

Empowering Green Infrastructure Champions: Implementing Sustainable Solutions in New Jersey's Overburdened Communities

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RUTGERS UNIVERSITY

Water Resources Program

New Jersey Agricultural Experiment Station



Rutgers Cooperative Extension

Rutgers Cooperative Extension (RCE) helps the diverse population of New Jersey adapt to a rapidly changing society and improves their lives through an educational process that uses science-based knowledge.





Water Resources Program



Our mission is to identify and address water resources issues by engaging and empowering communities to employ practical science-based solutions to help create a more equitable and sustainable New Jersey.

New Jersey

- Most densely populated state
- 21 counties, 565 municipalities
- 95% of our waterways are impaired
- Harmful Algal Blooms (HABS) in many of our lakes
- Hammered by Ida, Henri, Sandy, and a bunch of nor'easters
- Climate change is real – more severe storms and sea level rise



Main Cause of Water Resources Problems in New Jersey

Urban/Suburban Land Use
Existing Development



Rutgers Role

- Engage communities in stormwater management planning
- Design demonstration projects
- Implement demonstration projects
- Empower community to do more
- Creating local champions

Green Infrastructure Champions Program

The Rutgers Cooperative Extension (RCE) Water Resources Program hosts the Green Infrastructure Champions Training Program

Goal: To empower communities by training individuals to lead green infrastructure initiatives



Green Infrastructure Champions Program

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



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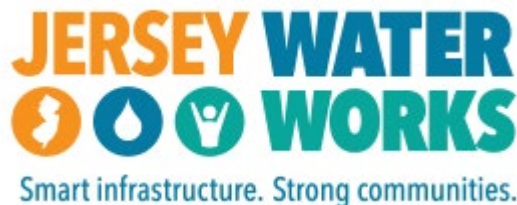
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FOUNDATION

IMAGINE A BETTER NEW JERSEY



What is a Green Infrastructure Champion?

Green Infrastructure Champions are key players in implementing green infrastructure as a stormwater management approach in their community.

Green Infrastructure Champion

Green Infrastructure Champions take the lead on
Community Outreach and Engagement

- Communication with municipalities and stakeholders
- Volunteer coordination
- Maintenance planning for long term green infrastructure viability

Growing Network of Champions

- Over 600 certified Green Infrastructure Champions after the 2023 session
- An additional 197 Champions trained in 2024, bringing the total to 804!
- The program is now in its seventh year.



Rutgers inputs to the Green Infrastructure Champion Program

- Training classes on various aspects of green infrastructure planning and implementation
- Professional staff to provide 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 and submission

Short-term results/impacts

Green Infrastructure Champions will:

- Increase their knowledge and awareness about green infrastructure practices, planning, and implementation
- Gain a skill set to allow them to engage community leaders, schools, and non-governmental organizations (NGOs) and advocate for green infrastructure as a stormwater management solution
- Identify funding opportunities and secure funding for green infrastructure

Long-term results/impacts

- Green infrastructure practices are installed throughout the community
- Green infrastructure becomes a standard in the community for addressing stormwater problems
- Localized flooding is reduced
- Water quality improves
- Community become more resilient to extreme weather events

Focus on Overburdened Communities

- The RCE Water Resources Program is commitment to assisting overburdened communities in New Jersey
- Funding for Green Infrastructure Implementation in New Jersey's Overburdened Communities provided by the New Jersey Sea Grant Consortium (NJSGC) for both Phase 1 and 2
- Phase 1:
 - 2023 Projects- Assisted ten Green Infrastructure Champions
 - Designed ten green infrastructure projects
 - Nine of the ten designs were successfully installed

Long Pond Elementary School Rain Garden, Newton, Sussex County, NJ

Green Infrastructure Champion: Kristine Rogers

- Largest project in 2023, covering 1,210 square feet
- Collaboration with Andover Township Department of Public Works
- Planted by Long Pond Elementary School students



Hackettstown High School Rain Garden, Hackettstown, Warren County, NJ

Green Infrastructure Champion: Wendy Flynn



- Connected RCE with Carl Johnson, School District Director of Facilities
- Designed rain gardens for Hackettstown Middle and High School; three installed
- Installed by a local contractor and Hackettstown students

Thomas Edison Elementary School Rain Garden, Haddon, Camden County, NJ

Green Infrastructure Champion: Lorraine Prince

- 125-square foot rain garden designed and built by the RCE Water Resources Program
- Community volunteers planted 60 native perennials and shrubs



Thomas Edison Elementary School Rain Garden, Haddon, Camden County, NJ



Vineland Historical Society Rain Garden, Vineland, Cumberland County, NJ

Champions: Diane Amico and Lisa Fleming

- 675-square foot rain garden installed
- Planted by volunteers from ANJEC and the Vineland Environmental Commission



