-pronged effort, integrating scientific inquiry, model development, and data collection. Specifically, modeling tools are needed to assess watershed loading and to understand how nutrients cycle through the Bay's ecosystem.

Lessons learned from this Action will influence creation of a Casco Bay Monitoring Plan (Action 4.3.A), shape development of river and stream monitoring programs (Action 4.3.C), and clarify priorities for understanding water movement in Casco Bay (Action 2.1.B).

Model development and data collection are complementary efforts to understand Casco Bay. New data can strengthen models via improved boundary conditions, better calibration, and testing of model output. Models, in turn, can help identify key data gaps and prioritize data collection.

Despite years of monitoring, much of the data needed to develop robust models are sparse or out-of-date. For example, none of Casco Bay's major tributaries are currently monitored for river discharge, and limited data exist on nutrient (especially nitrogen) concentrations in Casco Bay's streams and rivers. Casco Bay Estuary Partnership (CBEP) will work to address these data gaps under several other *Plan* Actions (Actions 2.1.B, 4.3.A and 4.3.C).

Local and Bay-wide models can make efficient use of limited data by systematically combining it with understanding of coastal processes. To clarify which sources contribute nutrients

to Casco Bay, scientists with the SEANET research consortium plan to use modeling tools to assess watershed loading (as a first step toward creating an ecosystem model for Casco Bay). Spatially explicit estimates of nutrient loads can facilitate local studies of nutrient processes. They also provide data necessary to drive a dynamic model of the Bay’s nutrient processes, which could in turn improve understanding of nutrient impacts (*e.g.*, fueling algal blooms, causing anoxia and exacerbating acidification).

SEANET also plans to deploy water quality monitoring buoys, pursue other Bay-related studies, and participate in the Casco Bay Monitoring Network (Action 4.3.A). CBEP will work closely with SEANET as it finalizes research plans, and will seek to ensure strong communication between scientists and stakeholders through the Casco Bay Nutrient Council (Action 2.3.A).

CBEP will also work with state and federal agencies as needed to ensure that coastal scientists and managers are aware of models being developed to address local management issues, and to assist (as capacity allows) with other research projects involving Bay nutrient processes and coastal acidification.

Resources

CBEP will use limited staff time to assist SEANET consortium researchers in developing Casco Bay nutrient models and in facilitating other relevant research efforts.

Significant CBEP funds (more than \$20,000) may be needed to accelerate development of high-quality nutrient-loading estimates.

Outputs

- Spatially explicit estimates of nutrient loading to Casco Bay
- Watershed-loading model
- Casco Bay nutrient process model

Outcomes

- Short-term
 - Identification of needed data collection and monitoring priorities
 - Increased understanding of nutrient loading to the Bay
- Medium-term
 - Greater understanding of the effects of nutrients and increased nutrient loads on Casco Bay ecosystem processes
- Long-term
 - Better insight into costs and benefits of policy alternatives for addressing water quality concerns in Casco Bay

Metrics and Targets

Metric	Target
Watershed-loading model for Casco Bay	Completed by 2018
Nutrient process model for Casco Bay	Completed by 2020

Improve Understanding of Water Movement within Casco Bay

Goal 2: Reduce nutrient pollution and its impacts, including coastal acidification

Strategy 2.1: Fill the gaps in scientific understanding of Casco Bay's nutrient sources, processes and impacts that are needed to guide policy and management decisions

Purpose

Improve understanding of water flow in Casco Bay and its effects on nutrient processes, larval movement and sediment transport

Timeline

Begin in 2017 and complete by 2019

Key Alliances

- U.S. Geological Survey
- University of Maine
- SEANET research consortium
- Maine Department of Marine Resources
- Maine Department of Environmental Protection

Other Cooperators

- Friends of Casco Bay
- Gulf of Maine Research Institute
- Island Institute
- Maine Coastal Program/Department of Agriculture, Conservation and Forestry
- Maine Geological Survey
- National Oceanic and Atmospheric Administration
- Southern Maine Community College
- University of Southern Maine

Description

In May 2011, Casco Bay Estuary Partnership (CBEP) hosted a workshop for coastal scientists and resource managers to identify key data collection and modeling actions that could enhance understanding of Casco Bay circulation patterns and improve coastal management. Workshop participants characterized the needs of resource managers, identified key data gaps limiting model accuracy, and helped determine model features that would address scientific and management needs.

