Raingardens

10 Points

Updated June 2017

A rain garden is a landscaping technique that uses vegetation planted in a shallow depression to capture and filter stormwater runoff. By diverting water that would otherwise enter the combined sewer system (CSS), rain gardens reduce the amount of stormwater runoff entering treatment facilities thereby reducing the chance that the CSS may overflow. Additionally, rain gardens reduce the amount of stormwater entering local waterways and therefore decrease pollution of our waterways and erosion of soils while increasing groundwater recharge. These perennial gardens can easily be incorporated into municipal grounds, parks, or schoolyards to improve ecological health, while making the community more attractive. Rain gardens can also serve as an educational resource and a showcase for low maintenance, native plants.

Who should lead and be involved with this action?

The Environmental Commission should lead and seek the involvement of municipal groundskeepers.

The Rutgers Cooperative Extension Water Resources Program offers project consulting to assist with the development of rain gardens. Contact the “Rain Garden Team” at the Water Resources Program (see resources section). Staff members can provide technical assistance with garden design and collaborate on the development of educational programming.

Local parks department and grounds maintenance staff usually possess all necessary skills and tools for this project. Hiring contractors is unlikely to be necessary unless the site will undergo extensive modifications prior to garden installation.

Local Master Gardeners may offer volunteer labor for the project.

Timeframe

The time frame for planning and construction is 3 months or less.

After construction, maintenance and education will be ongoing.

Up to three months of planning may be necessary to conduct a site assessment and to order plant materials. Spring is the best season to construct a rain garden and the digging and planting steps can be completed in just one or two days. Additional lead time may be necessary if the project includes complementary infrastructure improvements such as updates to curbing or storm drains.

Regular maintenance and watering are necessary during the garden's first few months. Once plants have been established, the rain garden will benefit from seasonal weeding, mulching, and pruning, but will require less long-term maintenance than a lawn. Opportunities for educational programming will be ongoing.

Project Costs and Resource Needs

Rain Garden Installation Cost: $3,000-$12,000.

Plant material and any necessary soil amendments represent the primary costs. Institutional rain gardens cost about $30- $40 per square foot, including potential infrastructure upgrades to storm drains, curbs, or underdrains.[1] With typical rain gardens measuring between 100 and 300 square feet, construction costs range between $3,000 and $12,000. Costs can be lower if infrastructure changes are not required or if materials are donated. Labor for installation and upkeep can be provided by existing parks or grounds maintenance staff with opportunities for assistance from community volunteers.

Complementary outreach and educational programming will require additional funding and staff time.

Why is it important?

Rain Gardens improve water quality. By diverting stormwater, rain gardens reduce polluted runoff and recharge the groundwater supply. Water collected in rain gardens is filtered by the plants as it seeps into the ground.

Rain Gardens reduce water treatment costs. Runoff diverted to a rain garden does not enter the combined sewer system and does not require municipal treatment. The installation of 40 rain gardens could treat 1,000,000 gallons of water per year.[2]

Rain Gardens provide community education. A high-visibility site combined with outreach efforts will enhance local awareness of water quality issues. A demonstration rain garden is a community asset that can be used as part of a variety of educational programming.

Rain Gardens are attractive, low-maintenance improvements. Taking advantage of New Jersey's native plants, a rain garden will require only occasional maintenance. Perennials selected for color and texture can add four-season visual interest to municipal sites.

Rain Gardens support local wildlife. Plantings create food and habitat for birds along with beneficial insects including butterflies.

Rain Gardens are an easy strategy for homeowners and businesses to duplicate Rain gardens are a simple, low-cost strategy to reduce pollution while adding an attractive landscape feature. A residential-scale rain garden can be constructed for as little as $3-5 per square foot (under $1,000 for a 200 square foot garden) and can be completed in one weekend.

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

Below we have listed the requirements for earning points for this action.

1) As long as the rain garden is currently in use for the year in which you are applying for certification, the installation may have been completed at any time to be eligible for points.

2) The rain garden must be installed at a new or existing municipal facility.The municipal government must have been significantly involved in the implementation of the project, and the installation must be completed. Outreach must be performed to educate the community about the installation.

