

Plants for Rain Gardens



Wild Columbine
Aquilegia canadensis
Ht: 24" Flower: Red Bloom: April-July
Habitat: Full to part shade. Moist to dry soils.



Marsh Milkweed
Asclepias incarnata
Ht: 36" Flower: Purple Bloom: June-August
Habitat: Full to part sun. Wet to moist soils.



Butterfly Milkweed
Asclepias tuberosa
Ht: 24" Flower: Orange Bloom: June-September
Habitat: Full to part sun. Dry soils.



Pink Turtlehead
Chelone lyonii
Ht: 36" Flower: Pink Bloom: July-September
Habitat: Full to part sun. Wet to moist soils.



Boneset
Eupatorium perfoliatum
Ht: 36" Flower: White Bloom: July-August
Habitat: Full to part sun. Wet to moist soils.



Sweet Joe-Pye Weed
Eutrochium purpureum
Ht: 36" Flower: Purple Bloom: June-September
Habitat: Full to part sun. Wet to moist soils.



Alumroot
Heuchera richardsonii
Ht: 30" Flower: Green Bloom: April-June
Habitat: Full to part sun. Moist to dry soils.



Thick Spike Blazing Star
Liatris pycnostachya
Ht: 48" Flower: Purple Bloom: July-September
Habitat: Full to part sun. Wet to moist soils.



Blue Bottle Gentian
Gentiana andrewsii
Ht: 24" Flower: Blue Bloom: August-October
Habitat: Full to part sun. Wet to moist soils.



Prairie Smoke
Geum triflorum
Ht: 12" Flower: Pink Bloom: April-June
Habitat: Full sun. Dry soils.

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Northern Blue Flag Iris
Iris versicolor
Ht: 30" Flower: Blue Bloom: May-July
Habitat: Full to part sun. Wet to moist soils.



Jacob's Ladder
Polemonium reptans
Ht: 15" Flower: Bluish-purple Bloom: April-June
Habitat: Full to part shade. Moist soils.



Pasque Flower
Pulsatilla patens
Ht: 6" Flower: White-Purple Bloom: July-August
Habitat: Full to part sun. Dry soils.



Fox Sedge
Carex vulpinoidea
Ht: 24" Flower: Green-Brown Bloom: May-July
Habitat: Full to part sun. Wet to moist soils.



Little Bluestem
Schizachyrium scoparium
Ht: 30" Flower: Reddish-brown Bloom: August-September
Habitat: Full sun to part shade. Dry soils.



Prairie Dropseed
Sporobolus heterolepis
Ht: 36" Bloom: August-September
Habitat: Full sun to part shade. Dry soils.



Black Chokeberry
Aronia melanocarpa
Ht: 3-6' Flower: White Bloom: April-June
Habitat: Full sun to part shade. Wet to moist soils.



Red-Osier Dogwood
Cornus sericea
Ht: 3-5' Flower: White Bloom: May-August
Habitat: Full to part sun. Wet to moist soils.



Compact Highbush Cranberry
Viburnum trilobum 'compactum'
Ht: 4-6' Flower: White Bloom: May-June
Habitat: Full sun to part shade. Wet to moist soils.

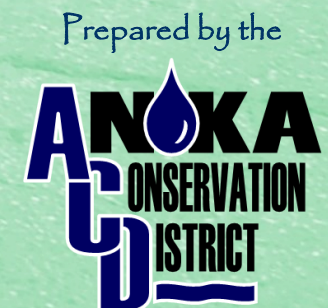
RAIN GARDENS

Treating Runoff at the Source



Conservation Starts at Home

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Introduction

Urbanization has greatly increased the amount of impervious surfaces (streets, roofs, compacted lawns) across the landscape, creating an overload of stormwater runoff. Rainwater that once soaked into the ground now flushes quickly through storm sewers and into our lakes and streams. Runoff transports large amounts of sediments, excess nutrients, and other pollutants, leading to a deterioration of water quality, along with increased flooding and erosion.

Rain gardens are shallow depressions that collect stormwater runoff and allow it to soak into the ground, thereby providing many water quantity and quality benefits. They are typically planted with a selection of native, low-maintenance wildflowers, grasses, shrubs and trees, and are an attractive addition to your home landscape.

Rain gardens are often referred to as bioretention basins. Bioretention can be categorized as either biofiltration (water is filtered then returned to the storm sewer via drain tile) or bioinfiltration (water is allowed to soak into the ground). In either case, the basins are designed to have standing water for a maximum of two days following a rain event so plants are able to thrive and so they do not provide habitat for mosquito reproduction.

Benefits of Rain Gardens

Improve Water Quality– As runoff is filtered by rain gardens, pollutants are retained by the soil and vegetation.

Reduce Downstream Flooding and Erosion– Preventing water from entering the storm sewer system reduces peak volumes and flow rates that can contribute to downstream flooding and erosion.

Replenish Groundwater– Allowing water to soak into the ground restores the natural hydrologic cycle and can contribute to groundwater recharge.

Provide Pollen Sources– Native species are often planted in rain gardens, which provide islands of pollen sources for pollinators in an otherwise urban setting.

