Sustainable Jersey for Schools

is a certification program for New Jersey public schools that want to go green, conserve resources and take steps to create a brighter future, one school at a time.

CERTIFICATION BENEFITS

Sustainable Jersey certification is a prestigious designation. Registration is free and grants will be available. The program provides a framework for collaboration between schools and with the school district. Don't miss your chance to be part of the first schools to be certified and to:

Save money. Get money.

Schools will implement practices that lead to cost savings in energy, water and garbage bills. The program will help improve efficiency, cut waste and free up money for the classroom. Participating schools/districts will be alerted to available grant money.

Gain access to training, tools and expert guidance.

Participating schools will have access to clear guidance and NJ specific tools and resources for developing a comprehensive sustainable school program. Training workshops, webinars and leadership meetings will provide your school with the opportunity to connect with experts in important school sustainability issues.

Get recognized. Promote your school.

Participants in the Sustainable Jersey for Schools program are promoted on our website, in our publications, in the media and at events. Schools that achieve certification are provided a customized logo that can be used on the school's promotional materials. Schools will be honored at an annual event and awards recognize those schools that excel in leadership, innovation and collaboration. Program participation will enhance your efforts to achieve U.S. Department of Energy Green Ribbon recognition and/or EcoSchools Green Flag status.

Improve your school and district.

Research shows that sustainable practices positively impact student academic performance. Kids learn best when there is good natural classroom light and excellent indoor air quality. Sustainable practices help create healthier learning environments that lower illness and absenteeism.

Conserve valuable resources. Protect the environment.

New Jersey is facing issues of climate change, energy crises, water shortages and environmental pollution. Schools need to be a part of the solution to these challenges and demonstrate their commitment to environmental stewardship. Participants in the program will provide an opportunity for students to connect with curricula in environmental and science technology engineering and mathematics (STEM) education which can also serve as a tool for interactive lessons. By becoming certified, you align your school/district with your community's values while saving your resources as well as nature's.

SUSTAINABLE JERSEY FOR SCHOOLS:

- Advances and supports sustainable practices in schools and prepares the next generation of children to address sustainability issues
- Identifies actions that schools can implement to become certified
- Provides guidance and tools to enable schools to make progress on each action
- Provides access to grants and identifies funding opportunities for schools to make progress toward the actions

SUSTAINABLE JERSEY FOR SCHOOLS AT-A-GLANCE

- New Jersey schools/districts apply for certification. Certification is achieved at individual school level.
- There is no fee for the certification, the use of the program tools or participation in the training workshops. The certification is valid for three years.
- The program is voluntary.
- There are two certification levels: bronze level requires a total of 150 points and silver level requires a total of 350 points.

CERTIFICATION STEPS

Get started today! The online certification program allows you to pursue a balanced sustainability program one policy, program or resource audit at a time. Your school can start slowly and see how each small step yields economic and community gains.

Step 1: School district adopts a resolution of participation and registers at the Sustainable Jersey for Schools website. (A sample resolution can be downloaded from the website.) The superintendent invites the district's school principals to participate.

Step 2: School principals register their individual school by uploading a letter of participation signed by the principal and superintendent.

Step 3: Green team is created at the district or school level depending upon how activities will be coordinated. The green team is the only mandatory action.

Step 4: School districts and schools complete actions on behalf of schools totaling at least 150 points; each action includes guidance about who should be involved, resources, what to do, submission requirements and other information related to completing the action successfully.

Step 5: School documents, associated with completed actions, are uploaded to meet submission requirements. Sustainable Jersey certification is awarded after review of application materials.

To promote a comprehensive and results oriented approach to sustainability, the certification application is based on a check list of 87 actions in 17 categories. The certification process is flexible, allowing your school to choose from a broad range of actions.