We have provided extensive guidance and recommendations for implementing the action. You do not need to follow this guidance exactly as long as your final product meets the requirements.

1. Site Selection: For new construction projects in the design phase, work with the architects to incorporate a rain garden into the site plan. In consultation with municipal departments, determine potential locations for the rain garden at existing facilities. While a rain garden can be installed in almost any location, ideal sites provide high visibility and facilities for educational programming such as schools, libraries, environmental centers, and town halls.

2. Garden Planning: Size depends on the area of water that will drain to the garden, the type of soils on the site, and the depth of the garden. A typical rain garden ranges from 100 to 300 square feet with a depression depth of 3-8 inches. Evaluate existing drainage infrastructure on the site and identify desired garden features.

3. Installation: Spring is the best season to begin construction. A summer start is also possible, but will require more frequent watering until plants are fully established. The construction step is an excellent opportunity for community members or students to participate in hands-on training.

4. Education and Outreach: A variety of programming options can take advantage of the rain garden demonstration site. Some examples are:

- Educational signage at the site.

- Integrating the rain garden with local school curricula.
- Tours, lectures, or training workshops at the rain garden.
- Hands-on volunteer opportunities for garden maintenance.
- A website with project profile and rain garden resources.
- Rain garden brochures for homeowners or businesses.
- Profile of the rain garden in newsletter for residents.
- Outreach partnerships with local nurseries and landscapers.

What to submit to get credit/points

In order to earn points, your submission must meet the following standards:

1) As long as the rain garden is currently in use for the year in which you are applying for certification, the installation may have been completed at any time to be eligible for points.

2) The rain garden must be installed at a new or existing municipal facility. The municipal government must have been significantly involved in the implementation of the project, and the installation must be completed. Outreach must be performed to educate the community about the installation.

Submit the following documentation to verify the action was completed to the above standards. (Log in to the password protected webpage where you submit your online application for certification to write in the text box and upload documents).

1) In the text box, please provide a short narrative (300 word max) to summarize what was accomplished and the general steps taken to accomplish it.

- Upload: Project documentation that may include project scopes and paid contracts.
- Upload: Documentation of an outreach initiative that was conducted.

Resubmission Requirements

To resubmit for points under this action, please provide documentation that the raingarden is still operational the year in which you are applying for certification, and a current outreach initiative.

Approved Action Expiration Date

Approved actions will be set to expire 2.5 years from the date of the installation OR if resubmitting for this action, the date of the outreach initiative.

IMPORTANT NOTES: You can upload up to six separate documents for each action. Please excerpt relevant information from large documents. Please remember that your submissions will be viewable by the public as part of your certified report.

Spotlight: What NJ towns are doing

CRANFORD

In the spring of 2005, a rain garden was installed in Hanson Park, a 1.8 acre municipal-park parcel. The park plan itself was developed by a team of Cranford citizens under the direction of the Cranford Township Committee using funds from a Green Acres no-interest loan. The initial funding was used for an overall plan and the implementation of the first phase of that plan, which included a stone path, benches, and low impact lighting. The plans for phase II outlined different areas of the park that were to be developed in various stages. The Rain Garden was the first of these areas to be developed. Later, a Butterfly Meadow, extensive woodland plantings, and a native plant garden were added.

The Rain Garden project was a joint effort among several organizations: The Hanson Park Conservancy (HPC, the membership of which is almost entirely Cranford residents), Union County Master Gardeners, Rutgers Extension Service, and the Rahway River Association as well as the Township of Cranford. Residents of Cranford, who were not members of the HPC, were encouraged to participate in the installation. An HPC Board member learned of the Rutgers project and applied to have Hanson Park considered as one of the sites. Rutgers approved the site, an area at the end of a sloping driveway and parking area and next to the Hanson House garage. The Cranford Township Department of Public Works (DPW) helped determine that there were no pipes, sewer lines, or other impediments on site. Once the site was finalized, the DPW prepared the soil and dug the shallow depression necessary for a functioning Rain Garden. The Chair of the HPC kept the Township Committee informed with oral presentations about the project.

