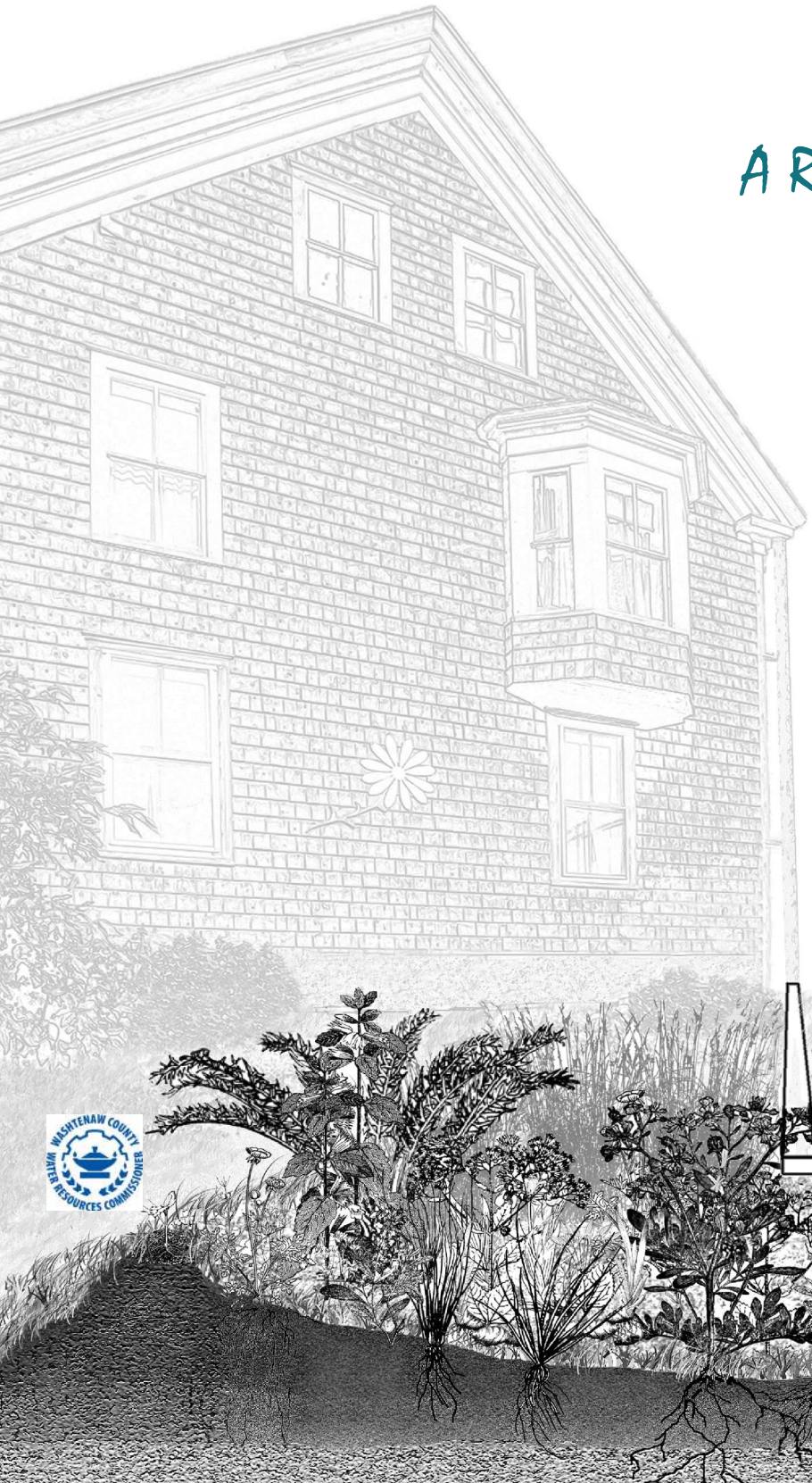
Rain Garden Guide for Homeowners

RAIN GARDENER



A Rain Garden

1. Soaks rainwater into the ground quickly.
2. Protects our rivers and creeks from pollution.
3. Replenishes the groundwater.
4. Creates beautiful gardenscapes throughout the growing season.
5. Provides food and shelter for birds, butterflies and beneficial insects.

WASHTENAW COUNTY WATER RESOURCES COMMISSIONER

Illustration courtesy of Joy Buslah for Wild Ones, wildones.org

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INTRODUCTION

In many towns and cities, rainfall and snow melt are whisked away into an engineered stormwater system of pipes and basins that funnel water, unfiltered, directly into local streams & rivers.

Stormwater is warmed in summer as it flows over hot pavement before it runs into, and in turn raises the temperature of, local waterways. Gushing rainwater washes phosphorous and other contaminants into stormwater drains, pushing other refuse and debris along with it.

