# Rain Gardens

## What is a Rain Garden?

A rain garden is a garden of native shrubs, perennials, and flowers planted in a small depression, which is generally formed on a natural slope. It is designed to temporarily hold and soak in rain water runoff that flows from roofs, driveways, patios or lawns. Rain gardens are effective in removing up to 90% of nutrients and chemicals and up to 80% of sediments from the rainwater runoff. Compared to a conventional lawn, rain gardens allow for 30% more water to soak into the ground. It is not a pond or wetland, but is dry most of the time and typically holds water during and following a rainfall event.

## Why is rainwater runoff a problem?

Every time it rains, water runs off impermeable surfaces, such as roofs or driveways, collecting pollutants such as particles of dirt, fertilizer, chemicals, oil, garbage, and bacteria along the way. The pollutant-laden water enters storm drains untreated and flows directly to nearby streams and ponds. The EPA estimates that pollutants carried by rainwater runoff account for 70% of all water pollution. Rain gardens collect rainwater runoff, allowing the water to be filtered by vegetation and percolate into the soil. These processes filter out pollutants.

## Is there a difference between a rain garden and a regular garden?

In the design of a rain garden, typically six to twelve inches of soil is removed and altered with tillage, compost and sand to increase water infiltration. The type of alteration to the soil depends on the current soil type, so it is a good idea to obtain a soil test. Rain gardens are generally constructed on the downside of a slope on your property and collect rainwater runoff from the lawn, roof and/or the driveway. Once water collects in the rain garden, infiltration may take up to 48 hours after a major rainfall. Also, rain gardens incorporate native vegetation; therefore, no fertilizer is needed and after the first year, maintenance is usually minimal.


## What are the benefits?

- Improves water quality by filtering out pollutants
- Aesthetically pleasing
- Preserves native vegetation
- Provides localized stormwater and flood control
- Attracts beneficial birds/butterflies/insects
- Easy to maintain after establishment

## What is the average size and placement of a rain garden?

A rain garden should have an area about 20% the size of the roof, patio, or pavement area draining into it. A typical residential rain garden is between 100 and 300 square feet. If a smaller rain garden than recommended for a lot is chosen, it will still function, as any size garden can make an impact.

Rain gardens are longer than they are wide and are perpendicular to the slope, in order to catch the maximum amount of rainfall. Rain gardens should be placed at least 10 feet away from building foundations and should not be located where water ponds for an extended period of time.

## What types of plants are used?

As a rule, native vegetation should be incorporated into a rain garden. Native plants don't require fertilizer, have good root systems, and are better at utilizing the water and nutrients available in their native soils than non-native species. Perennials, shrubs, wildflowers, or a mixture of all three can be planted. Avoid planting trees, as trees generally absorb more water than surrounding plants. Also, never plant invasive or noxious species in a rain garden, such as purple loosestrife.

## What is the cost of a rain garden?

The cost of a rain garden is dependant on the property's soil type, the size of roof/driveway/patio draining into a rain garden, and the types of plants chosen. If the soil is high in clay content, it may be a good idea to install an under drain system to prevent standing water in the rain garden for more than 48 hours.

For a self-built rain garden, expect to pay between $3 and $5 per square foot in plant costs and soil amendments. Digging the garden is the most time consuming task, as 6-8 inches of soil depth is typically removed to add amendments.

When working with a landscaping company to design and install a rain garden, the cost will significantly increase to around $10 to $12 per square foot.

## What kind of maintenance is involved?

Rain gardens do not require fertilizer, if native vegetation is used. During the first few years after the installation of a rain garden, the weeds will need to be removed periodically. After the plants in the rain garden have become established and grown larger, they will eventually out-compete the weeds. As the rain garden is establishing during the first and second year or during periods of little to no rainfall, occasional watering of the plants will be necessary.

## Why is the City of Lincoln promoting rain gardens?

The main function of a rain garden is improving water quality. Communities around the country have experienced dramatic reductions in stormwater pollution, due to many homeowners installing rain gardens on their property. According to the EPA, 70% of all water pollution comes from pollutants carried in rainwater runoff and other non-point pollution sources. Rain gardens are effective in removing up to 90% of pollutants and 80% of sediments from waters flowing into them. Not only are rain gardens beautiful additions to any landscape, the amount of pollution leaving yards and entering nearby steams, lakes, and wetlands can be reduced. Constructing, installing, and maintaining a rain garden will help to reduce pollution and keep our streams and lakes healthy.

***Thinking of Installing a Rain Garden? Let us know! We'd be interested in your comments, the success of your garden, and pictures of your progress. Please send information to Amanda Meder, Watershed Management Division, Public Works and Utilities Department, 901 North 6th Street, Lincoln, NE 68508, 402-441-7075.***

***Please visit lincoln.ne.gov, keyword: rain garden***

Nebraska DEQ

Lower Platte South Natural Resources District

CITY OF LINCOLN Public Works & Utilities WATERSHED MANAGEMENT