FALL 2025 NEWSLETTER

STORMWATER INNOVATION CENTER

Monitoring & Research | Water Quality Restoration| Education & Outreach | Training & Networking

INDRODUCING OUR NEWEST STAFF!

MALIA CAFASSO

TerraCorps Community Engagement Coordinator

Malia Cafasso joined the Stormwater Innovation Center (SIC) in late September as the TerraCorps/AmeriCorps Community Engagement Coordinator! She is from Dartmouth, MA, and holds a B.A. in Environmental Studies from Brandeis University. Malia is excited to get to know the RI community better and explore the ongoing stormwater initiatives.

During her service term to July 2026, she will be working on coordinating the RI City Nature Challenge, expanding and standardizing outreach materials, improving social media strategy, and supporting the Stormwater in Schools Program!

SARA HORVET

Outreach & Engagement Program Manager

Sara joined us in December as our new Stormwater Outreach and Engagement Program Manager. She is from Barrington, RI, and brings over 20 years of experience in water quality science, with expertise in nutrient impacts on estuaries and freshwater ponds. She holds degrees from Providence College and UMass Dartmouth-SMAST and has a strong background in laboratory operations and volunteer program management.

She looks forward to advancing stormwater research, supporting community monitoring, and expanding outreach to help Rhode Islanders understand and address stormwater challenges.

PROJECT UPDATES

SNEP WATERSHED IMPLEMENTATION GRANT (SWIG)

The Stormwater Innovation Center is proud to announce that we have received a 2025 SNEP Watershed Implementation Grant through the U.S. Environmental Protection Agency's Southeast New England Program (SNEP), in partnership with Restore America's Estuaries (RAE). This project reflects a partnership between Audubon Society of Rhode Island, Roger Williams Park Zoo, The Providence Parks Department, The Nature Conservancy of Rhode Island, Pawtuxet River Authority and Watershed Council, University of Rhode Island, the EPA's Atlantic Coastal Environmental Sciences Division (ACESD) Laboratory, the EPA Region 1 New England Regional Laboratory, and Carp Solutions.

This $254,253 grant will support our Carp Management and Water Quality Restoration Demonstration Project, which will explore the relationship between water quality and common carp in Roger Williams Park (RWP) ponds. Carp, known as "ecological engineers," can negatively impact water quality by disturbing sediments, uprooting aquatic plants, and releasing nutrients that promote harmful algal blooms. In 2024, electrofishing surveys in RWP and Zoo ponds identified a significant population of large carp. The next project phase will focus on selective carp removal from the Zoo wetland into Polo Lake.

For targeted carp removal, we will use a box net, which is a square net with a mesh bottom and mesh sides lined with weighted lines around each side. While the net normally lies on the bottom of the pond, its sides can be quickly lifted to trap carp that aggregate at the bait. Following carp removal, we will monitor water quality, nutrient levels, aquatic vegetation, and native fish recovery.

The project also includes fish tissue testing for contaminants such as heavy metals, PFAS, and cyanotoxins to assess safe and beneficial reuse options, including compost, fertilizer, bait, and energy generation. Beyond Roger Williams Park, this effort will serve as a regional model for invasive carp management in impaired water bodies across Southeast New England. Visit our website for project updates!

This project is supported by the Environmental Protection Agency as part of a financial assistance award totaling $254,253 with 100 percent funded by EPA. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, EPA or the U.S. Government.

PROJECT UPDATES

SNEP RESTORATION CAPITAL MINI-GRANT

Our former Seasonal Water Resources Monitoring Assistant, Jack Duncan, weighs a filter for total suspended solids analysis at Dr. Soni Pradhanang's Hydrology and Environmental Water Quality Laboratory through the University of Rhode Island's Department of Geosciences. Equipment is shared among stormwater project partners.

The Stormwater Innovation Center is proud to announce that we have received a 2025 SNEP Restoration Capital Mini-Grant through the U.S. Environmental Protection Agency's Southeast New England Program (SNEP) in partnership with Restore America's Estuaries (RAE).

This grant, totaling $4,928, has supported the purchase of a vacuum pump, high-precision analytical balance, drying oven, desiccator, portable UV lamp, and benchtop incubator! This equipment allows the SIC to complete time-sensitive analyses during and following storm events, such as incubating and reading results of bacteria tests, and filtering, drying, and weighing filters for total suspended solids (TSS) determination. These materials and equipment are used in collaboration with Dr. Soni Pradhanang's Hydrology and Environmental Water Quality Laboratory through the University of Rhode Island's Department of Geosciences.

