

CITY OF NORTHFIELD RAIN GARDEN COST SHARE APPLICATION



THE CITY OF NORTHFIELD is awarding cost share grants for a limited number of rain gardens in an effort to improve water quality and reduce the chances of localized flooding in the community. The City will reimburse property owners 50% up to a \$250.00 max reimbursement for the cost of materials in rain garden construction and rental of any construction equipment. Reimbursement will be in the form of a Utility Bill credit and applicants must have a Utility account. Applications will be accepted between January 1st and May 31st of each year for projects to be installed in that year's growing season. Grants will be awarded first-come, first-serve based on a set of criteria including effectiveness in treating stormwater runoff, location, and cost. Applicants will be notified of an award no later than June 31st. This program is funded through Stormwater Utility Fees.

Send completed applications to:

801 Washington St.
Northfield, MN 55057
Fax: 507-645-3055
engineering@ci.northfield.mn.us

Property Owner's Name: _____ Date: _____
Address: _____
Email: _____ Telephone: _____
Utility Account #: _____

General Questions:

- YES NO I currently have surface water drainage issues on my property after rainstorms.
- YES NO I can maintain the rain garden for at least 5 years (weeding, mulching, replanting, etc.).
- YES NO Rain garden can be used as a site for rain garden tours.

Proposed installation date of rain garden: _____

How did you hear about the rain garden program? _____

Briefly explain why you are interested in participating in the Rain Garden Cost Share program:

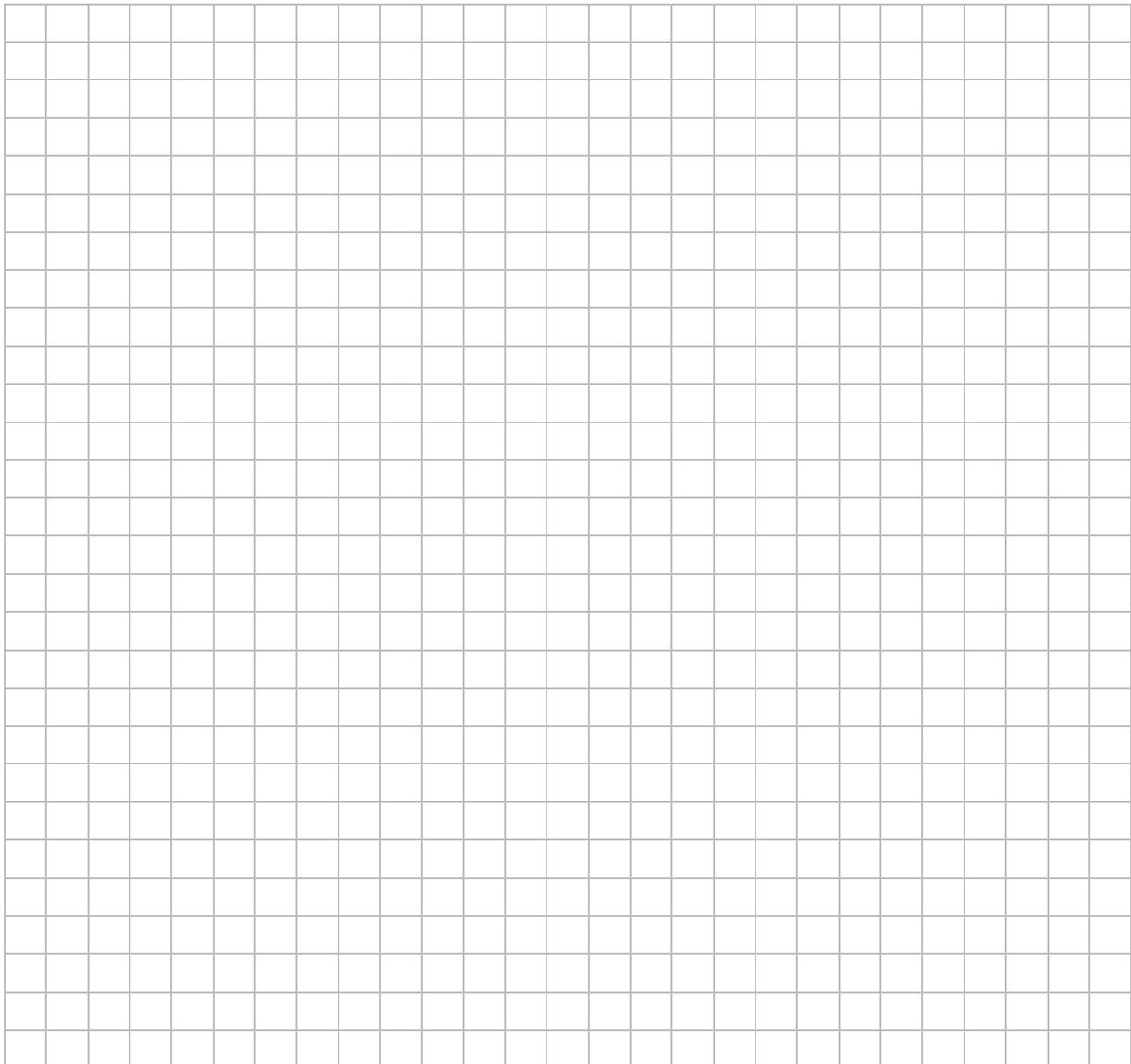
RAIN GARDEN COST SHARE APPLICATION

(For resources to help plan your rain garden, visit www.bluethumb.org or check out “The Blue Thumb Guide to Raingardens” book at your public library)

1. Locate Utilities: Call Gopher State One-Call (1-800-252-1166) to mark the location of utilities on your property. Rain gardens should be located away from buried utilities.

2. Property Sketch: Sketch your property including buildings, driveways, sidewalks, street, gutters/downspouts and the proposed location of the rain garden. Rain gardens should be at least 10 ft away from foundation of house. Locations on steep slopes and above buried utility lines are not recommended. Recommended locations are existing low spots in the yard, places where water collects, and areas near downspouts. For detailed instructions on how to design and plant a raingarden, we recommend “The Blue Thumb Guide to Raingardens” which is available through the public library system.

Rear Property Line

A large grid for sketching the property layout. The grid is composed of 20 columns and 30 rows of small squares. It is intended for drawing a property sketch, including buildings, driveways, sidewalks, and the proposed location of a rain garden.

Front Property Line

2. Location Conditions: Does the proposed location meet all of the following criteria? (Check box if yes.)

- Garden is at least 10' from house
- Garden is not over buried utilities (electric, phone, cable, storm sewer, sanitary sewer, water)
- Garden is not over septic system
- Slope < 8% (8' rise over 100' distance)
- Garden is at least 3' above bedrock (see Factors When Installing a Rain Garden attachment)

3. Drainage Area: What impervious areas will supply water to the rain garden? (Check all that apply and estimate area)

Drainage Area	Area in square feet
<input type="checkbox"/> House roof - describe which portion(s):	
<input type="checkbox"/> Garage roof - describe which portion(s):	
<input type="checkbox"/> Driveway (only the portion that slopes towards the rain garden)	
<input type="checkbox"/> Patio	
<input type="checkbox"/> Other – please describe:	
Total Drainage Area (A) =	

4. Depth and Area of Rain Garden: The depth and area of a rain garden is based on the drainage area you intend to capture water from and the infiltration rate of water into the soil. The depth of a rain garden should match the number of inches of water that will infiltrate in one day, based on your infiltration test:

To test the infiltration rate of your soil:

1. Choose a good location for a rain garden, such as close to a downspout, near the driveway, or in a natural depression at least 10 feet from any basement to prevent seepage
2. Dig a hole about 8 inches wide and 8 inches deep
3. Fill the hole with water and let it drain
4. Fill the hole again, but this time measure and record the water level at the 30 minute, 1 hour, and 2 hour marks. If it's draining very slowly, record the level every hour.
5. Using these measurements, calculate how many inches of water soak into the ground in 1 hour.
6. For example, if the water in the hole drops ½ inch in 2 hours, that means ¼ inch infiltrates every hour (½ in ÷ 2 hr = ¼ in. per hour).

The infiltration rate test results on my proposed rain garden site show that water infiltrates into the ground at a rate of _____ inches per hour **(B)**. (Clay .15 in/hr – Loam .5 in/hr – Sand 1 in/hr)

To find the depth of your rain garden, take the infiltration rate **(B)** and multiply it by 24 hours:

(B) X 24 = _____ inches of water per day that will infiltrate (C)

(C) is the **maximum depth** your rain garden should be in order to insure there is no standing water 48 hours after a rain event.