17 ACTION CATEGORIES

PROSPERITY

- Board Leadership & Planning
- Energy Efficiency
- Innovation Projects
- Learning Environment
- Student Learning

PLANET

- Climate Mitigation & Renewable Energy
- Green Cleaning
- Green Design
- Green Purchasing
- School Grounds
- Waste Management & Recycling

PEOPLE

- Diversity & Equity
- Food & Nutrition
- Healthy School Environments
- Student Safety
- Student & Community Outreach
- Student & Staff Wellness

To learn more visit
www.SustainableJerseySchools.com

SustainableJersey
SJ_Schools

FOR SCHOOLS SUSTAINABLE JERSEY® • CERTIFIED •

Green Infrastructure Assessment & Plan

10 Points School

School campuses contain many impervious surfaces, including buildings, parking, access roads, and paved playgrounds. Stormwater runoff from these sites, if not controlled properly, has a major negative impact on water quality in local waterways and can contribute to flooding. There are often opportunities to reduce these impacts on-site by retrofitting school facilities with green infrastructure (such as rain gardens, bioswales and rain barrels) to capture and treat stormwater runoff. Performing a green infrastructure assessment identifies green infrastructure opportunities for school grounds, and can be used as a learning opportunity to engage students and staff. To qualify for points, students in your school must have conducted an assessment of existing stormwater conditions of the school grounds and identified opportunities for installing green infrastructure. The assessment and plan should have been completed no more than three years prior to the submission deadline.

Why is it important?

Water quality (and avoiding river pollution) is tremendously important to river and ocean ecosystem health, as well as human health, because much of our drinking water comes from surface water subject to pollution from stormwater runoff. Natural land slows and filters rain and stormwater runoff. Slowing the water prevents flooding as it is gradually released into rivers. Filtering the water eliminates pollution. Replace natural land and green spaces with pavement and roofs, and rainwater will quickly rush across the landscape, picking up pollution, and run directly into rivers quickly. Many communities and neighborhoods in New Jersey are experiencing significant, repeated, and damaging flooding, and the incidence of this flooding has been increasing over time. A major contributor to inland flooding is the increase in impervious surface that is created by buildings and roads and new development. The problem can be mitigated by adding natural features to the built environment to capture, slow, and filter the water.

There are 2,492 public schools in New Jersey; all of them have rooftops, paved parking lots, and other impervious surfaces that negatively impact New Jersey's water resources. Many of these schools do not have practices or infrastructure in place to manage stormwater, and many of them have ample space to install green infrastructure that could dramatically reduce stormwater runoff to New Jersey's waters. Green infrastructure may also bring the added benefits of enhancing the aesthetics of the school grounds and providing opportunities to engage the school community in learning about the benefits, design, and installation of green infrastructure. Many green infrastructure elements are inexpensive and can be installed through a collaborative effort by the students, teachers, parents, and the local community.

Who should lead and be involved with this action?

The teachers, students and the facilities manager should be key participants in this process. A variety of people from the school community can be involved, including grounds maintenance staff, green team members, community volunteers, and professionals who can provide technical support. Rutgers Cooperative Extension has extensive program technical support and resources to offer.

Timeframe

This action can be completed in the span of one school year or less. Once the assessment is complete, students, teachers and local stakeholders can begin implementing the green infrastructure practices that have been identified.

Project Costs and Resource Needs

The main resource is people who can dedicate their time to completing the assessment. As discussed earlier, this can be students, teachers, local stakeholders, community volunteers, or the facilities director. This action can be completed as part of an in-class effort, by the professional staff, or by both working together. Local stakeholders also can be incorporated into the project. The project will require measuring tools such as a tape measure, cloth 100-foot tape, and/or a measuring wheel. Many of these measuring tools can be borrowed from parents or the school's facilities.

What to do, and how to do it ("How to")

This section provides guidance and recommendations for implementing the action. Excellent program guidance, free technical support, design and guidance documents and school case studies are available on the Rutgers Water Resources, Stormwater Management in Your Schoolyard program website. Rutgers Cooperative Extension Water Resources Program can be reached at http://water.rutgers.edu/

Throughout the process of completing this action, please keep the following requirements in mind:

1. A school must conduct an assessment of existing stormwater-related conditions and identify opportunities for retrofitting the property with green infrastructure by working with staff and students.

2. The assessment and plan should have been completed no more than three years prior to the submission deadline.

3. The assessment report and plan must contain the following elements:

    - An assessment of the amount of impervious (rooftops, parking lots, paved playgrounds, compacted soil, etc.) and permeable surfaces (lawns, woods, and other open space) on the school property.
    - Identification of where the stormwater runoff goes (e.g., Are downspouts piped directly to underground to storm sewer systems? Does the parking lot drain to catch basins that carry water directly to the stream?).
    - Assessment of where stormwater can be intercepted with a green infrastructure practice such as a rain garden, bioswale, rainwater harvesting system, or infiltration system.
    - A map showing all the above information and determining the amount of impervious surfaces that can be treated with green infrastructure practices.

