



<u>Lead Presenter</u> Brandon Blanchard Pare Corporation	<u>Co Presenter</u> Chris Hayward Pare Corporation	<u>Co Presenter</u>
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PRESENTATION TITLE: A RHODE ISLAND TOWN'S APPROACH TO SEPTIC SYSTEM UPGRADES WITHIN ITS CENTRAL VILLAGE

ABSTRACT:

This presentation will describe the unique approach the Town of Glocester, Rhode Island, is taking to incentivize property owners by funding upgrades to wastewater treatment in the Chepachet Village area of the Town. Chepachet Village is the Town's commercial and cultural center, with its origins as a trading post dating to the late 1600s. It was added to the National Register of Historic Places in 1971. Since the 1990s, the Town has put forth efforts to revitalize the Village to encourage renewed investment. Wastewater treatment and water supply are limitations to economic development, and there are currently no publicly owned treatment works close by. The Village relies on individual onsite wastewater treatment systems, and while some have been modernized and replaced in recent years, many properties still use cesspools, holding tanks, or otherwise failed systems. Previous efforts targeting onsite wastewater treatment improvements have been advanced with varying success, but inconsistent and often inadequate operation and maintenance has hampered some of these past investments. Malfunctioning systems contribute to the Chepachet River's status as an impaired water body, which has a Total Maximum Daily Load (TMDL) for bacteria.

The Town has dedicated nearly \$1 Million in EPA Southeast New England Program Watershed Implementation and Decentralized Wastewater Improvement Grants, along with American Rescue Plan Act funds, to incentivize wastewater treatment upgrades in the Village. These grants are planned to provide property owners with funding toward the design and construction of onsite wastewater treatment upgrades. Treatment systems are expected to include individually owned conventional septic systems and Alternative/Experimental (A/E) technologies. A public outreach program has been carried out to gauge interest, better understand community needs, and to inform community members of the opportunity for investment in their properties. Property owners were invited to apply in mid-2025, with a committee evaluating each prospective project and selecting those that were deemed best using a scoring system that awarded points based on each project's ability to meet Program objectives. Funding was awarded in late 2025 to owners of more than 20 properties in the Village, with a goal of completing all design and construction by September 2026.

The project is also expected to establish a Responsible Management Entity (RME), a third-party organization that will be charged with overseeing inspection, operation, and maintenance of completed systems after their construction. Once instituted, the Chepachet Village Septic Improvement Program RME will be one of only a handful administering decentralized wastewater programs in New England.

Lead Speaker Bio:

Brandon Blanchard is a Vice President at Pare Corporation in Lincoln, Rhode Island. Mr. Blanchard has 22 years of professional experience focusing on water, wastewater, and stormwater management. He is a registered professional engineer and Class III Designer of septic systems in Rhode Island, Massachusetts, and Connecticut. Mr. Blanchard received his B.S. in Civil Engineering from Lehigh University and his M.S. in Environmental Engineering from Worcester Polytechnic Institute. He is a member of the Small Community Committee in the New England Water Environment Association.



<u>Lead Presenter</u> Danielle Gaito EPA Region 1	<u>Co Presenter</u> Matthew Stamas EPA Region 1	<u>Co Presenter</u> Yongping Yuan EPA
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PRESENTATION TITLE: IMPERVIOUS COVER IMPACT ANALYSIS AND FUTURE STORMWATER MANAGEMENT STRATEGIES IN THE GREAT BAY WATERSHED

ABSTRACT:

The Great Bay estuary is a highly valued, tidally-dominated embayment located in southeastern New Hampshire that experiences signs of eutrophication, specifically, low dissolved oxygen, macroalgae blooms, and declining eelgrass habitat, resulting from excessive nutrient loading from point and non-point sources. Urban stormwater runoff, primarily from impervious cover, is among the major sources of nitrogen in the 42 New Hampshire and 10 Maine communities that comprise the Great Bay watershed. Thus, managing nitrogen loads from urban stormwater is a high priority for Environmental Protection Agency (EPA) Region 1, the New Hampshire Department of Environmental Services (NHDES), and local municipalities. Existing regulatory mechanisms like EPA’s Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) General Permit and Great Bay Total Nitrogen NPDES General Permit require municipalities to address stormwater quality through implementation of non-structural and structural stormwater control measures. At the same time, the Great Bay watershed is experiencing rapid land development, including increased impervious cover, primarily from the conversion of forest to low and medium density residential land uses. This project uses land use and stormwater models to assess impacts from future land development and explore potential stormwater controls to mitigate future impacts with a focus on the impacts of small-scale development on nitrogen loading. In addition, we compare different regulatory stormwater standards and associated benefits to inform and build community support for protective watershed stormwater management and conservation strategies.

Lead Speaker Bio:

Danielle Gaito is a physical scientist in EPA Region 1's National Pollutant Discharge Elimination System (NPDES) Program. She primarily works on stormwater permitting, including the Massachusetts and New Hampshire Small MS4 Permits.



<u>Lead Presenter</u> Kyle Gray Throwe Environmental	<u>Co Presenter</u> Joanne Throwe Throwe Environmental	<u>Co Presenter</u>
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PRESENTATION TITLE: COLLABORATING FOR CLEAN WATER: PARTNERSHIP PATHWAYS TO AMPLIFY FEDERAL FUNDING

ABSTRACT:

Goals and Learning Objectives

- Understand the changing context of NPS water pollution reduction funding in New England, with a focus on the Upper Connecticut River Basin.
- Understand what makes a competitive NPS project that can attract multiple funding sources.
- Understand how a National Fish and Wildlife Foundation (NFWF), Long Island Sound Futures Fund (LISFF) grant can help anchor durable project partnerships and attract multiple funding sources. This information also is relevant to organizations seeking funding from other federal, state, or private foundation sources.
- Provide opportunities for organizations to meet and discuss collaborations with prospective project partner organizations and/or state agency staff.
- Learn how to connect with Throwe Environmental to receive one-on-one virtual guidance for developing a competitive project application for the 2026 LISFF grant funding opportunity.

Abstract

Improving water quality through NPS reduction at scale requires creativity and flexibility when seeking project funding. In New England, this challenge also includes navigating varying state contexts, permitting issues, funding sources, and the evolving federal funding landscape. This session, focusing on the Upper Connecticut River Basin, offers organizations space to learn from recent project funding successes and craft new ways to advance this work through collaboration designed to leverage funding in a changing funding environment.

Presenters from Throwe Environmental — the team of Field Liaisons for the National Fish and Wildlife Foundation’s (NFWF) Long Island Sound Futures Fund (LISFF) — will provide an overview of the NPS funding context in New England, focusing on the Upper Basin states of Massachusetts, New Hampshire, and Vermont. Recent successful LISFF case studies will be shared to illustrate how partnerships can be developed that lead to project success and increase the likelihood of funding through federal, state, philanthropic, and other funding sources. Participants will learn how to incorporate additional outcomes into their project design, including flooding reduction, engaging diverse communities, and increasing public access. The case studies will highlight how project partners can be selected, project work can be framed, and how attracting matching funds helps build buy-in and increase the competitiveness of proposals.

An interactive workshop session, facilitated by Throwe Environmental, will allow participants to engage with and understand how these project components can be woven into a successful application using the case studies and proposed new projects. This session will allow participants to unpack the elements of successful projects, explore ways to strengthen partnerships, include diverse perspectives in project design, and develop match opportunities to build buy-in for a competitive proposal.

By sharing and centering collaborative experiences, participants will leave with new insights into how to design stronger funding applications, build enduring partnerships, and apply lessons learned across multiple grant programs and other funding opportunities. The session will also help reinforce the connections of organizations and communities throughout the Connecticut River watershed in improving local water quality locally and throughout the watershed.

Post-conference, Throwe Environmental will offer participants the opportunity for virtual Office Hours for project development for the 2026 LISFF grant application cycle. (NOTE: Throwe Environmental serves as Field Liaisons for the NFWF LISFF program. Participation in these sessions does not guarantee project funding.)

Lead Speaker Bio:

Kyle Gray is TE's Chief of Staff. Kyle oversees strategic planning, program development, team resources, and all project activities across the company's full portfolio. During his time with TE, Kyle has led planning, technical assistance, and financing projects in more than a dozen communities along the East Coast, including in partnership with the SNEP Network; The Nature Conservancy; Jacobs; and numerous local governments in RI, MA, MD, and FL. Kyle has led/supported TE's efforts as Field Liaisons for multiple National Fish and Wildlife Foundation (NFWF) programs since 2021, helping connect communities nationally with more than \$650 million in philanthropic investments. Since 2024, Kyle has served as one of TE's Funding Subject-Matter Experts in support of multiple EPA WaterTA programs, through which TE has provided direct assistance to more than 100 community water systems and local governments (the majority of which are classified as underserved) nationwide. Kyle has developed TE's Planning to Action: Climate Toolkit, coordinated multiple Leadership Exchange events, and hosted two seasons of The Leadership Exchange Podcast.

Kyle has an M.A. in Marine Affairs, a Graduate Certificate in Community Planning, and a Bachelor of Arts, all from the University of Rhode Island (URI); Kyle has served as a Workshop Facilitator for URI's Diversity and Inclusion Badge Program intermittently since 2020. He was certified as a Climate Change Professional (CC-P®) through the Association of Climate Change Officers (2021) and has completed Environmental Leadership Training (VT ANR, 2025), Facilitation Basics for Coastal Managers training (NOAA, 2023), diversity and inclusion training (URI, 2020), and the State and Municipal Finance Academy (URI/RI DOR, 2025).

Prior to his work with TE, Kyle served in the Office of Congressman Jim Langevin, with Save The Bay, and with Langevin for Congress. Kyle has served on the Board of Directors for OUT for Sustainability since 2023, where he currently serves as Board Secretary and Acting Chair. Kyle is originally from Rhode Island and is currently based in Washington, DC.



<u>Lead Presenter</u> Diane Mas Fuss & O'Neill, Inc.	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: HEALTHY WATERS, HEALTHY COMMUNITIES: BUILDING PARTNERSHIPS FOR NONPOINT SOURCE SOLUTIONS THAT INCREASE RESILIENCE

ABSTRACT:

Protecting water quality and community health are deeply interconnected goals, yet professionals working on nonpoint source (NPS) pollution reduction, nature-based solutions (NBS), and public health often operate in silos. This presentation explores opportunities to bridge these disciplines to deliver cleaner water, stronger communities, and more sustainable funding pathways.

Drawing inspiration from collaborative climate adaptation efforts, we identify how integrating health perspectives into watershed and NBS planning can enhance both environmental and public health outcomes. Health professionals bring valuable insights into community vulnerability, exposure pathways, and health co-benefits, which can be critical dimensions for prioritizing NPS interventions. In turn, scientists and design professionals contribute design and implementation expertise that can translate health goals into tangible, site- and landscape-scale outcomes.

Through examples and discussion, this presentation highlights opportunities where health data, community health goals, and funding streams could better inform NPS strategies—such as incorporating health indicators into benefit-cost analyses or framing NBS as public health interventions to unlock new funding, support, and partnerships. In particular, it explores the role of nature-based solutions in addressing NPS pollution, extreme heat, and health outcomes.

Ultimately, this collaboration between water quality and health is not just beneficial—it’s essential. By connecting the expertise of water, health, and nature-based solution practitioners, we can create a shared framework for resilient, healthy communities and watersheds.

Lead Speaker Bio:

Dr. Diane M.L. Mas serves as Chief Resilience & Sustainability Officer at Fuss & O’Neill, where she leads the firm’s efforts to integrate sustainability and resilience considerations across all technical practices. With experience in water-quality modeling, watershed management, environmental impact assessment, and the links between water resources and human health, she brings a deep, multidisciplinary perspective to environmental and water resources engineering, adaptation and resilience, and nature-based solutions.

Diane works across the natural and built environment, applying sound science, forward-thinking planning, and innovative engineering to help communities, businesses, and public agencies adapt to and mitigate the impacts of natural hazards and a changing climate while promoting long-term ecological, social, and economic health and resilience. Dr. Mas is actively working in the adaptation and resilience, water resources, and public health practice communities to leverage interdisciplinary collaboration to deliver holistic, resilient, and sustainable solutions that protect water quality, safeguard public health, and enhance community resilience.



<u>Lead Presenter</u> Alex Wong Maine DEP	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: OURSHORE - MAINE'S GUIDE TO NATURE-BASED SHORELINE STABILIZATION

ABSTRACT:

Nature-based solutions to shoreline stabilization uses native plants and bioengineering techniques to protect banks from the impacts of flooding while maintaining a healthy aquatic ecosystem. At the time of this writing, Maine is finalizing our guidance document for nature-based shoreline stabilization, aptly named "OURSHORES". It's a catchy title and it's also an acronym for a 3 step process of 1) determining design goals and objectives; 2) assessing sources of instability and erosion; and 3) selecting the right tools to accomplish the design goals and objectives. This talk will provide background on the inception of this concept, an introduction to the guidance, document, and examples of the guidance in action from active 319 funded NPS mitigation projects. Come and discover what O.U.R.S.H.O.R.E.S actually stands for.

Lead Speaker Bio:

Alex is the NPS Program Coordinator for the State of Maine. His team oversees CWA ss.319 and 604(b) funded implementation and planning projects and generally keeps him in line. He has a MS in Limnology from the University of NH (ok, it's technically Zoology, but that story is too long to tell here), and has been doing watershed work in some manner for most of his professional career. Fun fact about Alex - he volunteers with a wildlife rescue and rehabilitation organization.