The garden was placed behind the Hanson House garage and was designed to receive runoff from the steeply sloped roof and the adjacent macadam driveway. Since Hanson Park is situated on the bank of the Rahway River, the garden serves to collect, slow down, and recharge water that would otherwise flow directly into the river.

The garden is maintained by the HPC, which has installed signage that illustrates the purpose of the garden. Educational programs have been offered every year to interested Cranford and Union County residents.

Specific details on the project can be found on the Hanson Park Conservancy website at:

http://www.hansonparkconservancy.com/about/raingarden.htm

GALLOWAY TOWNSHIP

The Galloway Township Rain Garden is located at the Municipal Complex in the main parking lot, a location that provides high visibility and that had experienced a drainage problem. The parking area that is adjacent to this island was constantly flooding each time it rained. The rain garden site absorbs the excess runoff and filters the water as it drains. The construction of this garden was done by two Stockton Professors, Patrick Hossay and Tait Cherinje and their students. Patrick and Tait designed and engineered the garden, did test borings, and provided some of the plantings. The students helped to promote the project and did a good part of the actual digging.

The town has hosted several events which included Rain Garden tours and discussions. While written outreach materials are available, Galloway is also developing a Galloway-specific guide for residential rain gardens and a guide for commercial rain gardens.

Resources

FUNDING RESOURCES:

New Jersey Coalition for Schoolyard Habitats

See grant opportunities listing at http://www.state.nj.us/dep/seeds/syhart/index.htm

New Jersey Department of Environmental Protection
http://www.state.nj.us/dep/grantandloanprograms/.

EDUCATION/TRAINING RESOURCES:

Rutgers Cooperative Extension Water Resources Program

Rain Garden Information Center

Project assistance is available from the Extension's "Rain Garden Team"
http://water.rutgers.edu/Rain_Gardens/RGWebsite/rginfo.html

CASE STUDIES:

Mansfield Township Water Conservation Rain Barrel Workshop

In 2013, Mansfield Township received a $2,000 capacity building grant through the Sustainable Jersey Small Grants program. The final report provides excellent guidance on the design of the project, expenditures, what was accomplished, how challenges were overcome, and future improvements.

Read the final report

New Jersey Demonstration Rain Gardens

More than 25 demonstration sites across New Jersey have been installed with the assistance

of the Rutgers Cooperative Extension Water Resources Program
http://water.rutgers.edu/Rain_Gardens/RGWebsite/demoraingardens.html

RAINSCAPES:

Montgomery County, MD

The Department of Environmental Protection collaborates on the installation of rain gardens throughout Montgomery County. Sites have included schools, parks, libraries, and private businesses. The county offers technical assistance and provides educational resources about rain gardens and low impact development through the Rainscapes website:
http://www.montgomerycountymd.gov/DEP/water/rainscapes.html

10,000 Rain Gardens Program

Kansas City, MO

Several hundred rain gardens have been constructed in the Kansas City region since this outreach initiative was launched in 2005. A partnership between area governments, nonprofits, and other community leaders, the 10,000 Rain Gardens program offers educational presentations and workshops. The website maintains a tally of rain gardens constructed in the area and offers a variety of educational resources.
http://www.sustainablecitiesinstitute.org/topics/water-and-green-infrastructure/urban-forestry/rain-gardens/10000-rain-gardens-initiative

GENERAL RESOURCES:

Low Impact Development Center

Rain Garden Design Templates
http://www.lowimpactdevelopment.org/raingarden_design/index.htm

Native Plant Society of New Jersey

Rain Gardens Page http://www.npsnj.org/pages/nativeplants_Rain_Gardens.html

New Jersey Master Gardeners
http://njaes.rutgers.edu/mastergardeners/

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[1] The Native Plant Society of New Jersey. Rain Garden Manual for New Jersey, 2005; available for download at http://www.npsnj.org/pages/nativeplants_Rain_Gardens.html

[2] Rutgers Cooperative Extension. Rain Gardens Fact Sheet, 2005; available for download at http://water.rutgers.edu/Rain_Gardens/fs513.pdf.