This has many negative effects on local streams and rivers, not least on fish, plants and other species that depend on them. The increased water volumes produced during storms dislodges soil from riverbanks causing erosion. The soil muddies the water, eventually increasing sedimentation once it settles. This water can be more expensive to purify for drinking water; it can also place restrictions on recreational activities such as swimming and fishing. A river can develop hydrologic problems when the direct channeling of a disproportionate amount of rainwater causes the buildup of excess sedimentation.

Water tables are not recharged when rainwater is impeded from infiltrating into the groundwater where it falls; the resulting lower groundwater levels can even cause sinkholes to develop in some areas.

The warmer temperatures of climate change have brought increased precipitation and more frequent extreme weather events. In response, communities are implementing stricter and more varied stormwater practices. There is a simple way to do your part to keep pollution out of the river, reduce flooding, recharge the water table and revitalize your yard:

Rain Gardens

Rain gardens help protect our nearby water bodies by storing and filtering water back into the ground. For a modest 1,500 square foot home, as much as 5,000 gallons of water from a one inch rain storm can run off the roof, driveway, patio and even lawns. A simple, low maintenance and easy to construct rain garden can capture much of that run off, similar to how the natural environment would function. Learn how you can mimic some of nature's effects by following this guide to rain gardens.

1) Build a Rain Garden to infiltrate water on site. Native plants provide wildlife habitat, reduce stormwater runoff & are a beautiful addition to your yard. www.ewashtenaw.org/raingardens.
2) Rake leaves in the fall so they aren't flushed into streams & lakes. Fertilize your lawn sparingly.
3) Pick up litter before it enters the storm drain.
4) Scoop pet waste.
5) Clean up any oil or gas spills from your car.
6) Add a native plant buffer strip around streams & lakes to reduce erosion and stabilize the bank, during large storm events. Long root systems of native plants prevent sedimentation.

RAIN GARDEN ESSENTIALS

A rain garden is a shallow saucer-shaped garden that soaks rainwater into the ground. It fills with the rain that falls on it – plus rainwater that runs off a hard surface like a roof or a driveway. The water that runs off might have picked up pollutants that the rain garden can filter out: phosphorus and nitrogen from fertilizers; bacteria from animal waste; oil, grease and heavy metals from cars, and just plain old "dirt" called sediment. If not captured, these pollutants go into streams where they effect fish, plants, animals and us!

Without a rain garden, urban rainwater runoff goes into storm pipes, or ditches, both of which can go straight to the river. This runoff called "stormwater" is not treated. Pollution can be prevented from entering creeks and rivers if it is caught by a rain garden.

Rain gardens not only filter water, they replenish the groundwater with clean, cool water. Plants in rain gardens require less watering during hot summer months. Because they capture water from the roof, a rain garden gets enough water that it doesn't need water from the tap. Your water bill can be reduced by using free water from the sky.

Construction Steps

Each site is different but in general, follow these five steps.

1) Pick a location at least 10 feet from the house and downhill from the downspout. Call Miss Digg (811) to check for underground utilities three days before you dig. Dig a garden bed that will hold water 3-6" deep. The area of the depression should be 20-30% the size of the contributing roof or driveway. More information on sizing can be found on page 14.

2) Rototill in compost, spread mulch and plant the native plants recommended in this guide, on page 25.

3) Direct the water from your downspout or sump pump to your depression, either overland or through a buried, non-perforated black plastic drain pipe, available at most home centers, see page 22.

4) Water your garden if it doesn't rain, until it is well established.

5) Once your plants are established, they'll thrive without additional watering. Fertilizers aren't necessary but weeding is, especially at the beginning.

Photo of Roger Moon's Rain Garden. Designed & Installed by Roger Moon. Photo credit: Susan Bryan.

TOOLS

- ☐ Tape Measure
- ☐ Shovels
- ☐ Rakes
- ☐ Trowels
- ☐ Line Level
- ☐ String
- ☐ Wood stakes
  at least 2' tall
- ☐ Small backhoe or rototiller
  optional

Locating

1) The garden must be at least 10 feet away from any building to prevent potential water seepage into the basement.

2) Select a naturally low spot that is flat or gently sloping and is downhill of the downspout. Avoid tree roots. Make sure overflow from the garden will go to a safe location, away from a building.

3) Do not place a rain garden over a septic tank, leach field or drinking water well.

4) Call Miss Dig at 811 at least three days before digging to avoid public pipes & utilities.

5) Avoid any private wiring or utilities such as driveway lights, sheds with electricity or lawn irrigation pipes.

Measuring

Now that you have chosen a general location for the future rain garden, create a base plan that has all the elements that are currently on the site. This is so you can draw up a rain garden plan. Include the house, trees, fences, sheds and bed lines that are near the future rain garden in the base plan. Being able to draw the rain garden plan "to scale" on an accurate base plan will help accurately estimate quantities of plants, mulch & compost. It is handy!