This capacity will support the expansion of stormwater monitoring in overland flow and outfalls in Roger Williams Park & Zoo and the surrounding watershed. The SIC will be able to capture impacts of storms of differing magnitudes and intensities on pollutant loading, green infrastructure performance, and receiving water quality.

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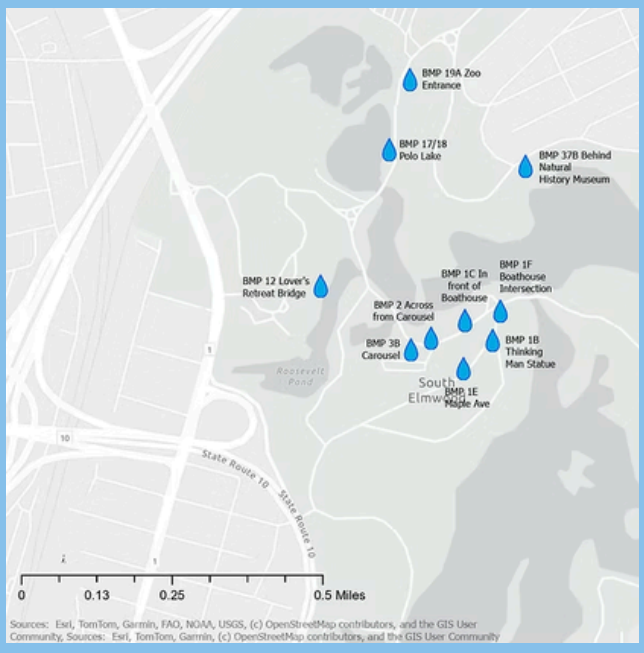
PROJECT UPDATES

GREEN INFRASTRUCTURE RETROFITS

Building on our past monitoring and research in Roger Williams Park, we identified 11 stormwater sites that are not functioning as intended. Due to design, construction, or maintenance issues, these areas are not effectively capturing or treating stormwater, limiting planned water quality improvements. With support from the Narragansett Bay Estuary Program and the Restore America's Estuaries SNEP Watershed Implementation Grant, we redesigned all 11 sites and have completed repairs to 6 of these sites to restore their function.

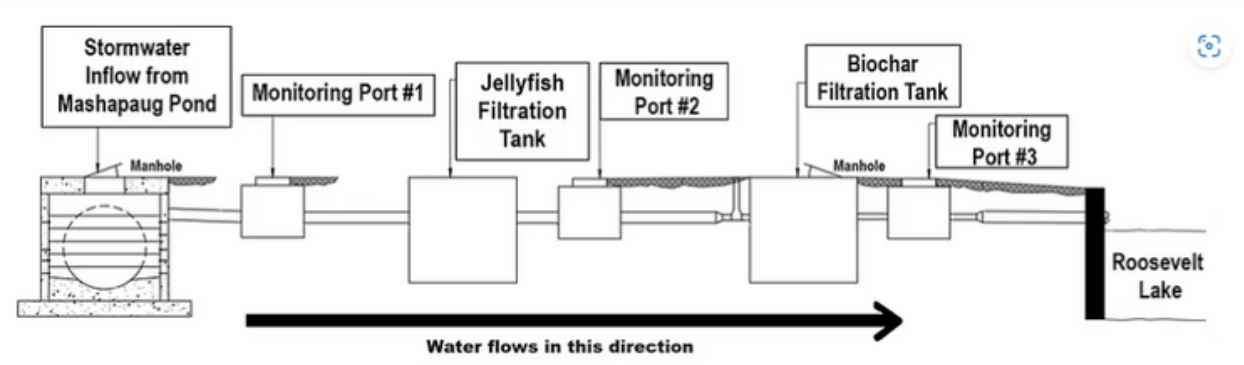
This project upgrades green stormwater infrastructure to significantly improve RWP's pond water quality. It also serves as an educational platform for planners, engineers, contractors, and maintenance staff, helping inspire similar projects across the region. View more details about these retrofits **here.**



PROJECT UPDATES

TREATMENT TRAIN

This stormwater treatment train diverts and filters runoff from Mashapaug Pond and nearby stormwater catch basins. During rain events, stormwater from the upper watershed is directed into the treatment train using modular stop logs, which can be adjusted to control the volume of diverted runoff. Monitoring ports installed between each stage allow for the collection of water quality data before and after filtration, helping to optimize maintenance practices and filtration performance. The site also serves as a hands-on training location for staff and municipalities across RI to learn about maintaining Jellyfish filters, named for filter cartridges that look like jellyfish tentacles.



