Rain Garden Maintenance Manual

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Rain Garden Description

A rain garden is a landscaped, shallow depression that captures, filters, and infiltrates stormwater runoff. The rain garden removes nonpoint source pollutants from stormwater runoff while recharging groundwater. A rain garden has two main goals. The first goal is to serve as a functional system to capture, filter, and infiltrate stormwater runoff at the source, and the second goal is to be an aesthetically pleasing garden. Rain gardens are an important tool for communities and neighborhoods to create diverse, attractive landscapes while protecting the health of the natural environment. Rain gardens:

- capture stormwater runoff reducing erosion and sedimentation and the amount of water that flows to our streams and waterways during rain storms
- protect water quality by filtering out and breaking down pollutants
- infiltrate runoff and thereby recharge groundwater supplies and provide baseflow to nearby streams and waterways
- provide the opportunity to establish native plant communities to promote biodiversity and habitat for beneficial wildlife
- integrate necessary soil improvements and native plants adapted to periodic wet and dry periods mimicking our New Jersey natural landscape

To a certain extent, a traditional landscaped bed or flower garden can provide functions similar to a rain garden. Yet, to provide all the benefits of a rain garden including capturing, filtering, and infiltrating stormwater runoff, a shallow basin must be dug and planted slightly below-grade to store water. Ideally, a rain garden is planted with a variety of grasses, wildflowers, and woody plants that are adapted to the soil, precipitation, climate, and other specific site conditions. Using native plants with deeper root systems facilitates infiltration and also sustains the landscape through periods of drought.

(SOURCE: “Rain Garden Manual of New Jersey,” Rutgers Cooperative Extension)

Preventative and Corrective Maintenance

Proper and timely maintenance is important for continuous, effective function of the rain garden. Access to the rain garden from surrounding lawn areas should be maintained at all times. The following maintenance actions are required to keep the rain garden functioning properly.

WATERING

Water is essential for the survival of a newly installed rain garden. The garden should be watered regularly during the first three months and as needed throughout the future in times of drought. Plants should be watered every day for the first week they are in the ground and then once a week after that, unless there is substantial rainfall. In hot weather or times of drought, the rain garden will need water one to two times a week to prevent the loss of plants, even if the garden is already established.

WEEDING

Remove unwanted weeds from the garden by hand. Pull them from the base of the weed to remove the roots. As the garden becomes established, the rain garden plants will spread and out-compete unwanted weeds.

MULCHING

Mulch is used to prevent weeds and retain moisture in the rain garden. During the first year the garden is growing, maintain a 3-inch layer of mulch between plants. As the rain garden plants spread and become denser, you may find mulching the garden more difficult. Mulching beyond the first year is optional. Please be careful not to excessively mulch the garden, and keep mulch away from any drain inlets and outlets.

INSPECTING AND CLEANING INLETS/OUTLETS

Inspect the rain garden's inlets monthly, and be sure to remove any leaves, trash, or debris that may prevent water from passing through. Observe the inlet during rainstorms to make sure stormwater is flowing into the rain garden. After rainstorms, please check the garden to be sure drainage outlet paths are clear and that water is not ponding for more than 48 hours. All structural components should be inspected at least once each year.

MOWING

DO NOT mow or use a line-trimmer inside of the rain garden. This damages the plants and can destroy the rain garden.

VEGETATION AND PLANTINGS

During rain garden establishment, vegetation should be inspected bi-weekly. Vegetated areas must be inspected at least once each year for erosion, scour, and unwanted growth. Unwanted growth should be removed from the rain garden. Remove and replace any dead plants in the garden as needed.

PRUNING

Prune overgrown material in the garden annually when the plants are dormant. Remove dead plant material and deadhead flowers. This will encourage dense, new vegetative growth.

DRAINAGE

The rain garden is to be inspected twice each year to determine if permeability of the bed has decreased. The rain garden is designed to infiltrate all stormwater runoff within 48 hours. No standing water should be visible 48-72 hours after a storm event. If standing water remains in the rain garden after 72 hours, corrective actions will be needed.

Equipment, tools, and supplies

No specialized equipment is needed for routine rain garden maintenance. A garden shovel, rake, pruning shears, and water hose are all that is required to keep the rain garden working and healthy.

Maintenance Schedule

Each month and following storm events, the rain garden should be inspected. A schedule with specific inspection notes is attached. It is recommended that photographs be taken during inspections to document conditions.

Estimated Costs

Regular maintenance activities can be completed by the property owner at no additional cost. Below are estimated costs for plants and materials that may be needed as the rain garden matures and develops:

Replacement perennial plantings (1 gallon pots)	$7.00 - $10.00/plant
Replacement shrub plantings (3 gallon pots)	$25.00 - $40.00/plant
Triple-shredded hardwood mulch	$15.00 - $25.00/cubic yard

Maintenance and Inspection Checklist

In addition to the schedule, a maintenance and inspection checklist is attached to assist with documenting the condition, function, and establishment of the rain garden. In addition to completing the form, it is recommended that photos be taken and kept on file.