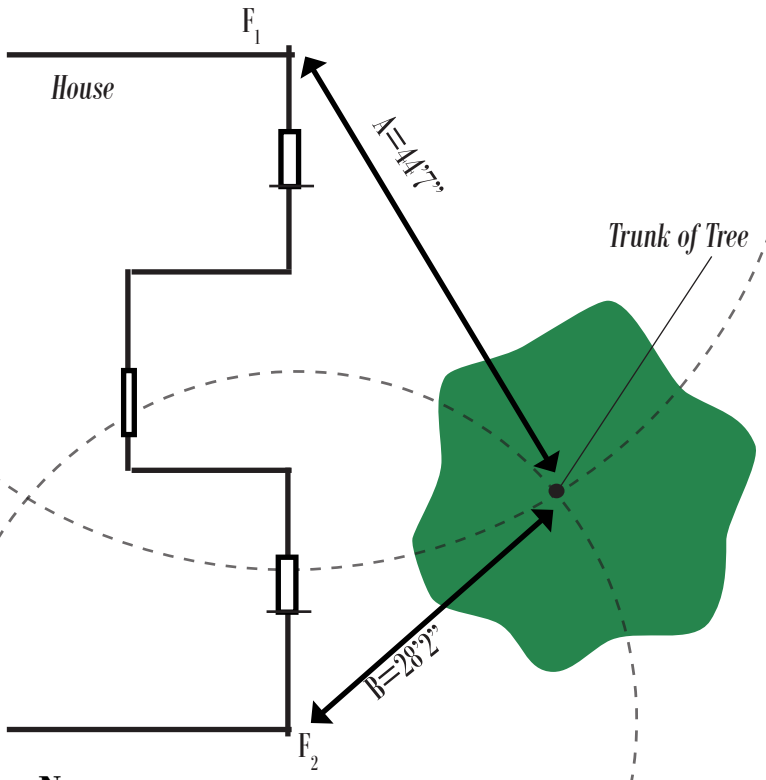
1) First start with a piece of graph paper. Each square on the paper might equal one square foot in the real world, depending on the size of your site. Make sure your graph paper is big enough to include your rain garden's location. To do that, go outside and measure the space. Count the number of squares across your paper and make sure the plan will fit on the paper.

2) Measure the distance between two fixed spots. (Often, this is two corners of the house.) Draw them, on the graph paper to scale.

3) Start locating other objects in the yard (trees, fences, etc.) To do this, measure the difference between all the fixed spots. Sketch them in on the plan in an approximate location, and write down the distances to each of the fixed spots. For example, A=44'7"; B=28'2".

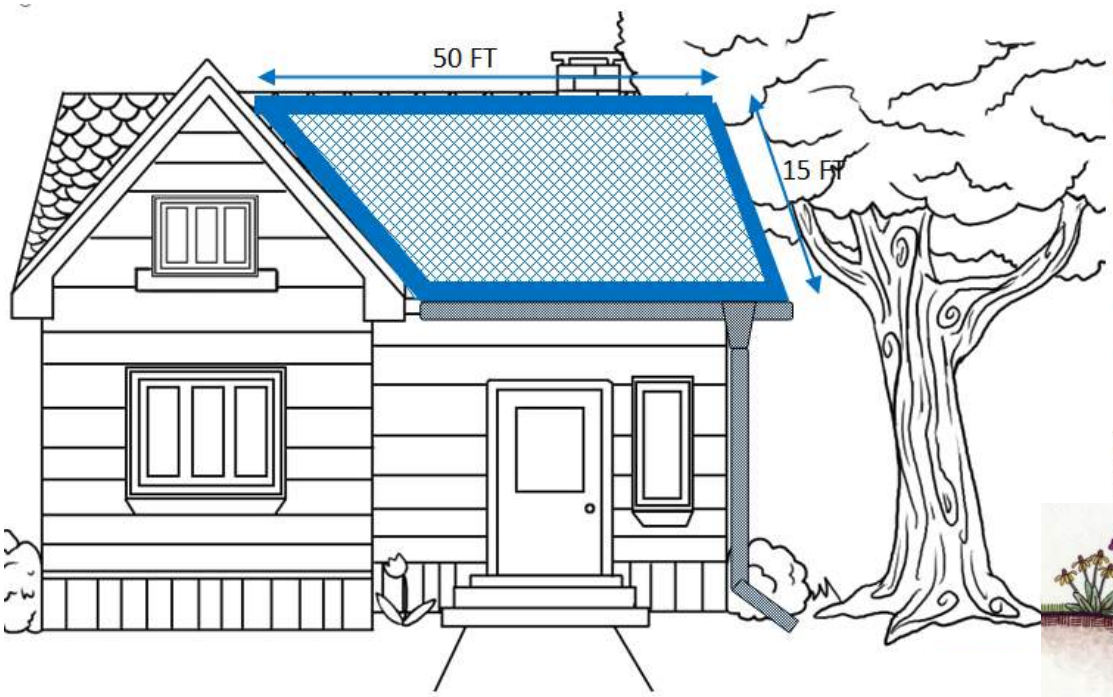
4) Go back inside and using a string or compass that is measured to length, triangulate the exact location of the objects on the plan. Use the graph paper squares to make the string the first length that you measured (A). Holding one end of the string on the first fixed spot, draw a semi-circle with the other end. Make the string the distance to the other fixed spot (F_1). Holding one end of the string at the other fixed spot (F_2), draw a semi-circle that crosses the first. Where the two circles cross is the location of the object. Erase the approximate location, and re-draw it in the exact location.