Following construction, and with support from Dave Messier and Ian Kirby at the Rhode Island Department of Transportation (RIDOT), modifications were successfully completed at the diversion structure to enhance upstream head pressure while still allowing baseflow to reach Roosevelt Lake. Since these adjustments, many smaller storm events have successfully been diverted through the system that previously would have bypassed treatment. This past season, we completed monitoring across 10 storm events, measuring total suspended solids (TSS), turbidity, enterococci bacteria, nutrients, and water level, flow, and velocity data. These data will allow us to calculate pollutant removal capacity of the Jellyfish filter and biochar tank. Monitoring will pause for the winter and resume in the spring to understand system performance before and after routine Jellyfish filter cleaning. We partnered with Dr. Soni Pradhanang's Laboratory through the University of Rhode Island Department of Geosciences in completing this monitoring.

At the annual Stormwater Innovation Expo, the treatment train was a demonstration site for an outdoor presentation led by Caleigh McLaren about North Atlantic Aquatic Connectivity Collaborative (NAACC) Nontidal Culvert Assessment Field Data Collection

PROJECT UPDATES

CANADA GOOSE SURVEY

We are celebrating the 1-year anniversary of the Canada Goose Survey community science program! Since January 2025, we have had 20 dedicated volunteers conduct once-a-month surveys around Roger Williams Park, recording numbers of Canada Geese spotted in or near the park ponds, as well as human feeding activity and waterfowl counts. These data are important to track high goose populations, since they can impact water quality and public health via their waste, which can serve as fuel for harmful algal blooms and spread pathogens. Geese also contribute to shoreline erosion through trampling and grazing.

Volunteer survey route around Roger Williams Park

With these data, we were able to launch a new ArcGIS dashboard that lets you explore the data visually. We hope that this dashboard will help guide public education efforts, such as improved signage, discouraging feeding, and engaging park visitors in more community science monitoring!

View Data Here

PROJECT UPDATES

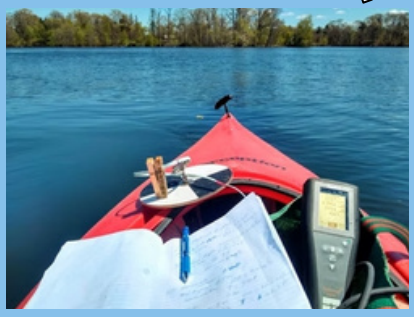
PROJECT DATA DASHBOARDS

This year, we expanded our data dashboards by updating existing tools and adding new ones to visualize data across our monitoring programs. Explore the dashboards below and on our website.

Watershed Watch

The SIC works closely with the University of Rhode Island Cooperative Extension by participating in their Watershed Watch program, a scientist-led volunteer water quality monitoring program. Trained community scientists sample weekly for dissolved oxygen, temperature, and chlorophyll-a. They also sample monthly for nutrients, bacteria, alkalinity, and pH from May through October.

View Dashboard Here



Cyanobacteria Monitoring

The Nature Conservancy and the Audubon Society of Rhode Island collaboratively conduct weekly cyanobacteria monitoring at eight water bodies in the Providence/Cranston area, typically from June through November. This monitoring follows the EPA's Cyanobacteria Monitoring Collaborative protocol.

View Dashboard Here

Mashapaug Pond Buoy

In partnership with the EPA's Atlantic Coastal Environmental Sciences Division Laboratory, the Mashapaug Pond water quality buoy continuously measures eight key parameters that help track changing conditions in the pond and detect potential harmful algal blooms (HABs) over time. The buoy's baseline data provide a critical foundation for assessing how these efforts influence the pond's health and long-term water quality trends.

View Dashboard Here

COMMUNITY

RAIN HARVEST FESTIVAL

On September 28th, we hosted another successful annual Rain Harvest festival in Roger Williams Park! Visitors participated in making chalk murals, listening to live music, observing live animals, and engaging with over a dozen local community organizations with efforts to improve water quality and natural systems in our communities. The festival is made possible through our sponsors and partners, the Providence Parks Department, and the Rhode Island Department of Transportation (RIDOT).

Young festival attendees enjoy an art activity at the People's Port Authority table

ANNUAL STORMWATER EXPO

On October 8th, the SIC and Providence Parks Department hosted the annual RI Green Infrastructure Coalition's Stormwater Innovation Expo! The 2025 theme was "Climate Resilience in Rhode Island – We've Got This!"

