Creating a Rain Garden in Your Yard

Yes, you can do it! A rain garden is simply a dip or a swale that is planted with water-tolerant plants.
Creating one requires nothing more high-tech than a spade.

Where To Put Your Rain Garden

A rain garden can be placed almost anywhere, as long as it is at least 10' away from buildings and does not
interfere with underground utilities. It is most useful if it is positioned to collect runoff, in spots such as:

- Near a downspout
- In low wet area
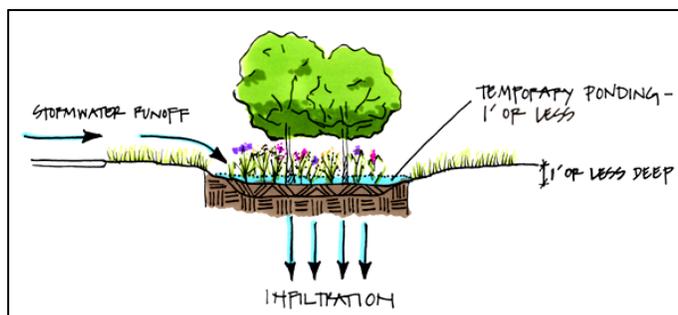- Near a driveway, road, or sidewalk
- At the base of a slope

Design Time

Your rain garden is a collaboration between the engineer and the artist in you.

❖ **Engineering the garden**
- Most home rain gardens are simply a depression in the ground. No fancy pipes. No special soil.

- A rain garden can be as shallow as 4" deep and as deep as 10"- 12".
- Almost any size garden is possible. Larger gardens of course will be able to absorb and hold more

water.
- Rain gardens work in almost any kind of soil except heavy clay.
- To test your soil: Dig a hole about 6" deep and fill it with water. If the water infiltrates within 24 hours, you soil will probably be okay.
- If your soil drains very slowly, you may need to amend it with compost. For home rain gardens, layering rock and sand is not necessary and can sometimes create problems.
- If you want to get technical, you can design a garden to collect the water from a specific area. For example, you could create a garden with enough volume to hold the runoff from half your roof during a 1" rainfall.
- Large commercial or community projects may have very complex designs with overflow pipes, felt mats, rock, sand, and more.

❖ The artistry
- Nature is your palette - trees, shrubs, flowers, ferns, grasses, sedges!

- Native plants are great for rain gardens. Why?
  - They are easy on the environment because most require no fertilizing or watering.
  - They create a no-fuss, low-maintenance garden.
  - Many native plants have deep and extensive root systems that help loosen the soil so water can quickly infiltrate.
  - There are many native plants that can tolerate wet, saturated soils.
- Maplewood has created seven design for home rain gardens that are available on the web.

❖ Designing your own garden
- It is great fun to design your own rain garden. The wettest part of the garden is the wet zone. As you move up the slopes to the top of the garden, the soil is drier. This is the upland zone.
- Some designers just design the wet zone. Other designers plant an upland zone as well. This helps pull the garden into the rest of the landscape.
- Select water tolerant plants for the wet zone. Native wetland plants do well here – plants from sedge meadows, lakeshores, stream banks, wet prairies, and forest swamps. The upland zone can be planted with plants adapted to moderate and dry areas. Both native and non-native plants do well in the upland zone. Our Plant List has suggestions for Minnesota and Wisconsin gardens.
- For best results in sunny gardens, plan for at least 25% grasses or sedges. In shady gardens at least 50% sedges and ferns is a good rule of thumb for the wet zone.
- Your garden will establish much more quickly if you use plants instead of seeds. Fluctuating water levels make it difficult to establish rain gardens with seed.
- Seedlings (often sold in 4-packs and 6-packs) are a great choice for rain gardens. If you can afford it, plant seedlings at one-foot intervals. 18" spacing is acceptable for seedlings but plants will take longer to fill in. Larger plants may be planted further apart.
- How many plants will you need? Say you have a 300 square foot garden and you figure the wet zone is about 100 square feet. If you plant with *seedlings* at one-foot intervals and decide on 25% grasses : 75% flowers, you will need:
     100 plants for wet zone (25 grass seedlings, 75 flower seedlings)
     200 plants for upland zone (50 grass seedlings, 150 flower seedlings)

❖ **Design tips**
- For a low-maintenance garden, choose a naturalistic style rather than a formal style.

