



NOVEMBER 2022 ~ HAPPY THANKSGIVING!  
WATER PAGES eNEWSLETTER

## Phillipsburg School District Makes a Green Push in Town



*Phillipsburg Elementary School  
rain garden construction, August  
2022*



*Phillipsburg Middle School rain  
garden construction, August  
2022*

Students from the Phillipsburg Elementary School and the Phillipsburg Middle School in Phillipsburg, Warren County, New Jersey returned from their summer break to find some “green” changes going on at their schools!

During the month of August while the students were enjoying their summer break, the Water Resources Program was at both schools with Davis Landscaping, Inc. constructing and installing rain gardens at both schools.

The elementary school had a 910 square-foot rain garden installed along the side of the school parking lot to manage an annual stormwater runoff volume of 58,531 gallons per year from the parking lot. The middle school had a 360 square-foot rain garden installed to the right of the school’s main entrance to manage an annual stormwater runoff volume of 31,517 gallons per year from the school’s rooftop.

Last month, over 300 students helped install 675+ plants at both schools combined to complete the installation of the rain gardens.

These projects were successful thanks to funding and support from the **National Fish and Wildlife Foundation (NFWF)** and through our partnership with the **Association of New Jersey Environmental Commissions (ANJEC)**, the **Lopatcong Creek Initiative (LCI)**, and the **New Jersey Highlands Coalition**.



*Rain garden planting at the Phillipsburg Elementary School, October 2022*



*Rain garden planting at the Phillipsburg Middle School, October 2022*

## **What PJHS Green Team Can Teach You about Rocky Bottom Basins**

The Water Resources Program (WRP), with support from the National Fish and Wildlife Foundation, implemented a 2-phase basin naturalization project at Pope John XXIII Regional High School (PJHS) in Sparta Township, Sussex County, New Jersey.



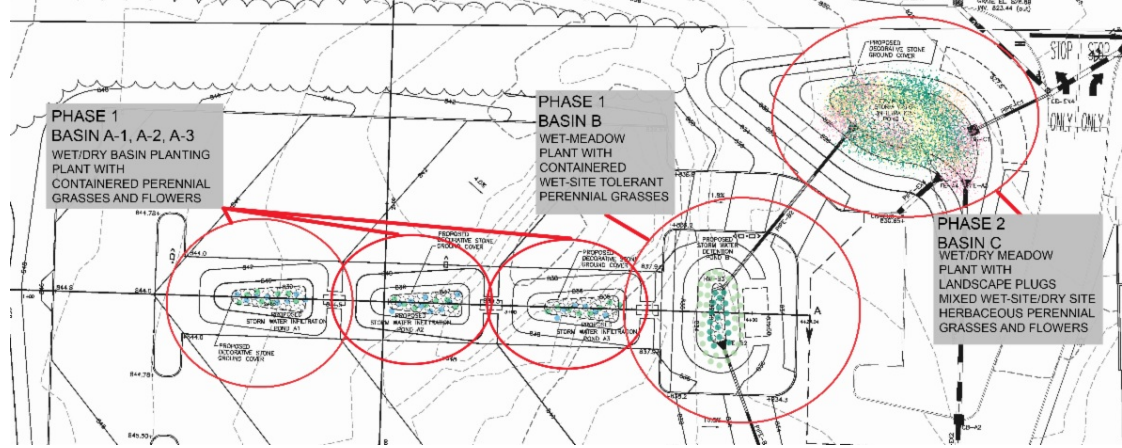
*Basin A1*

The goal for this project was to naturalize the five existing stormwater detention basins (3,000 square feet total) located within the southwest parking lot next to the turfgrass field recently installed over the summer of 2022.



*Basin C*

The project was phased out through two separate installations where the PJHS Green Team assisted the Water Resources Program. The PJHS Green Team, consisting of 20 students dedicated to environmental issues, volunteered their time to plant within the basins. Phase 1 was completed in the beginning of June 2022 right before the school year ended for summer break. Phase 2 was completed in late October 2022 as the weather was still favorable for planting.



### *PJHS Phasing Plan*

Naturalizing basins involves placing native species into the existing basin bottom and the surrounding sloped edges. This best management practice (BMP) helps improve water quality, enhance groundwater recharge, and reduces stormwater volumes that discharge to local waterways.



