

Parker, Ipswich & Essex River Watershed Implementation Plan Update

2025–2027

The mission of the PIE-Rivers Partnership is to protect, restore, and increase the resiliency of the valuable aquatic resources of the Parker, Ipswich, and Essex River Watersheds.

As a part of the Partnership's efforts, the PIE-Rivers Steering Committee periodically updates the following Implementation Plan which guides near-term priorities.

The Implementation Plan covers four (4) Priority Areas:



Water Conservation

Implement enhanced water conservation strategies to increase the resiliency of the PIE-Rivers water resources.



Water Quality Management

Promote efforts to protect and enhance surface and groundwater quality for the benefit of people and the environment.



River & Stream Continuity

Support municipal and non-municipal owners in upgrading barriers to improve habitat continuity, increase flood resiliency, and restore floodplains.



Land Use

Ensure planning, zoning, regulations, land management, and land use practices support implementation of low impact development and redevelopment (LID) best practices through the PIE-Rivers region.

The Implementation Plan prioritizes Action Items from the 2019 PIE-Rivers Action Plan, which provides a framework to facilitate the planning, coordination, and tracking of resiliency and restoration efforts in the Parker, Ipswich, and Essex River Watersheds.

The 2025-2027 Implementation Plan update was led by the Planning Sub-Committee. The process included input and engagement from the Steering Committee, partners, and PIE participants through an online survey and in-person event.



WATER CONSERVATION

Objective: Implement enhanced water conservation strategies to increase the resiliency of the PIE-Rivers water resources.

PRIORITY ACTIONS

Water Conservation Outreach

Continue and broaden regional outreach campaign, including water conservation website, highlighting the need for water conservation and promoting household and municipal water conservation measures. These measures could include, but not be limited to, water banks, use restrictions, billing incentives, and low impact landscaping. Increase capacity for municipalities to incorporate “water wise” practices (Levin, 2006). (Action Item #1)

Incentivize Water Conservation

Reduce lawn watering and other non-essential water demand through a combined approach including use restrictions and billing incentives. (Action Item #31)

Limit Water Withdrawals from Sensitive Areas

Optimize water supply operations to minimize environmental damage by discontinuing or limiting withdrawals from sensitive sub basins and streamside wells. This might include adopting flow-triggered measures to limit and prioritize withdrawals and developing alternative water sources to replace or relieve pressure from the most damaging sources (from particular sub-basins and streamside wells). (Action Item #34)

Supporting Partners:

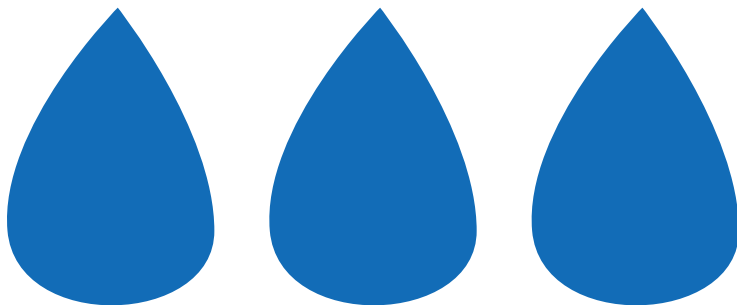
- Parker River Clean Water Association, IRWA, Chebacco Lake Watershed Association
- MA Department of Environmental Protection
- MassRivers
- Municipal Departments of Public Works, Water Departments, Planning and Conservation staff
- Municipal Boards & Commissions
- Greenscapes Coalition
- Regional Planning Agencies (MVPC, MAPC)

Potential Activities/Tasks:

- Provide technical assistance to municipal water departments to enhance water conservation programs, including educational tools and outreach.
- Build PIE-Rivers Water Conservation Best Practices Toolkit.
- Work with PIE-Rivers communities to review, update, and implement stronger water conservation bylaws, including private well bylaws, water neutral growth ordinances, water banks, etc.
- Provide Town-Specific water data on PIE-Rivers Website.
- Participate in/support regional water conservation, resiliency, & drought initiatives.
- Track progress of North Shore Water Resilience Task Force.

Progress Metrics:

- Number of outreach events
- Development of lasting deliverables (tools, websites, groups)
- North Shore Water Resilience Task Force progress
- Water usage data (reduction in summer usage, reduction in overall usage)



WATER QUALITY MANAGEMENT

Objective: Promote efforts to protect and enhance surface and groundwater quality for the benefit of people and the environment.

PRIORITY ACTIONS

Identify Water Quality Problems

Expand water quality assessments to unmonitored (DEP unassessed areas) and identify areas where water quality threatens important aquatic ecosystems using existing information and new research as necessary. Consider ecological and public health effects of emerging threats that end up in surface and groundwater systems. Develop a list and proposed timeline to address high priority "Hot Spots" for degraded water quality in both freshwater and estuarine zone. (Action Item 14)

One of the continuing and increasingly important issues under Action 14 is the monitoring of invasive species affecting water quality, and consistent mitigation and restoration efforts (see below, Action 49).