<p><u>Lead Presenter</u> Amy Sauber Piscataqua Region Estuaries Partnership (PREP)</p>	<p><u>Co Presenter</u> Abigail Lyon Piscataqua Region Estuaries Partnership (PREP)</p>	<p><u>Co Presenter</u></p>
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PRESENTATION TITLE: BUILDING STORMWATER STEWARDSHIP: A DIGITAL COMMUNICATIONS TOOLKIT FOR LOCAL ACTION

ABSTRACT:

Stormwater runoff is one of the biggest challenges facing estuaries and waterways in southern New Hampshire and Maine. PREP’s 2023 State of Our Estuaries Report found that between 2017 and 2020, nonpoint sources (primarily stormwater runoff) accounted for 78% of the nitrogen load in Great Bay Estuary. We also know that sediment and phosphorus continue to significantly impact our waterways. Across the Piscataqua Watershed, rain and snowmelt carry sediment, nutrients, and pollutants into our rivers and bays, degrading water quality and straining infrastructure. Despite this significant impact, stormwater remains confusing and often misunderstood by the public. Municipalities must educate residents under MS4 permits but often lack the time, staff, or resources to do it well. Outreach can feel impersonal, focused on drains and pipes rather than the people and waterways residents care about. The Piscataqua Region Estuaries Partnership's (PREP) new Stormwater Toolkit addresses this gap. Created with Roca Communications and Tangram 3DS, this free digital resource makes stormwater outreach simple, accessible, and effective. It includes captioned videos, ready-to-use social media posts, newsletter text, images with alt-text, and step-by-step guidance. Communities can “plug and play” content, adapt it locally, and strengthen public understanding.

The Toolkit is also a pilot supported by an advisory group that will evaluate what works, what needs refining, and what additional resources communities need. Our goal is to build capacity, elevate stormwater education, and spark meaningful community action for clean water.

This presentation will share the Toolkit’s development process, contents, and lessons learned about co-creating communication tools that help small towns make a big impact.

Lead Speaker Bio:

Amy Sauber is a writer and guides the strategic direction of the Piscataqua Region Estuaries Partnership (PREP)'s communication and branding efforts. At PREP, she conceptualizes messaging, writes content, and uses creative storytelling techniques to elevate the visibility of PREP's and its partners' initiatives. She is deeply passionate about helping local New England communities make meaningful connections between their lives and the protection of our estuaries. Amy has a professional background in writing, digital communications, teaching, and learning design. She holds a M.F.A. in Writing from the University of New Hampshire and has spent her adult life living near coastal and river waterways. She lives in Maine.



<u>Lead Presenter</u> Sarah Esenther East Shore Health Department	<u>Co Presenter</u> Michael Pascucilla East Shore Health Department	<u>Co Presenter</u>
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PRESENTATION TITLE: MICROBIAL SOURCE TRACKING TO INFORM COMMUNITY-BASED WATER QUALITY INTERVENTIONS

ABSTRACT:

Background

Many recreational and shellfish beds face repeated closures from elevated bacteria levels. These closures are currently determined with a simple fecal indicator bacterial threshold, where exceedant samples (or precipitation levels anticipated to cause exceedant levels) initiate water closures. While thresholds are logistically simple to implement, this approach cannot identify the root cause of bacterial contamination or direct remediation in communities with chronically impaired waters. Here, we provide a case study employing microbial source tracking at stormwater outfalls in Branford, Connecticut to identify the species source of fecal indicator bacteria entering the Long Island Sound and give recommendations for other communities to use microbial source tracking in their own water quality intervention designs.

Methods

Water samples were collected from 9 stormwater outfalls under wet and dry precipitation conditions in 2023 and 2024. High E.coli samples (> ~1500 MPN E.coli/100 mL) were analyzed for avian, human, and canine markers at a private laboratory with quantitative microbial source tracking. We partnered with a local civic association, Branford Engineering, and Branford Public Works to implement a behavior change campaign and infrastructure improvements targeted to limit canine fecal waste from entering stormwater and subsequently beach waters. Interventions included improving nearby dog park drainage, placing watertight waste receptacles, and creating a public awareness campaign with community partners to encourage pet owners to clean up their dog waste.

Results

E.coli was measured in 103 samples in 2023 and 90 samples in 2024. Of these, 27 samples in 2023 and 36 samples in 2024 met the high E.coli threshold and were sent for microbial source tracking analysis. Under roughly similar precipitation conditions between years (18" total in 2023, 22" total in 2024), prevalence of moderate to high canine markers in high E.coli samples decreased from 85% to 17% from 2023 to 2024 following the interventions. Short Beach experienced no beach closures in 2024 and was upgraded from a tier 2 (2-3 closures/season) to a tier 1 beach by the State of Connecticut.

Conclusions

Use of microbial source tracking found that canine bacteria is the likely driver of elevated E.coli levels in local beaches. Identification of species sources of bacterial contamination and close partnership with community groups led to outsized improvement in water quality given limited resources. As the magnitude and frequency of extreme precipitation events is anticipated to increase with climate change, coastal waters will likely face increasing threat from precipitation-induced runoff and bacterial contamination. MST and other technologies will likely become increasingly important tools to understand and protect local recreational and aquaculture waters in a changing climate.

Lead Speaker Bio:

Sarah Esenther is the Water Quality Coordinator for the East Shore Health Department and a PhD Candidate at the Institute at Brown for Environment and Society. Her work addresses local water issues at the intersection of water resources engineering and public health. She received her bachelor's in Civil/Environmental Engineering from UMass Amherst in 2018 and her MPH in Environmental Health Sciences from Yale University in 2020.



<u>Lead Presenter</u> Helen Smith Devereux Consulting	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: FINDING THE EASY BUTTON: ENHANCING WATERSHED MANAGEMENT WITH A NEW PRIORITIZATION TOOL FOR COST-EFFECTIVE BMP SELECTION IN DELAWARE

ABSTRACT:

The Delaware Targeting and Planning Tool (DTAP) is a decision-support platform used by Delaware Department of Natural Resources and Environmental Control (DNREC) to identify opportunities for achieving pollutant load reductions required by Total Maximum Daily Loads (TMDLs), develop implementation plans, and support long-term evaluation of nitrogen, phosphorus, sediment, and bacteria reductions. Users leverage DTAP to assess the effectiveness and cost-efficiency of best management practices (BMPs) in reducing pollutant loads across Delaware's Piedmont, Delaware and Inland Bays, and Atlantic Ocean Basins. These can be used for informing Implementation Plans.

This poster/talk highlights a newly developed Prioritization Tool within DTAP, designed to optimize BMP selection based on user-defined pollutant reduction goals and budget constraints. The tool generates a ranked set of BMPs and associated implementation amounts, which can be seamlessly integrated into optimized DTAP scenarios for targeted watershed management. The optimized scenario is developed with user inputs about goals, priorities, and funding availability. By providing actionable, cost-effective recommendations, the prioritization tool supports more efficient decision-making for MS4 operators, DNREC staff, and other stakeholders.

Looking forward, we aim to enhance DTAP's functionality through collaboration with Drexel University by incorporating artificial intelligence to support predictive analytics and scenario evaluation. Importantly, this approach is adaptable and can be applied to other watershed modeling systems beyond DTAP, expanding the utility of prioritization in nonpoint source management nationwide.

Lead Speaker Bio:

Helen C. Smith is a Watershed Data Analyst at Devereux Consulting. Helen is a 2018 BA graduate of the Environmental Studies Program at the University of Maryland, Baltimore County and is currently pursuing an MS in Geographic Information Systems and Spatial Analysis from West Virginia University. While studying at UMBC, Helen was an intern with the Spa Creek Conservancy in Annapolis where she did ground-level data collection and supported GIS mapping projects. Helen also participated in water quality data collection in her undergraduate environmental science courses. She supports Devereux Consulting's projects related to decision support tools for water quality improvements in major watersheds around the Mid-Atlantic region.



<p><u>Lead Presenter</u> Emma Gildesgame The Nature Conservancy</p>	<p><u>Co Presenter</u> Allyson Snell The Nature Conservancy</p>	<p><u>Co Presenter</u> Anna Ormiston The Nature Conservancy</p>
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PRESENTATION TITLE: BETTER TOGETHER: A COMMUNITY-CENTERED PLANNING APPROACH FOR A CLEAN, CONNECTED, CLIMATE RESILIENT MERRIMACK RIVER WATERSHED

ABSTRACT:

The Merrimack River Watershed, spanning NH and MA, is home to over two million people and vital ecosystems, yet faces mounting threats from development and climate change. Planning for a cleaner, more climate resilient Merrimack requires us to work across a gradient of rural forested areas, growing suburbs, and densely populated urban areas. Nonpoint source pollution is a major – and growing—concern in the watershed, especially as climate change brings more intense rainfall, leading to significant flooding and stormwater pollution throughout the watershed. In 2025, The Nature Conservancy and partners completed a years-long watershed planning effort which brings together traditional conservation science and community-sourced data to create a watershed-scale plan which highlights opportunities for improved community climate resilience, water quality, wildlife habitat, agricultural lands, and working forests across the watershed. The Merrimack Conservation Partnership, a coalition of 30+ organizations and agencies, uses this watershed plan to focus efforts and investment to improve the health and habitats of the Merrimack watershed.

This session will highlight the novel planning, community engagement, and spatial analysis approach used for this project, and provide tangible tools and templates to support participants in incorporating community input into watershed planning efforts.

Lead Speaker Bio:

Emma Gildesgame is the Climate Adaptation Director for The Nature Conservancy in MA and was a co-lead for this project. She has technical expertise in water quality and climate resilience planning, watershed science and management, and equitable community engagement. In her role, she collaborates with communities and stakeholders to co-develop and implement equitable, nature-based solutions that benefit both people and nature at a pace and scale that match the urgency of climate change. She takes a holistic, people-centered approach when working with partners to secure funding and implement solutions that align with the communities needs and priorities.



<p><u>Lead Presenter</u> Andrea Berry New England Environmental Finance Center</p>	<p><u>Co Presenter</u> Lyndsay R. Butler, PE Town of Newmarket, NH</p>	<p><u>Co Presenter</u> Chloe Shields New England Environmental Finance Center</p>
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PRESENTATION TITLE: FROM REJECTION TO RENEWAL: STRENGTHENING VOTER SUPPORT FOR STORMWATER INVESTMENT IN NEWMARKET, NH

ABSTRACT:

With federal grant dollars shrinking, convincing taxpayers to invest in stormwater infrastructure is both a major challenge and critical priority to move projects forward. In New Hampshire’s Great Bay watershed, the Town of Newmarket is committed to reducing nonpoint source pollution and nutrient runoff, yet translating this commitment into voter-approved investments remains difficult.

This presentation will share insights from a collaboration between Newmarket and the New England Environmental Finance Center’s New England Water Infrastructure Network (NEWIN) to build community support for a \$1.4 million stormwater improvement project. Although the town secured below-market financing through the NHDES Clean Water State Revolving Fund, voters narrowly rejected borrowing authority to construct bioswales, install high-rate biofiltration units, and regrade a road segment adjacent to Great Bay in 2025.

Following the vote, municipal staff partnered with NEWIN to assess barriers—including limited public awareness, low turnout, and concerns about tax impacts—and to design engagement and communications strategies for a second attempt in 2026. These included identifying trusted community champions, expanding direct outreach through local networks, improving clarity around project cost and benefit information, and leveraging regional partnerships.

This session will present early evidence of how these strategies improved public understanding, broadened community participation, and built support for stormwater investment. Lessons learned offer practical guidance for other New England towns seeking to pair strategic engagement approaches with funding and partnership models to advance essential stormwater and nonpoint source projects.

Lead Speaker Bio:

Andrea Berry, Climate Funding Manager, New England Environmental Finance Center (NEEFC)

With more than 20 years in nonprofit development and philanthropy, Andrea works with communities to advance climate adaptation and environmental justice priorities. She offers both fundraising and community engagement support through the lenses of collective power building, decolonization, and justice. Andrea’s strategic approach to complex environmental justice challenges makes her a creative partner, ready to address the multifaceted climate change threats facing communities today. In her “free time” Andrea serves as the Chair of the Select Board in the Town of North Yarmouth, ME, carefully balancing financial pressures with efforts to advance community health and climate resilience, as well as serving on the Board of Directors of Momentum Conservation and Resources for Organizing and Social Change.



<u>Lead Presenter</u> Brenda Zollitsch Bangor Area Stormwater Group	<u>Co Presenter</u> Megan Hess Town of Orono	<u>Co Presenter</u>
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PRESENTATION TITLE: GUIDING OUTREACH FOR STORMWATER POLLUTION THROUGH A REGIONAL STORMWATER STEWARDSHIP TRAIL

ABSTRACT:

Over the last three years, eleven MS4s in the Greater Bangor Urbanized Area developed a successful Outfall SignSearch project to engage community members in stormwater pollution prevention at some of the places where pollutants enter local waters - at outfall pipes. Across the region, MS4s placed signs with messaging and QR codes taking them to online content that shows them where their outfall lies in the watershed, pollution prevention tips, learning about local stormwater staff and projects, an opportunity to complete a citizen science outfall area survey, and connections to our popular "Stomp Out Pollution" video game. In 2025, BASWG has built on this successful community engagement project by laying out a new regional Stormwater Stewardship Trail that "connects the dots" between the outfall signs like a scavenger hunt. This new effort has BASWG's education and outreach planners working with scouting and homeschooling groups to encourage completion some of their achievement activities using GPS orienteering, the sign search signs and online content, and tying in with their own youth activities. This presentation will share the evolution of the project, the replicable model, and the project's outcomes and impact.

