Raingarden Maintenance:

A guide to tending the Vadnais Heights City Hall & Fire Department raingarden.

What's a raingarden?

Raingardens are one of many types of stormwater best management practices (BMPs), also known as green infrastructure. The goal of a best management practice is to capture and treat stormwater runoff before it reaches a wetland, lake, or stream. By reducing runoff volume, BMPs reduce the amount of sediment, nutrients, road salt, auto leaks, and other contaminants that wash into water bodies. The results are cleaner water resources, less sedimentation in our wetlands, less drastic water level fluctuations in nearby lakes or wetlands, and replenished groundwater. This raingarden is connected to East Vadnais Lake and was built in 2013 by the Vadnais Heights Rotary, utilizing VLAWMO grant funds. With the dissolution of the Vadnais Heights Rotary, the original maintenance team has been lost.

What's an MS4?

An MS4 is a Municipal Separate Storm Sewer System, or a system of stormwater conveyance. Cities, hospitals, or counties that generate stormwater obtain an MS4 General Permit from the State to keep track of and improve stormwater within the MS4 area. The goal of the MS4 General Permit is to reduce sediment and pollution that enters surface and ground water. MS4 permit holders develop a stormwater pollution prevention program (SWPPP) that incorporates best management practices (BMPs). The Vadnais Heights raingadren is an example of a BMP that supports the City's MS4 permit, and adds to a state-wide effort to improve water resources.

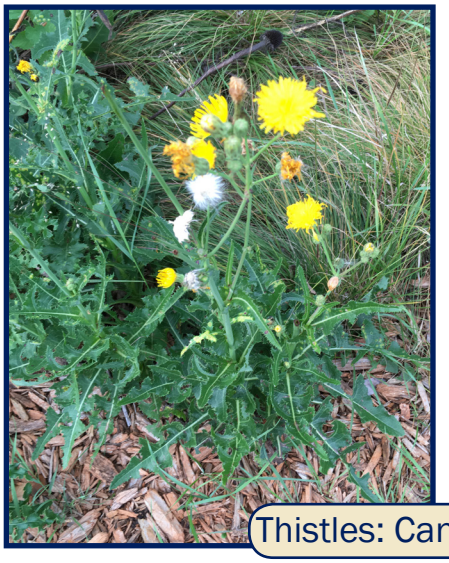
What can we do?

Raingardens and green infrastructure are a different style of landscaping. The native plants in the garden can look a bit 'scruffier' than conventional garden plants. This can be confusing or intimidating, but with understanding and committed upkeep, they can look good, be an asset for water, the MS4, and public education. Refer to this guide to learn about what belongs in the garden and what doesn't, as well as how it's maintained and how much time it takes. Small, incremental visits to the garden are the most efficient way to stay ahead of maintenance. A team effort is key - many hands make light work!

Raingarden Plants:

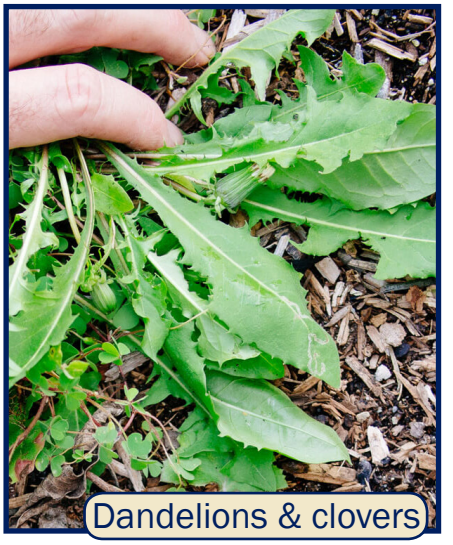
Common weeds and natives that don't belong in the garden.

Goldenrod



Thistles: Canada, sow

Trees: Siberian elm, ash, buckthorn, maple, etc.



Dandelions & clovers

Ragweed

Even if trees are native, they're not part of this raingadren's design and should be pulled.
Watch for single woody stems; if woody plants are in the form of a shrub they may belong there.

Raingarden Plants:

Native plants that belong in the garden.

Native plants support the garden through deep root structures that harness water into the soil. They support pollinators such as bees and butterflies throughout the year, including habitat for overwintering. Native plants are more resilient to drought and the conditions of the Midwest. Unlike many ornamental plants, natives tend to become dense and spread once they're established. While this helps block out weeds and intruding trees, it can also raise questions as to how the community wants the garden to look. If a dense look isn't an issue, maintenance time is lower. If a cleaner aesthetic is desired, more time should be spent keeping weeds down and cutting back natives that are spreading.

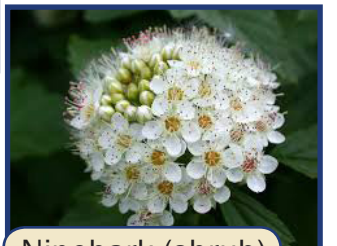
In this garden, goldenrod is the most common weed. While goldenrod is a native plant, it's seldom intended to be in a raingarden due to its aggressive spreading. In mid to late summer goldenrod is likely the only plant that needs to be weeded. Rosin weed is the native (despite being named "weed") intended for the garden that does the most spreading, requiring the most monitoring so that it doesn't overtake other plants. Plants growing up to or over the garden edge can be pulled depending on preference.