- Integrate the rain garden into your existing landscape. For example, the rain garden above was added to an existing garden and expanded to include the whole boulevard area.
- Keep garden edges neat and tidy. Mowed borders, edging, and fences help instill a look of care to a naturalistic garden.
- Don't be afraid of grasses! Native grasses, with their extensive root systems, are the workhorses of a rain garden. Aesthetically, grasses knit the garden into a pleasing composition, toning down the riot of color. In addition, grasses help hold up some of the spindly wildflowers.
- Mix species together. Large areas of one species require more maintenance and are more susceptible to pest problems. In prairie gardens, seeds fall, new seedlings emerge, and gardeners quickly learn that native plants don't stay put.
- That said, if you don't mind the extra maintenance, you may want to play a bit with massing - planting an area with a single species. This creates bold splashes of bloom that are great for attracting butterflies.

Digging Your Garden

❖ **Remove sod**
- Rent a sod cutter or use a spade to remove existing sod. Some people like to kill the sod first because it is easier to remove. It can be killed by covering it with black plastic for several weeks or by using an herbicide.

❖ **Dig the garden**
- Before you dig, make sure there are no underground utilities. In Minnesota, you can call Gopher One at: 651-454-0002 or 800-252-1166.
- Use a shovel to dig the garden. If your garden is very large, you may want to rent a mini-backhoe.
- Make the bottom of the garden flat. This helps the water spread out so it infiltrates more rapidly. The garden's side slopes should not be too steep to plant.
- You may want to use the soil you remove to create a berm (small hill) on one side of the garden. Just be sure water will overflow away from the house if the garden fills up.
- If you discover lots of nice topsoil when you dig, you may want to salvage it. Keep it in a pile separate from the subsoil. After digging the garden, you can return this soil as the top layer.
- If you need to amend the soil, till or spade weed-free compost into the top 6" of soil.

Planting and Mulching

❖ Once your garden is dug, it's nice to give it a trial run. Put the sprinkler on in the garden for 15-30 minutes to see how well water infiltrates. Keep in mind that once plants are mature infiltration will be much quicker. Be sure to let the garden dry out before planting.

❖ It is best to plant a rain garden as soon after digging as possible. If you cannot plant it within a week or so, mulch it lightly with fibrous wood mulch.

❖ In Minnesota and Wisconsin, spring and fall (before September 15) are the preferred planting times. Summer planting is fine if you're willing to water frequently.
❖ It is important to mulch young rain gardens! If you don't mulch, the soil surface can seal up and prevent water from infiltrating. Mulching also prevents weeds and helps retain moisture so you won't have to water as often.
❖ Not all mulches work in rain gardens. Lightweight mulch and flat wood chips will float when it rains! Good results have been obtained using coarse, fibrous shredded wood chips.

Maintaining

❖ **First season care**

Caring for your garden the first several weeks after planting is critical to its success. The most important tasks the first year are watering and weeding. Young, establishing plants need about an inch of rainfall or water per week. By the second or third season the plants will be able to handle short periods of drought. The best way to keep weeds out is to keep a 3"-4" layer of mulch in place.

❖ **Long-term care**

By the second or third season your plants should be fairly well established and most of the plants will be able to handle short periods of drought. During longer drought periods, you may need to water your garden. If you've planted native plants, your main task will be cutting back dead vegetation in the spring to clean up the garden for the new season.

❖ **More information**

Rain Gardens: A how-to manual for homeowners, is an excellent how-to guide. It is available on-line at: http://clean-water.uwex.edu/pubs/raingarden/ or through University of Wisconsin-Extension (UWEX Pub #GWQ037, 1-03-03-5M-100-S)

City of Maplewood
Engineering and Public Works
651-249-2400
www.ci.maplewood.mn.us/rainwatergardens

Plants for Rainwater Gardens

We encourage you to use plants native to your region in your rain garden. Below are list of plants that would work well in the wet zone, for gardens in the upper Midwest. The upland zone can be planted with native prairie, savanna, and woodland species, depending on amount of sun or shade.