To find the area of your rain garden, take the drainage area **(A)** and divide it by the depth of your rain garden **(C)**:

(A) _____ (C) _____ = _____ area of proposed rain garden (D)

Write the dimensions of your proposed rain garden here:

Raingarden Area (D): _____ square feet

Depth (C): _____ inches

5. Excavation: Check how you plan to excavate the soil and what you will do with the excess soil.

Excavation Method	Soil Use
<input type="checkbox"/> Shovel	<input type="checkbox"/> Use for berm around rain garden
<input type="checkbox"/> Mini-backhoe	<input type="checkbox"/> Use or store elsewhere on site
<input type="checkbox"/> Other: _____	<input type="checkbox"/> Haul off site

6. Plant Estimates: Rain gardens, designed with wet-tolerant plants in the bottom depression and drought-tolerant plants on the drier upper slopes, have unique plant requirements. For assistance, please visit the Blue Thumbs Plant Selector (<http://www.bluethumb.org/plants/>), use the Blue Thumb Guide to Raingardens book, or browse the internet for a variety of professionally designed rain garden layouts for the Midwest.

Estimate the number of plants you intend to purchase for your rain garden using the spacing guidelines below. Price estimates are provided but actual prices from a supplier (check with local greenhouses and nurseries) are preferred. Native plant species or their cultivars that originate within 200 miles of Northfield are preferred. Feel free to attach additional pages for your plant estimates.

# of plants needed for 100 sq. ft.	Spacing Suggestions and Price Estimates for Different Pot Sizes
12" spacing – 100 plants 16" spacing – 56 plants 18" spacing – 45 plants 24" spacing – 25 plants 48" spacing – 6.25 plants	<ul style="list-style-type: none"> • 6-pack-sized plugs: 12"-15" spacing; \$1 • 2"- 4" pots: 15"-18" spacing; \$4 • 6" pots: 18" – 24"; \$8 • Shrubs: spacing depends on species; \$23 • Sod: no spaces; \$2 per square yard

Plant Species	Pot Size	# of Plants	Price Each	Subtotal
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
Total # of plants:			Total Price:	\$

7. Materials Estimates: Estimate the materials cost using the tables below. Note: Unit Costs are estimates. The actual costs will differ based on the supplier and delivery options you choose.

Material	Unit Costs per sq. ft.	Area (sq. ft.)	Total Cost
Leaf Compost, 3 inches *	\$0.15		\$
Shredded Hardwood Mulch, 3 inches **	\$0.35		\$
Edging: Plastic or Landscape block	\$0.50 - \$2.00		
Other:			
Other:			
Other:			
Subtotal:			\$

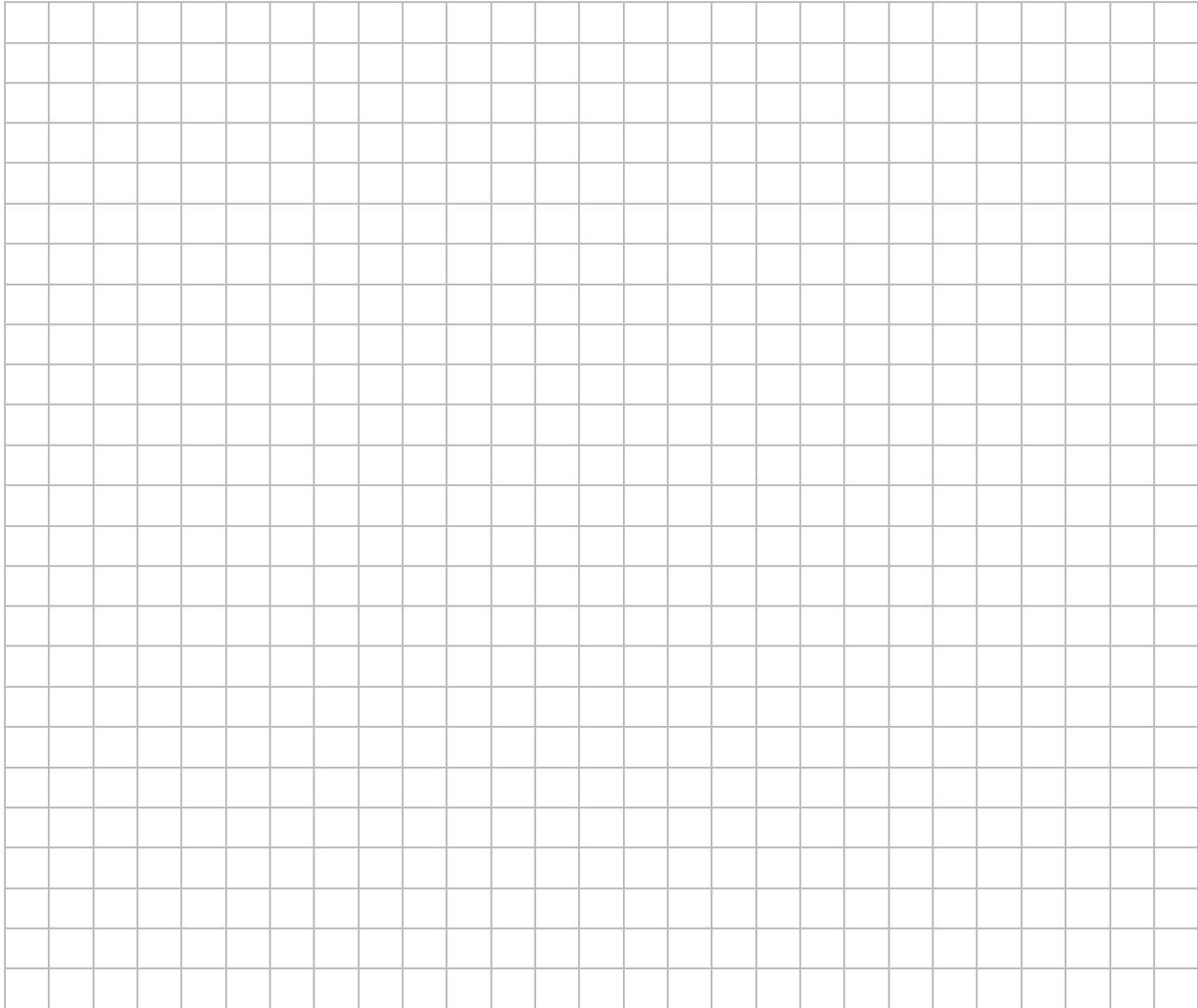
* In order to insure that residential rain gardens infiltrate properly, at least 3 inches of leaf compost should be incorporated into the bottom of the rain garden depression by tilling it in. This provides higher infiltration rates and better soils for plants to thrive in. A 100 sq ft rain garden will require approximately 1 cu. yd. of compost.