Lead Speaker Bio:

Brenda Zollitsch, PhD is Founder and President of Resilient Roots LLC, a Maine-based business focused on guiding leaders working on building community and organizational resilience. Brenda serves as the long-time facilitator of the Bangor Area Stormwater Group (BASWG) working with eleven MS4s to reduce stormwater pollution in the Greater Bangor Urbanized Areas. She is also faculty lecturer at the Muskie School of Public Service, where she teaches public policy, analysis and resilience building courses to graduate students. She has more than twenty years of experience working to lead and build public service-related organizations. She specializes in strategic planning, collaboration building, training, policy implementation, and water resources. Zollitsch received her PhD in Public Policy from the University of Southern Maine in 2012 and brings a vast background in training individuals, organizations and agencies in capacity building.



<u>Lead Presenter</u> Kathleen Mason Massachusetts Office of Coastal Zone Management	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: CASE STUDIES PROTECTING AND IMPROVING COASTAL HABITAT AND WATER QUALITY IN MASSACHUSETTS

ABSTRACT:

This session will serve as outreach for the Coastal Habitat and Water Quality Grants as well as highlight successful methods and outcomes to other practitioners. Attendees will learn about 4-6 projects completed within the Massachusetts coastal watershed to protect and improve coastal habitat and water quality. We will discuss the local conditions informing assessment and action, project goals and approaches, and transferable tools and lessons learned.

Lead Speaker Bio:

Kathleen Mason is a Coastal Habitat and Water Quality Specialist with the Massachusetts Office of Coastal Zone Management. She manages the Coastal Habitat and Water Quality Grants Program, which provides funding and technical support for projects that improve coastal water quality and habitat health. Kathleen brings expertise in stormwater management and water quality planning to help communities implement effective, nature-based solutions across the Commonwealth.



<u>Lead Presenter</u> Amasha Withana The University of Vermont, Vermont, USA	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: QUANTIFYING COLLOID-FACILITATED PHOSPHORUS (PCOLL) LOSS FROM VERMONT AGRICULTURAL WATERSHEDS TO LAKE CHAMPLAIN

ABSTRACT:

Phosphorus (P) is an essential plant nutrient, and its long-term application in agriculture has led to the accumulation of legacy P in soils. Increasing evidence shows that colloid-facilitated P transport is a major pathway of P loss from agricultural lands, especially in regions with high soil erosion potential. Colloidal phosphorus (Pcoll), defined as P associated with soil colloids sized 1-1000 nm, plays a critical role in freshwater eutrophication. However, its sources, mobility, and contribution to watershed-scale P loading remain poorly understood. The Lake Champlain Basin (LCB, Vermont, USA) continues to experience persistent P loading, yet the specific contribution of Pcoll to overall P transport is unclear. This study aims to quantify Pcoll transport from three agricultural watersheds: Little Otter Creek (LOC), East Branch of Dead Creek (DCE), and West Branch of Dead Creek (DCW) into the LCB. The research consists of three steps: (1) baseflow water sampling, (2) soil colloid separation, and (3) P fractionation. A total of 10-12 L of water was collected during April, June, August, and October 2025, covering one full cropping cycle. Soil colloids were separated using stepwise centrifugation at 2504 g, 4124 g, and 16,850 g for 23 s, 1 min, 6 min, and 22 min, yielding particle-size fractions of >1000 nm, 1000-450 nm, 450-100 nm, and 100-50 nm, respectively. The 50-1 nm fraction was isolated using ultrafiltration with an Amicon® stirred cell and 10 kDa regenerated cellulose membranes. All separated colloids were oven-dried at 50 °C for ~5 days. To date, colloidal separation for April and June samples has been completed. Preliminary results show that DCW exhibited the highest colloidal loss in both months, and in all watersheds the >1000 nm fraction dominated the colloidal mass. Approximately 10–550 mg of colloids were recovered in April and 11-850 mg in June across all size classes. The presence of substantial colloidal material indicates ongoing soil and/or stream channel sediment erosion and transport into Lake Champlain. In the final phase of this study, Pcoll will be quantified using Hedley’s sequential P fractionation to determine its lability and bioavailability, enabling a clearer understanding of colloid-facilitated P loading and P speciation across particle-size classes in the LCB. This work provides critical insights into watershed-scale Pcoll dynamics and will inform improved nutrient management strategies for reducing P loading to Lake Champlain.

Keywords: Agricultural watersheds; Colloid-facilitated transport; Colloidal phosphorus; Legacy phosphorus; Soil erosion

Acknowledgement: This project was supported through the U.S. Department of Agriculture's Conservation Effects Assessment Project (CEAP), a multi-agency effort led by Natural Resources Conservation Service (NRCS) to quantify the effects of voluntary conservation and strengthen data-driven management decisions across the nation's private lands.

Lead Speaker Bio:

Amasha Withana, Ph.D. is a Postdoctoral Associate in the Department of Agriculture, Landscape, and Environment at the University of Vermont. Her research focuses on phosphorus fate and transport in agricultural soils of the Lake Champlain Basin, with an emphasis on water quality, nutrient management, and sustainable agricultural practices. She earned her Ph.D. in Environmental Science and Ecological Engineering from Korea University, South Korea, where her doctoral research examined plastic contamination and biodegradation in soils. Dr. Withana has published extensively on soil–water processes, biodegradable plastics and microplastics in soils, their degradation-driven impacts on soil properties, and sustainability, and she actively contributes to interdisciplinary environmental research and outreach.



<u>Lead Presenter</u> Theresa McGovern VHB	<u>Co Presenter</u> James Houle UNH Stormwater Center	<u>Co Presenter</u>
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PRESENTATION TITLE: THE WATERSHED PROTECTION STANDARD (WPS) TOOLKIT: MATERIALS TO HELP LOCAL GOVERNMENTS PROTECT THEIR WATERSHEDS IN PARTNERSHIP WITH DEVELOPMENT

ABSTRACT:

This presentation will introduce the Watershed Protection Standard (WPS) Toolkit. The WPS Toolkit is a compilation of materials developed in 2025 to help municipalities adopt and implement stormwater design standards that will protect waterbodies from the impact of development without unduly hindering projects.

A modeling study performed by EPA Region 1 for the Taunton River watershed in Massachusetts shows that state standards do not go far enough to mitigate the hydrologic and pollutant loading effects of development. The study showed that new impervious cover, even when controlled to the level required by state wetland and development standards, greatly impacts runoff and nutrient loading. Because pre-development conditions are not attained when meeting state standards, the result is incremental degradation of watershed hydrology and nutrient loading through each new project.

The EPA modeling study also determined the specific recharge and pollutant reduction values that, if met for a project, would attain pre-development conditions on an average annual basis. This work leverages the work performed as the basis for EPA Region 1 tracking and accounting systems for MS4 compliance, using the same long-term continuous simulation modeling. These values serve as the basis of the WPS and offer designers a significant advantage in calculating benefits of more holistic site design.

The Toolkit provides several resources, including model regulatory language and a review checklist, to help municipalities adopt and implement this new protective standard. It also provides materials that illustrate how designers can meet the WPS across a broad range of site development and redevelopment scenarios. This toolkit is publicly available and SNEP is currently working with a handful of pilot communities in adoption.

<https://snepnetwork.org/watershed-protection-standard-toolkit/>

The WPS Toolkit was developed by VHB for the Southeast New England Program (SNEP) Network in close collaboration with the University of New Hampshire Stormwater Center and supported by an advisory committee made up of RIDEM and MassDEP staff and representatives from other organizations such as URI NEMO, Rhode Island Division of Statewide Planning, Mass Audubon, Cape Cod Commission, Blackstone Collaborative, SRPEDD and others. The SNEP Network is a project of the New England Environmental Finance Center and is funded by the U.S. Environmental Protection Agency’s Southeast New England Program.

Lead Speaker Bio:

Theresa has extensive environmental consulting experience with focus on watershed evaluation and planning, water quality modeling, TMDL compliance, hydrology and hydraulics, and stormwater management and design. Currently, her work is focused on assisting clients with addressing impacts to impaired waters and regulatory compliance, particularly in the areas of NPDES and the Clean Water Act. She enjoys using technical approaches to develop creative and pragmatic regulatory compliance solutions.



<u>Lead Presenter</u> Sadie Friesen Chesapeake Bay Trust	<u>Co Presenter</u> Delaney Samons Chesapeake Bay Trust	<u>Co Presenter</u>
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PRESENTATION TITLE: LEVERAGING PARTNERSHIPS TO ENGAGE DIVERSE GROUPS AND BUILD CAPACITY IN THE CHESAPEAKE BAY WATERSHED

ABSTRACT:

This session will highlight how the Chesapeake Bay Trust builds capacity throughout the Chesapeake Bay watershed, leveraging partnerships to engage diverse groups in improving the quality of human and environmental health in the watershed. Through our Community Engagement and Restoration Grant Program, Connector Group model, Capacity Building Initiative, and various other programs, our work centers the role that people play in watershed restoration and provides the resources for communities to implement watershed restoration and environmental stewardship projects. You can expect to hear how we've leveraged funding partnerships and models to increase the capacity of diverse organizations to help move the needle for Chesapeake Bay restoration. We cannot fully reach the goal of Bay restoration without engaging diverse communities, and investing resources in groups across the watershed allows greater capacity to reach a shared goal of a healthy Bay.

Lead Speaker Bio:

Sadie joined the Chesapeake Bay Trust in September 2024, supporting various programs on the Restoration team. She has led the Community Engagement and Restoration Grant Program which focuses on building capacity and engagement of organizations new to Chesapeake Bay restoration work, while supporting other initiatives at the Trust. Sadie received her B.A. in Earth and Planetary Sciences and Cognitive Science from Johns Hopkins University, with a minor in Environmental Studies. She is passionate about the intersection of human and environmental health, and this carries to her personal life as she enjoys time outdoors - backpacking, canoeing, or just relaxing in nature.



<u>Lead Presenter</u> Madison Ambrogi Fitchburg State University	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: MITIGATING FLOOD RISK THROUGH WETLAND (RE)CONSTRUCTION: A PROPOSAL EVALUATING THE ECONOMIC AND ENVIRONMENTAL IMPACTS ON CAPE COD

ABSTRACT:

Historically, Cape Cod, Massachusetts has been at higher risk of flooding than inland areas due to low elevation, significant precipitation events, and storm surges due to proximity to the ocean. However, a warming climate has greatly exacerbated these events, resulting in increased severity and frequency of flooding activity as well as rising flood insurance premiums.

This project aims to understand to what extent placing constructed wetlands in coastal areas will a) mitigate flooding and b) decrease flood insurance rates. In order to accomplish this, viable sites were identified throughout Cape Cod which possessed some combination of characteristics necessary for a self-sustaining wetland: hydrology, hydrophytic vegetation, and hydric soil. These characteristics were assessed in situ at eight sites in Sandwich, Bourne, Barnstable, and Yarmouth, MA, and 19 soil samples were collected from representative soil horizons (O, A, B) and analyzed for pH, modified Morgan nutrients, exchangeable acidity, electrical conductivity, among other characteristics to confirm appropriateness for use in a constructed wetland. Then, flood modeling was carried out to evaluate runoff depth following precipitation events ranging from two to seven inches of rainfall based on current land cover type, as well as the extent of which following the conversion of current land cover to wetland within and outside of FEMA flood zones for Sandwich, MA. An analysis of historical trends of flood insurance rates in Sandwich correlatively to average precipitation events will be utilized to understand to what extent these rates will be mitigated based on the reduction of flooding itself.

Overall, this project aims to explore the capabilities of green infrastructure and natural resources, whilst evaluating their effectiveness in alleviating intensifying weather events due to a changing climate.

Lead Speaker Bio:

Madison Ambrogi is a fourth-year undergraduate student at Fitchburg State University. She is an Honors student, double majoring in biology and Earth & environmental science, and minoring in Geospatial Information Systems (GIS) and chemistry. She has completed multiple internships ranging from mapping Martian volcanoes, working within recirculating aquaculture systems, and bridging the digital literacy gap in local communities for senior citizens. This project serves as her senior thesis, in which Madison is excited to implement the variety of skills she has acquired over the past four years in multiple scientific disciplines in an applied, practical manner.



<p><u>Lead Presenter</u> Arrianna Proia Charles River Watershed Association</p>	<p><u>Co Presenter</u> Julie Wood Charles River Watershed Association</p>	<p><u>Co Presenter</u></p>
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PRESENTATION TITLE: CLIMATE ADAPTATION STORMWATER STANDARDS (CASS): A NEW ERA IN STORMWATER MANAGEMENT

ABSTRACT:

Charles River Watershed Association (CRWA) developed a Climate Adaptation Stormwater Standards (CASS) to support communities in addressing the challenges of stormwater pollution and climate-driven flooding through local regulations. The CASS represents a forward-looking approach to municipal stormwater management that was developed following a comprehensive review of stormwater bylaws across 33 watershed communities and watershed scale flood modeling of future events. CASS comprises a set of recommended updates to local stormwater bylaws and regulations, including a tiered regulatory system capturing smaller development projects and a 100-year storm retention standard for larger developments, and reflects best practices already in place in the municipalities of Watertown and Waltham. By adopting CASS, municipalities can better protect residents and infrastructure from flooding, meet existing nutrient reduction requirements, and increase stormwater system capacity without straining municipal budgets.