Improved understanding of water movement can heighten understanding and lead to better coastal policy of Casco Bay and better coastal policy (see Action 2.1.A). The ability to assess the temporal cycle of nutrients within particular Casco Bay embayments, for example, could reveal how vulnerable Bay waters are to water quality problems. Understanding large-scale water movement patterns could reveal the transport dynamics of lobster and clam larvae.

Several models of Bay-wide circulation exist, and standard tools have been applied to model water movement on a smaller (*e.g.*, sub-embayment) scale. Yet accuracy of such models is limited, in part by inadequate data, especially inshore. Lack of data regarding key input variables such as bathymetry (topography of the Bay's floor), river discharge and wind velocity strictly limits the accuracy of available models.

CBEP will continue to work with scientists, as well as state and federal agencies, to improve understanding of Casco Bay circulation, and to

facilitate communication of study results to a broader audience (see Action 4.1.A). A key role for CBEP will be to foster new partnerships that facilitate collection of the data needed for model refinement.

This Action is closely tied to reinstating flow monitoring on one or more Casco Bay tributaries (Action 4.3.C) and to coordinating members of the Casco Bay Monitoring Network (Action 4.3.A) to encourage collection of data (like inshore wind velocities) that contribute to understanding Bay water movement. CBEP will also work with federal and state agencies to seek improved shallow-water bathymetry and intertidal topography.

Resources

The costs involved in updating models and addressing data gaps that limit accuracy of circulation models are well beyond CBEP's ability to fund directly. While CBEP funding could help jumpstart efforts, this Action relies on building funding coalitions and coordinating the efforts of multiple organizations (a CBEP role that will require moderate staff time but aligns with related Actions: 2.3.A, 4.1.A, 4.3.A and 4.3.C).

Outputs

Improved circulation models for Casco Bay and sub-embayments of Casco Bay

Outcomes

- Short-term
 - Fewer data gaps limiting understanding of water movement in Casco Bay
 - Better understanding among policy makers of Bay's water movement
- Medium-term
 - Improved scientific and technical understanding of water movement in Casco Bay
 - Greater understanding of how circulation patterns may affect transport of nutrients and other pollutants
- Long-term
 - Increased understanding of how the Bay's water flow affects nutrient processes, larval movement and sediment transport

Metrics and Targets

Metric	Target
Additional data collected that allow further refinement of Casco Bay circulation models	By 2018

Work Collaboratively to Reduce Nutrient Pollution within a Priority Watershed

Goal 2: Reduce nutrient pollution and its impacts, including coastal acidification

Strategy 2.2: Encourage use of green infrastructure to reduce nutrient pollution from runoff

Purpose

Work collaboratively to identify a priority watershed and implement a collective effort to reduce nutrient pollution, employ green infrastructure approaches, and raise public awareness so as to inspire behavioral change

Timeline

Begin early in 2016

Key Alliances

- Cumberland County Soil and Water Conservation District
- Maine Department of Environmental Protection
- Municipalities

Other Cooperators

- Cumberland County
- Friends of Casco Bay
- Interlocal Stormwater Working Group
- New England Environmental Finance Center
- U.S. Environmental Protection Agency
- Portland Watershed District
- Watershed groups
- Long Creek Watershed Management District
- Maine Water Environment Association
- Maine Department of Transportation

Description

Roughly a third of the total nutrients entering Casco Bay come from land-based runoff (whether urban runoff, septic tank leachate, or other sources). Valuable work is underway within many sub-watersheds of Casco Bay (such as the Capisic Brook, Trout Brook, Long Creek and Concord Gulley watersheds) to address stormwater runoff. Additional work is beginning in other urbanized watersheds (such as Barberry Creek and Red Brook). Coastal towns are continuing their ongoing work to address failing septic systems, which contribute nutrients to the Bay and release pathogens—potentially prompting clamflat closures.