** Shredded hardwood mulch is strongly recommended in rain gardens rather than woodchip mulch. During rain events, shredded hardwood mulch binds together to form a mat which stays in place. Woodchip mulch tends to float on top of the water where it sticks on plants and congregates wherever the wind blows it, leaving bare spots throughout the rain garden. A 100 sq ft rain garden will require approx. 1 cu. yd. of shredded hardwood mulch.

Method for Water to Enter the Rain Garden (Check those that apply)	Materials and Amount (Give size and quantity)	Cost
<input type="checkbox"/> Extended downspout		\$
<input type="checkbox"/> Buried or overland pipe or drain tile		\$
<input type="checkbox"/> Across lawn	N/A	\$
<input type="checkbox"/> Vegetated swale		\$
<input type="checkbox"/> Dry creek (rock, no plastic liner)		\$
<input type="checkbox"/> Stone or concrete spillway		\$
Subtotal:		\$

Materials Total: \$ _____

10. Rain Garden Planting Design: Sketch the shape of the rain garden and show which plants you will be planting and where. See examples on previous page and attach a separate sheet if needed. Group plant varieties in masses or drifts for the greatest visual impact and color. Tall plants usually go in the middle or are used as a backdrop and medium and short plants get used in the front and on borders. If you are using a professional or pre-made design, please attach.

A large grid for sketching a rain garden design. The grid is composed of 20 columns and 20 rows of small squares, providing a space for drawing the layout and plant placement.

I certify that I have met the following conditions to qualify for the Rain Garden Cost Share program:

- I own the property within the city limits of Northfield, MN on which the rain garden will be installed.
- I understand the function and design of rain gardens and have a genuine interest in improving water quality.
- I will install the rain garden during the growing season immediately following cost-share award notice.
- If approved, I will finance 100% of the cost for rain garden installation and submit eligible receipts for reimbursement after a Final Evaluation. Only those costs incurred after grant has been awarded will be eligible.
Rain garden cost share participants are eligible for 50% reimbursement for approved expenses up to \$250.00 maximum.

Contact Name: _____ Signature: _____ Date: _____

Thank you for your interest in improving water quality and reducing flooding in your community!