Address Estuarine Pollution Sources

Work with coastal communities to identify and address high priority pollution sources for the estuarine environment. (Action Item 29)

Upgrade Stormwater Systems

Upgrade stormwater systems that are identified as high priority. (Action Item 33)

Supporting Partners:

- MA Department of Environmental Protection, Division of Marine Fisheries, Office of Coastal Zone Management
- Plum Island Estuary Long Term Ecological Restoration (PIE LTER)
- Municipal Departments of Public Health, Public Works, Water Depts, and any staff tasked with MS-4 responsibilities
- Parker River Clean Water Association, IRWA, Chebacco Lake Watershed Association
- MVPC/8TGM
- Greenscapes Coalition
- MassBays Circuit Rider

Potential Activities/Tasks:

- Develop Water Quality Monitoring Toolkit for municipal staff and partners to reference and update.
- Assist municipalities & partners with funding proposals and technical assistance.
- Engage with state and federal agencies to advocate for PIE-Rivers priorities and additional funding opportunities.
- Publish and publicize water quality monitoring data results on PIE-Rivers website.

Progress Metrics:

- # of water quality testing sites/volunteers
- # of municipalities using the toolkit
- Development of lasting deliverables (tools, websites, groups)
- Amount of funding for stormwater/water quality improvement projects



RIVER & STREAM CONTINUITY

Objective: Support municipal and non-municipal owners in upgrading barriers to improve habitat continuity, increase flood resiliency, and restore floodplains.

PRIORITY ACTIONS

Remove Migration & Flow Barriers

Improve aquatic habitat connectivity and restore natural flow regime through various methods including dam removal, culvert replacement/upgrade, and fishways as necessary with focus on barriers identified as high priority for both habitat and flooding impacts. Changes in flow capacity for structures such as culverts and bridges should take into account position in the watershed and potential effects on upstream and downstream structures. *Note: This action relies on priorities identified in Action 12, "Prioritize Aquatic Barriers". (Action Item 44)

Restore Priority Degraded Habitat

Restore high priority degraded habitats identified in Action 16 using appropriate measures. *Note: This action relies on priorities identified in Action 16, "Prioritize Degraded Habitats". (Action Item 49)

The following sub-actions were specifically highly rated during the update process, and fall under the overall category of Action 49:

Action 19: Develop Bird Conservation Strategy

Identify strategies to counteract any concerning decreases in bird diversity and population stability that can be enacted on a regional level.

Action 45: Implement Additional Aquatic Species Restoration Measures

Implement aquatic species restoration measures identified in Action 13 that are not already underway. *Note: This action relies on the results of Action 13, "Identify Factors Limiting Aquatic Species".

Supporting Partners:

- Division of Ecological Restoration, Division of Marine Fisheries, NOAA, USFWS, Department of Fish & Game
- Parker River Clean Water Association, IRWA, Chebacco Lake Watershed Association
- Mass Audubon
- Trout Unlimited (project specific), Native Fish Coalition
- Municipal Department of Public Works
- Municipal Conservation Commission staff

Potential Activities/Tasks:

- Assist PIE-Rivers communities with barrier removal projects, as identified through Great Marsh Barriers Report and municipal MVP plans.
- Develop and promote PIE-Rivers habitat priorities for both upper and lower watershed areas.
- Develop and launch best practices toolkit, with input from PIE-Partners and relevant state/regional authorities.

Progress Metrics:

- # of proposals submitted
- # of proposals funded
- # of barriers upgraded/removed
 - Miles of stream reopened/restored
 - Acres of potential spawning habitat reopened/restored
- # of municipalities and other property owners participating



LAND USE

Objective: Ensure planning, zoning, regulations, land management, and land use practices support implementation of low impact development and redevelopment (LID) best practices throughout the PIE-Rivers region.

PRIORITY ACTIONS

Promote Low Impact Development

Promote the implementation of Low Impact Development (LID) techniques to reduced development impacts on factors including water use, groundwater recharge and stormwater induced flooding. (Action Item 5)

Protect Drinking Water Sources

Protect the quality and quantity of current and future drinking water supplies through land use education, incentives and regulation. (Action Item 42)

Supporting Partners:

- PIE-Rivers Municipal Planners, Municipal Committee & Board Members
- PIE-Rivers Town Reps
- Municipal and Regional Water Suppliers
- Greenscapes
- Regional Planning Agencies (MVPC, MAPC)
- Other Massachusetts Regional Planners

Potential Activities/Tasks:

- Work with municipal staff and boards/commissions to identify challenges facing communities in implementing LID. Assist communities in developing/implementing bylaw updates and/or finding funding to do so.
- Using MS-4 Bylaw Review report, continue to provide technical support to communities to update bylaws.
- Monitor development & redevelopment projects regionally.
- Increase visibility with regional efforts and cohorts (ex. ResilientCoasts process).
- Participate in and support regional land use, resiliency, and sustainability initiatives.
- Develop a Road Show and/or other strategies for regional dissemination of best practice materials to municipal boards/committees.

Progress Metrics:

- # of educational events/programs/meetings
- Acres of new protected/conserved land area
- Number of LID projects completed
- Number of amended local policies (bylaws/ordinances)