5. Repeat this process for fence ends, trees or other objects that will affect the location of the rain garden. Sketch in the approximate location of the future rain garden too. Now you have a base plan on which to draw the shape of the rain garden.



Notes:

Activity courtesy of J. Hiss & N. Booth, (2002) "Residential Landscape Architecture" Design Process for the Private Residence. Prentice Hall.



IMPERMEABLE SURFACE: Rooftop source of water that goes to rain garden

Area = Length x Width
Area = 50 x 15
Area = 750 FT^2

DOWNSPOUT

Sizing

1) Measure the length and width of the impervious surfaces (roof or driveway) that will flow to your rain garden. Multiply length times width to find the area in square feet. You can use the Interactive Map Washtenaw to measure areas here: mapwashtenaw.ewashtenaw.org. Search for your address using the search bar on the top right. Use the measuring tools found within the top right tool icon.

2) Design the garden to be 3-6" deep and 20-40% the size of the impervious surfaces.

3) To figure out the exact size of your rain garden, first test your soil permeability by digging a hole that is the width of your shovel and 18" deep. Fill with water, wait until dry. Fill the hole again with water and time the rate of infiltration. If you can't do a percolation test, use Map Washtenaw's NRCS Hydrologic soils layer to find if you have sandy (A), silt/loam (B), sandy clay/loam (C) or clay (D) soils. Use the identify curser, found within tools, to pull the information. You will have to scroll down on the left hand 'Identify Results' section to find soil data.

4) If your hole drains within 24 hours or you have A, B or C soils within the NRCS layer, then you will want your rain garden to be 20% the size of your hard surfaces and the depth to be between 4 and 6 inches. If the hole takes longer than 24 hours to drain or is identified as D (clay) in the NRCS layer, size it at 40% your impermeable surface area and at a depth of 3".

Time to Drain	Impermeable Multiplier	Depth in inches
within 24 hours or A, B, C soil type	0.2	4-6
longer than 24 hours or D soil type	0.4	3

5) Multiply the total area of impervious surfaces by 0.2 to find the area needed for a rain garden. If your hole takes longer than 24 hours to drain, then multiply by 0.4 to find the area needed for your rain garden.

Example

If impermeable surface draining into my rain garden is 750ft^2 and my test hole drains within 24 hours

750 x .2 = 150ft^2

My rain garden must be at least 150ft^2 & 4-6" deep. The dimensions could be 15'x10' or 5'x30'.

If there isn't enough space on your property for the needed area, or if long term maintenance isn't possible in such a large garden, it is acceptable to make the rain garden smaller.

6) Select a rainwater overflow outlet location for when the garden fills up and spills over. Make sure it flows away from any buildings and to a safe place.

You will have to dig your garden two inches deeper than the final elevation to allow for added compost.

Design

1) Use the base plan you made to draw in the rain garden outline. Draw in the berm, if you are digging on a slope, on the downslope sides (see page 23 for more information). The berm can take up a surprising amount of room, especially on steeper sites. Make sure you are only changing the grade of your property, not the grade of your neighbor's property.

2) Make sure there is at least ten feet of distance between any structure with a basement to the rain garden to prevent water damage. Generally, the rain garden should be at least 2 feet away from the property line and shouldn't negatively impact your neighbor's property.

3) Make the garden a pleasing shape that goes with the rest of the garden.

4) Decide the form of water conveyance to the rain garden: overland swale or underground. More information on page 22. Record the path and type of conveyance on the drawing.

5) Select plants. Plants for the sides and bottom of the rain garden should include those adapted to the extremes of wet and dry conditions. The berm should include plants adapted to dry conditions. See the suggested plant list on page 25.

6) Incorporate a diverse mix of sedges, rushes and grasses with your flowering plants. Consider the height, bloom time, sun requirements and color to create a varied garden.

7) Defined edges make a naturalized area look more deliberate. Label plants to ease identification during weeding.

Notes:

Miller Ave Rain Gardens in Ann Arbor. Design by Susan Bryan & Chris Carson Installed by Hoffman Brothers in 2013. These gardens capture runoff from the street & are maintained by volunteers.