Existing efforts to address stormwater runoff tend to be geographically dispersed, implemented by multiple entities to address separate and often local goals. While some projects employ green infrastructure, they lack a public outreach component that links them to local water bodies and Casco Bay. A shared outreach strategy is needed to publicize green infrastructure projects, reinforce their benefits, and promote the need for behavioral changes among watershed residents and businesses.

To successfully foster greater use of green infrastructure (which is only being slowly adopted within the region), a visible initiative is needed that links stormwater—and the benefits of green infrastructure—to the health of coastal waters that are a vital economic and recreational asset. Casco Bay Estuary Partnership (CBEP) will convene

colleagues to identify a priority watershed in which to promote green infrastructure (and other tools for reducing nutrient flow to the Bay) through new demonstration projects as well as Bay-focused outreach, signage, tours and media coverage. After identifying the watershed, the group will implement projects and shared outreach.

Resources

This Action builds on efforts already underway by numerous organizations, with support from CBEP on project coordination. Success of the initiative will depend on external fundraising and on leveraging municipal and other funds.

Outputs

- Selection of priority watershed
- Outreach plan and project priority list
- Outreach materials for priority watershed
- Green infrastructure demonstration projects

Outcomes

- Short-term
 - Sharing of strategies/messages among stakeholders
- Medium-term
 - Increased community awareness of green infrastructure to inspire behavior change
- Long-term
 - Improved coastal water quality due to decreases in stormwater runoff

Metrics and Targets

Metric	Target
Select priority watershed	2016
Develop implementation plan, including outreach plans and targeted projects	2017
Promote green infrastructure demonstration projects in the priority watershed	2 by 2021

Share Innovative Stormwater Solutions

Goal 2: Reduce nutrient pollution and its impacts, including coastal acidification

Strategy 2.2: Encourage use of green infrastructure to reduce nutrient pollution from runoff

Purpose

Showcase innovative and cost-effective stormwater solutions for local decision makers

Timeline

Begin developing outreach materials in 2016 and delivering programs in 2017

Key Alliances

- Interlocal Stormwater Working Group
- Cumberland County Soil and Water Conservation District
- New England Environmental Finance Center

Other Cooperators

- Municipalities with examples to share
- Long Creek Watershed Management District
- Nonpoint Education for Municipal Officials

Description

Casco Bay Estuary Partnership (CBEP) and allied organizations will communicate to community leaders and residents the benefits of innovative approaches to stormwater management by developing case studies and related materials for design professionals, contractors, and municipal decision makers. Materials that demonstrate the effectiveness and costs of innovative stormwater technologies will be shared with municipal audiences such as conservation commissions, planning boards and town councils through presentations, workshops and related print materials and web content. In addition to addressing MS4 (Municipal Separate Stormwater Sewer System) communities, this outreach will include those municipalities that do not have MS4 permit obligations.

Case studies will highlight policy choices and innovative solutions already undertaken in Maine and other cold-climate states that have generated significant savings and community benefits while addressing long-term budgetary concerns. These outreach materials will emphasize the multiple and long-term benefits of effective stormwater management—for water quality, long-term municipal costs, reduction in shellfish bed closures, and overall ecosystem health. Materials will include a compilation of existing green infrastructure projects within the region, prepared in coordination with the Interlocal Stormwater Working Group.

Resources

Other organizations will lead implementation of this Action, which is closely allied to work already underway by the Interlocal Stormwater Working Group (since outreach is a formal requirement under the MS4 permits). Moderate CBEP staff time will be needed to coordinate with other organizations, and to support development and distribution of outreach materials. This role aligns with Action 3.2.B, the creation of a municipal self-assessment tool and online resource library of model policies and ordinances.