*Basin B planting*



*Basin A2 planting*



## *Basin A3 planting*

Phase 1 was quite the challenge for the students needing to move aside about 12 inches of riverstone rock to plant large #3 container shrubs within the three smaller basins. Phase 2 consisted of installing roughly 650 plugs into Basin C (the largest detention basin). By retrofitting the stormwater detention basins with native vegetation, they are convert to systems similar to bioretention systems. The stormwater managed is roughly 5,260,000 gallons annually with a drainage area of 208,350 square feet (4.7 acres). The total suspended solids, total phosphorus, and total nitrogen removed by the naturalized basins is estimated at 846 lbs. per year, 9.87 lbs. per year, and 103.4 lbs. per year, respectively. The PJHS Green Team will see their hard work flourish as the basins transform from the rocky bottoms to native vegetation that will provide enhanced wildlife habitat.





*PJHS 2022 Green Team*



*Basin C planting*



*Basin B planted*

---

## **Lawrence Township Girl Scout Works to Improve Water Quality**

By Annette Loveless

- Chair Lawrence Township Environmental Committee
- Rutgers Green Infrastructure Champion
- Rutgers Environmental Steward
- Sustainable Lawrence
- Loveless Nature Preserve

The following is a reprint of an article written for the Lawrence Township Environmental & Green Advisory Committee EGAC News by Annette Loveless, **Green Infrastructure Champion!**

---

## LAWRENCE TOWNSHIP GIRL SCOUT WORKS TO IMPROVE WATER QUALITY

---

By Annette Loveless

LIAH KIBBEY, Troop 70019 Girl Scout Cadette and 9<sup>th</sup> Grade student at Lawrence High School, successfully planted new native Riparian Buffer at Colonial Lake in Lawrenceville on Saturday, September 10<sup>th</sup>. The planting was a culmination of a full year of planning and now the community can see and begin to benefit from the fruits of her labor.

### Stormwater Runoff and Riparian Buffers

Stormwater runoff is created when precipitation from rain and snowmelt flows over land or “impervious” surfaces and does not infiltrate into the ground. As the runoff flows over impervious surfaces such as paved streets, parking lots, and rooftops, it accumulates debris, chemicals, fertilizers, pesticides, sediment, and other pollutants that adversely affect water quality. “Riparian Buffer” is the vegetated area next to a water body which helps to control erosion and sediment, filter pollutants, reduce the impact from floods and provides habitat and food for wildlife and pollinators. Colonial Lake is man-made, as are most of the lakes in NJ, created by surface water impoundment—a damming of the Shabakunk Creek. Changing precipitation patterns due to Climate Change and increased urbanization means greater volumes of polluted water are running into all of our lakes and streams. New Jersey is particularly vulnerable. The state is warming faster than other parts of the Northeast, and other parts of the world, because of large areas of heat-

*“I knew I wanted to focus on an Environmental project that would have an impact.”*

trapping concrete and asphalt in its highly urbanized environment, as indicated in the 2020 NJ Climate Change Scientific Report. Precipitation is likely to increase by more than 20% from the 1999 baseline data by 2100. Projected changes will be greater in the northern part of the state than in the southern and coastal areas, with projections for some northwestern counties seeing the greatest increase, some by as much as 50%, per the Northeast Regional Climate Center.

Hopewell, Ewing and Lawrence are all part of the Shabakunk Watershed and contribute to the flow of water and nutrients. The drainage area leading to Colonial Lake is over 12 square miles in size and contains around four square miles of impervious cover—almost all of which funnels into Colonial Lake. That translates to an excess of three billion gallons of water, 2,596 pounds of phosphorus, 25,957 pounds of nitrogen and 311,478 pounds of total suspended solids (i.e. sediment) annually, per the Lawrence Township Impervious Cover Assessment and Reduction Action Plan. After flowing into Colonial Lake, the Shabakunk Creek enters the Assumpink and into Trenton, contributing to runoff issues in the city before flowing into the Delaware River. Riparian Buffers are one way to mitigate the problems associated with stormwater runoff.

### **Girl Scout Silver Award As Actual Full Cycle Project**

The Girl Scout Silver Award is the 2<sup>nd</sup> highest award a Girl Scout Cadette can achieve. It requires leadership that is organized, determined, and dedicated to improving the community. "I knew I wanted to focus on an Environmental project that would have an impact. I saw water quality as an issue that needed attention," said Ms. Kibbey.

Ms. Kibbey began work on the project in September 2021 under guidance of Troop Leader Joelle Ginter, "Liah was committed to the project--it was important to her to complete the project whether or not she earned her award. She really cares and she is tenacious!" The process included identifying a need in the community, a great deal of research, interviewing experts and stakeholders, identifying a lasting solution, and following through on that solution. Ms. Kibbey reached out to the Lawrence Township Environmental and Green Advisory Committee (EGAC) as part of her research. Her interest and ideas perfectly complemented the water quality outreach and education strategy the Committee has been focused on and she eagerly jumped into the material and work.

