



---

# Rain Gardens and Bioswales

*Your personal contribution to cleaner water*

---

## Why Rain Gardens Are Important

Rain gardens naturally protect our water sources and look great doing it! By planting a rain garden, you can help reduce water pollution.

One inch of rain falling on a 1,000-square foot roof generates 600 gallons of water. Rain gardens play a significant role slowly filtering water that previously soaked into prairie soils before roofs, driveways and sidewalks were built in neighborhoods.

## Rain Gardens

Typically, a rain garden is a low spot in a residential landscape that collects storm water runoff and allows it to soak into the ground within 24-48 hours. When planted with grasses and flowering perennials, rain gardens can be a cost effective and beautiful way to reduce runoff from your property.

A rain garden should not be located in poorly drained areas. Additional water will compound the issue. Excessively wet areas would benefit from a French drain system. A well-functioning rain garden drains rapidly and does not become a water hazard.

## Rain garden functions:

- Filter storm water runoff before entering waterways
- Alleviate drainage problems, providing soil stability and erosion prevention
- Provide habitat and food for wildlife, including birds and butterflies
- Enhance beauty of yards and community

Rain gardens should be located at least 10 feet from the house. A natural site is a low spot in your yard which collects water after a heavy rain, commonly from a downspout. Ideally, this area receives full sun, but at a minimum should receive a half day of sunlight.

The best types of plants to use in a rain garden are Kansas and Missouri natives because native plants have adapted to our soils and weather conditions. They are easy to care for once established. Native plants have deep root systems that channel water deep into the soil, filter pollutants, and provide soil stability, thus preventing erosion. Native plant nurseries offer many appropriate plant selections.

## Plants to Consider

Partial Shade Plants (4-6 hours of daily sun):

- ◇ Orange Coneflower (*Rudbeckia fulgida*)
- ◇ Blue Lobelia (*Lobelia siphilitica*)
- ◇ Palm Sedge (*Carex muskingumensis*)
- ◇ Rose Turtlehead (*Chelone obliqua*)

Full Sun Plants (6+ hours of daily sun):

- ◇ Sweet Coneflower (*Rudbeckia subtomentosa*)
- ◇ Shining Blue Star (*Amsonia illustris*)
- ◇ New England Aster (*Symphotrichum novae-angliae*)
- ◇ Swamp Milkweed (*Asclepias incarnata*)
- ◇ Rose Mallow (*Hibiscus lasiocarpus*)
- ◇ Sneezeweed (*Helenium autumnale*)
- ◇ Riddell's Goldenrod (*Solidago riddellii*)

## Rain Garden Maintenance

Establishing plants need watered regularly. Once established, infrequent watering if at all. Rain gardens and bioswales require similar maintenance as perennial gardens. Timely weeding, cutting back dead foliage and plant removal and divisions keeps the garden looking good. Mulching is usually not necessary as plant debris can be left in place to hold the soil. Fertilization is not needed.

## Bioswales

Bioswales are longer and deeper than rain gardens. They are designed to slow down and concentrate large amounts of storm water runoff, while removing debris and automotive/chemical pollution. Bioswales work the same as rain gardens but use engineered soils to manage runoff from large water-resistant areas, such as parking lots or roadways. Like rain gardens, they are vegetated with plants that can withstand both heavy water and drought.

Bioswales remove pollutants through vegetation and the soil. As storm water runoff flows through the bioswale, many pollutants are captured by the plants. The pollutants then enter the soil where natural soil bacteria decompose them.

### Bioswale functions:

- Capture the 'first flush' of car pollutants and oils from parking lots
- Slow down and filter storm water runoff before it enters local waterways
- Alleviate drainage problems, providing soil stability and erosion prevention
- Enhance the beauty of public use areas
- Provide food, nectar, and nesting materials for wildlife through native plantings



Rain Garden

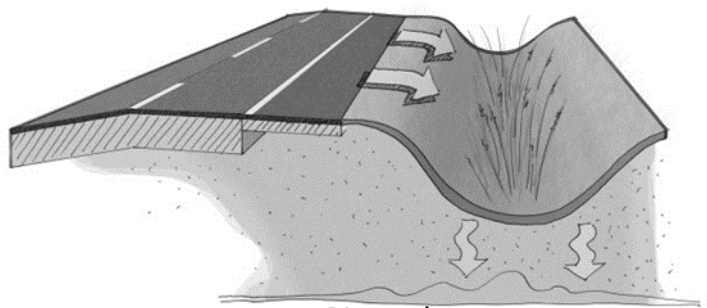
## Plant Selection

The best plants for a bioswale are often native grasses and sedges. Perennial wildflowers are also nice additions to bioswales. Their deep and fibrous roots act as a natural water filtration system. Because of the basin's large size, plants with a wide variety of water needs are used, depending if they are on the bottom, side, or top.

- ◇ Prairie Dropseed (*Sporobolus heterolepis*)
- ◇ Little Bluestem (*Schizachyrium scoparium*)
- ◇ Tussock Sedge (*Carex stricta*)
- ◇ Sideoats Grama (*Bouteloua curtipendula*)
- ◇ Switch Grass (*Panicum virgatum*)
- ◇ Plants on the rain garden list can be used also.

## Local Cost-share Resources

Many Johnson County cities have cost-share programs to help offset the cost of construction and other helpful information. Check the website ([containtherain.org](http://containtherain.org)) for information about these cost-share programs.



Bioswale

Johnson County K-State Research and Extension  
11811 S. Sunset Drive, Suite 1500, Olathe, KS 66061  
(913) 715-7000 — [www.johnson.k-state.edu](http://www.johnson.k-state.edu)

Questions? Contact the Extension Master Gardener Hotline at (913) 715-7050.

Email: [garden.help@jocogov.org](mailto:garden.help@jocogov.org)

*Kansas State University is committed to making its services, activities and programs accessible to all participants. If you have special requirements due to a physical, vision, or hearing disability, contact Johnson County K-State Research and Extension, 913-715-7000.*

**Kansas State University Agricultural Experiment Station and Cooperative Extension Service**  
*K-State Research and Extension is an equal opportunity provider and employer.*

Published 3/2021