

Protect Bloomington's ponds, lakes, streams, and rivers by using fewer chemicals on your lawn and keeping leaves, grass clippings, and debris out of the street and out of the storm drains. Plant a rain garden for natural on-site control of stormwater runoff.

What is a rain garden?

A rain garden is a garden designed with a depression to capture stormwater runoff in your yard from places like downspouts or paved areas. Runoff from your yard is routed into the garden where plants and soils help remove nutrients and other pollutants by allowing the water to soak into the ground. Rain gardens mimic the natural process of soaking up water where it falls, thereby reducing the amount of water and pollutants that run off our rooftops, lawns, and driveways into our water bodies. Rain gardens provide a natural way to help control stormwater pollution while creating an opportunity for homeowners to design an attractive landscaped garden.

Why are rain gardens beneficial?

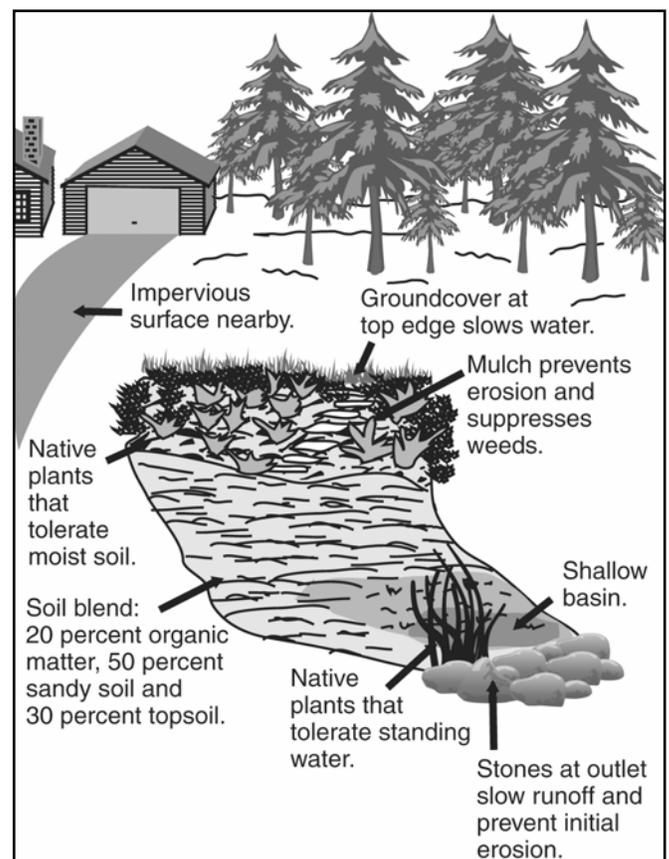
A rain garden provides property owners an opportunity to turn drainage or erosion issues in your yard into a beautifully landscaped garden area. Rain gardens help capture and absorb rainwater and snowmelt before it flows untreated into our storm sewers, enroute to Nine Mile Creek and the Minnesota River. A rain garden is 30% more efficient in soaking up water than turf grass. The large root masses of the vegetation in the garden loosen the soil and help water soak into the ground. As a result, a rain garden improves water quality by reducing the amount of runoff and removing nutrients and other pollutants as the water comes into contact with the plant roots and soil microbes.

What are some of the design features of rain gardens?

A rain garden is designed to channel runoff into a vegetated swale or low area away from a house foundation. Features of rain gardens include a shallow flat basin, gentle side slopes, soil that allows infiltration, and vegetation that traps runoff and prevents erosion. Each property presents unique opportunities and challenges in incorporating a functioning rain garden. Designs can vary from a small low spot in a backyard to a larger project, engineered with underdrains and grading.

- **Dimensions** - There is no standard size, your rain garden should be designed to fit your property and the space you have available in your yard. A common approach is to size the garden to capture the first inch of rain that falls on the area draining to the garden, which will capture 90% of storm runoff. Lawn edging or stone walls provide a crisp, neat edge that is visually appealing.