She completed a poster presentation on Riparian Buffers for the Mercer County Sustainability Coalition "Greening Together" event in April 2022 and

attended related presentations by Lawrenceville School students on their campus. She then collaborated with the Lawrence Township Engineer, Jim Parvesse, and the Director of Public Works, Greg Whitehead, on plans and permissions and acquired donations of native wetland plants from Gino's Nursery in Newtown, PA, whom she met at the "Greening Together" event. Members of her Girl Scout Troop--Riley Ginter, Zoe Snellings, Sandhya Surti--helped with the planting. It has been a full year of planning and work, but the project is not complete. She will be maintaining the area until it is established and will be doing multiple presentations to various groups. Ms. Kibbey really dedicated herself to learning about the issues and she has made, and continues to make, an actual impact through both the new vegetated buffer and through her advocacy on this land use issue and mitigating solution. Inspirational!

The video presentation "Plant Power: Preventing and Fixing Stormwater Problems" (<https://bit.ly/3QtHqxy>) includes a case study of Colonial Lake which is relevant to any area body of water and an overview of water quality issues and solutions, including Riparian Buffers. For more information on water quality resources, support and education in Central New Jersey, contact The Watershed Institute in Hopewell, NJ at [www.thewatershed.org](http://www.thewatershed.org).

Author: Annette Loveless is the Chair of the Lawrence Township Environmental and Green Advisory Committee (EGAC), Community Watershed Advocate Program Mentor at The Watershed Institute, and a Rutgers Green Infrastructure Champion.





*Girl Scout, Liah Kibbey and Green Infrastructure Champion, Annette Loveless, finish planting at Colonial Lake, Lawrence Township, September 2022*

---

## **HOLD THE DATES: Become a leader, become a Green Infrastructure Champion!**



**The next Green Infrastructure Champions Training Program will be offered every other Friday from 10AM to 12NOON starting January 13, 2023!**

**All sessions for the 2023 training program will be offered via an online format. Generous support from our funders is allowing us to offer this year's training for free.**

### **Here is what we can offer as part of the program:**

- Training on green infrastructure planning and implementation
- Technical support to develop a design for a green infrastructure demonstration project
- Networking opportunities with other Green Infrastructure Champions for mutual support
- Assistance with grant writing

### **2023 Training Program Class Schedule:**

1. How to identify green infrastructure projects in your town (January 13)
2. Moving from planning to implementation of green infrastructure (January 27)
3. Maintaining green infrastructure practices/projects (February 10)
4. Stormwater management regulations, policies, and ordinances

- (February 24)
5. Green infrastructure planning and implementation for Sustainable Jersey points (March 10)
  6. Green infrastructure projects for schools (March 24)
  7. How to design and build a rain garden (April 7)
  8. Retrofitting traditional detention basins with green infrastructure (April 21)
  9. Developing green infrastructure master plans for an entire site or neighborhood (May 5)
  10. Using green infrastructure to promote climate resiliency (May 19)

Registration is **required** (*Coming soon to [water.rutgers.edu](http://water.rutgers.edu)!* *Registration will open December 1*). Attendance at a minimum of **five (5) classes** is needed for certification.

This program is partially funded by the **New Jersey Agricultural Experiment Station, Geraldine R. Dodge Foundation, William Penn Foundation, and New Jersey Sea Grant Consortium** and is a collaboration of the **Rutgers Cooperative Extension Water Resources Program** and the Green Infrastructure Subcommittee of **Jersey Water Works**.

Contact **Hollie DiMuro** ([hollie.dimuro@rutgers.edu](mailto:hollie.dimuro@rutgers.edu)) if you are interested in becoming a Green Infrastructure Champion.

---

GIVE  
THANKS  
FAMILY • FRIENDS • GRATITUDE

---



DONATE TO THE WATER RESOURCES PROGRAM



**Rutgers Cooperative Extension Water Resources Program**

[water@envsci.rutgers.edu](mailto:water@envsci.rutgers.edu)  
[www.water.rutgers.edu](http://www.water.rutgers.edu)

Connect with us



Rutgers Cooperative Extension Water Resources Program | 14 College Farm Road, New Brunswick, NJ 08901

[Unsubscribe water@envsci.rutgers.edu](#)

[Update Profile](#) | [Constant Contact Data Notice](#)

Sent by water@envsci.rutgers.edu powered by



Try email marketing for free today!