❖ Native Plants for the Wet Zone – Sunny Sites
❖ Native Plants for the Wet Zone – Shady Sites
❖ Native Shrubs for the Wet Zone
❖ Plants in Maplewood's Standard Designs (Native & Non-native)

Native Plants for the Wet Zone – Sunny Sites

Common Name	Scientific Name
Flowers:	
Sweet flag	*Acorus calamus*
Giant Hyssop	*Agastache foeniculum*
Canada anemone	*Anemone canadensis*
Swamp milkweed	*Asclepias tuberosa*
New England aster	*Aster novae-angliae*
Marsh marigold	*Caltha palustris*
Turtle head	*Chelone glabra*
Boneset	*Eupatorium perfoliatum*
Joe-pye weed	*Eupatorium maculatum*
Bedstraw	*Galium boreale*
Bottle gentian	*Gentiana andrewsii*
Sneezeweed	*Helenium autumnale*
Oxeye sunflower	*Helianthus helianthoides*
Blue flag	*Iris versicolor*
Blazing star	*Liatris pycnostachya*
Great blue lobelia	*Lobelia siphilitica*
Prairie phlox	*Phlox pilosa*
Virginia mountain mint	*Pycnanthemum virginiana*
Grass-leaved goldenrod	*Solidago graminifolia*
Meadowsweet	*Spiraea alba*
Tall meadow rue	*Thalictrum dasycarpum*
Blue vervain	*Verbena hastata*
Culver's root	*Veronicastrum virginicum*
Golden Alexander	*Zizia aurea*
Grasses and sedges:	
Big bluestem	*Andropogon gerardii*
Fringed brome	*Bromus ciliatus*
Blue joint grass	*Calamagrostis canadensis*
Sedge (many species)	*Carex spp.*
Canada wildrye	*Elymus canadensis*
Rush (many species)	*Juncus spp., Scirpus spp.*
Rice cut grass	*Leersia oryzoides*
Wool grass	*Scirpus cyperinus*
Indian grass	*Sorghastrum nutans*
Cordgrass	*Spartina pectinata*

Native Plants for the Wet Zone – Shady Sites

Ferns:
 Ostrich fern   *Matteuccia struthiopteris*
 Sensitive fern   *Onoclea sensibilis*
 Cinnamon fern   *Osmunda cinnamomea*
 Interrupted fern   *Osmunda claytoniana*
 Royal fern   *Osmunda regalis*
 Marsh fern   *Thelypteris palustris*

Sedges - we are testing:
 Fringed, lake, long-   *C. crinita, C. lacustris, C. sprengelii,*
 beaked, tussock, fox   *C. stricta, C. vulpinoidea*

Flowers:
 Wild sarsaparilla   *Aralia nudicaulis*
 Marsh marigold   *Caltha palustris*
 Turtle head   *Chelone glabra*
 Joe Pye-weed   *Eupatorium purpureum*
 Virginia waterleaf   *Hydrophyllum virginianum*
 Spotted touch-me-not *Impatiens capensis*
 Cardinal flower   *Lobelia cardinalis*
 Canada mayflower   *Maianthemum canadense*
 Virginia bluebells   *Mertensia virginica*
 False dragonhead   *Physostegia virginiana*
 Tall meadow rue   *Thalictrum dasycarpum*

Native Shrubs for the Wet Zone

The shrubs in this list were planted in our Rainwater Shrub Trial garden in 1999 and all are performing well so far. Most of these species do well in sun or shade.