Stormwater runoff is the greatest threat to the Charles River’s water quality, carrying pollutants and excess nutrients that degrade aquatic ecosystems, fuel algal blooms, and harm habitat. Currently, Massachusetts stormwater regulations focus primarily on water quality; however, addressing water quality without consideration of water quantity, namely building resilience to flooding and drought, is no longer a cost-effective approach.

Data from the Charles River Flood Model (CRFM), a watershed-scale simulation that projects how future precipitation and flooding patterns will change with climate change and tests mitigation strategies, was also used to inform the CASS standards. Developed with participation from two dozen towns under the Charles River Climate Compact, the CRFM highlights increased flood risk by mid-century and supports identification of nature-based solutions, such as green infrastructure, wetland restoration, and reduced impervious cover, that reduce both flooding and stormwater pollution impacts. Presenters will share modeling results demonstrating the efficacy of widescale adoption of CASS. The CASS standards demonstrate a holistic strategy: integrating climate adaptation into local stormwater policy while also reducing pollutant loads and building resilient communities throughout the Charles River watershed.

Lead Speaker Bio:

Arrianna Proia is CRWA’s Community Organizer and joined the organization in 2023, working with local leaders, community groups, and environmental advocates to advance municipal climate resilience laws and policies. She holds a B.A. in Political Science from Bridgewater State University. With a background in organizing local community campaigns, connecting with watershed communities and their residents is one of her favorite aspects of the role.



<p><u>Lead Presenter</u> Khalid Alvi Ulteig Engineers Inc.</p>	<p><u>Co Presenter</u> Kerem Gungor Maine Department of Environmental Protection</p>	<p><u>Co Presenter</u></p>
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PRESENTATION TITLE: MODELING VEGETATED BUFFER PERFORMANCE FOR STORMWATER MANAGEMENT IN MAINE

ABSTRACT:

Maine Department of Environmental Protection (DEP) is considering to adopt the performance curves developed for sizing stormwater control measures in EPA Region 1 as a part of its efforts to revise the Stormwater Management Rules (Chapter 500). This study delivers long-term cumulative performance curves for forest, meadow, and lawn buffers using EPA Region 1’s Opti-Tool and 28 years of climate data from the Portland Jetport (1997–2024). Regionally calibrated Hydrologic Response Unit (HRU) time series were applied to simulate reductions in runoff and pollutant loads—Total Phosphorus (TP), Total Nitrogen (TN), Total Suspended Solids (TSS), Zinc (Zn), and E. coli. Buffer configurations were refined through sensitivity analysis of slope, Manning’s roughness coefficient, depression storage, and soil infiltration rates across Hydrologic Soil Groups (HSG A–D). Performance curves were generated for impervious-to-pervious ratios (IC:PC) from 1:1 to 8:1. Forest and meadow buffers on highly permeable soils (HSG A/B) achieved >90% reductions in runoff volume and nutrients at low IC:PC ratios, while performance declined with increasing impervious drainage area or lower infiltration capacity. Lawn buffers—modeled as uncompacted grass on undisturbed soils—also provide substantial reductions, though less effective than forest or meadow buffers. Validation against North Carolina field studies confirmed Opti-Tool’s reliability for lawn buffers, supporting its use for planning and regulatory crediting. While limitations include the absence of Maine-specific observed data for forest and meadow buffers and simplified snow hydrology assumptions, the curves represent cumulative performance over diverse storm conditions, providing a more realistic basis for long-term planning than single-event or design-storm approaches. These curves offer a practical, transparent tool for stormwater control measure sizing and crediting, supporting Maine DEP’s regulatory updates and advancing LID implementation in sensitive and urbanizing watersheds.

Lead Speaker Bio:

Khalid is a senior water resources engineer specializing in modeling for watersheds and stormwater best management practices. His expertise includes all phases of the modeling process, from problem formulation to simplifying complex computations. He works at Paradigm Environmental, which is now part of Ulteig Engineers, and is a licensed Professional Engineer in Virginia.



<p><u>Lead Presenter</u> Jill Sarazen UVM/Lake Champlain Sea Grant</p>	<p><u>Co Presenter</u> Rachel Buchanan Vermont Department of Environmental Conservation</p>	<p><u>Co Presenter</u></p>
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PRESENTATION TITLE: ESTABLISHING VERMONT’S O&M PROGRAM FOR NON-REGULATORY CLEAN WATER PROJECTS

ABSTRACT:

Vermont's Clean Water Service Delivery Act (Act 76 of 2019) restructures how Vermont administers some clean water funding to build watershed scale capacity and establish regional organizations called Clean Water Service Providers (CWSPs). CWSPs are responsible for partnering with Basin Water Quality Councils and project implementers to oversee the identification, funding, implementation, operation and maintenance of clean water projects to meet non-regulatory phosphorus reduction targets with state funding provided through the Water Quality Restoration Formula Grant Program. This is the first State of Vermont program to fund verification and operation and maintenance (O&M) activities for state-funded non-regulatory clean water projects. This presentation will share highlights from the last four years of building the State’s clean water project verification and O&M framework, which has been a collaboration between the Clean Water Initiative Program and Lake Champlain Sea Grant. This includes work engaging stakeholders, developing guidance, writing an O&M manual, building tools, and delivering trainings aimed at building partner capacity to support the long-term functionality of clean water projects. Over the first two years of coordinating trainings, our team hosted four online trainings and four field-based trainings engaging over 80 clean water partners. Looking ahead, our team will expand tools and resources for all fundable project types and track the use and impact of O&M funding to support long-term project functionality and help achieve Vermont’s water quality goals.

Lead Speaker Bio:

Jill is the Green Infrastructure Collaborative Coordinator with Lake Champlain Sea Grant at the University of Vermont and partnered with the Vermont Department of Environmental Conservation. Through this role, she provides outreach, technical assistance, and coordinates educational programming to encourage the use of green stormwater infrastructure and nature-based solutions for managing stormwater runoff. She has master's degree in Plant and Soil Science from UVM and a bachelor's degree in Biology from Oberlin College.



<p><u>Lead Presenter</u> James Houle University of New Hampshire</p>	<p><u>Co Presenter</u></p>	<p><u>Co Presenter</u></p>
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PRESENTATION TITLE: GREAT BAY STREET CLEANING STUDY

ABSTRACT:

It is now well understood that street sweeping or street cleaning (non-sweeper leaf collection), effectively deployed in the fall to collect leaf litter from paved surfaces, is one of the single greatest actions to reduce nutrient wash off in developed watersheds. Leaf litter deposition on impervious areas is a major source of nitrogen and phosphorus, which can lead to eutrophication and harmful algal blooms in water bodies. By collecting leaf litter before it decomposes and releases these nutrients, substantial amounts of nitrogen and phosphorus can be prevented from entering stormwater drainage systems and ultimately receiving waters.

Based on this understanding, in 2022, the Piscataqua Regional Estuaries Partnership and the University of New Hampshire (UNH) published Clean Sweep: Recommendations for New and Updated Credits for Street Cleaning in New Hampshire.

A team of Woodard & Curran, UNHSC and NHDES was retained to assist in advancing considerations for the evaluation and consideration of a regional sweeping program, with the goal of cost-effectively reducing nutrient runoff into the Great Bay. Details of this effort will be summarized and detailed in this presentation.

Beyond the numbers, this pilot revealed critical insights. Street cleaning is one of the most cost-effective ways to reduce pollution, but it's not as simple as buying a sweeper truck. It requires trained staff, multiple pieces of equipment, scheduling, funding, maintenance, and community engagement.

Lead Speaker Bio:

James Houle is the Director for the Stormwater Center. His responsibilities include directing and managing the Stormwater Center's growing body of research projects. Areas of expertise include diffusion of innovative stormwater management solutions, the design and implementation of innovative stormwater control measures including green infrastructure (GI), and low impact development (LID) strategies, planning and implementation, operation and maintenance, and water resource monitoring.

Dr. Houle holds a Ph.D. in Natural Resources and Environmental Science and has over twenty years of experience with water quality related issues in New England and is a certified professional in storm water quality (CPSWQ) and a certified professional in erosion and sediment control (CPESC).



<u>Lead Presenter</u> Alison Marchione Vermont Department of Environmental Conservation - Lakes and Ponds	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: LAKE WATERSHED ACTION PLANS: A HOLISTIC WHOLE WATERSHED APPROACH TO CLEAN WATER PROJECT PLANNING

ABSTRACT:

For the last six years, Vermont has been implementing a comprehensive strategy for clean water project identification in the natural resource sectors via Lake Watershed Action Plans (LWAPs). An LWAP is an assessment and planning tool that is used to identify the areas of erosion, pollution, and degraded habitat in a specific lake’s watershed and propose implementable solutions. Natural resource assessment areas for an LWAP include lake shoreland, tributaries, wetlands, and roads. The end product of these assessments is an actionable plan that identifies problem areas and possible solutions, and prioritizes them for implementation. Following completion, projects from LWAPs are then eligible for several different types of grants to complete design and implementation. To date 16 of these plans have been completed throughout the state. This talk will outline the process of an LWAP from selection watersheds to assessing outcomes including what kinds of projects have been successfully installed.

Lead Speaker Bio:

Alison Marchione is the Shoreland Restoration Ecologist for the State of Vermont Department of Environmental Conservation. She holds an undergraduate degree in Environmental Science from Wells College and a Masters degree in Environmental Science and Land Management from Sacred Heart University. She has spent her career working in the fields of environmental conservation and restoration across the forestry, agriculture, and water resource sectors.



<u>Lead Presenter</u> James Houle University of New Hampshire	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: PTAP’ING TOWARD NUTRIENT REDUCTION ACCOUNTABILITY

ABSTRACT:

The Great Bay estuary and its tributaries are becoming increasingly polluted (PREP, 2013, DES, 2014). Due to declining water quality in Great Bay and other water bodies, the Great Bay General Nitrogen Permit was finalized in November of 2020 and communities opted into the innovative adaptive management approach in July 2021. The adaptive management permit necessitates tracking NPS control projects designed to mitigate and reduce pollutants entering Great Bay and accounting for the pollutant load reductions achieved. In response NHDES and the UNH Stormwater Center spent years collaboratively developing the Pollutant Tracking and Accounting Project (PTAP) database which is now live with several enhanced features.

PTAP has gone interstate including municipalities in ME. PTAP is also infinitely expandable into other states in EPA Region 1 including MA. PTAP has developed a unique and replicable reporting framework that offers several advantages over other tracking and accounting tools available in the Region.

With all these advancements it is finally time to contemplate the ultimate question: ask not what you can do for PTAP, ask what PTAP can do for you!

Lead Speaker Bio:

James Houle is the Director for the Stormwater Center. His responsibilities include directing and managing the Stormwater Center's growing body of research projects. Areas of expertise include diffusion of innovative stormwater management solutions, the design and implementation of innovative stormwater control measures including green infrastructure (GI), and low impact development (LID) strategies, planning and implementation, operation and maintenance, and water resource monitoring.

Dr. Houle holds a Ph.D. in Natural Resources and Environmental Science and has over twenty years of experience with water quality related issues in New England and is a certified professional in storm water quality (CPSWQ) and a certified professional in erosion and sediment control (CPESC).



<u>Lead Presenter</u> Gwendolyn Wynkoop NYSDEC	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: NEW YORK STATE’S NPS PROGRAM: CREATIVE STRATEGIES FOR PARTICIPATORY AND COMPREHENSIVE COMMUNITY ENGAGEMENT

ABSTRACT:

New York’s NPS Program is established under the leadership of the New York State Department of Environmental Conservation (NYSDEC) as the state lead agency for the Section 319 Program and many other closely related programs. NYSDEC partners with several state agencies to implement the NPS Program. These state agency partnerships are complemented by both federal agency partnerships and regional and local partnerships, with special emphasis on county Soil and Water Conservation Districts (SWCDs), county health agencies, county and regional planning agencies, municipalities, and watershed coalitions. In recent years, New York State has spearheaded, with support from these partnerships, several creative strategies for participatory and comprehensive community engagement to address NPS pollution. Some examples that will be discussed during the presentation include the “Don’t Be Salty, New York” public awareness campaign, Drinking Water Source Protection Program (DWSP2) implementation model, DWSP2 legacy project, and social media campaign focused on land acquisition projects for source water protection.

Lead Speaker Bio:

Gwendolyn Wynkoop is an Environmental Program Specialist II with the New York State Department of Environmental Conservation's Division of Water, Bureau of Water Resource Management. She has been with NYSDEC since January 2020 and is responsible for several programs, including the New York State Nonpoint Source Program. Gwendolyn has a B.S. in Environmental Science from SUNY Oneonta and a Master of Environmental Law and Policy from Vermont Law School.