ATTACHMENTS

Maintenance Schedule

Maintenance and Inspection Checklist

Schedule for Maintenance and Inspection

	First Quarter (Jan-Mar)	Second Quarter (Apr-June)	Third Quarter (July-Sept)	Fourth Quarter (Oct-Dec)
Year 1	Conduct monthly inspection of plantings. Inspect & clean outlet structures after each significant storm event (> 1"). Conduct annual pruning and removal of dead vegetation. Add mulch as desired. Inspect and clear all gutters, downspouts, and piping.	Conduct monthly inspection of plantings. Inspect & clean outlet structures after each significant storm event (> 1"). Repair erosion and replace plantings as needed.	Conduct monthly inspection of plantings. Inspect & clean outlet structures after each significant storm event (> 1"). Remove invasive species/weeds if needed. Inspect and clear all gutters, downspouts, and piping.	Conduct monthly inspection of plantings. Inspect & clean outlet structures after each significant storm event (> 1"). Repair erosion if necessary.
Year 2	Conduct a single quarterly inspection of plantings. Inspect and clean inlet and outlet structures. Conduct annual pruning and removal of dead vegetation. Add mulch as desired. Inspect and clear all gutters, downspouts, and piping.	Conduct a single quarterly inspection of plantings. Inspect and clean inlet and outlet structures. Repair erosion and replace plantings as needed.	Conduct a single quarterly inspection of plantings. Inspect and clean inlet and outlet structures. Remove invasive species/weeds if needed. Inspect and clear all gutters, downspouts, and piping.	Conduct a single quarterly inspection of plantings. Inspect and clean inlet and outlet structures. Repair erosion if necessary.
Year 3	Conduct a single quarterly inspection of plantings. Inspect and clean inlet and outlet structures. Conduct annual pruning and removal of dead vegetation. Add mulch as desired. Inspect and clear all gutters, downspouts, and piping.	Conduct a single quarterly inspection of plantings. Inspect and clean inlet and outlet structures. Repair erosion and replace plantings as needed.	Conduct a single quarterly inspection of plantings. Inspect and clean inlet and outlet structures. Remove invasive species/weeds if needed. Inspect and clear all gutters, downspouts, and piping.	Inspect and clean inlet and outlet structures. Repair erosion if necessary.
Year 4	Inspect and clean inlet and outlet structures. Conduct annual pruning and removal of dead vegetation. Add mulch as desired. Inspect and clear all gutters, downspouts, and piping.	Repair erosion and replace plantings if necessary.	Inspect and clean inlet and outlet structures. Remove invasive species/weeds if needed. Inspect and clear all gutters, downspouts, and piping.	Inspect and clean inlet and outlet structures. Repair erosion if necessary.
Year 5 & Beyond	Inspect and clean inlet and outlet structures. Conduct annual pruning and removal of dead vegetation. Add mulch as desired. Inspect and clear all gutters, downspouts, and piping.		Inspect and clean inlet and outlet structures. Remove invasive species/weeds if needed. Inspect and clear all gutters, downspouts, and piping.	

Rain Garden Inspection Form

Name of Inspector: _____

Site Name: _____ Date of Inspection: _____

Address: _____ County: _____

_____

When was the last time it rained? _____ how much _____inches

Rain Garden Inspection (please check)

Are there educational signs within the garden?	_____ Yes _____ No
Are there weeds (plants that do not belong there) within the garden? If yes, are these weeds invasive?	_____ Yes _____ No _____ Yes _____ No (Use USDA Invasive Plants Field and Reference Guide to identify invasive plants)
Are the plants in the garden healthy? For example: is there any leaf discoloration, fungal growth on the leaves, or pests?	_____ Yes _____ No Take photographs of the plants.
Are some plants over-shadowing other plants or are certain plants over-taking the other plants within the garden?	_____ Yes _____ No If yes, take photographs and provide description of the plant (if the plant name is known, write it down). Please describe:
Is there litter within the garden?	_____ Yes _____ No
Is there sediment accumulation within the garden?	_____ Yes _____ No If yes, is the sediment accumulation only in one area or throughout the garden? Please describe:
Is there sediment accumulation on the plants within the garden?	_____ Yes _____ No If yes, how many plants are covered with sediment? Please describe:

Rain Garden Inspection Form

Is there evidence of gullying or erosion within the garden?	_____ Yes _____ No If yes, where is the gullying mostly occurring? Describe & take photos.
Is there evidence that the mulch has washed away within the garden?	_____ Yes _____ No If yes, take photographs of exposed areas.
Are gutters or pipes entering and exiting the garden clear of debris?	_____ Yes _____ No _____ N/A If no, take photographs of clogged gutters or pipes.
Is runoff free to enter the garden without any obstructions?	_____ Yes _____ No _____ N/A If no, take photographs of areas of blocked flow within the garden.
Take measurements: drainage area and rain garden footprint	• Drainage area _____ ft^2 • Type of drainage area: _____ (rooftop, parking lot, driveway, sidewalk, grassed area, etc.) • Footprint _____ ft^2
Is there empty space in the garden?	_____ Yes _____ No If yes, estimate how many plants would be needed to fill the gaps.
Say cheese!	**Take photographs of the rain garden from all angles**

Additional Notes:

_____

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