



Collaboration Works! Who Would Have Thought?



In 2015, the University of Connecticut (UConn) brought together researchers and Extension professionals from New Jersey, Vermont, New Hampshire, Rhode Island, and Connecticut to discuss the current state of knowledge about green stormwater infrastructure and existing Extension programming to help communities incorporate green stormwater infrastructure into the fabric of our society. This sharing

of ideas led to a collaboration between Rutgers and UConn.

In October, the RCE Water Resources Program began working with UConn CLEAR to complete an impervious cover assessment, an impervious cover reduction action plan, and a green stormwater infrastructure feasibility study for Newington, CT, a community with approximately 27% impervious cover. Through this exchange of knowledge and programming, UConn CLEAR adopted the RCE Water Resources Program's proven and tested rapid planning process to identify potential green stormwater infrastructure projects that can reduce the impact of stormwater runoff from impervious surfaces. At the same time the RCE Water Resources Program has benefited from UConn CLEAR's strong geographic information system experience, which has allowed for an enhancement of the rapid planning process. Long Island Sound Futures Fund (LISFF) and the National Fish and Wildlife Foundation (NFWF) has recognized this strong partnership between UConn and Rutgers and has awarded UConn \$234,712 to support the "Rapid Action Plans to Deliver Green Infrastructure in Coastal Connecticut Communities (CT)" project. The RCE Water Resources Program and Tobiah Horton, Extension Specialist in Landscape Architecture will work with UConn CLEAR on this effort.

We plan to continue to develop similar relationships throughout the Northeast. To this end, the National Urban Extension Leaders (NUEL) Northeast Regional Caucus has identified green stormwater infrastructure as a top priority in the northeast and is looking to provide a platform for these states to continue their collaboration.

Woodbridge Township Expands on their Green Infrastructure Initiative

We have completed our first project at Kennedy Park! The project was implemented in cooperation with the Department of Public Works who provided equipment, labor, and supplies while the RCE Water Resources Program provided engineering designs and construction oversight. The project involved the construction of three rain garden areas: a 400 square foot standard rain garden in a sunny area, an 850 square foot turf area with stone storage beneath, and a 1,400 square foot shallow excavation rain garden in a shady area surrounded by trees. All elements of the project are underdrained to ensure flooding and standing water issues are avoided as infiltration in the area is poor. The project should significantly reduce the park's existing flooding issues as the plants uptake some water, and the underdrain allows the remaining treated water to slowly discharge. While elements of this project proved to be challenging and unique, such as constructing a rain garden surrounded by trees, it shows that with proper design, green infrastructure projects can be incorporated almost anywhere!

Additional projects have been identified for implementation in the spring at all of the local public libraries in Woodbridge. We look forward to our continued partnership with Woodbridge Township to implement green infrastructure projects at these locations and more in the coming years.



Tile Drain System Installation in Burlington County



Last October the RCE Water Resources Program reported that approximately 36,000 acres of farmland in New Jersey are likely drained by tile drain systems. These underground pipe systems help remove excess water from fields and increase crop production, but the fertilizer that can be washed away in the stormwater contributes to surface water and groundwater quality problems. In an effort to reduce the

amount of fertilizer being released from the tile drain system, the RCE Water Resources Program has constructed a nitrate reducing bioreactor at Specca Farms in Burlington County and is beginning to study the effectiveness of the system.

In the early part of the summer the dedicated farmers at Specca Farms started the installation of the tile drains, which turned out to be no simple task. Who knew that digging 3-foot trenches, securing pipes along the bottom of the trench, and then re-covering them with soil wouldn't be an open and shut case? After a few setbacks due to rainy and dizzyingly hot weather, the tile drain installation was complete by mid-August. With one part of the system in place, it was time to move on to another - install the bioreactor. To do this a trench was dug away from the main exit pipe of the tile drain system and connected to a large square pit; another trench was dug from the other side of the pit to the drainage ditch at the edge of the field. The pit was lined with plastic and filled with woodchips to provide a home to the bacteria which will be doing the real work of breaking down nitrate before it leaves the bioreactor.

We are currently collecting samples with the help of our robot friends, the ISCO Avalanche. These handy machines collect samples at four-hour intervals and keep them refrigerated long enough to bring them back to the laboratory for analysis. As we continue to gather data we will be able to see how much nitrate the bioreactor is removing from the field at Specca Farms, which is currently planted with winter rye as a cover crop for the winter.



RCE Water Resources Program | New Brunswick, NJ 08901 | M-F 8:30 - 4:30pm

