

RAIN GARDENS

INTRODUCTION

A rain garden is a type of green stormwater infrastructure (GSI) that collects rain from roofs, driveways, sidewalks, roads, and other areas that contribute to runoff. Unlike bioswales, rain gardens are used for smaller sites such as private residences, cultural and communal facilities, small properties, parking lots, and urban areas. Rain gardens are close to stormwater sources on the ground level, allowing water to pool and infiltrate the soil. They use native plants that effectively absorb and filter water. Depending on the type of storm, rain gardens typically take between 12 to 72 hours to drain and then remain dry, to prevent mosquito breeding, until the next storm.

With proper maintenance, rain gardens benefit both the landowner and the local ecosystem by:

- Storing localized stormwater, minimizing localized flooding
- Creating attractive native habitat throughout the year
- Supporting pollinating insects
- Filtering pollutants
- Improving community aesthetics



IMPLEMENTATION

Steps to implementing a rain garden involve:

- Identifying a low-lying area at least 10' away from foundations
- Evaluate soil conditions for permeability (Note: soil type may need to be amended to allow for proper drainage and plant growth)
- Create a depression at least 6" deep
- Direct runoff to the site by redirecting downspouts and creating curb cuts
- Create an outlet for overflow during storm events
- Select a variety of native plants, grasses, and wildflowers to ensure a strong root system to prevent erosion and promote infiltration

Plants provide natural absorption, filtration and stabilization in a rain garden system; therefore, it is important to select species that are tolerant to both wet and dry conditions as well as compatible with local soil types. When designing and installing a rain garden, consider where the water will be flowing, sitting, and draining, so that certain plants can be positioned for greatest chance of survival and efficacy.

Additionally, depending on the performance of the rain garden, there are supplemental best management practices (BMPs) that can be engineered to further support the overall efficiency of the system. Gutter and downspout installation, berms, trench drains, underdrains, catch basins, piping, or a regrading of upland elevation can all improve the inflow and outflow capacity of a rain garden.



MAINTENANCE

Rain gardens, like many other types of stormwater infrastructure, require long-term maintenance to uphold the system's effectiveness in draining, infiltrating and filtering runoff. Maintenance practices that contribute to a healthy, successful and visually appealing rain garden include weeding, watering (during the initial implementation stage), mulching, pruning, and inspection. While the level of upkeep might vary depending on the season and maturity of a rain garden, consistent maintenance will prolong the functionality and visual benefits of the system.

Weeding

Identify and remove weeds every week during the growing season to reduce competition with native plants for water, sunlight and other nutrients. Less weeding will be required once there is mature, established groundcover that can outcompete invasive species. Make sure to distinguish weeds from native sprouts when removing plants.

Watering

Water plants every other day within the first growing season and in times of drought. Watering is critical within the early stages of the rain garden development to help establish strong, healthy plants. Less frequent, deep watering is more effective than frequent light watering as it helps to encourage deep root development.

Mulching

Replace mulch annually, when necessary; shredded mulch substitutes fertilizer usage, sustains moisture, controls weeds and prevents erosion. Do not bury plants when laying new mulch. Ultimately, a rain garden will require mulch as the plants and groundcover act as a living, green mulch.

Pruning

Cut-back herbaceous overgrowth and dead or diseased vegetation during each winter season before plants begin to emerge or budding occurs. Pruning, thinning, and trimming techniques improve plant health, plant growth, and flowering. While some of the pruned material can stay in the rain garden as a mulch, remove excessive amounts to prevent the smothering of emerging plants in the spring. Do NOT mow over your rain garden. If your rain garden includes woody shrubs, these can be pruned to maintain size or enhance their shape.

Inspection

Inspect rain garden periodically throughout the growing season for invasive species, weeds, plant health, excess sediment, trash, and structural changes. Regular inspections can help early identification of any problems that need to be solved before they become larger maintenance issues, such as replacing a plant, removing outlet/inlet blockages, or re-mulching areas displaced during a storm. When a rain garden is first implemented, inspections should occur every other day to ensure proper function. With each growing season inspections can become monthly or semi-annually depending on the site, age of the planting and weather patterns.

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