Joe Pye Weed

Wild Blue Indigo (purple) & False Indigo (white)

Rosinweed

New England Aster



Ninebark (shrub)

Serviceberry (shrub)

Raingarden Maintenance:

Native plants that belong in the raingarden:

June & Karl Foerster Grass

Wild Monkey Flower

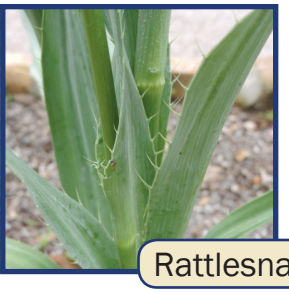
Big Bluestem & Indian Grass

Compass Plant

Common Milkweed

Swamp Milkweed

Butterfly Milkweed



Rattlesnake Master

Fox & Pennsylvania Sedge

Sneezeweed

Spring Care:

Dead plant material is removed in spring to make space for new growth.

Weeding:

The most effective times for weeding are Spring and Fall. Targeting mid to late May as well as early to mid August prevents the weeds from going to seed. Turf grass often encroaches into the garden, and shows up as individual, short (2-5”) blades of grass that are spaced apart yet connected at the roots. Dense, “bunchy”, and long grasses are intentional native grasses or sedges, which are planted in clusters.

When weeding, shake off the root mass and try to disturb the soil as little as possible. Re-cover bare soil with mulch to keep new weeds from seeding.

Mulch:

Raingardens benefit from fresh mulch every 3-4 years or when bare soil is exposed. Mulch should be about 3” thick and should be thin to the ground two inches away from the base of the plants, which promotes air circulation and prevents disease. As raingardens mature, the larger plants crowd out weeds and reduce the need for mulch.

Double-shredded hardwood mulch is best suited for raingardens. This type of mulch lasts longer than single-shredded or wood chips, and doesn’t float when the garden is inundated with water. Double-shredded also interlocks to form a mat that blocks weeds.

Time Commitment:

In 2019, two people did a comprehensive garden weeding in about two hours at a time when weeds were heavy. For heavy weeding like this, three or more individuals could complete weeding in about an hour. For light weeding sessions, 3-5 people need only work for about 30 minutes. Two to three light weeding sessions per year will suffice to keep up on weed growth and control the spread of native species, or 3-5 20-minute sessions, depending on aesthetic preference.

Other Maintenance:

- When mowing around the raingarden, point mower to spray clippings away from the garden.
- Keep rocks clear from all plants and debris.
- Keep under drain (near the sign) clear of debris, as this is an overflow into the nearby wetland.
- Native perennials that belong in the raingarden do spread over time. These plants were selected for the garden for their ability to be robust and fill the space, but when one is dominating other plants they should be cut back with pulling to keep the garden organized. In this raingarden, rosin weed is the most aggressive native plant that needs thinning.

Debris disposal:

Weeds and dead plant debris should be disposed of at a designated yard waste site or facility. Disposing debris in a ditch or woodlot may seem harmless, but this can contribute to the issue of nutrient loading into lakes and wetlands as the debris decays. If a woodlot or field receives regular dumping, the level of nutrients may exceed the lot's ability to retain the nutrients, particularly as native, dense vegetation gets smothered. Such vegetation would otherwise inhibit the movement of sediment and nutrients on the landscape. Continued dumping can also encourage the dispersal of invasive plant species such as buckthorn, which takes advantage of newly disturbed soil.

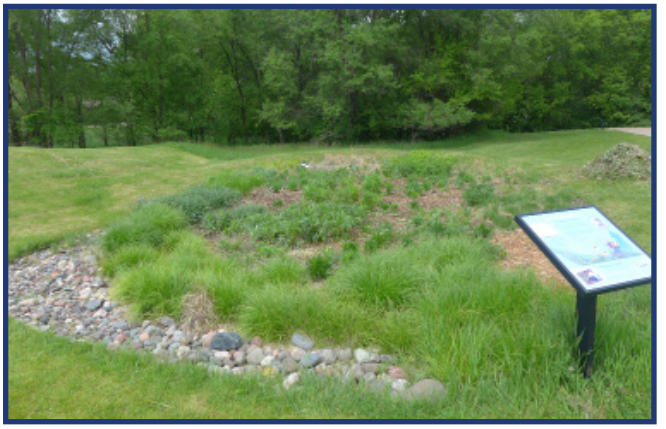
Dumping debris into a wetland is illegal under the Wetland Conservation Act. Dumping into the area around a wetland, or the wetland buffer, is also discouraged. Vegetated wetland buffers are important parts of wetland health and function, serving to slow down nutrient movement, retain sediment on land, and provide important edge habitat between water and upland areas. Depending on the type and size of the wetland, VLAWMO's Water Management Policy outlines wetland buffers ranging from 16-67 ft (pg 25-26).

An MS4 that takes initiative to support wetland buffers and dispose organic debris at designated yard waste facilities can include these efforts on their annual SWPPP report. Specifically, these actions fall under Minimum Control Measure (MCM) #6: Good housekeeping or MCM #1: Public education. For many cities this strategy works to "lead by example", encouraging the public to follow suit with the use of postings, newsletters, utility bills, etc.

Raingarden Comparisons:

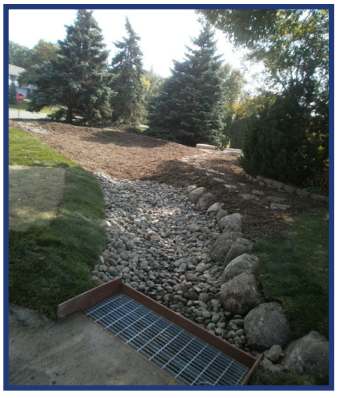
Vadnais Heights Elementary

Spring: Dead material gets removed and weeded. Rocks are clear, mulch covers bare soil.



Fall: Plants are dense but garden is weeded and maintained around the edges.

Heritage Estates: Greenhaven Dr & Thornhill Ln in Vadnais Heights



Vadnais Heights

EST 1983 VLAWMO Vadnais Lake Area Water Management Organization