John F Kennedy Center Bioswale, Willingboro, Burlington County, NJ

Green Infrastructure Champion: Patricia Lindsay-Harvey

- 625-square foot bioswale converted from a parking lot island
- Installed with assistance from Willingboro Township Department of Public Works
- Designed to divert and filter stormwater runoff



Heart of Camden Bioswale, Camden, Camden County, NJ

Green Infrastructure Champion, Crystal Wessel

- 765-square foot bioswale converted from a parking lot swale
- Initiated by NJDEP AmeriCorps Watershed Ambassador, Mason Kramer
- Completed by a local contractor



Oceanport Shoreline Restoration Project, Oceanport, Monmouth County, NJ

Green Infrastructure Champion: Bradley Sherman

- Coir log and 300 native grasses and perennials added
- Created a buffer to prevent erosion along a streambank



Spotswood Library Rain Garden, Spotswood, Middlesex County, NJ

Green Infrastructure Champion: Doriann Kerber

- 465-square foot rain garden completed
- Library Director, Karin Finnegan
- Constructed by a contractor
- Planted by volunteers
- Enhanced stormwater management and biodiversity



South River High School Rain Garden, South River, Middlesex County, NJ

Green Infrastructure Champion: Doriann Kerber

- 825-square foot rain garden installed
- Supported by South River Environmental Commission, Board of Education, and Department of Public Works
- Installed by a contractor



Impact of the 2023 Projects

- Total of nine green stormwater infrastructure projects installed
- Total size of GI Practices: 4,970 square feet
- Manages a total volume of 689,242 gallons of stormwater annually
- Total drainage area managed: 38,106 square feet
- A total of 1,492 native plants installed
- Pollution removed annually
 - 0.35 lbs total phosphorus (TP)
 - 1.81 lbs total nitrogen (TN)
 - 92.36 lbs total suspended solids (TSS)



Focus on Overburdened Communities

- Phase 2:
 - 2024 Projects- Assisted five Green Infrastructure Champions
 - Designed five green infrastructure projects
 - Four of the five designs were successfully installed



Cedarbrook Elementary School, Plainfield, Union County, NJ

Green Infrastructure Champion: Karen Rutberg

- Collaborated with community members and summer school program
- 195-square-foot rain garden
- Captures runoff from a 340-square-foot paved area
- Constructed with Water Resources Program interns



Passaic Preparatory School, Passaic, Passaic County, NJ

Green Infrastructure Champion and DEP Watershed

Ambassador: Maria Rivera

- 80-square-foot rain garden receiving runoff from a 120-square-foot patio
- Collaborative effort with 8th and 12th-grade students
- Educational opportunity for students



South Toms River Elementary School, Toms River, Ocean County, NJ

Green Infrastructure Champions: Karen Walzer and Bailey Sanders (Barnegat Bay Partnership and Jersey Friendly Yards)

- 290-square-foot rain garden capturing runoff from a 910-square-foot paved sidewalk
- Contractor hired for excavation and material addition
- Planted with 130 perennials and 18 shrubs



Middlesex Public Library, Middlesex, Middlesex County, NJ

Champions: Clare Levourne and Doriann Kerber

- 560-square-foot rain garden
- Manages runoff from the library and adjacent municipal building's parking lots (14,460 sq ft drainage)
- Excavated by a contractor
- Community planting event with 170 native plants



Impact of the 2024 Projects

- Total of four green stormwater infrastructure projects installed
- Total size of GI Practices: 1,125 square feet
- Manages a total volume of 138,989 gallons of stormwater annually
- Total drainage area managed: 16,955 square feet
- A total of 309 native plants installed
- Pollution removed annually
 - 0.26 lbs total phosphorus (TP)
 - 1.33 lbs total nitrogen (TN)
 - 36.86 lbs total suspended solids (TSS)



Overall Impact

- Over the last two years, empowered 15 certified Green Infrastructure Champions
- Installed 13 projects
- Manage a total volume of 828,231 gallons of stormwater annually
- Total drainage area of 55,061 square feet managed (mostly impervious)
- A total of 1,801 native plants installed
- Pollution removed annually:
 - 0.61 lbs total phosphorus (TP)
 - 3.14 lbs total nitrogen (TN)
 - 129.2 lbs total suspended solids (TSS)



CONCLUSION

- The Green Infrastructure Champions program is a successful model for empowering communities to implement sustainable stormwater management practices
- Collaboration and dedication of the champions are crucial for the success of these projects
- These initiatives are making a tangible difference in managing stormwater and reducing pollution in New Jersey's overburdened communities.





QUESTIONS?