Outputs

- Communications plan for community outreach about stormwater benefits
- Compilation of existing green infrastructure projects within Interlocal Stormwater Working Group communities
- Presentations, primarily to municipal audiences; related outreach documents

Outcomes

- Short-term
 - Partners develop strategies and materials for municipal stormwater outreach
- Medium-term
 - Communities demonstrate increased knowledge of benefits associated with stormwater management
- Long-term
 - Local decision makers adopt local ordinances and policies encouraging innovative stormwater solutions

Metrics and Targets

Metric	Target
Communication plan for benefits of stormwater management	2017
Case studies of stormwater successes developed for Casco Bay audiences	5 by 2021
Presentations to municipal or civic group within the 16 communities on Casco Bay	Average of 6 per year, beginning in 2017

Form a Stakeholder-Based Group to Study Impacts of Nutrients and Costs of Nutrient Management

Goal 2: Reduce nutrient pollution and its impacts, including coastal acidification

Strategy 2.3: Advance policies and regulations that minimize nutrient pollution and coastal acidification

Purpose

Provide a forum for developing a shared regional understanding of costs and benefits associated with different approaches to nutrient management

Timeline

Convene Council in 2016 and complete consensus report in 2018

Key Alliances

- Portland Water District
- Cumberland County Soil and Water Conservation District
- Maine Department of Environmental Protection
- Interlocal Stormwater Working Group

Other Cooperators

- Maine Water Environment Association
- Conservation Law Foundation
- City of Portland
- City of South Portland
- Friends of Casco Bay
- Long Creek Watershed Management District
- Other wastewater treatment plant operators
- Cumberland County
- Greater Portland Council of Governments

Description

Efforts to control nutrient loading to coastal waters are complex and often expensive. Experience nationwide has shown that communities are unlikely to make significant investments to reduce coastal nutrient inputs without trust in the scientific, technical, and financial information underlying control efforts. One effective way to build that trust is through a public process in which multiple stakeholders participate on an equal footing to construct a shared understanding of issues and solutions.

Casco Bay Estuary Partnership (CBEP) will convene and staff a high-level, regional “Casco Bay Nutrient Council” that brings together representatives of municipalities (including towns where septic tanks are common), wastewater treatment plants, environmental groups and businesses. It will collectively study the costs and potential benefits of different approaches to limiting nutrients entering the Bay, or reducing the harm that they cause. An independent entity is essential so that participants and the public can trust that the Council has no prior agenda and can collaboratively construct shared knowledge that reflects participants’ diverse interests.

The initial role of the Council will be to identify key scientific and technical questions among stakeholders to help guide studies of nutrient processes in the Bay and watershed (Action 2.1.A). The Nutrient Council will also develop a consensus report on costs and

opportunities for nutrient reduction in the Casco Bay watershed. Following that, it will discuss questions pertaining to nutrient sources, sinks and effects, and will synthesize available information (including results on nutrient dynamics in Casco Bay), and prioritize approaches to limiting the impact of excess nutrients.

CBEP will help to organize meetings, bring in experts to brief Council members, provide facilitation as required, and draft summary reports of the Council’s findings. CBEP will also help seek funding to commission studies needed to advance Council deliberations. Further, CBEP will link the work of the Council with efforts to improve understanding of nutrient processes in Casco Bay (Actions 2.1.A and 2.1.B), ensuring that scientific research efforts address stakeholder concerns.

Resources

This Action will require significant time invested by a CBEP staff member (potentially one quarter of a full-time position). Limited CBEP funding may be needed to cover meeting costs (*e.g.*, facilitation, meeting space, and food for <\$1,500 per meeting) and publication of reports (<\$5,000 per report). Additional funds may be needed to answer specific technical questions raised by the

Council; CBEP will seek supplemental funding to address those needs.