- **Depth** – A good rule of thumb is 6" in heavy soils and up to 12" in sandy soils.
- **Location** - A rain garden should be placed where rain and snowmelt will drain into the depression. Locate the garden near impervious surfaces, such as patios, driveways or sidewalks, and under downspouts or gutters to capture the rain as close as possible to the point where it falls. Locate rain gardens at least 20 feet away from house foundations. Gardens should not be located in areas where plants may obstruct driver sight lines or over underground utilities. *Remember to call Gopher State One Call at 651 454 0002 before you dig.*



- **Soil considerations** – A good loose, uncompacted organic soil is desired. One method is to over-excavate 4 to 6 inches, till the subsoil and then till in 2 to 3 inches of compost or peat moss with the over-excavated soil. This will help sandy soils retain moisture and loosen clay soils to allow infiltration. A mulch layer on the surface of the garden bed aids in the decomposition of organic matter, prevents erosion, and helps to suppress weeds. Shredded hardwood mulch is recommended because it resists flotation and has a greater surface area for binding pollutants in runoff.

- **Plant selection** — Plant species that tolerate the extremes of wet soils and very dry soils are preferred for rain gardens. The plant location within the rain garden is an important consideration; locate plants such as Joe Pye weed, Siberian iris, and Tussock sedge in the wet bottom. On the drier edges and side slopes consider grasses like little bluestem, or flowers like purple coneflower. Native plants are attractive to butterflies and provide habitat for birds and although low in maintenance, still require care, occasional weeding and control of diseases and insect pests.



What about maintenance and mosquitoes?

Like all gardens, rain gardens require some maintenance: weeding, pruning, plant replacement, mulching, and supplemental watering. In addition, rain gardens may need additional care like sediment removal to maintain their effectiveness. As for mosquitoes, a properly designed rain garden should not lead to mosquito breeding because a rain garden is not intended to detain standing water for long periods. Ideally runoff will not be detained longer than 24 hours in the garden. Mosquitoes will not survive in wetlands that dry out in less than one week after a summer rain.



Additional links

Minnesota DNR Conservation Volunteer, May-June 2004
<http://www.dnr.state.mn.us/volunteer/mayjun04/raingardens.html>

University of Wisconsin-Extension Service
<http://clean-water.uwex.edu/pubs/pdf/home.rgmanual.pdf>

City of Maplewood
www.ci.maplewood.mn.us, Keywords: Rainwater Gardens

Does my rain garden plan need to be reviewed by the city?

In certain circumstances it may be necessary for the city to review the rain garden plan *before* construction. Rain gardens constructed entirely within your property typically will not require a plan review. A plan review is required for any rain garden construction if you are proposing to:

- Install a curb cut on a public street.
- Construct a rain garden within the right-of-way or a drainage and utility easement.
- Construct a retaining wall within the right-of-way or a public easement.
- Move more than 25 cubic yards of material.

A plan review by the city will determine any additional requirements that may be necessary and insure the rain garden is constructed according to all applicable city requirements. In some instances this may require additional permits or agreements and associated fees.

How do I get my plan reviewed by the city?

At a minimum, you will need to submit an accurate sketch describing your proposed rain garden that includes all applicable information such as: address of property, property lines, location of buildings, location of proposed rain garden, how water will enter the rain garden, location of underground utilities, and the location of the curb cut for engineering plan review. The sketch must be drawn to scale or you must include dimensions of the relevant information.

The sketch can be as detailed as engineering drawings; a hand drawn sketch, or you may obtain a plot with approximate property lines for a fee from the City's Engineering Division with which you can indicate the relevant information.

The sketch must be submitted to the Engineering Division at the Public Works Building. The review process may take up to two weeks.

Department contacts

Engineering Division 952-563-4870

Sources:

City of Maplewood, www.ci.maplewood.mn.us accessed June 2008
 Schmidt, R. et al. 2007. *Blue Thumb Guide to Raingardens*
 Yard & Garden by the Minnesota Tree Advocate. May 1, 2001.