<u>Lead Presenter</u> Amasha Withana The University of Vermont	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: QUANTIFYING COLLOID-FACILITATED PHOSPHORUS (PCOLL) LOSS FROM VERMONT AGRICULTURAL WATERSHEDS TO LAKE CHAMPLAIN

ABSTRACT:

Phosphorus (P) is an essential plant nutrient, and its long-term application in agriculture has led to the accumulation of legacy P in soils. Increasing evidence shows that colloid-facilitated P transport is a major pathway of P loss from agricultural lands, especially in regions with high soil erosion potential. Colloidal phosphorus (Pcoll), defined as P associated with soil colloids sized 1-1000 nm, plays a critical role in freshwater eutrophication. However, its sources, mobility, and contribution to watershed-scale P loading remain poorly understood. The Lake Champlain Basin (LCB, Vermont, USA) continues to experience persistent P loading, yet the specific contribution of Pcoll to overall P transport is unclear. This study aims to quantify Pcoll transport from three agricultural watersheds: Little Otter Creek (LOC), East Branch of Dead Creek (DCE), and West Branch of Dead Creek (DCW) into the LCB. The research consists of three steps: (1) baseflow water sampling, (2) soil colloid separation, and (3) P fractionation. A total of 10-12 L of water was collected during April, June, August, and October 2025, covering one full cropping cycle. Soil colloids were separated using stepwise centrifugation at 2504 g, 4124 g, and 16,850 g for 23 s, 1 min, 6 min, and 22 min, yielding particle-size fractions of >1000 nm, 1000-450 nm, 450-100 nm, and 100-50 nm, respectively. The 50-1 nm fraction was isolated using ultrafiltration with an Amicon® stirred cell and 10 kDa regenerated cellulose membranes. All separated colloids were oven-dried at 50 °C for ~5 days. To date, colloidal separation for April and June samples has been completed. Preliminary results show that DCW exhibited the highest colloidal loss in both months, and in all watersheds the >1000 nm fraction dominated the colloidal mass. Approximately 10–550 mg of colloids were recovered in April and 11-850 mg in June across all size classes. The presence of substantial colloidal material indicates ongoing soil and/or stream channel sediment erosion and transport into Lake Champlain. In the final phase of this study, Pcoll will be quantified using Hedley’s sequential P fractionation to determine its lability and bioavailability, enabling a clearer understanding of colloid-facilitated P loading and P speciation across particle-size classes in the LCB. This work provides critical insights into watershed-scale Pcoll dynamics and will inform improved nutrient management strategies for reducing P loading to Lake Champlain.

Keywords: Agricultural watersheds; Colloid-facilitated transport; Colloidal phosphorus; Legacy phosphorus; Soil erosion

Acknowledgement: This project was supported through the U.S. Department of Agriculture's Conservation Effects Assessment Project (CEAP), a multi-agency effort led by Natural Resources Conservation Service (NRCS) to quantify the effects of voluntary conservation and strengthen data-driven management decisions across the nation's private lands.

Lead Speaker Bio:

Amasha Withana, is a Postdoctoral Associate in the Department of Agriculture, Landscape, and Environment at the University of Vermont. Her research focuses on phosphorus fate and transport in agricultural soils of the Lake Champlain Basin, with an emphasis on water quality, nutrient management, and sustainable agricultural practices. She earned her Ph.D. in Environmental Science and Ecological Engineering from Korea University, South Korea, where her doctoral research examined plastic contamination and biodegradation in soils. Dr. Withana has published extensively on soil–water processes, biodegradable plastics and microplastics in soils, their degradation-driven impacts on soil properties, and sustainability, and she actively contributes to interdisciplinary environmental research and outreach.



<u>Lead Presenter</u> Gemma Kite Horsley Witten Group	<u>Co Presenter</u> Janelle Veary Horsley Witten Group	<u>Co Presenter</u>
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PRESENTATION TITLE: NAVIGATING OPPORTUNITIES FOR GREEN STORMWATER INFRASTRUCTURE ACROSS CAPE COD'S BOAT RAMPS

ABSTRACT:

Boat ramps are for boats, not stormwater! In collaboration with the Association to Preserve Cape Cod, this project identified opportunities for stormwater management improvements to boat ramps across Cape Cod towns to improve water quality conditions in Cape Cod's waters. This project has continued over the last four years, with several boat ramps in various stages of design, construction, and completion. Many funding partners were integral to achieve the project goals, making this an interesting example of how to implement regional GSI. Come aboard with us as we show you where you can launch your boat and see examples of GSI!

Lead Speaker Bio:

Gemma Kite, P.E. is a Senior Environmental Engineer with the Horsley Witten Group, based out of Sandwich, MA. She enjoys working with a variety of municipal clients across the Cape and New England to develop creative solutions for designing and implementing green stormwater infrastructure. Gemma enjoys gardening, finding sea glass on the beach, and performing in community theatre.



<u>Lead Presenter</u> Gemma Kite Horsley Witten Group	<u>Co Presenter</u> Lisa Holden X-Cel Education	<u>Co Presenter</u>
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PRESENTATION TITLE: X-CEL-ING AT MAINTENANCE: A COLLABORATIVE APPROACH TO MAINTAINING GREEN STORMWATER INFRASTRUCTURE AND EDUCATING FUTURE WATER CONSERVATIONISTS.

ABSTRACT:

GSI maintenance is critical to ensuring it functions as designed, but maintenance often takes the back seat to other critical municipal needs. Learn how the X-Cel Education Conservation Corps provides GSI maintenance throughout the greater Boston area to help meet their program’s educational requirements and support communities’ ongoing maintenance needs. X-Cel Education Conservation Corps, based in Boston, Worcester, Fall River, and Springfield, was developed to help break the cycle of poverty by preparing Massachusetts youth for careers in water management and conservation that lead to economic self-sufficiency.

Lead Speaker Bio:

Lisa Holden started with X Cel in 2016 as an intake coordinator and stepping into the role of Program Director for the Conservation Corps in 2024. Her work is hands on and people focused — she manages recruitment, provides transportation, supervises work projects, teaches the course material needed to earn a wastewater license, and supports students as they move into new career. Lisa is driven by the belief that transformation is possible at any stage of life, and she tries to bring that hope into every person she works with. Lisa shows up, invests in people, and cares deeply about helping others find their path forward.



<u>Lead Presenter</u> Julianne Busa Fuss & O'Neill	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: EAGER BEAVERS: REWILDING A GOLF COURSE WITH HELP FROM NATURE’S ENGINEERS

ABSTRACT:

Beaver activity and beaver management is often a contentious topic, but in the right location, beaver habitats and active beaver populations provide a number of specific benefits that increase the ability of riparian and aquatic systems to react dynamically to change and absorb climate impacts—and can therefore be a tremendous asset in stream and wetland restoration projects. At the former Pine Grove golf course in Northampton, MA, the City, Mass Division of Ecological Restoration, Mass Audubon, and Fuss & O’Neill have engaged a dynamic partnership—not just with each other, but also with the local community of beavers—to help restore Nashawannuck Brook and the surrounding wetlands and uplands that were significantly modified during operation as a golf course. Working with beavers and welcoming them into our design enables us to take a light touch approach to restoration, focusing on restoring ecosystem processes and setting the stage for a restored stream and wetland system that will be resilient and ever-changing. This case study of an ongoing golf course rewilding project will serve as an example to highlight process-based ecological restoration approaches and provide insights from the first phase of implementation.

Lead Speaker Bio:

Julianne Busa, PhD, Associate | Senior Resilience Scientist, Fuss & O’Neill – Julie is a Professional Wetland Scientist and Certified Senior Ecologist who leads Fuss & O’Neill’s Ecological Restoration Technical Practice Team out of Springfield, MA and is a co-lead of the firm’s Massachusetts Climate Resilience practice under the state MVP program. She has over 15 years of experience in the areas of ecological restoration, resilience planning, sustainability, soil science, and ecological modelling. She has served as a technical lead and project manager on a variety of projects including: cranberry bog restoration from design through implementation; golf course rewilding; dam removal and river restoration; culvert and stream improvements to improve aquatic passage; and nature-based slope stabilization and green infrastructure design. Prior to joining Fuss & O’Neill, she served as President of the Society for Conservation Biology’s Working Group for Ecological Economics and Sustainability Science and taught on the environmental studies faculties of multiple colleges. Julie serves as co-lead of the Massachusetts Ecosystem Climate Adaptation Network (MassECAN) Slow the Flow Working Group and is the Chair of the Easthampton Conservation Commission. She is a self-proclaimed Beaver Believer.



<u>Lead Presenter</u> Michelle West Horsley Witten Group	<u>Co Presenter</u> Sydney Stanton-Sheetz Horsley Witten Group	<u>Co Presenter</u> Tim Lydon Town of Bourne
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PRESENTATION TITLE: GOING GREEN TO GET BLUE: WATERSHED IMPLEMENTATION FOR QUEEN SEWELL POND

ABSTRACT:

Like many freshwater ponds throughout New England, Queen Sewell has been more green than blue in recent years. The pond, with a 150-acre watershed located in the Buzzards Bay area of Bourne, is home to a popular neighborhood beach and fishing area. However, it is suffering from degraded water quality from excess nutrients and algal blooms. The Horsley Witten Group collaborated with the Town of Bourne Conservation and Engineering Departments to develop a watershed action plan for the pond and have already started on green stormwater infrastructure (GSI) implementation. The Town is excited to apply this same management approach to their other freshwater resources. This presentation will showcase the watershed planning approach, community outreach, a suite of restoration opportunities, innovative neighborhood GSI designs, and the GSI at the newly retrofitted beach parking lot.

Lead Speaker Bio:

Michelle West, P.E., is a senior water resources engineer with Horsley Witten Group based out of Sandwich, MA. With a background in both engineering and natural resources, she loves using her skills to restore the natural world while improving the human experience. Her work focuses on green stormwater infrastructure and restoration projects throughout New England and the Caribbean and Pacific Islands. Michelle enjoys spending time exploring nature with her two boys, as well as carting them around to all their sports!



<u>Lead Presenter</u> Michelle West Horsley Witten Group	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: CLEANING YARMOUTH’S WATERS WITH A COMPREHENSIVE GSI APPROACH

ABSTRACT:

The Town of Yarmouth has embraced green stormwater infrastructure (GSI) as one way to address water quality impairments in their freshwater and coastal resources. Horsley Witten Group, in collaboration with the Association to Preserve Cape Cod, has worked closely with the Town to first identify opportunities for GSI retrofits and then systematically start implementing the top priority sites. This project has continued over the last three years, with several sites in various stages of design, construction, and completion. Join us to learn more about this approach and see a variety of GSI designs and finished practices, including a constructed wetland, tree trench, and roadside bioretention! This is a great example of how one town is taking GSI from just demonstration projects to the standard approach for stormwater management.

Lead Speaker Bio:

Michelle West, P.E., is a senior water resources engineer with Horsley Witten Group based out of Sandwich, MA. With a background in both engineering and natural resources, she is passionate about using her skills to restore the natural world while improving the human experience. Her work focuses on green stormwater infrastructure and restoration projects throughout New England and the Caribbean and Pacific Islands. Michelle enjoys spending time exploring nature with her two boys, as well as carting them around to all the sports!



<u>Lead Presenter</u> Erin Grimes Geosyntec Consultants	<u>Co Presenter</u> Chris Greene Consultants	<u>Co Presenter</u> Jeff Carlson City of Nantucket
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PRESENTATION TITLE: IMPROVING WATER QUALITY IN MIACOMET POND, NANTUCKET, MA: THE ROLE OF DREDGING AND BENEFICIAL REUSE IN NUTRIENT MANAGEMENT

ABSTRACT:

Miacomet Pond, a 43.5-acre Massachusetts Great Pond on Nantucket Island, has experienced significant water quality decline due to internal nutrient loading, resulting in eutrophication, habitat impairment, and recurring cyanobacteria blooms. Despite a largely undeveloped watershed and intact vegetative buffers, legacy phosphorus and nitrogen accumulated in bottom sediments have been identified as the primary drivers of persistent water quality issues. The pond is currently listed as impaired (Category 5, TMDL required) on the Massachusetts DEP 303(d) list. The Miacomet Pond Dredging Project, led by the Town of Nantucket, is an example of ecological restoration designed to deliver substantial and lasting environmental benefits. The Project will hydraulically dredge to 135,000 cubic yards of nutrient-rich organic sediment and underlying sands, desand the dredge spoils, and then dewater the material. The project directly addresses the root cause of eutrophication—internal nutrient cycling—rather than relying solely on watershed controls. Sediments will be processed at a nearby wastewater treatment facility, with both sand and organic material repurposed for beneficial uses, such as beach nourishment, dune restoration, and agricultural soil amendments. This approach further reduces waste. looks at dredge material as a resource, and supports island resilience.

This presentation will highlight the rationale, design, and anticipated outcomes of the dredging project, with a focus on nutrient management as a critical strategy for water quality enhancement. Pre-design investigations and sediment analyses confirmed elevated concentrations of phosphorus and nitrogen throughout the pond’s sediments, with no significant “hot spots,” emphasizing the need for a whole-pond approach. The project’s adaptive design minimizes impacts to sensitive habitats and rare species, incorporates climate resilience considerations, and engages Environmental Justice communities through multilingual outreach.

Key topics will include:

- The role of internal nutrient cycling in sustaining eutrophication in legacy-impacted ponds.
- Sediment characterization and agronomic analysis supporting beneficial reuse.
- Dredging as a nutrient management tool: lessons learned, regulatory context, and monitoring.
- Anticipated water quality improvements, ecological benefits, and public health outcomes.
- Community engagement and environmental justice in project planning and implementation.
- Grant funding availability

The Miacomet Pond Dredging Project demonstrates how targeted sediment removal can reset nutrient dynamics, restore ecological function, and provide long-term resilience for impaired surface waters. This case study offers transferable insights for similar nutrient management challenges across the Northeast.