    Below is additional guidance on implementing the assessment and plan. A school does not need to follow this guidance exactly as long as it meets the requirements for earning points for this action.

    Recommended steps to complete a green infrastructure assessment:

    Task 1: Impervious Surfaces Audit

    An impervious surface is any surface that does not allow water to pass through it. One way to make this determination is to obtain a site plan from the school's facilities director and simply measure the impervious cover on the plan. A second way would be to download an aerial photograph from an online source, such as bing maps or google map, and measure the impervious surfaces on this map. A third way would be to physically measure the impervious surfaces. These measurements, along with calculating the areas, can be conducted by students as part of a math or science project. If using a map, it is important to confirm and annotate the map by walking the property. Online stormwater calculators are also available from USEPA and other partners to supplement the onsite data collection, see the resources section for guidance.

    A tricky element to be aware of is compacted soil. This may appear to be natural and permeable. If soil is compacted by design or through heavy use (like a dirt road or overused field), though, it becomes impervious to water. Guidance and an example of a student investigation into soil considerations can be found on the Rutgers Stormwater Management in Your Schoolyard– Rain Garden Soil Considerations.
    http://water.rutgers.edu/Projects/SWMIYSchoolyard/K-8/Rain%20Garden%20Soil%20Considerations/Rain%20Garden%20Soil%20Considerations.pdf

    Task 2: Determining the Amount of Pervious Surfaces

    A pervious surface is any surface that water passes through. Not all pervious surfaces are the same. Some of the lawn areas can be overly compacted so they behave more like impervious surfaces. These overly compacted areas

or other pervious surface areas that water cannot infiltrate also should be identified as part of this task.

The amount of pervious surface can be determined the same way as the impervious surface in Task 1. Another way would be to determine the entire size of the property and simply subtract the impervious surface from the total area.

The pervious surfaces should be delineated on the map developed for Task 1.

Task 3: Identify Where Stormwater Goes

This task focuses on determining where stormwater runoff from impervious surfaces goes. Some surfaces are directly connected to local waterways or to the storm sewer system that drains to local waterways. These are impervious surfaces that need to be managed with green infrastructure. Green infrastructure practices can be used to "disconnect" these impervious surfaces from draining directly to local waterways. These practices capture stormwater runoff; treat the runoff; and, in most cases, infiltrate the runoff into the ground. Sometimes these systems harvest the water so the water can be reused to irrigate landscaped areas, to wash vehicles or for other non-potable uses.

To complete this task, use the map developed in Tasks 1 and 2 to delineate where the stormwater runoff goes for each impervious surface. The easiest way to do this is to simply look at the slope of the land or, better yet, to watch where the water goes when it is raining. Another way would be to use a topographic map to determine drainage patterns.

The product from this task is a map showing drainage pattern. This could be a new map or the information can be overlaid on the map developed for Task 1 and 2.

Task 4: Identify Where Stormwater Runoff can be Intercepted

Tasks 1-3 have produced a map showing the impervious surfaces, pervious surfaces, and drainage patterns. The next step is to determine where stormwater can be intercepted before it drains directly to the storm sewer or local waterway. For example: if a downspout is connected underground, is there an opportunity to cut the downspout and divert the flow into a rain garden, rainwater-harvesting system (rain barrel or cistern), or to simply run the water over the grass? Another example is a parking lot that drains to a catch basin. Is there a way to cut out a section of the curb prior to the catch basin to divert the water into a grassed area where a rain garden or other landscape feature can be installed to capture stormwater runoff?

All these possible interventions should be shown on the map that is created for this action. Extensive guidance on designing rain gardens, bioswales, rain storage and collection systems and other infiltrations practices can be found on the Rain Garden Information Center at http://water.rutgers.edu/Rain_Gardens/RGWebsite/rginfo.html and Stormwater Management in Your Schoolyard

Task 5: Develop the Final Map and Determine the Amount of Surfaces that can be Treated

Every project needs to show impact. For this action, a map will be produced showing all the information from Tasks 1-4. Additionally, for each proposed green infrastructure practice, the area of impervious surface that is being treated should be determined. This will allow for a determination to be made on the percentage of impervious surface that can be disconnected with green infrastructure, which will allow for the school's green team to set a target for implementation. Is it 5%, 10%, 50%, or 100%?