Sample design: part shade

Black-eyed Susan
Rudbeckia hirta
part sun-part shade
height 2-3'
spread 1-1.5'
blooms July-Sept

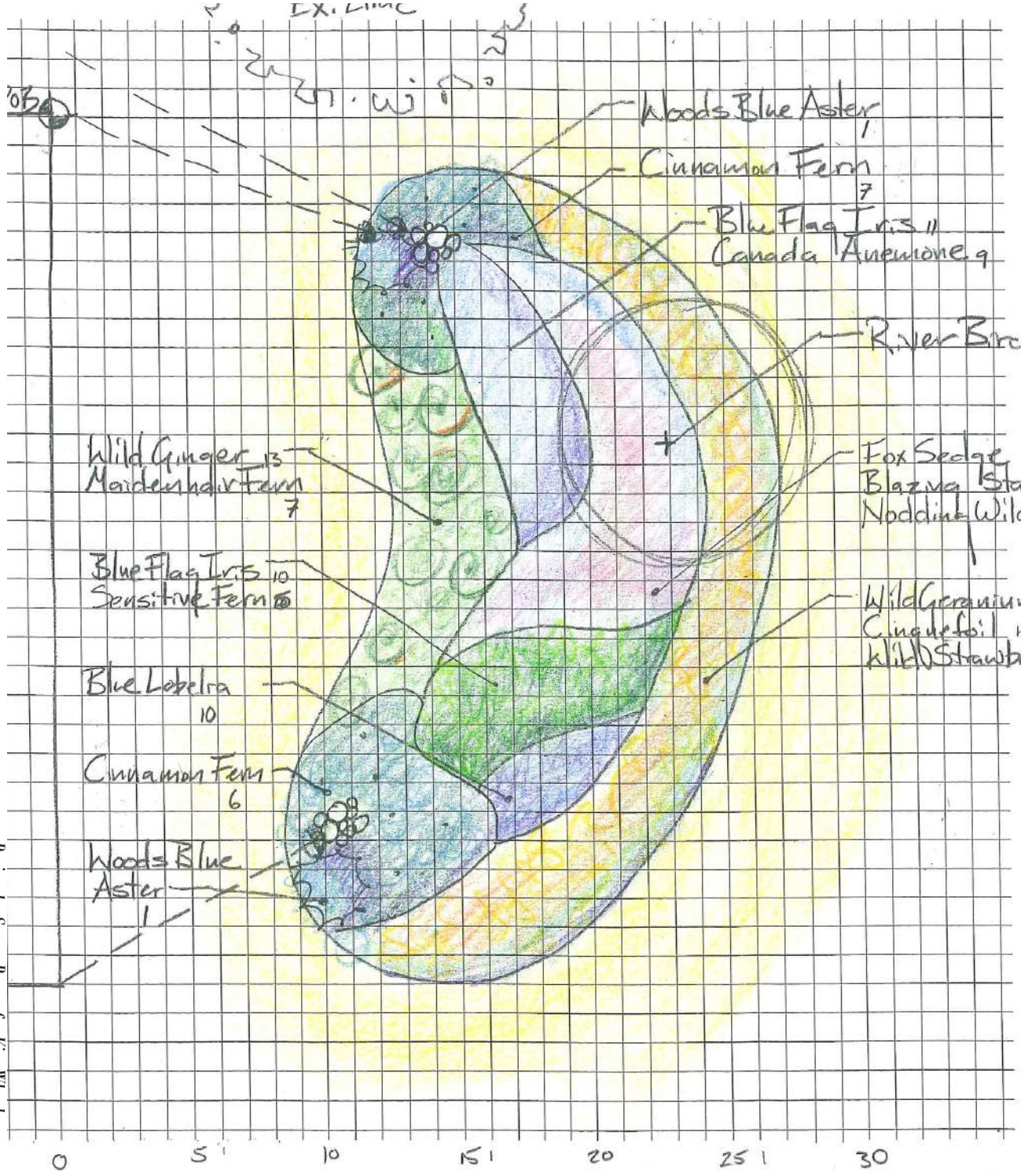
- Coral Bells
- Virginia Waterleaf
- Early Meadow Rue
- Blazing Star
- Obedient Plant
- Starry Soloman's Seal
- Black-eyed Susan
- Blue-eyed Grass
- Canada Anemone
- Blue Flag Iris
- Blue Lobelia
- Blue Lobelia
- Gray's Sedge
- Spiderwort
- Wild Geranium
- Slender Mountain Mint
- Wild Geranium
- Celandine Poppy
- Nodding Wild Onion

Sample design: full shade

Wild Geranium
Geranium maculation
full sun-part shade
height 1.5-2'
spread 1-1.5'
blooms April-July

Photo credit: Jonathan Kittel

- Pennsylvania sedge
- Wild Geranium
- Common Lilac
- Swamp Milkweed
- Blue Flag Iris
- Prairie Dock



LEGEND

- Point of Beginning
- Stormwater Conveyance from Roof

Sample design: part shade

NOTES

1. Drawing is completed to the accuracy of the base information. Slight modifications may be necessary during installation.
2. Plants are subject to nursery availibility. Substitutions may be made.