Lead Speaker Bio:

Erin Grimes is a Professional at Geosyntec Consultants based in Acton, Massachusetts, supporting the planning, design, and permitting of sediment and surface-water restoration projects across New England. Her work centers on pond dredging, beneficial reuse of dredged materials, permitting strategy, and stakeholder engagement, drawing on Geosyntec’s extensive pond and lake remediation experience in the northeast United States. She is a co-author of the Miacomet Pond dredging abstract for the New England Interstate Water Pollution Control Commission’s Nonpoint Source Conference, focusing on nutrient management, and beneficial reuse.



<p><u>Lead Presenter</u> Alexandra Gulachenski New England Environmental Finance Center</p>	<p><u>Co Presenter</u> Emma Williamson Town of Auburn</p>	<p><u>Co Presenter</u> Stefanie Covino Blackstone Watershed Collaboration</p>
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PRESENTATION TITLE: BUILDING COMMUNITY CAPACITY TO ADDRESS STORMWATER ISSUES WITH NATURE-BASED SOLUTIONS

ABSTRACT:

This session will provide an overview of the SNEP Network Stormwater Planning Series, a free cohort-based training and technical assistance model designed to build local capacity to address stormwater challenges using nature-based solutions. Drawing on four years of implementation, presenters will share key lessons learned and a case study from supporting communities through planning, design, and early implementation phases.

Launched in 2021, the Stormwater Planning Series supports municipalities and Tribes in better understanding their stormwater challenges and developing locally driven, cost-effective solutions. Through no-cost peer-to-peer learning and direct technical assistance, participating communities work with SNEP Network partners to identify priority drainage areas and develop a conceptual design for a small-scale green infrastructure stormwater retrofit. The series puts into practice the principles outlined in the Network’s New England Stormwater Retrofit Manual, emphasizing practical, community-led planning, for small-scale green infrastructure stormwater abatement systems (retrofits). Since its launch, 17 communities have participated in the series, with many receiving follow-on support for site assessments, engineering design, and pathways to funding and implementation. The session will include a case study co-presented with current Stormwater Planning Series participant, the Town of Auburn and SNEP Network partner organization, Blackstone Watershed Collaborative. They will share their experience in the series and how the resulting conceptual retrofit design is being leveraged as a pilot to implement and scale green infrastructure retrofits in 20–30 locations across town.

The Southeast New England Program (SNEP) Network is a regional partnership serving Rhode Island and southeast Massachusetts, bringing together over 16 local technical assistance providers to deliver no-cost training and technical assistance to municipalities, Tribes, and organizations seeking to build capacity and pathways for funding or financing for stormwater and ecological restoration projects. The SNEP Network is supported by U.S. EPA Region 1 and hosted by the New England Environmental Finance Center.

Lead Speaker Bio:

Alex Gulachenski is the Senior Program Manager of the SNEP Network Program at the New England Environmental Finance Center (NEEFC) based at the University of Maine in Portland. Alex holds a M.S. in Ecology from the University of California, Davis and holds over 7 years of experience in program management, community outreach and education, and climate adaptation and resilience. The NEEFC has been providing training, technical assistance, and capacity building for over 22 years to communities, tribes, and small businesses, with a focus on underserved, marginalized, and rural communities that are most in need of assistance and added capacity. The mission of the NEEFC is to meet communities where they are at, build capacity at the local level and to move projects forward from planning to funding/financing, and ultimately to implementation.



<u>Lead Presenter</u> Sean McCormick Rhode Island Department of Environmental Management	<u>Co Presenter</u> Betsy Dake Rhode Island Department of Environmental Management	<u>Co Presenter</u>
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PRESENTATION TITLE: LEVERAGING SECTION 319 AND STATE BOND FUNDING WITH RURAL DEVELOPMENT FUNDING TO REMOVE FAILED ON-SITE SYSTEMS IN THE MOUNT HOPE BAY WATERSHED

ABSTRACT:

Coastal waters in Mount Hope Bay located adjacent to the Town of Tiverton were assessed as impaired by the Rhode Island Department of Environmental Management due to bacteria (fecal coliform) and nitrogen. The existence of cesspools and failing/underperforming on-site wastewater systems was identified as one of the major sources of the pollutants. The Tiverton Wastewater District began installing sewer mains as well as residential connections in 2020 under USDA Rural Development Funding. However, due to pandemic-related delays and unforeseen rises in constructions costs, the original award would not be sufficient to complete the project. RIDEM was able to supplement funding through the Section 319 Non-Point Source Management Program and the Narragansett Bay & Watershed Restoration Fund (a state bond- funded grant program). When the Tiverton Wastewater District contacted RIDEM regarding potential funding opportunities, RIDEM communicated with EPA to verify that the scope of the project (limited just to 78 private low-pressure lateral connections within residential properties) would be eligible under Section 319 funding.

Lead Speaker Bio:

Sean McCormick has a BA in English from the College of Holy Cross in Worcester, MA and a Masters of Environmental Science and Management from the University of California Santa Barbara. He has worked at the Rhode Island Department of Environmental Management for four years managing implementation grant programs (Narragansett Bay & Watershed Restoration Fund, Wastewater Treatment Facility Resilience Fund, Section 319 NPS, and the Ocean State Climate Adaptation and Resilience Fund).



<u>Lead Presenter</u> Geoffrey Glover Horsley Witten Group	<u>Co Presenter</u> Jonas Procton Horsley Witten Group	<u>Co Presenter</u>
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PRESENTATION TITLE: COASTAL RESILIENCY AND HAZARD MITIGATION PLANNING

ABSTRACT:

Is it a bog? Is it a pond? Is it a plane? No! It's a stream! Since the mid to late 1800's cranberry cultivation has been a mainstay along coastal New England, particularly in southeastern Massachusetts and Cape Cod. Most of those cranberry bogs were built by altering natural riparian and wetlands resources. By the late twentieth century, as the cranberry business became more competitive with the advent of farming out of New England and southeastern Massachusetts property values have risen, many local historic bog owners have stopped cultivating cranberries and left their bogs to transition back to something wild. However, the impacts of cranberry farming on the prior natural wetlands systems and other human interference from dams, culverts, and development of "waterfront" property often prevent the bogs from returning to their original wetland form.

Red Brook is a small stream on the Cape which flows through a series of historic cranberry bogs and forms the border between the Towns of Mashpee and Falmouth. HW has been working with the two municipalities, the Association to Preserve Cape Cod, and others to restore the entire length of Red Brook to naturalized conditions to the maximum extent practical. The first phase of that restoration includes a culvert replacement and dam removal at the stream crossing at Red Brook Road. This first phase has been a springboard to the development of subsequent restoration plans for the former cranberry bogs upstream and downstream of the Red Brook Road culvert replacement and dam removal project. Join us to learn more about this collaboration of ideas, planning efforts, and engineering techniques to improve Red Brook.

Lead Speaker Bio:

Geoff is a civil/environmental engineer specializing in site design, grading and drainage systems, geomorphology, and hydrologic/hydraulic modeling. Geoff works on a variety of projects with a focus on stormwater management, water resources, and civil/site design. Projects include stormwater retrofits in the Boston and greater Boston area, site design for paths, roadways, and parking areas in various locations around Massachusetts, as well as stormwater management and restoration efforts throughout New England and the US Virgin Islands.



<u>Lead Presenter</u> Juanita Urban-Rich School for the Environment, University of MA Boston	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: A STORY OF PLASTIC DEBRIS, A NON-POINT SOURCE POLLUTANT, ALONG THE NEPONSET RIVER

ABSTRACT:

Plastic pollution is a global environmental problem and most of the plastic that goes to the ocean is derived from land-based sources. Rivers are important conduits for transporting plastic from in-land to coastal regions. Macro (> 5mm) plastic debris while being transported often fragments into smaller microplastic pieces. Their impacts on the environment, although very real, are poorly known due to their great diversity. In the 1950s, the emergence of plastic marked the advent of the consumer society. Plastic production has exponentially increased. It is estimated that 1 million tons of macro plastics (> 5mm) are discharged into the ocean each year by rivers. This is mainly packaging (e.g. bags, bottles, food wrappers, foam). Since most packaging is single use, it commonly ends up in the environment where it becomes non-point source pollution as it can blow into rivers or be transported by stormwater into rivers where it flows away from its origin. Once in the river plastic debris can enhance damming and flooding, be ingested by wildlife or fragment in smaller pieces. To help reduce plastic pollution we need to educate people about plastic debris- what is there, where is it and what is it doing?

Not all plastic is the same, and a river is not the same as it flows from its headwater to its mouth. In collaboration with the Neponset River Watershed Association Community Water Monitoring Network Program (NepRWA CWMN) we monitored macro-debris at sampling sites along the Neponset River with the goal of engaging community members in science and educational material development and creating educational materials that could be used to Tell the Story of Plastic Pollution in our local waterways. Members of the CWMN took pictures of banks along the river while collecting their monthly water samples. These images were used to monitor the type of macro debris present at sites along the river and to create a game of "Finding the Trash". In addition, a kayaking trip along the river from near the headwaters to the mouth, recorded debris. These images were used to create a story map showing how plastic debris can accumulate and how the type of material can change along the way. This presentation will show how this can be used to provide a creative local storytelling product that can be used for outreach, education and management of plastic pollution in rivers.

Lead Speaker Bio:

Juanita Urban-Rich is an Associate Professor in the School for the Environment at the University of MA Boston. Her research focuses on microplastic pollution – abundance, distributions and impacts in coastal habitats and marine life. Juanita earned a Ph.D. in Biological Oceanography from the University of Maryland, a Master of Science in Biology from Memorial University of Newfoundland Canada and a B.S. in Marine Sciences from Southampton Campus of Long Island University.

CO-AUTHORS

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<p><u>Lead Presenter</u> Jason Steiding Mashpee Wampanoag Tribe</p>	<p><u>Co Presenter</u> Dale Oakley Jr Mashpee Wampanoag Tribe</p>	<p><u>Co Presenter</u> Kimberly Groff, Ph.D., CCP Southeast New England Program Network</p>
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PRESENTATION TITLE: WATERSHED PLANNING, PARTNERSHIPS AND PUBLIC EDUCATION TO ADDRESS NON-POINT SOURCE IN A MASHPEE WAMPANOAG TRIBE ANCESTRAL POND

ABSTRACT:

This session will focus on watershed planning and long-term partnerships, community engagement, capacity building, and effective non-point source (NPS) storytelling to address multiple sources of NPS pollution in Santuit Pond in the Town of Mashpee. The name “Santuit” originates from the Wampanoag word “Sachem,” meaning spiritual leader. The land and water resources have been home to the Mashpee Wampanoag Tribe (MWT) for over 12,000 years, and the Tribal Trust Lands and associated waters are sacred and culturally essential to the Tribe. The pond is also valued by Mashpee residents, making its environmental health critical to both Tribal life and the broader community. Santuit Pond has been degraded by current and historical polluted runoff from surrounding residential development. For decades, phosphorus entered the pond from septic systems, stormwater runoff, and agriculture, resulting in the accumulation of phosphorus-laden sediments. This nutrient pollution is the primary cause of recurring harmful algal blooms, which negatively affect recreation, aquatic life, and Mashpee Wampanoag cultural practices. To address these water quality challenges, the Santuit Pond Watershed-Based Plan was developed through a partnership between MWT and the Town of Mashpee, with technical assistance from the SNEP Network, The Nature Conservancy, TRC Group, and Fuss & O’Neill. The Mashpee Wampanoag Natural Resources Department has played a critical leadership role in advancing efforts to protect and enhance water quality. SNEP Network technical assistance to the MWT has included feasibility analysis of internal phosphorus controls, participation in stormwater planning training, development of baseline monitoring and alum dosing studies, and support for public education. Together, alum treatment, stormwater retrofits, sewer implementation, and cranberry bog re-purposing are anticipated to reduce phosphorus loads by approximately 80%. This partnership enabled MWT, in collaboration with the Town of Mashpee, to serve as lead applicant on a \$700,000 Section 319 NPS Grant awarded by MassDEP to implement nutrient inactivation treatment beginning next year. Public outreach and education have been central to this work and have included workshops, mailers to pond residents, public presentations, and web-based content, including the Santuit Pond Learning Hub and Low Impact Development for Homeowners resources.

Lead Speaker Bio:

Jason Steiding is a native Cape Codder and eagle clan member of the Mashpee Wampanoag Tribe. In his role as Natural Resources Director of the Mashpee Wampanoag Tribe he strives to protect the natural resources that have ensured the survival and well-being of his People since time immemorial and to sustain these resources for the next seven generations. Jason oversees all natural resource related activities for the Mashpee Wampanoag Tribe including fish and wildlife management, habitat protection and restoration, water resource management, food sovereignty, diadromous fish recovery, and Tribal development and environmental policy analysis and implementation.