RAIN GARDEN COST SHARE AGREEMENT FORM

If I am awarded a City of Northfield rain garden cost share grant, I hereby agree to:

1. Read and understand all the information provided in the cost share grant documents, including the design, function, and construction process of rain gardens;
2. Construct a residential rain garden according to the plans submitted in the Cost Share Application and approved as a grant award before September 15th of the year the grant is awarded;
3. Implement basic rain garden design principles, including: rain garden ponding area is sized to the volume of water draining to the rain garden; 12 in. of ponding depth maximum; 3 in. of weed-free leaf compost tilled into the bottom of the rain garden; native prairie plants or cultivars of native plants will dominate the planting; rain garden must be 10 ft. from foundation of house;
4. Avoid planting within utility and drainage easements and road right-of-way areas;
5. Call Gopher State One-Call (1-800-252-1166) before I start digging;
6. Track expenditures and keep receipts during rain garden construction;
7. Authorize access by City staff to inspect the project, construction activities, and post-construction conditions.
8. Allow City staff to use photos and information gained from project for future public education opportunities.
9. Submit reimbursement requests by December 31st of the year the grant is awarded, providing all receipts for materials and/or services;
10. Maintain the rain garden for a minimum of 5 years including irrigation during plant establishment and weeding when needed or at least 3 times a year
11. Agree that all submittals and methods or techniques developed as part of the grant award shall become the property of the City for use at its discretion, including but not limited to print and web site publications, tour maps, and any or all program publicity. The City must ask for approval before putting property location on tour maps.

Further, I understand that the City of Northfield will not authorize payment of the reimbursement request unless full documentation is received and until all construction tasks are complete.

Except if arising from or out of the City of Northfield's fault or negligence, I agree to indemnify and defend the City of Northfield, and will hold harmless the City of Northfield, and assign from any claims, expenses, or damages including attorney's fees, arising from my participation in this agreement.

I certify to the best of my knowledge that the information included in this application is true, complete, and accurate and I agree with the terms listed above.

Applicant's Signature: _____

Applicant's Name (Please print): _____

Date: _____ Date Received by the Northfield Engineering Department: _____

RAIN GARDEN COST SHARE CONSTRUCTION GUIDE

Every rain garden is different, but here is a general step-by-step guide for constructing a rain garden.

1. **Call Gopher State One** (1-800-252-1166) and your irrigation installer to stake the location of underground utilities and irrigation lines near your raingarden site. You may need to adjust the rain garden location if utilities are found below your rain garden location.
2. **Prepare site:**
 - a. **Spray paint** or lay a rope around the outline of the proposed rain garden.
 - b. **Remove the sod.** A mechanical sod cutter works best. Roll it up and save it for patching up bare spots.
 - c. **Loosen soil 6" - 12" deep.** A large 8hp rear tine tiller makes this much easier!
 - d. **Remove the soil 4" lower than your intended garden depth to accommodate adding and tilling in 3" of compost.** For example, if you want a 3" deep rain garden on flat land, dig the depression 7" below the surrounding grade. Use the excess soil elsewhere on your property (raised bed garden?) or haul away.
 - e. **Add 3" of compost and till** into the soil. Compost loosens up the soil, helping water infiltrate faster. Adding 3" of compost and tilling the garden bed will raise the depth 4" or more.
 - f. **Make sure there is an outlet** to the rain garden that is lower than the inlet (unless using a pop-up drain). If there is a high flow of water entering the rain garden, put the outlet close to the inlet so when the rain garden is full it can easily reroute itself out of the garden and into a proper drainage path.
3. **Add 3" of shredded hardwood mulch** to the garden. High quality shredded hardwood mulch is stringy and gets tangled easily, and should hold together if squeezed into a ball (or stick to a fleece jacket!). Unlike wood chip mulch, shredded hardwood mulch should stay put on the bottom of the rain garden during times of temporary ponding.
4. **Lay out potted plants** in desired locations. This is your chance to make final adjustments to your design.
5. **Dig in and plant the native plants!** Break up the root balls before planting and after planting be sure compress the soil surrounding the plants to allow good soil to root contact.
6. **Water the garden** immediately after planting and at least twice a week for the next month or two. Potted plants, especially small pots and plugs, dry out quickly with full sun and wind. After the first season no additional water should be needed—native plants, with their deep roots, can handle droughts.
7. **Connect your water sources** to the raingarden (e.x. downspouts, driveways). If the raingarden is draining poorly in the beginning, it might be best to wait 2-4 months after planting to connect the water source so that the plants have time to establish a bigger root system.
8. **Weed the rain garden** two to three times per growing season or as needed.
9. **Remove dead vegetation** each spring with hedge clippers or a weed whacker and then compost it. Driving lawn mowers on the rain garden will compact the soil and reduce water infiltration rates.
10. **Replace mulch as needed.** In 2-3 years the native perennial plants should spread to empty areas so that mulching is no longer required. The closer you plant, the faster the garden fills out.
11. **Dividing perennial plants** with a spade every 5-7 years makes the plants healthier and more vigorous. It also means free plants for you and your friends!