North

72 HOURS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

OWNER is responsible to field verify location of all underground utilities prior to any work

Scale 1"=4'-0"
0 1 2 4 8

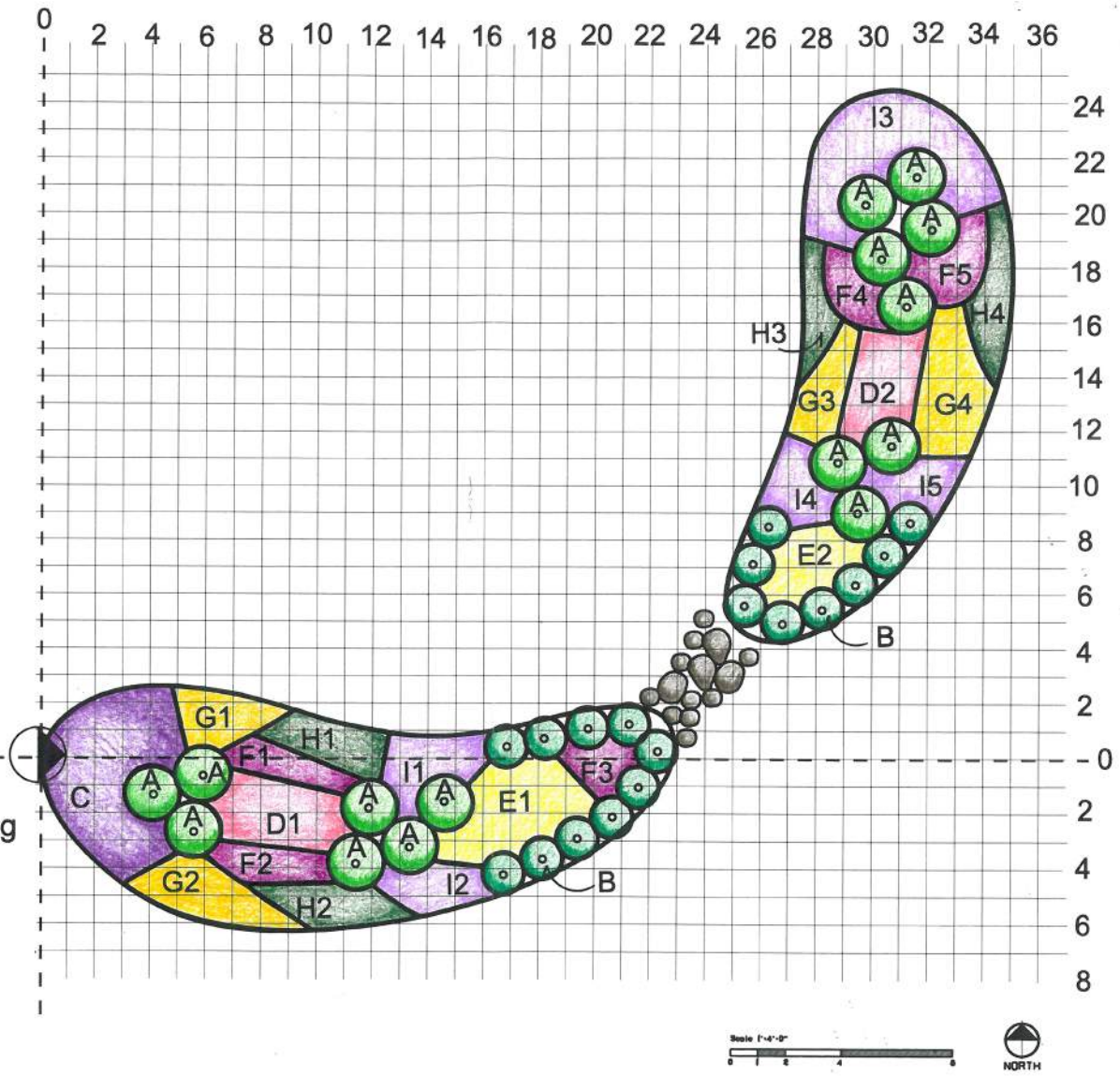
Design by Susan Bryan for Kim Wheeler

Sample design: full sun

INSITE

LEGEND

- A: Panium virgatum (15)
- B: Sporobolus heterolepis (18)
- C: Iris virginica (24)
- D1: Eupaterium maculatum (4) Ratibida pinnata (4)
- D2: Eupatorium maculatum (3) Ratibida pinnata (4)
- E1: Silphium terebinthinaceum (7)
- E2: Silphium terebinthinaceum (4)
- F1: Liatris spicata (8)
- F2: Liatris spicata (8)
- F3: Liatris spicata (6)
- F4: Liatris spicata (8)
- F5: Liatris spicata (9)
- G1: Rudbeckia hirta (6)
- G2: Rudbeckia hirta (9)
- G3: Rudbeckia hirta (6)
- G4: Rudbeckia hirta (12)
- H1: Anemone canadensis (4) Rudbeckia hirta (4)
- H2: Anemone canadensis (4) Rudbeckia hirta (4)
- H3: Anemone (3) Rudbeckia (3)
- H4: Anemone (4) Rudbeckia (3)
- I1: Geranium maculatum (7)
- I2: Geranium maculatum (6)
- I3: Geranium maculatum (21)
- I4: Geranium maculatum (6)
- I5: Geranium maculatum (5)



Project:
Washtenaw County Rain Gardens
Geddes Lake
3000 Lakehaven Dr.
Ann Arbor, MI

NOTES

1. Drawing is completed to the accuracy of the arial photo and mortgage survey (if available). Slight modifications may be necessary during installation.
2. Plants are subject to nursery availibility. Substitutions may be made.