Schools can partner with Landscape Architects, Engineers, trained Master Gardeners or knowledgeable volunteers, or use the worksheets, guidance and staff resources available from the Rutgers Water Resources Program to assist with the requirements of this action http://water.rutgers.edu/Projects/SWMIYSchoolyard/SWMIYSchoolyard.html

What to submit to earn points for this action

In order to earn points for this action, the following documentation must be submitted as part of the online certification application in order to verify that the action requirements have been met.

1. Description of Implementation – In the text box provided on the submission page for this action provide a short narrative (300 words or less) of what has been accomplished and the impact it has or will have on the school community.
2. Upload a copy of the school's green infrastructure map of the school grounds showing the following information from

tasks 1-5 in the "What to do, and How to Do it" section:

- Impervious surfaces
- Pervious surfaces
- Drainage patterns
- Areas where stormwater can be intercepted before it drains directly to the storm sewer or local waterway
- Proposed green infrastructure projects, indicating the area of impervious surface that is being treated with each project.

IMPORTANT NOTES:

There is a limit of six uploaded documents per action and individual files must not exceed 20 MB. Excerpts of relevant information from large documents are recommended.

All action documentation is available for public viewing after an action is approved. Action submissions should not include any information or documents that are not intended for public viewing.

Spotlight: What New Jersey schools are doing

Dr. Michael Conti No. 5 Elementary School, Jersey City Public Schools
The anticipated outcome of this STEM lesson is to provide students with the opportunity to think critically about solutions to real world problems. We want our students to understand they share a responsibility in working with others in effecting change that will be of benefit to their community. To view more details of the Dr. Michael Conti No. 5 Elementary School STEM lesson click here.

Resources

New Jersey Department of Environmental Protection, Stormwater in New Jersey

http://www.nj.gov/dep/stormwater/

New Jersey Department of Environmental Protection, Watershed Restoration, Water Education and Outreach Resources

http://www.nj.gov/dep/watershedrestoration/outreach.html

Rutgers Water Resources Program,

- Stormwater Management http://water.rutgers.edu/Stormwater_Management/Default.htm
- Green Infrastructure Education and Implementation Plan – includes learning modules for grades K-8 http://water.rutgers.edu/Projects/GreenInfrastructureEducation/GreenInfrastructureEducation.html
- Stormwater Management in My Schoolyard includes design guidance, case studies from schools, manuals and curriculum for k-12 http://water.rutgers.edu/Projects/SWMIYSchoolyard/SWMIYSchoolyard.html

United States Environmental Protection Agency,

- Green Infrastructure http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm
- Stormwater Management
- National Stormwater Calculator is a desktop application that estimates the annual amount of rainwater and frequency of runoff from a specific site anywhere in the United States. Estimates are based on local soil conditions, land cover, and historic rainfall records. http://www2.epa.gov/water-research/national-stormwater-calculator
- YouTube video on using EPA's National Stormwater Calculator http://www.youtube.com/watch?v=ibZTm4_ZQxg&feature=share&list=PLBhfkkujnoRCePsdyYKkBRVX9W4airQt9

SUNY College of Environmental Science and Forestry, Stormwater Runoff Calculator This calculator allows you to simulate the effects that installing a rain garden type of green infrastructure, could have on stormwater runoff from your property.

http://www.esf.edu/ere/endreny/gicalculator/RunoffHome.html

This action aligns with the following:

Eco Schools' pathways:

- School Grounds
- Biodiversity
- Water

U.S. Green Building Council:

Sustainable Sites credits for LEED certification

Green Infrastructure Installation

10 Points School

School campuses contain many impervious surfaces, including buildings, parking, access roads, and paved playgrounds. Stormwater runoff from these sites, if not controlled properly, can increase flooding and have a major negative impact on water quality of local waterways. With this action, schools can earn points for installing green infrastructure on their grounds to capture and treat stormwater. The installed project must be in place and currently maintained in working condition to qualify for points. The school is also expected to publicize the installation and the expected benefits to the school community (students, staff, and families).