<u>Lead Presenter</u> Shannon Hogan Urban Harbors Institute	<u>Co Presenter</u> Nicole Taylor The Johns Hopkins University School of Medicine	<u>Co Presenter</u>
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PRESENTATION TITLE: FROM RESEARCH TO PRACTICE: DESIGNING A GREEN INFRASTRUCTURE MICROCREDENTIAL TO ADDRESS PLASTIC POLLUTION AND WORKFORCE GAPS

ABSTRACT:

Green infrastructure (GI) plays a critical role in addressing nonpoint source pollution, flooding, and water quality. Recent research shows that GI systems can also capture and retain plastic pollution. The effectiveness of these systems over time depends on informed management and community stewardship, but there is a need to enhance education for those responsible for maintenance as new research and knowledge focused on GI emerges. This project responds to that need through a gap analysis of current resources and trainings available to the local workforce along with the development of a workforce-focused microcredential framework on plastic pollution in green infrastructure. Through a collaboration between the University of Massachusetts Boston’s School for the Environment, College of Education and Human Development, and the Urban Harbors Institute, this work combined environmental research with instructional design and community engagement. Interviews were conducted with municipal agencies in the City of Boston, education and workforce training providers, community-based organizations, and GI credentialing bodies. Through community engagement and additional review of existing resources, a gap analysis was performed to better understand current education offerings, workforce needs, and barriers to participation. A consistent gap that was revealed: most existing programs emphasize GI design and construction, while offering limited, locally relevant training on maintenance, pollution management, and troubleshooting. The microcredential framework integrates local resources and applied learning activities (online and field-based experiences). Community engagement and employer interaction were intentionally embedded throughout the curriculum as essential components of effective training. This session will share who we engaged with and how, what gaps were identified, how the microcredential was structured, and how discussion-driven community learning can strengthen GI maintenance capacity. Attendees will leave with a replicable model for connecting research, workforce development, and community participation to support more effective and equitable green infrastructure management.

Lead Speaker Bio:

Shannon Hogan is a Research Associate at the Urban Harbors Institute (UHI), an applied research institute at the University of MA Boston in the School for the Environment. At UHI, Shannon focuses on and has expertise in marine debris and plastic pollution, coastal planning, science education and community engagement. Shannon regularly works as part of multidisciplinary teams that include municipal staff, community members, associations, scientists, engineers, and subject matter experts focused on a variety of topics including water quality, climate change, natural resources, outreach and access, etc. Shannon earned a M.S. in Marine Science and Technology from the University of MA Boston and a B.S. in Environmental Sciences with a concentration in Water Resources from the University of Vermont.

CO-AUTHORS

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<p><u>Lead Presenter</u> Beth Kirmmse Fuss & O'Neill</p>	<p><u>Co Presenter</u> Lynn Rae Fuss & O'Neill</p>	<p><u>Co Presenter</u> Brenda Geer Eastern Pequot Tribal Nation, Vice-Chairwoman</p>
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PRESENTATION TITLE: COMMUNITY AT THE CENTER: A CO-DESIGN APPROACH FOR CLIMATE ADAPTATION PLANNING IN A SHARED WATERSHED

ABSTRACT:

This project engaged a diverse community across four municipalities and two tribal nations in the upper Mystic River Watershed to collaboratively identify climate change risks, understand local vulnerabilities, and develop a prioritized, feasible action plan for watershed-wide adaptation and mitigation to increase resilience to risks from flood, drought, and extreme heat. Under the umbrella of the Alliance for the Mystic River Watershed, the four municipalities and two Tribal Nations who share the watershed were able to work together with the consultant team through a series of engagement activities. In contrast to a top-down planning approach to vulnerability assessment, the methodology used utilized a grassroots-driven process where community members were consistently central to decision-making. This innovative engagement was facilitated through a series of dynamic methods, including an all-ages "scavenger hunt" which asked participants to map local assets and risks via an app designed to feel like a game, design circles which brought together community members of all-ages, the formation and development of a Community Action Team (CAT) which held gatherings to discuss the project, field visits to vulnerable sites open to all members of the community, and an intensive workshop that empowered participants from the municipalities, emergency responders, and the general public to assess assets and prioritize solutions. The development of a first-of-its-kind in New England Quality Assurance Project Plan (QAPP) that outlined the facilitated co-design of the project work served as a cornerstone to the project's success. Specifically, the QAPP explicitly recognized and legitimized Tribal knowledge, data, and ways of knowing, addressed the protocols for exchanging information inherent to the cultural heritage of the Tribal Nations, and ensured its equitable integration into the analysis. Through these inclusive engagements, the project successfully identified watershed vulnerability to climate and natural hazard impacts, brainstormed potential solutions, evaluated adaptation and mitigation options, and assessed their feasibility. The primary outcome is a community-informed, prioritized plan that addresses current and future climate risks to collectively-identified critical watershed assets .

Lead Speaker Bio:

Beth Kirmmse, RLA, ASLA, WEDG

Beth Kirmmse is an Associate at Fuss & O'Neill, a 430+ person multi-disciplinary consulting engineering firm with offices throughout all six New England states. As a licensed Landscape Architect, Beth's experience includes all phases of design and implementation from Concept Development to Construction Management. Over her 25+ year career, Beth has focused on Environmental and Climate Resilience Planning and Design and has managed multiple project teams whose work addressed risks to climate changes being experienced throughout the New England area. In addition to her work in the design and construction fields, Beth also has a background in Government and Environmental Policy and Business Management. Beth earned a Bachelor of Arts in Government at Smith College and her master's in landscape architecture at Rhode Island School of Design.

In her role as the Project Manager for the Mystic River Watershed Vulnerability Assessment, Beth directed the development of collaborative engagement methodologies and events and facilitated a process rooted in co-design with the community.



<u>Lead Presenter</u> Asa Eslocker Weston & Sampson	<u>Co Presenter</u> Emily DiFranco Weston & Sampson	<u>Co Presenter</u>
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PRESENTATION TITLE: MULTIMEDIA STORYTELLING FOR NPS OUTREACH & EDUCATION: A CASE STUDY EXPLAINER VIDEO FROM ELIZABETH CITY, NC

ABSTRACT:

Nonpoint source pollution and nature-based solutions (NBS) are often difficult to communicate to the public – until people can see how these strategies look, feel, and function in their own neighborhoods. This is the power of thoughtful storytelling. This session will feature a four-minute educational explainer video, Nature-Based Stormwater Solutions for the Future of Elizabeth City, created through the NC Resilient Coastal Communities Program. Using drone footage, community interviews, motion graphics, and a youth-led rain garden installation, the film translates NPS and NBS concepts into an accessible, place-based narrative that inspires residents to take action. Building upon national presentations on the power of storytelling for planning and inclusive engagement, this session demonstrates how human-centered narrative media can bridge the gap between technical data and lived experience for broad, diverse audiences. Attendees will learn applicable storytelling structures, the latest neuroscience of storytelling, and replicable strategies for using visual storytelling to strengthen environmental outreach, elevate community voices, and motivate stewardship to help improve NPS education and drive meaningful behavioral change.

Lead Speaker Bio:

Asa R. Eslocker is a multidisciplinary design, planning, and communications professional whose career bridges landscape architecture, urban design, journalism, and award-winning documentary filmmaking. A two-time National News Emmy Award recipient with more than 20 years of storytelling experience, Asa integrates human-centered narrative techniques with place-based planning, videography, community engagement, and strategic communications to help communities understand complex environmental and resilience challenges. He has produced more than 40 community-based films and explainer videos for federal, state, and municipal agencies specializing in transforming technical content into accessible, emotionally resonant stories. Asa has been invited to deliver keynote addresses and conference sessions nationwide, including APA National Planning Conference, APA-VA, ASLA National Conference, AIA Architecture Exchange East, SMPS, and others. His work embodies his central belief that storytelling is one of the most powerful tools we have for inclusive public engagement, environmental education, and shaping healthier, more resilient communities.



<u>Lead Presenter</u> Alex Simpson Weston & Sampson	<u>Co Presenter</u> Janet Moonan Weston & Sampson	<u>Co Presenter</u>
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PRESENTATION TITLE: FROM FUNDING TO IMPLEMENTATION: MASSACHUSETTS CASE STUDIES IN NATURE-BASED SOLUTIONS FOR NONPOINT SOURCE POLLUTION REDUCTION

ABSTRACT:

In 2017, Massachusetts established a dedicated funding program for climate resilience, with nature-based solutions (NBS) identified as a key priority for reducing flooding while improving stormwater quality and nonpoint source pollution outcomes. Since its inception, the program has directed more than \$100 million toward projects that manage runoff, reduce pollutant loads, and restore natural hydrologic processes at multiple scales.

This presentation highlights selected case studies demonstrating how communities are using NBS to address nonpoint source pollution through integrated stormwater management. In Lynn, MA, watershed-scale modeling informed the construction of bioretention systems, porous pavement, and expanded street tree installations to reduce runoff volumes and improve receiving water quality, alongside climate-resilient redesign of a coastal park.

Framingham, MA completed a stream and wetland restoration project that improves pollutant attenuation and habitat function while providing an ADA-accessible boardwalk through an environmental justice neighborhood and incorporating public education elements.

Natick, MA has advanced regional and local NBS implementation through multi-community flood modeling and identification of scalable NBS strategies, recently prioritizing stormwater-driven water quality improvements in park and municipal facility designs along a major river. Fitchburg, MA developed a monitoring and maintenance program focused on evaluating the long-term performance of NBS practices for pollutant reduction, engaging DPW staff, community organizations, and STEM-focused high school students. In Boston, community-driven data and partnerships with local organizations and nonprofits have guided the identification of priority corridors for NBS implementation to address urban runoff and nonpoint source pollution, now advancing through design.

Collectively, these case studies illustrate how NBS can be strategically deployed to reduce nonpoint source pollution, improve water quality, and deliver co-benefits including climate resilience, environmental justice, and community engagement.

Lead Speaker Bio:

Alex Simpson is a Stormwater and Site Civil Engineer with over a decade of experience helping communities across New England, the Midwest, and Canada create stronger, more resilient places to live. Alex specializes in low-impact, sustainable solutions for drainage, flood protection, and resilient infrastructure, combining technical expertise with a strong commitment to nature-based design. As a Project Manager and Certified Floodplain Manager (CFM), Alex leads innovative, community-focused projects that prioritize performance, regulatory compliance, and long-term environmental stewardship.



<p><u>Lead Presenter</u> Tansy Remiszewski Department of Conservation and Recreation - Division of Water Supply Protection</p>	<p><u>Co Presenter</u> Brett Boisjolie Department of Conservation and Recreation - Division of Water Supply Protection</p>	<p><u>Co Presenter</u></p>
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PRESENTATION TITLE: WET GETS WETTER: ANTECEDENT MOISTURE CONTROLS ON WINTER HYDROLOGY AND WATER QUALITY IN A DRINKING WATER SUPPLY WATERSHED

ABSTRACT:

Annual precipitation across the Northeastern U.S. has increased in recent decades due to changes in climate as global temperatures rise. Models project continued increases in both total precipitation and the frequency and intensity of extreme rain events, with this trend expected to intensify in the latter half of the century. Here, we examine how changes to winter hydrology in a primary tributary for a drinking water reservoir are being driven by alterations to localized precipitation regimes, and how these changes influence sediment transport processes. Analysis of mean daily streamflow records for the East Branch Swift River (MA) from 1937 to present shows an overall increase in flow, with winter flows increasing 69% when compared to a pre-1960s baseline. While rain-on-snow events were initially investigated as potential drivers of increased winter flows, analysis revealed that antecedent moisture conditions exert stronger control over peak streamflow magnitude. These hydrological changes correspond with increasing turbidity trends documented by the Division of Water Supply Protection, with winter turbidity rising over the observational period and spring showing even stronger increases, suggesting water quality impacts that extend beyond the winter season. Results suggest that antecedent moisture conditions may drive winter hydrological change and shifting water quality dynamics across similar Northeastern watersheds.

Lead Speaker Bio:

Tansy Remiszewski (DCR-DWSP) is the Hydrologic and Meteorologic Monitoring Program Lead for the Quabbin Reservoir and Ware River watersheds, overseeing streamflow and climate data collection, analysis, and reporting. She holds an M.S. in Ecology from Utah State University and a B.S. in Wildlife Ecology and Conservation from UMass Amherst. Her research and fieldwork have taken her from remote desert rivers in Utah to coastal estuaries in Massachusetts, building expertise in aquatic ecosystem monitoring, water quality assessment, and environmental mapping using drone technology and geographic information systems.



<u>Lead Presenter</u> Marlene Krajewski CT DEEP	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: BUILDING BARNs AND FINANCIAL CAPACITY: HOW A CONSERVATION DISTRICT COMBINED 6 GRANTS TO MANAGE AGRICULTURAL NPS POLLUTION FROM A CONNECTICUT DAIRY FARM

ABSTRACT:

In a masterclass of leveraging resources to further Connecticut’s Nonpoint Source efforts, a Clean Water Act Section 319 NPS Grant-funded project was combined with five additional grant opportunities, in addition to a local farmer’s own contributions, to create a large scale agricultural NPS management project. The Project was completed in 2025, and included construction of a freestall barn, agricultural waste storage facility, milk parlor, and acquisition of additional necessary equipment for management of milk-heifer related waste, per the recommendations of an approved Watershed Based Plan.

The Broad Brook Watershed Based Plan Phase 2 identified the need for site-specific agricultural best management practices to manage water quality impairments, for a watershed that is primarily wooded and agricultural, with only a quarter of the watershed characterized as urbanized. Among the sites identified in the WBP was Roaring Brook Farm, a 53-acre farm in the southeastern portion of the Broad Brook Watershed, home to approximately 180 milk cows and young stock. The farm is bisected by a tributary to Broad Brook, which was impacted by agricultural runoff due to insufficient existing structure and waste management – and also by cows wading directly in the water.