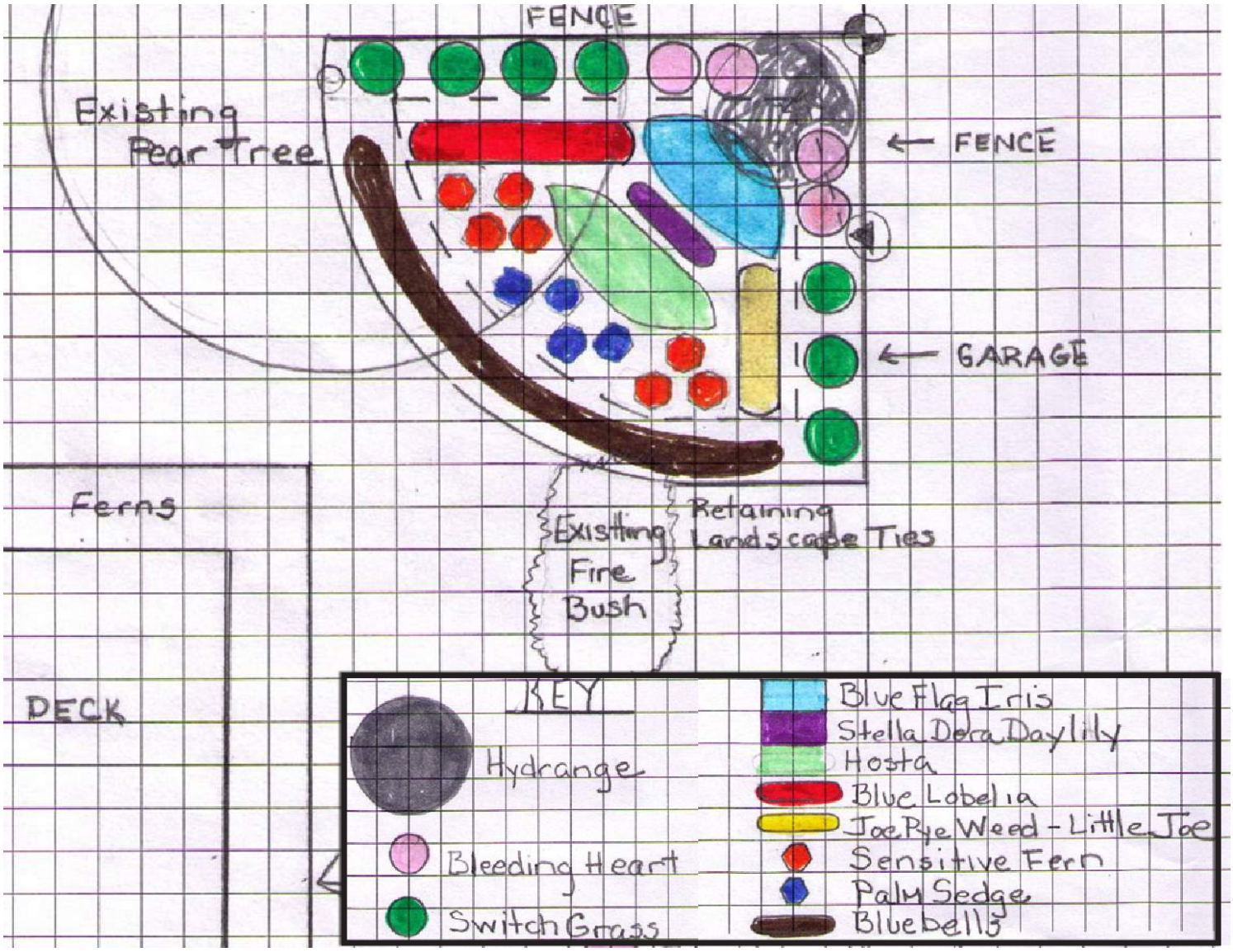
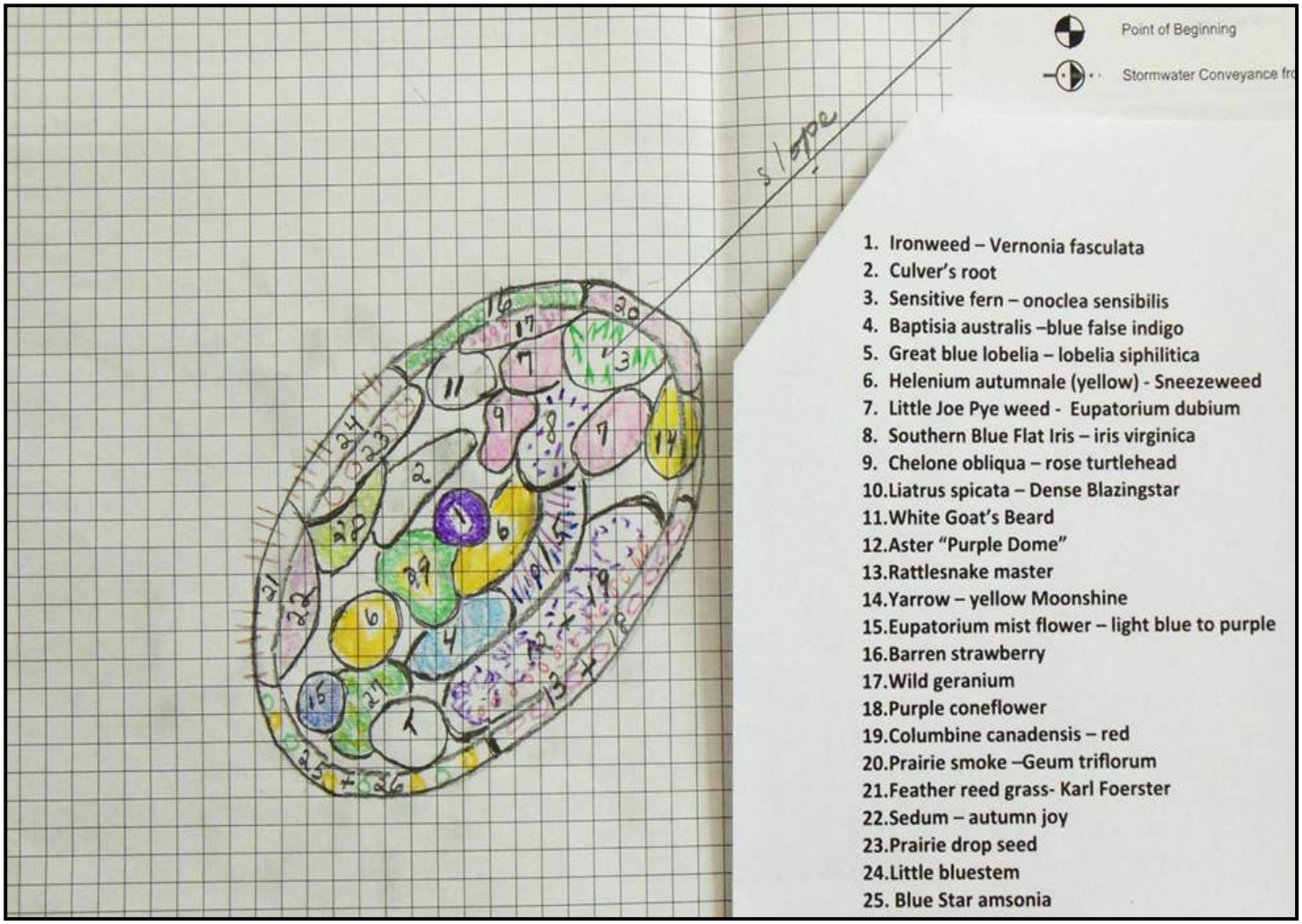