Why is it important?

Water quality (and avoiding river pollution) is tremendously important to river and ocean ecosystem health, and also to human health because much of our drinking water comes from surface water that is subject to pollution from stormwater runoff. Natural land slows and filters rain and stormwater runoff. Slowing the water prevents flooding by gradually releasing the water into rivers. Filtering the water eliminates pollution. When natural land and green spaces are replaced with pavement and roofs, rainwater will quickly rush across the landscape, picking up pollution and running directly into rivers. Many communities and neighborhoods in New Jersey are experiencing significant, repeated, and damaging flooding, and the incidence of this flooding has been increasing over time. A major contributor to inland flooding is the increase in impervious surface that is created by buildings and roads and new development. We can mitigate the problem by adding natural features to the build environment to capture, slow, and filter the water.

There are 2,492 public schools in New Jersey and all of them have rooftops, paved parking lots, and other impervious surfaces that negatively impact our state's water resources. There are often opportunities to reduce the negative impacts by retrofitting impervious sites with green infrastructure (e.g. rain gardens, bio swales, rain barrels) to capture, treat and recharge stormwater runoff. Many of these schools do not have stormwater management facilities and many of them have ample space to install green infrastructure that can dramatically reduce storm water runoff to our state's waters. Green infrastructure can also enhance the aesthetics of the school grounds. Many green infrastructure elements are inexpensive and can be installed through a collaborative effort by the students, teachers, parents, and the local community. The collaborative approach also provides opportunities for those involved to be engaged and to learn about stormwater management.

Who should lead and be involved with this action?

The teachers, students and the facilities manager should be key participants in this process. A variety of different people from the school community can be involved, including grounds maintenance staff, green team members, parent teacher associations, community volunteers, trades professionals, landscape and gardening business and members from the municipal green team could also be part of the project installation team. Rutgers Cooperative Extension has extensive program technical support and resources to offer.

Timeframe

Securing funding or in-kind donations of materials, services or technical expertise will take anywhere from 6 to 9 months to organize for a relatively conservative project. Larger or more complex projects could take up to 2 years to secure the resources needed to complete the project installation.

Project Costs and Resource Needs

The project costs will vary greatly, depending on the nature of the project and the methods and personnel used to implement it. Resources necessary to complete this action will include volunteers (students, teachers, facility staff, parents, community volunteers, municipal green team volunteers and staff) and professionals to oversee the project installation. Funding or in-kind donations for supplies and equipment, including landscaping materials (plants, soil amendments), heavy construction equipment, hand tools and supplies (stone, filter fabric, mulch) will be needed. Long term maintenance can be done by existing grounds personnel, or by volunteers.

What to do, and how to do it ("How to")

This section provides guidance and recommendations for implementing the action. Excellent program guidance, free technical support, design and guidance documents and school case study examples are available on the Rutgers Water Resources, Stormwater Management in Your Schoolyard Program website. A comprehensive Stormwater Management in Your Backyard is an expansive "how to" manual with detailed steps in organizing a volunteer based installation project. Rutgers Cooperative Extension Water Resources Program can be reached at http://water.rutgers.edu/

Recommended steps to install green infrastructure to capture stormwater:

1. Identify the team. This may include the facilities manager, a landscape professional or contracted company used to manage district sites. Rutgers Cooperative Extension has personnel and many resources to assist schools with stormwater management (see Resources section). The project should also include teachers and their students, parents and other volunteers that will be supporting the project. Additional points could be awarded under the Education for Sustainability action if classroom based learning/lessons are incorporated into the project. Sample classroom lessons linked to NJ Core Curriculum Content Standards are available for k-12 students at: https://nj.gov/education/cccs/
2. Using the green infrastructure assessment and plan completed under the Green Infrastructure Assessment and Plan action, select the project to be installed. If your school has not completed this assessment, please see that action for additional guidance and detailed steps. Working with a trained professional, develop a detailed plan for the green infrastructure project. If you are installing a rain garden or a system to capture, store and reuse roof water (for example, a system of rain barrels with a water reuse component), free technical assistance could be provided by Rutgers Cooperative Extension and through Rutgers Master Gardeners trained in rain garden design and installation. Professional landscapers, landscape architects or stormwater engineers or soil conservation professionals could also provide the expertise needed to work with the students to prepare a plan. Rutgers developed a rain garden installation service directory for NJ which lists professionals that have completed rain garden design and installation training.
3. The detailed project plan will need to identify the materials, equipment, supplies and plant materials list. Discuss, with a professional, the optimal time of year to begin and conclude this work. Determine sources for plant materials needed and factor in time for seasonal availability of plant materials. Some plants may require a full growing season to become established in order to survive winter temperatures. One example of a plan and planting list is the Ethel Jacobsen Elementary School in Surf City NJ. For more examples of school plans and a plant list, visit: http://water.rutgers.edu/Projects/Projects.htm
4. Once the detailed plan is completed, secure funding and or in-kind contributions of materials or services to complete the project. Once the materials and equipment are secured, the team should then focus on recruiting students, parents and other volunteers to assist with the installation. The Stormwater Management in Your Backyardtoolkit offers extensive guidance on recruiting volunteers, developing program publicity materials, managing volunteers during the installation event, and includes templates for fact sheets and program tips.
5. Schools may want to "quantify" the impact of their completed project by calculating the reductions in stormwater volumes captured by the green infrastructure project. Online stormwater calculators are available from USEPA and other partners to quantify the reduction in the stormwater volume. By tracking the cumulative impact of various green infrastructure projects, your school can document your contributions to mitigating flooding, improving water quality and enhancing ground water recharge from district school sites.
6. Don't forget to take "before" photographs of the site before installation and document the progress of the project with photographs. The pictures can be used for publicity, class room learning, and educational outreach on the project.
7. Publicize the project to the school community by sharing photographs and narrative accounts in school and local media, or on posters and flyers displayed in the school, library, and other community buildings.

What to submit earn points for this action

Green Infrastructure Installation projects that are installed and functional at the time of submission are eligible to earn points. Samples of outreach materials distributed after the project's completion must also be provided. *Additional points*

could be awarded for your Green Infrastructure project under the Education for Sustainability action if classroom based learning/lessons are incorporated into the project. Sample classroom lessons linked to NJ Core Curriculum Content Standards are available for k-12 students at:
http://www.water.rutgers.edu/Projects/SWMIYSchoolyard/SWMIYSchoolyard.html

The following documentation should be submitted as part of the online certification application to verify the action requirements have been met.

1. In the text box provided on the submission page for this action provide an overview (300 words or less) of the process used to implement the Green Infrastructure project and the results of the effort to date.
2. Upload documentation showing that the green infrastructure project has been installed and is currently maintained and in working order. This can include a copy of the project plan, images and written accounts of the project, articles or posts published on websites, social media, or print media.
3. Upload documentation that demonstrates that the school community was informed about the project and its benefits, materials such as copies of news articles, media posts, posters and photographs from workshops, assemblies or other events at which the green infrastructure project was publicized are acceptable.

Important Notes:

There is a limit of six uploaded documents per action and individual files must not exceed 20 MB. Excerpts of relevant information from large documents are recommended.

All action documentation is available for public viewing after an action is approved. Action submissions should not include any information or documents that are not intended for public viewing **.**

Spotlight: What New Jersey Schools are doing

Brimm Medical Arts High School, Camden City Public School
Dr. Charles E. Brimm Medical Arts High School has put a tremendous amount of effort into the installation of green infrastructure. The Brimm Green Team and community volunteers oversaw the project installation. With the use of NJ Tree Foundation, Resilient Roots, and Rutgers Educational Program they were able to install two rain gardens, 2 rain barrels, and trestles for the greenhouse. To view Brimm Medical Arts High School approved submission click here.

NJ Department of Environmental Protection
"Building Ecological Solutions for Coastal Community Hazards"
Memorial Middle School, Eatontown School District
Installing Rain Gardens to Absorb Stormwater Runoff

Memorial Middle School is located less than five miles from the Atlantic Ocean. Stormwater runoff from the roof floods the courtyard and enters the stormwater drains that are located near the school. Rain barrels had been installed to collect some of the rainwater runoff from the school roof but the barrels weren't enough to stop the flooding. Students researched native shrubs and plants and devised a plan to install a rain garden along the courtyard that would absorb the excess water, improve soil and garden drainage, and increase wildlife biodiversity by providing habitat that would attract and support more species of birds and butterflies.