Outputs

- Nutrient Council meetings
- Report on cost/benefits of nutrient management options

Outcomes

- Short-term
 - Shared understanding of information needs and approach to addressing knowledge gaps; cost-based information about alternatives
- Medium-term
 - Efficient use of limited funds to address nutrient inputs
- Long-term
 - Protect Bay’s habitats, water quality, ecosystem function and integrity

Metrics and Targets

Metric	Target
Nutrient Council meetings per year	2
Report on nutrient management alternatives	Completed by end of 2018

Reduce Combined Sewer Overflow Discharges

Goal 2: Reduce nutrient pollution and its impacts, including coastal acidification

Strategy 2.3: Advance policies and regulations that minimize nutrient pollution and coastal acidification

Purpose

Support the efforts of regional communities to address the financial and technical challenges involved in reducing CSO discharges

Timeline

Ongoing

Key Alliances

- Portland Water District
- City of Portland
- City of South Portland
- Maine Department of Environmental Protection

Other Cooperators

- Town of Cape Elizabeth
- City of Westbrook

Description

Antiquated sewer systems with underground pipes that carry both sewage and runoff rainwater can lead to the direct discharge of untreated sewage into Casco Bay during heavy rains. Portland, South Portland and Cape Elizabeth still have combined sewers that discharge into Casco Bay, while Westbrook’s combined sewers discharge into the Presumpscot River.

All these communities have worked hard to eliminate Combined Sewer Overflow (CSO) discharge points (or outfalls). The number of active CSO discharge points has dropped from 80 in 1990 to 43 in 2014. Discharges have declined markedly both in absolute volume (cut in half since 2000), and in annual discharge per inch of rainfall (cut by about a factor of three).

Despite decades of work, though, more than 440 million gallons of combined sewer effluent was discharged to Casco Bay waters in 2014 during 166 CSO discharge “events.” Reduction of CSO discharges is a priority for Casco Bay Estuary Partnership (CBEP), but making progress requires continued leadership from CSO communities and regulatory agencies, often working in collaboration with Portland Water District, which by charter manages wastewater treatment plants and sanitary sewers.

Regulators require CSO remediation, but the costs—which are substantial—rest with our communities. The City of Portland, which accounts for more than 90 percent of CSO discharges in the region, anticipates spending close to \$170 million during the Tier III phase of its CSO control program.

The need for prompt action on CSO control is becoming more acute as climate change prompts more extreme precipitation events in the region. Work to control runoff pollution in the face of more intense precipitation includes CSO abatement action, increased use of green infrastructure and low-impact development (Action 2.2.A), and innovative approaches to stormwater management (Action 2.2 B).

CBEP staff members will support communities and regulators in their efforts to find creative solutions to financial and technical challenges, and educate area residents about ongoing efforts to address CSOs.

Resources

This Action will be implemented primarily by communities, regulatory agencies and utilities, with CBEP playing a supporting role that requires limited staff time or funding.

Outputs

- CSO remediation projects
- CBEP staff continues to attend City of Portland Water Quality Stakeholder Meetings

Outcomes

- Short-term
 - Reduced volume of CSO discharges per inch of annual rainfall
 - Reduced numbers of active CSOs

- Medium-term
 - Localized improvements in water quality
- Long-term
 - Improved water quality in Casco Bay

Metrics and Targets

Metric	Target
Number of remaining active CSO discharge locations	Under 30 by 2021
Volume of CSO discharges per inch of annual rainfall	10% decline by 2021
Total volume of CSO discharges per inch of annual rainfall	Average 2010-2014 value not exceeded more than once from 2015 through 2020

Help Address Stormwater and Water Infrastructure Finance Challenges

Goal 2: Reduce nutrient pollution and its impacts, including coastal acidification

Strategy 2.4: Seek long-term solutions for funding stormwater management and constructing stormwater infrastructure

Purpose

Facilitate community-based solutions to the long-term fiscal challenges associated with managing stormwater and water infrastructure

Timeline

Ongoing

Key Alliances

- New England Environmental Finance Center
- Greater Portland Council of Governments
- Cumberland County

Other Cooperators

- Cumberland County Soil and Water Conservation District
- Interlocal Stormwater Working Group
- Maine Department of Environmental Protection
- Portland Water District
- Long Creek Watershed Management District
- City of Portland
- Maine Water Environment Association
- Maine Water Utilities Association

Description

In the coming five years, Casco Bay Estuary Partnership (CBEP) will support several existing efforts to help local communities address infrastructure financing.