Apart from Section 319 funding, the Project received funding from EQIP, Long Island Sound Futures Fund, and three additional smaller funding opportunities. Connecticut’s North Central Conservation District juggled each of these funding sources and their stipulations, all while bridging the relationship between the operator of this centennial farm and various state and federal agencies.

Lead Speaker Bio:

Marlene Krajewski is an Environmental Analyst at the Connecticut Department of Energy and Environmental Protection, where she primarily oversees projects funded by the Clean Water Act Section 319 Nonpoint Source Grant. She earned a B.S. in Environmental Science and Policy from Marist College, and an M.S. in Hydrology and Water Management from the University of Oklahoma.



<u>Lead Presenter</u> Gena Morin UMass Boston	<u>Co Presenter</u> Juanita Urban-Rich School for the Environment, University of MA Boston, Boston, MA USA	<u>Co Presenter</u>
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PRESENTATION TITLE: RETENTION OF MICROPLASTICS IN RAIN GARDENS: MESOCOSM STUDY AND FIELD STUDY

ABSTRACT:

Urban rain gardens are increasingly being implemented as nature-based solutions that mitigate stormwater runoff and contaminants. It is poorly understood how they play a role in retraining microplastics, and research remains limited. This research examines how rain garden design and rainfall intensity influence the vertical distribution and transport of microplastics within stormwater treatment systems. Microplastic concentrations are assessed across depth profiles in both a field-installed rain garden on Nantucket, Massachusetts, and a controlled mesocosm experiment at the UMass Boston Field Station. Field samples were collected from distinct functional zones in the in-town rain garden, including the central depression area, an isolated grass area, and the engineered flow pathway. The mesocosm, consisting of nine rain garden barrels seeded with microplastics, alongside three unseeded controls, was subjected to varied simulated rainfall intensities to evaluate microplastic retention and vertical transport. To assess potential biological implications, leachates generated from seeded microplastics were prepared and will be used in a laboratory-controlled toxicity experiment with *H. Azteca* to examine developmental responses. Together, this integrated study approach aims to improve the understanding of rain garden design and ecological risks in stormwater nature-based solutions. Previous studies have suggested that green infrastructure, rain gardens in particular, can filter out contaminants while stormwater infiltrates. However, research regarding the Nantucket rain garden that was installed on the island in 2023 has yet to be investigated. Looking at the influence rain gardens have on filtering stormwater will allow for insight into how well they function as bioorientation filters.

Lead Speaker Bio:

Gena M. Morin is a Master of Science candidate in Environmental Sciences at the University of Massachusetts Boston. Her thesis research examines the retention, transformation, and potential ecotoxicological effects of microplastics in green infrastructure systems, with a focus on rain gardens. Using a combination of controlled mesocosm experiments, laboratory-based microplastic extraction and polymer identification, and aquatic toxicity testing with *Hyalella azteca*, her work investigates how microplastics and associated leachates behave within stormwater treatment systems. Her research aims to inform the design and management of nature-based solutions by identifying potential trade-offs between pollutant mitigation and emerging contaminant risks, while also recognizing the concentration of microplastics present in rain gardens given different depths.



<u>Lead Presenter</u> Samantha Dow CT Department of Energy and Environmental Protection	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: RESILIENCE IN PLANNING FOR RESILIENCE IN WATER QUALITY: SUCCESSES AND CHALLENGES DURING THE COPPERMINE BROOK STORMWATER MANAGEMENT IMPROVEMENTS PROJECT

ABSTRACT:

Every project experiences unanticipated challenges that could not have been accounted for during initial planning stages. This presentation highlights successes and challenges encountered during the Coppermine Brook Stormwater Management Improvements project at Edgewood School in Bristol, Connecticut. The Farmington River Watershed Association (FRWA) received Section 319 funding and worked with the City of Bristol to complete the project in 2025, which included the installation of a 300-foot bioswale and four infiltrating tree wells on the school’s campus to improve water quality to Coppermine Brook. A learning guide was also developed as part of the educational outreach component. When the project was conceived in 2021, Edgewood School was an elementary school with an outdoor program that FRWA intended to engage with on educational programs alongside implementing stormwater BMPs. Since that time, the school underwent many changes resulting in FWRA scaling back educational outreach goals; FRWA also experienced significant challenges working with the City while installing the BMPs. Despite unanticipated challenges at the site and having to develop alternative solutions to accomplish project goals, FRWA successfully implemented stormwater BMPs, developed a 30-page guidebook that educates the community about the importance of stormwater management, and ran an educational summer camp program. FRWA anticipates using the site for future workshops and as a future demonstration project for municipalities within the state.

Lead Speaker Bio:

Sam has been an Environmental Analyst with the Watersheds program at the Connecticut of Department of Energy and Environmental Protection since February 2025. Prior to that, she has experience in environmental consulting working on ecological restoration, water resources, and climate resiliency projects. She has a background in geology and earned a B.A. from the University of Connecticut, a M.S. from Boston College, and returned to UConn for a Ph.D, specializing in fluvial geomorphology.



<u>Lead Presenter</u> Jenna Bartholomew CT Department of Energy & Environmental Protection	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: DEVELOPMENT OF BEST MANAGEMENT PRACTICES FOR CONNECTICUT STATE PARKS, BOAT LAUNCHES, AND BEACHES

ABSTRACT:

The Connecticut Department of Energy & Environmental Protection (CT DEEP) seeks to improve water quality at state parks, boat launches, and swimming areas. CT DEEP conducts weekly water sampling at state beaches to monitor levels of indicator bacteria; beaches close when levels exceed a defined threshold. With Section 319 funds, CT DEEP partnered with the University of Connecticut (UConn) Center for Land Use Education and Research (CLEAR) to develop a best management practices (BMPs) manual for state parks, boat launches, and beaches. CLEAR conducted low impact development (LID)/green stormwater infrastructure (GSI) retrofit assessments at four CT State Parks with swimming areas and/or boat launches. From these assessments, CLEAR developed Best Management Practices for Waterfront Connecticut State Parks, a guide designed to inform and recommend park supervisors and other land managers about stormwater runoff, LID, BMP siting, and other practices. Based off CLEAR’s recommendations, the CT DEEP Watersheds Program collaborated with CLEAR, CT DEEP’s Engineering Division, State Parks Division, and Water Monitoring Program to implement green infrastructure during an already planned parking lot reconstruction at Chatfield Hollow State Park. CT State Parks offer fantastic opportunities for the implementation of LID and GSI practices to improve water quality, protect recreational activities, and engage and educate the public.

Lead Speaker Bio:

Jenna Bartholomew serves the CT DEEP as an Environmental Analyst managing nonpoint source pollution projects in the Watersheds Program within the Bureau of Water Protection & Land Reuse. Jenna received a B.S. in Natural Resources from the University of Connecticut.



<u>Lead Presenter</u> Megan Gehrke VHB	<u>Co Presenter</u> Cambria Ung City of Cambridge	<u>Co Presenter</u>
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PRESENTATION TITLE: MUNICIPAL STORMWATER CONTROL MEASURE (SCM) INSPECTION AND MAINTENANCE (I&M) GUIDANCE

ABSTRACT:

This presentation will provide an overview of the Stormwater Control Measures (SCMs) Inspection and Maintenance (I&M) Guidance StoryMap, an online tool that allows a multimedia approach to content sharing. With increased regulatory requirements to meet water quality objectives, the number of SCMs installed is also increasing. As SCM inventories grow, cities and towns face mounting complexity in planning, coordinating, and carrying out effective I&M programs. This project, conducted by VHB with support from the City of Cambridge and the Charles River Watershed Municipal Stormwater Collaborative (CRWMSC), developed a web-based SCM I&M Guidance StoryMap to address these needs and support municipal practitioners. The guidance brings together established procedures, new multimedia resources, and downloadable tools for implementation, available to all municipalities interested in strengthening their I&M programs.

The project’s goal was to fill key gaps identified through a survey of CRWMSC members, which included the need for: consolidated, up-to-date guidance; strategies for managing private SCMs; approaches to building and coordinating inter-departmental I&M teams; and targeted, practical municipal tools. The resulting guidance consolidates existing knowledge, introduces new tools, and provides immediately usable resources for municipalities seeking to initiate, refine, or expand their SCM I&M programs.

The presentation will highlight the SCM I&M Guidance StoryMap's capabilities, leveraging a multimedia online platform to organize and present content. The StoryMap addresses: I&M program administration and inter-departmental coordination; budgeting for staff, equipment, and contracted services (including a template SCM I&M budget calculator); data management and tracking of SCM inventories; I&M procedures; staff training; maintenance-conscious SCM design and installation; and the regulatory framework governing public and private SCMs, including reporting and enforcement. Case studies from regional and non-regional municipalities illustrate innovative approaches to data management, prioritization, and I&M workflows. A second phase of the project included creating 5-minute instructional videos for SCM maintenance for subsurface infiltration practices and bioretention basins and adding them to the StoryMap.

Lead Speaker Bio:

Megan is an Environmental Scientist and Project Manager at VHB with experience in water resources, including watershed science and management, stormwater management, hydrogeology, and water quality. Megan supports a broad range of clients in environmental data management and analysis, geospatial analysis, environmental assessment, and environmental permitting.



<u>Lead Presenter</u> Daniel Buttrick Tighe & Bond	<u>Co Presenter</u>	<u>Co Presenter</u>
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PRESENTATION TITLE: THE MERRILL POND PROJECTS: RESTORING SINGLETARY BROOK

ABSTRACT:

Seven small ponds along West Sutton Road in Sutton, Massachusetts had many tales to tell. Located in the headwaters of the Blackstone River along Singletary Brook, they were used as cranberry bogs and for mill power. In the 1920s they were converted into the first scientifically-monitored warm water fish hatchery in the United States by what is now the Massachusetts Department of Fish and Game’s Division of Fisheries and Wildlife (MassWildlife). Later, cold-water fish became MassWildlife’s stocking focus, and the ponds reverted to public recreational use as the Merrill Ponds Wildlife Management Area (WMA). In 2016, MassWildlife began the process of renewal of the WMA by developing a master plan for its lower portion. The plan sought to balance public access wants and infrastructure needs with maintaining a diversity of wetland and habitat types, address significant stakeholder concerns about nutrients entrained in sediments and impacts to stormwater quality, and maintain the historical and scenic character of the area. These competing interests left the plan feeling over-constrained, but there was a path forward: rehabilitation of one dam and removal of four! After a few years of planning, design, and permitting, ground broke on the first construction contract in 2018, and the final erosion control blanket was unrolled in 2025. The result has been overwhelmingly positive, even leading to unexpected benefits in the end.

Lead Speaker Bio:

Daniel Buttrick is a civil engineer who works on ecological restoration, dam inspection/ design/ construction, and other civil infrastructure projects in the water environment. His experience extends to dam removal and rehabilitation, along with dam investigation, repair, and maintenance; design of bridges, culverts, and stormwater infrastructure; environmental impact assessment and documentation; watershed planning; environmental permitting; and industrial, municipal, and utility regulatory compliance and pollution prevention. He has performed dam inspections numbering in the hundreds. His work has also included the design of several parks, public access areas, boat ramps, and large dredging projects. He is a member of the Easthampton, Massachusetts Conservation Commission and served as a member of its adhoc stormwater committee.



<p><u>Lead Presenter</u> Laura Collins New England Environmental Finance Center</p>	<p><u>Co Presenter</u> Mark Dindorf Hart's Location</p>	<p><u>Co Presenter</u> Grace Little FB Environmental Associates</p>
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PRESENTATION TITLE: STORYTELLING, SCIENCE, AND STEWARDSHIP: A CREATIVE APPROACH TO PARTICIPATORY WATERSHED PLANNING IN THE UPPER SACO RIVER CORRIDOR

ABSTRACT:

The Upper Saco River corridor is one of New Hampshire’s most valued and vulnerable ecosystems. The Town of Hart’s Location encompasses approximately 11 miles of the Saco River and, despite being the smallest town in the state, is driving a regional effort to protect the long-term ecological integrity, water quality, and recreational value of the Saco River.

This presentation will share insights from an ongoing collaboration between Hart’s Location, FB Environmental Associates (FBE), the New Hampshire Department of Environmental Services (NHDES), and the New England Environmental Finance Center’s New England Water Infrastructure Network (NEWIN) to design and implement a community-centered, data-driven approach to integrated watershed management in a high use river corridor. Informed by the recommendations outlined in the 2023 Saco & Swift Rivers Corridor Management Plan, this effort leverages an interactive StoryMap platform to translate technical findings into a dynamic, multilingual tool that broadens public engagement in watershed stewardship.

With funding secured through the New Hampshire Clean Water State Revolving Fund (CWSRF), Hart’s Location is expanding the StoryMap into a centralized Saco River platform and interactive water quality dashboard. The dashboard will be informed by data generated through a community-led water quality monitoring program and will complement a concurrent Recreational Study and Management Plan being conducted by the Town of Conway. This ongoing collaboration demonstrates how storytelling, science, and stewardship can work together to strengthen watershed planning and implementation. The session offers practical guidance for other small communities across New England on combining technical expertise, community participation, and public education tools to move watershed planning from paper to practice.

Lead Speaker Bio:

Laura manages the NEEFC’s water infrastructure program, the New England Water Infrastructure Network (NEWIN), and provides direct technical, financial, and project management support for the region’s municipalities, utilities, and tribes. She helps communities navigate financing options for drinking water, wastewater, and stormwater projects and advance projects to the funding and implementation stage. She holds a Master's in Environmental Management from Duke University.