Sumner Elementary School, Camden, NJ

In 2011, two 4th grade classes participated in the Stormwater Management in Your School Yard educational program that was designed to provide students with an opportunity to apply their science, math, and communication skills to real-world environmental problems through the building of a rain garden on the Sumner Elementary School's campus. The students completed the nine module program that included the installation of two rain gardens. These rain gardens help mitigate nuisance flooding in the area and help reduce nonpoint source pollution and stormwater that would otherwise discharge into the City of Camden's combined sewer system. For more information click here.

Taunton Forge Elementary School, Medford, NJ

Through a partnership with Woodford Cedar Run Wildlife Refuge, the school won a 2011 NJ Water Environmental Grant and installed a rain garden to capture stormwater coming off the school's roof and parking lot. A diverse group of

community partners, including PSE&G, Haas Excavating, Star Sprinkler, Leonberg Nursery, several scout troops and the school's teachers and students donated work to install the garden. Native species were planted in the rain garden to create habitat for pollinators, such as bees and butterflies.

Resources

Low Impact Development Center, Rain Garden Design Templates.

https://lowimpactdevelopment.org/rain-garden-templates-for-maryland/

Montgomery County, MD Environmental Protection – Information on rainscapes.

http://www.montgomerycountymd.gov/DEP/water/rainscapes.html

The Native Plant Society of New Jersey, plant lists and information about native plants of New Jersey for different conditions.

http://www.npsnj.org/

New Jersey Department of Environmental Protection, Stormwater in New Jersey.

http://www.nj.gov/dep/stormwater/

New Jersey Department of Environmental Protection, Watershed Restoration, Water Education and Outreach Resources.

http://www.nj.gov/dep/watershedrestoration/outreach.html

Rutgers Cooperative Extension Resources and Water Resource Program

- Master Gardener Program Rutgers New Jersey Agricultural Experiment Station (NJAES) Cooperative Extension has trained thousands of Rutgers Master Gardeners across the state. In return, these Rutgers Master Gardeners have donated hundreds of thousands of hours in service to the residents of New Jersey. For a list of NJ master gardener programs visit, http://njaes.rutgers.edu/mastergardeners/counties.asp
- Rain Barrel Train the Trainer Program – includes how-to guidance for building, installing and painting rain barrels. http://njaes.rutgers.edu/environment/rainbarrel-trainerprogram.asp
- Stormwater Management. http://water.rutgers.edu/Stormwater_Management/Default.htm
- Green Infrastructure Education and Implementation Plan – includes learning modules for grades K-12. http://water.rutgers.edu/Projects/GreenInfrastructureEducation/GreenInfrastructureEducation.html
- Stormwater Management in My Schoolyard includes design guidance, case studies from schools, manuals and curriculum for k-12 http://water.rutgers.edu/Projects/SWMIYSchoolyard/SWMIYSchoolyard.html
- Rain Garden Installation Services Directory for NJ http://njaes.rutgers.edu/pubs/publication.asp?pid=E326

SUNY College of Environmental Science and Forestry, Stormwater Runoff Calculator This calculator allows you to simulate the effects that installing a rain garden type of green infrastructure, could have on stormwater runoff from your property.

http://www.esf.edu/ere/endreny/gicalculator/RunoffHome.html

United States Environmental Protection Agency,

- Green Infrastructure http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm
- Stormwater Management https://www.epa.gov/greeningepa/epa-facility-stormwater-management
- National Stormwater Calculator is a desktop application that estimates the annual amount of rainwater and frequency of runoff from a specific site anywhere in the United States. Estimates are based on local soil conditions, land cover, and historic rainfall records. http://www2.epa.gov/water-research/national-stormwater-calculator
- UTUBE video on using EPA's National Stormwater Calculator http://www.youtube.com/watch?v=ibZTm4_ZQxg&feature=share&list=PLBhfkkujnoRCePsdyYKkBRVX9W4airQt9

This action aligns with the following Eco Schools' pathways:

- School Grounds
- Biodiversity
- Water