One initiative involves a U.S. Environmental Protection Agency (US EPA) grant to the New England Environmental Finance Center (NE/EFC) that is helping to provide technical assistance on stormwater finance in communities by six National Estuary Programs, including CBEP. The NE/EFC will partner with experts from the University of Maryland's Environmental Finance Center on a comprehensive review of water programs and potential funding mechanisms in selected New England communities. For communities not yet ready to engage in this extended analysis, the NE/EFC plans to host a number of workshops on environmental finance topics, provide direct consultation with municipal officials, and offer self-assessment tools and other online content.

CBEP also plans to work directly with local communities to help them assess stormwater management costs and the potential justification for and risks associated with adopting a stormwater fee. Before establishing its stormwater service charge, for example, the City of Portland engaged an engineering consulting firm to study whether a stormwater utility was feasible.

Finally, CBEP will facilitate discussions about creating shared regional mechanisms to address stormwater costs, working with existing regional entities, including the Interlocal Stormwater Working Group, Greater Portland Council of Governments, and Cumberland County.

Resources

This project will be led primarily by other organizations, with staff time invested by the CBEP Director who serves as principal investigator on the US EPA grant to NE/EFC.

Outputs

- Delivery of technical assistance on stormwater and water infrastructure finance to communities
- Town-level assessment of feasibility of establishing stormwater fees
- Discussion of regional stormwater funding mechanisms

Outcomes

- Short-term
 - Increased local understanding of finance options for stormwater and water infrastructure

- Medium-term
 - Adoption of local or regional stormwater funding mechanisms
- Long-term
 - Stable long-term funding sources to address costs of stormwater management
 - Improved water quality in Casco Bay

Metrics and Targets

Metric	Target
Locally based stormwater cost assessments	3 by 2021
Stormwater finance workshops	4 by 2021

Monitor Implementation of Portland's Stormwater Service Charge

Goal 2: Reduce nutrient pollution and its impacts, including coastal acidification

Strategy 2.4: Seek long-term solutions for funding stormwater management and constructing stormwater infrastructure

Purpose

Strengthen Portland's stormwater service charge program, and share lessons learned with other communities that are considering establishing stormwater fees

Timeline

Ongoing

Key Alliances

City of Portland

Description

In 2016, the City of Portland launched the region's first stormwater utility, charging a stormwater service fee to help fund future stormwater and Combined Sewer Overflow (CSO) remediation projects. This approach appears to be more equitable than the previous joint funding formula drawn from the general fund and from sewer fees. Other communities are watching the rollout of the City's new program with interest.

While the City of Portland is principally responsible for this Action, Casco Bay Estuary Partnership (CBEP) staff members and others in the Partnership can support its efforts. As a non-regulatory, non-advocacy organization with an ongoing interest in the program, CBEP can provide objective but supportive reviews of program implementation.

CBEP will focus on three areas: (1) allocation of funds collected as part of the fee; (2) likely and actual water quality benefits of projects funded by stormwater fees; and (3) allocation of stormwater "credits." CBEP will participate in any public review or oversight mechanisms that may be created to address these or similar questions. Finally, working with others, CBEP will share lessons learned from the program with other municipalities.

Resources

Limited CBEP staff time will be required to continue participating in the City of Portland's quarterly water quality stakeholder meetings and to stay current on program implementation. Additional resources—either staff time or funding for hiring expert assistance—may be needed to review program details.

Outputs

Annual reviews of the costs and benefits of projects funded by the stormwater fee

Outcomes

- Short-term
 - More information available to public, program managers and local decision makers
- Medium-term
 - Efficient use of program funds
 - Increased understanding of stormwater fee mechanisms in other regional communities
 - Adoption of additional local or regional stormwater funding mechanisms
- Long-term
 - Improved water quality in Casco Bay

Metrics and Targets

<i>Metric</i>	<i>Target</i>
Annual reviews of costs and benefits of projects funded by Portland's stormwater fee	1 per year 2016–2021