Improve Property Values– Well maintained rain gardens provide a landscape feature that can enhance curb appeal.

Types of Rain Gardens

Downspout– Runoff from roof tops can be directed to and captured in downspout rain gardens before it reaches the storm sewer system. Similarly, runoff from driveways may also be redirected to downspout rain gardens.

Curb-Cut– The roadside curb and gutter system that channels runoff quickly from your neighborhood can be rerouted with a curb-cut that directs rainwater from the street into a rain garden positioned near the road. Once the rain garden fills (typically 1' deep), the runoff bypasses the inlet so there is no risk of flooding your yard. This allows the "first flush" to be treated, which typically has the most pollutants.



Networks of Rain Gardens

Although they are relatively small in size, rain gardens can make a difference. An individual rain garden may only treat a small portion of urban runoff. However, multiple rain gardens well placed throughout an area can provide significant benefits. Curb-cut rain gardens are generally more effective than downspout rain gardens because they capture and treat larger volumes already destined to be discharged into a lake, stream, or wetland. In contrast, runoff from downspouts may already soak into yards without the aid of a rain garden.

Project Planning

Downspout rain gardens can be designed and installed by individual homeowners. Curb-cut rain gardens typically require professional design and installation. Homeowners interested in a curb-cut rain garden, ideally near storm drain inlets, should contact the Anoka Conservation District for assistance.

- Map your property. Note topography, buildings, existing vegetation and other features. Determine where existing runoff flows.
- Identify utility locations and plan to avoid them.
- Investigate underlying soils to determine if water will soak into the ground.
- Calculate the impervious surface area that drains to each downspout.
- Design your rain garden in the area that captures the most runoff, placing it at least 10-15' from any basements.
- Make your rain garden about 10% of the size of the area it receives runoff from, and 6-9" deep.
- Create a shallow swale or run drain tile from your downspouts to the rain garden to ensure the runoff is captured.

Construction

- Locate utilities before you dig (Gopher One-Call: 651-454-0002).
 - Remove existing vegetation by using a sod-cutter, digging by hand, or applying an herbicide.
 - Water can be routed into the garden directly from the downspout through a drain tile, as overland flow directed to the garden, or both.
- The following steps may vary when incorporating retaining walls into your plan.

- Dig a shallow depression (6-9" deep at the center) with gently sloping sides.
- If clay or heavy soils are present you may need to over-excavate 12-18" and backfill with a lighter soil mixture (75% sand, 25% compost).
- Place excavated soil on the downhill side to create a small berm. The berm should be slightly higher than the outlet for a controlled overflow. A downslope retaining wall as shown in the photo can be very effective as an overflow.
- If no downslope wall is used, cover the berm with erosion control blanket to hold the loose soils in place while plants become established.
- Spread 2" of shredded hardwood mulch over the entire planting area. Woodchips tend to float and should be avoided.



Plant Selection and Installation

- Choose clump forming perennials that don't readily spread by seed or rhizomes and make sure they are suited to the light and moisture conditions.
- Include at least 40% grasses and sedges to provide support for flower stems and interesting textures and add some small shrubs to add structure.
- Seedlings can be planted from mid-May to mid-September. Late spring planting is ideal. Summer plantings may require frequent watering.
- Plant seedlings 12" apart with more flood-tolerant species toward the bottom and drought tolerant species toward the top.
- Plant species in large clusters to provide more visual impact.

Maintenance

Your rain garden will require maintenance, similar to other gardens on your property.

Downspout and Curb-Cut

- Ensure your rain garden receives at least one inch of water per week for the first 2 months. If watering is needed, give your garden one good soaking each week.
- Lightly weed your rain garden monthly. Leaving plant tags next to your plugs or purchasing a plant identification book may help in determining which species are desirable.
- Remove leaves that accumulate in the garden in the fall to ensure they don't create an impermeable mat and restrict water from soaking into the ground.
- Dead plant material can be removed in the spring to allow more room for new growth. Many native species have strong stems and will stay standing even after a snowfall. Allowing the year's growth to stand over winter adds visual interest and increases wildlife habitat.
- As the shredded hardwood mulch biodegrades, additional mulch should be added to maintain no more than 2" of coverage.

Curb-Cut Only

- Sediment and debris can diminish the effectiveness of your rain garden by decreasing the infiltration capacity and stressing the plant community. An effective form of pretreatment should be installed at the inlet. A Rain Guardian pretreatment chamber, developed by the Anoka Conservation District, is one option that simplifies maintenance for homeowners.
- Place markers by the inlet to alert snow plows to the presence of the rain garden. Depressions like rain gardens seem like good places to pile snow, but doing so can damage the inlet and plants.



Technical Assistance

Expert assistance may be available through the Anoka Conservation District to homeowners interested in decreasing the quantity and improving the quality of urban stormwater runoff reaching our aquatic resources. Assistance may include on-site consultations, project design, cost estimation, and guidance throughout project installation and maintenance.

Financial Assistance

Cost-share grants may be available through the Anoka Conservation District for the installation of rain gardens. Grants may cover a substantial portion of installation costs on projects that will provide the greatest benefits for treating urban stormwater runoff.