



JANUARY 2018

WATER PAGES eNEWSLETTER



Royce Brook Green Infrastructure Projects focus on Hillsborough Township

The Royce Brook is a tributary to the Raritan River. Patricia Woods of Rutgers Cooperative Extension (RCE) of Somerset County, Christopher Obropta and staff of the RCE Water Resources Program, and Tobiah Horton, Extension Specialist with the Rutgers Department of Landscape Architecture have been involved in green infrastructure projects to reduce stormwater runoff to the Royce Brook in Hillsborough Township. To best determine where to place green infrastructure practices, the team relied on the RCE Water Resources Program's impervious cover assessment and reduction action plan for Hillsborough (2015) and the Royce Brook Watershed Restoration Plan Stormwater Basin Assessment Summary (2015).

A 2,000 square foot rain garden was installed in May 2015 in the front of the Hillsborough Municipal Complex. The rain garden is 8,270 square feet and disconnects 15,000 square feet of impervious surfaces. As in-kind assistance, the



Homeowner during a rain garden rebate design session with Christopher Obropta discussing a rain garden design



Homeowner during a rain garden rebate design session with Tobiah Horton, Rutgers Department of Landscape Architecture, discussing a rain garden landscape design

Hillsborough Township Parks Department spent nine days with three men for a total of 131 man hours to help with the rain garden. They also rented a track hoe, which cost \$1,805.

A residential rain garden rebate program has provided education to residents and included the installation of rain gardens within the Township. The program consisted of an initial educational session followed by a design session. During the design session, an engineer provided technical assistance to design the garden for the individual home. During the design session, the homeowners also meet with a landscape architect who worked with them to develop a landscape plan for their yard. In its second year, the program focused on the Hunts Pond and Fox Chase Pond area.

The next phases of the grant will seek to restore the shoreline at Hunts Pond and naturalize detention basins in the area.



Rain gardens installed by homeowners who participated in the rain garden rebate program within the Hunts Pond area



Rendering of the Phase I Restoration at Hunts Pond developed by the RCE Water Resource Program

Reduce Local Flooding, Improve Clean Water Resources

*FREE workshop for Environmental Commissions,
Green Teams, Municipal Employees and Residents*

Mayor Ras J. Baraka,
the Municipal Council,
and the Newark Office
of Sustainability invite
you to discuss:



- *Managing flooding*
- *Preventing raw sewage pollution in local waterways*
- *Combined sewer overflow basics*
- *Green infrastructure solutions, and*
- *What residents, environmental commissions and green teams can do to help reduce the impact of flooding and improve local water quality*

Monday, January 29, 2018 from 6:00-8:00 pm
(5:30 for registration, light fare, and networking)
Newark City Hall First Floor Rotunda
920 Broad Street, Newark, NJ 07102

Program includes:

- **Stormwater Management, Dr. Christopher Obropta, Rutgers Water Resources Program**
- **"Sewer in a Suitcase" demonstration — Rosana Da Silva, Rutgers Water Resources Program**
- **Green Infrastructure Practices — Dr. Amy Rowe, Rutgers Cooperative Extension of Essex and Passaic Counties**

To sign up for this *free* workshop, contact ANJEC at
973-539-7547 or info@anjec.org.



Student interns, Gerardo and Alex, work in pairs to

Neshanic River Watershed Water Sampling

During the 2017 summer internship cycle, the RCE Water Resources Program interns were tasked with sampling seven (7) locations in the Neshanic River Watershed. The long days of sampling involved learning how to use unfamiliar monitoring equipment, wearing thigh high waders in 90 degree and above weather, and sometimes treading into rough and high waters, and they always managed to do it with a great attitude and

monitor stream flow.

eager interest.



Local wildlife was often found during sampling days along the Neshanic River.



Student interns cross the river to set up their flow measurement markers.

The Neshanic River is fed by three smaller tributaries: First Neshanic, Second Neshanic, and Third Neshanic, which are also fed by smaller tributaries. Staff members Chris Perez and Liz Pyschnik led the interns on sampling days to seven locations within the Neshanic River watershed. The sampling sites ranged from narrow tributaries to wide streambeds, and they all had features that changed with the weather. Some days the waters moved at a glacial pace, and on other days they were so deep and wide that stream flow could not safely be measured.