The day was filled with meaningful connections, innovative technologies, expert services and products, and community-driven solutions from municipalities and non-profits across New England. Attendees could choose between rotating indoor and outdoor sessions and attended a presentation by keynote speaker Kara Runsten (Municipal Vulnerability Preparedness (MVP) Director, Commonwealth of Massachusetts).

Expo attendees gathered to listen about the Roger Williams Park Zoo Stormwater Master Plan presented by Molly Welsh and Brian Kuchar

COMMUNITY

Building Futures Partnership

In early November, we held a hands-on training with a Building Futures RI student cohort, with a focus on surveying techniques and the critical role of stormwater infrastructure inspection and maintenance. After learning surveying basics in the classroom, participants applied their skills at the bioswale site on the Building Futures Tree Farm along the Woonasquatucket River. This swale carries stormwater runoff and overflow from Valley Street to a Narragansett Bay Commission structure, which was filled with sediment and vegetation, ultimately reducing its effectiveness.

Building Futures students learn the fundamentals of surveying and grading by using a laser level in a real-world setting, applying these skills directly to a green infrastructure bioswale.

Referencing the original design plans, the students completed a site survey, installed a permeable liner, and restored the swale to improve flow, enhance filtration, and reduce localized flooding along Valley Street.

VOLUNTEER HIGHLIGHTS

Watershed Watch

Kayla Winslet

"It's a really good project. I love the park and want to do whatever I can to help."

Ian Lyle

"I wanted to get my feet wet and hands dirty, and have a natural connection to the environment I am in so often."

Helena Willis

"I enjoy the science and being an active participant in the program."

Canada Goose Survey

"One of my favorite memories from this year's Canada Goose Survey was bringing along my friends' daughter, Ivy. She eagerly helped document the different waterfowl we spotted and even assisted a group of Graylag geese as they crossed the road!" - Lindsay Dulude

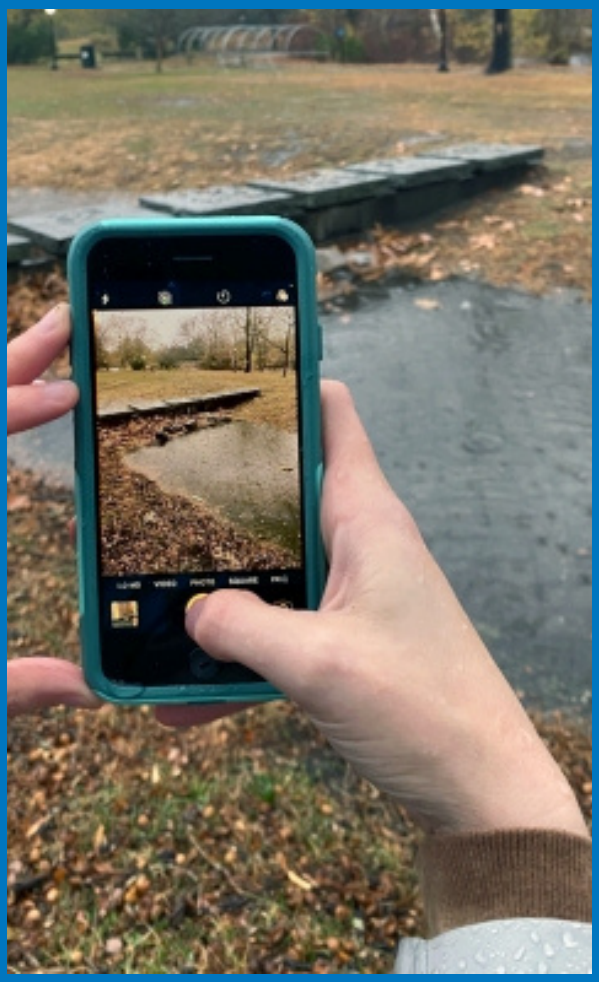
GET INVOLVED

Volunteer with RainSnap!

Are you passionate about protecting local waterways? RainSnap invites you to get involved in a unique community science initiative where your observations make a difference!

As a RainSnap volunteer, you'll document stormwater flow at green infrastructure sites during heavy rain events using your smartphone. These videos are uploaded to RainSnap.org, where they are used by stormwater professionals like city planners, engineers, and environmental scientists to optimize stormwater management and keep pollution out of our waterways.

No prior experience is required! By volunteering, you'll contribute valuable data and join a community dedicated to making a cleaner, greener future.



Register today at https://rainsnap.org/join-rainsnap/

STAY IN TOUCH

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INTERESTED IN VOLUNTEERING?

Contact shorvet@asri.org for more information!

Stormwater Innovation Center