Saskatoon	*Amelanchier alnifolia*
False Indigo	*Amorpha fruticosa*
Black chokeberry	*Aronia melanocarpa*
Buttonbush	*Cephalanthus occidentalis*
Silky dogwood	*Cornus amomum*
Grey dogwood	*Cornus racemosa*
Red-osier dogwood	*Cornus sericea*
Red-osier dogwood 'Isanti'	*Cornus sericea 'Isanti'*
Hazelnut	*Corylus americana*
Dwarf bush honeysuckle	*Diervilla lonicera*
Winterberry	*Ilex verticillata*
Fragrant sumac	*Rhus aromatic*
Meadow sweet (needs sun)	*Spirea alba*
Snowberry	*Symphorocarpos alba*
Nannyberry	*Viburnum lentago*
American cranberry	*Viburnum trilobum*
American cranberry 'Compacta'	*Viburnum trilobum 'Compacta'*

Willows (Salix spp.) were not in our trial
but most willows thrive in wet soil.

Plants in Maplewood's Standard Designs

For these gardens, native plants are used in the wet zone. Both native and non-native plants are used in the upland zone.

Shady Garden

Wet Zone:
Ostrich fern	*Matteuccia pensylvanica*
Great blue lobelia	*Lobelia siphilitica*
Culver's root	*Veronicastrum virginicum*

Dry Zone:
Astilbe 'Rhienland'	*Astilbe 'Rhienland'*
Lady's mantle	*Alchemilla mollis*
Hosta 'Auero Marginata'	*Hosta fortunei 'Auero Marginata'*
Hosta 'Honeybells'	*Hosta 'Honeybells'*
Wild geranium	*Geranium maculatum*

Sunny Gardens

Wet Zone:
'Isanti' dogwood	*Cornus sericea 'Isanti'*
'Baileys Compact' cranberry	*Viburnum trilobum 'Baileys Compact'*
Swamp milkweed	*Asclepias incarnata*
New England aster	*Aster novae-angliae*
Purple coneflower	*Echinacea purpurea*
Joy Pyeweed	*Eupatorium maculatum*
Ox-eye sunflower	*Heliopsis helianthoides*
Blue flag	*Iris versicolor (Blue flag)*
Great blue lobelia	*Lobelia siphilitica*
Culver's root	*Veronicastrum virginicum*

Upland Zone:
Hydrangea 'Annabelle'	*Hydrangea arborescens 'Annabelle'*
Spirea 'Anthony Waterer'	*Spirea x bumalda 'Anthony Waterer'*
Yarrow 'Moonshine'	*Achillea filipendula 'Moonshine'*
Yarrow	*Achillea millifolium*
Yarrow 'Fire King'	*Achillea millefolium 'Fire King'*
Butterfly weed	*Asclepias tuberosa*
Coreopsis 'Moonbeam'	*Coreopsis 'Moonbeam'*
Purple coneflower	*Echinacea purpurea*
Purple coneflower 'White Swan'	*Echinacea 'White Swan'*
Geranium 'Johnson's Blue'	*Geranium x 'Johnson's Blue'*
Oxeye sunflower	*Heliopsis helianthoides*
Daylily 'Catherine Woodbury'	*Hemerocallis 'Catherine Woodbury' (pink)*
Daylily 'Gentle Shepard'	*Hemerocallis 'Gentle Shepard' (white)*
Daylily 'Happy Returns'	*Hemerocallis 'Happy Returns' (yellow)*
Daylily 'Hearts Afire'	*Hemerocallis 'Hearts Afire' (red)*
Daylily 'Little Grapette'	*Hemerocallis 'Little Grapette' (purple)*

Daylily 'Stella d'Oro'	*Hemerocallis 'Stella d'Oro' (gold)*
Blazing star 'Kobold'	*Liatris spicata 'Kobold'*
Beebalm 'Blue Stocking'	*Monarda didyma 'Blue Stocking'*
Blackeyed Susan 'Goldstrum'	*Rudbeckia 'Goldstrum'*
Salvia 'May Night'	*Salvia 'May Night'*
Little bluestem	*Schizachyrium scoparium*
Sedum 'Autumn Joy'	*Sedum 'Autumn Joy'*
Sedum 'Vera Jameson'	*Sedum 'Vera Jameson'*
Lamb's ear	*Stachy's lantana*