The parameters that were measured were stream flow velocity, width from bank to bank, depth, *E. coli*, total phosphorus, total suspended solids, temperature, pH, and dissolved oxygen. The results of this monitoring can be used to infer stream health, and when recorded over an extended period of time, the results can give a good picture of seasonal fluctuations in stream health. The interns learned how to properly collect these samples safely and without contamination and how to take measurements using a wading rod, a dissolved oxygen meter, and a pH meter. Having the interns help with this project made the collection of data much easier with the addition of their helpful hands and their patience in dealing with summer mosquitos and ticks, wearing waders all day, and occasionally tumbling into the streams. The data they helped collect is currently being analyzed before being reported to our project partner, the North Jersey Resource Conservation & Development Program.

Check out the [Neshanic Watershed Map](#)

Municipal Action Teams' Green Infrastructure Initiative Updates

Camden SMART (Stormwater Management and Resource Training) partners have been focusing efforts on developing a plan for monitoring and maintaining more than 50 green infrastructure projects now installed throughout the city. A combination of volunteers,

Municipal action teams have been formed to foster collaboration and collective action that helps the

trained community members, and contractors will be necessary to ensure that green infrastructure projects continue to provide benefits to the community. In addition, partners are in the early stages of planning the 2018 Camden Environmental Summit. In March, rain barrel workshops and installations will begin again with funding from the National Fish and Wildlife Foundation and a partnership with the Philadelphia Horticultural Society. The partners are also continuing design efforts in partnership with the Trust for Public Land for green infrastructure improvements at two Camden schools.

Gloucester City Green Team are gearing up for installing green infrastructure projects in spring 2018. Through a NJDEP 3 19(h) grant to the Camden County Soil Conservation District, the partners are finalizing plans for the implementation of rain gardens, depaving, and tree plantings throughout the city. Projects will be installed in partnership with the Department of Public Works, School District, and the City Tree Committee.

Harrison TIDE (Transforming Infrastructure and Defending our Environment) partners discussed an opportunity to engage the town council to present on the rain garden installation at the Public Library. Partners also discussed grant funding opportunities that can support additional green infrastructure projects and outreach efforts. A rain barrel workshop for Harrison residents is being scheduled for early spring.

Jersey City START (Stormwater Treatment and Resiliency Team) discussed the 2018 Year of Energy efforts that the city will be focused on, but will continue to promote green infrastructure initiatives through the 2017 Year of Water plan. Several green infrastructure projects are being planned for city parks and right-of-way opportunities with various partners, and further discussion was held on engaging residents in the long term control plan process to gain an understanding of the permit.

Newark DIG (Doing Infrastructure Green) partners have worked with the City of Newark to launch an **Adopt-a-Catch Basin** program and is assisting in identifying volunteers who are interested in being trained on how to install a **rain barrel**. Partners are working on several green infrastructure projects with various partners, the most recently completed project is the third phase of Riverfront Park expansion by the Trust for Public Land.

Paterson SMART (Stormwater Management and Resource Training) partners are brainstorming education and outreach opportunities for 2018 and engaging residents in the long term control plan alternatives analyses. In the spring, several rainwater harvesting systems will be installed at community gardens supported by an NJDEP 3 19(h) grant. Partners are working together to develop several grant ideas and will be meeting in March to review past accomplishments and develop a 2018 work plan.

Perth Amboy SWIM (Stormwater Infrastructure Management) partners move into 2018 with major successes to celebrate from the

municipality speak with a common voice and achieve a common goal while advocating for green infrastructure. Updates on the various municipal action teams across the stated are listed in this newsletter.

Technical assistance provided to these municipal action teams by the RCE Water Resources Program is funded in part by the Surdna Foundation, the Passaic Valley Sewerage Commission with support from the New Jersey Department of Environmental Protection (NJDEP) and our local partners.

Camden SMART

Gloucester City Green Team

Harrison TIDE

Jersey City START

Newark DIG

Paterson SMART

Perth Amboy SWIM

Trenton Green Infrastructure Partners

past year. In 2017, SWIM ushered the development of eight green infrastructure projects including five (5) different green infrastructure practices across the city. Together those projects manage a total of **2,240,520 gallons of stormwater annually!** Since their inception in 2014, SWIM has developed partnerships with over 15 local, regional, and statewide organizations.

Trenton Green Infrastructure Partners last met in November and focused on plans for demonstration projects, a stormwater management plan, and formalizing efforts of the work group. Demonstration project designs are moving forward on three projects in the city at schools, community gardens, and parks with funding from an NJDEP 319(h) grant. Additionally, community tree planting projects in flood prone areas are being planned. The city, with support from the RCE Water Resources Program, is preparing a stormwater management plan that emphasizes the use of green infrastructure techniques when managing stormwater runoff from new development projects.



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