Photo credit: Sallie Richie

Sample design: part shade

Top: Master Rain Gardener, Sallie Richie's design
Left: Yard before rain garden construction
Right: Completed rain garden with Master Rain Gardener, Sallie Richie



Sample design: full sun

Top: Master Rain Gardener, Helen Prussian's design and plant list
Bottom Left: Yard before rain garden construction. Footprints in snow outline rain garden border.
Bottom Right: Completed rain garden with Master Rain Gardener, Helen Prussian

Photo credit: Helen Prussian

Photo credit: Susan Bryan

1

Transfer your drawing to your site

1) Translate the dimensions of your rain garden onto the ground by first laying out tape measures that act like the grid paper

2) Add a flag garden border into the ground in the measured locations from your 'point of beginning'

3) Define the border with string or spray paint

2

4) Rototill sod or kill the grass by securing black plastic over the lawn for several weeks

5) Dig a shallow depression that has a level bottom

6) With the soil dug out to create the depression, build a berm on the downhill side to hold the water within the garden, like a bowl. Add a notch to the downslope berm for overflow water to go to a safe location. The notch will determine the water depth within the rain garden.

3

Photo credit: Harry Sheehan

Drainage
With an Underground Pipe

1) Sometimes it is necessary to direct water to the rain garden underground with a pipe. Make sure to place the pipe at or above the top of the lower berm so that water won't sit in the pipe

3) Use a non-perforated pipe with a 4" diameter to prevent clogging and keep up with heavier rains

4)The pipe can end with a grate (shown) or a pop-up

5) Place a few stones where the pipe outlets in the garden to reduce erosion

Rain garden in Dexter, Michigan. Photo credit: Susan Bryan

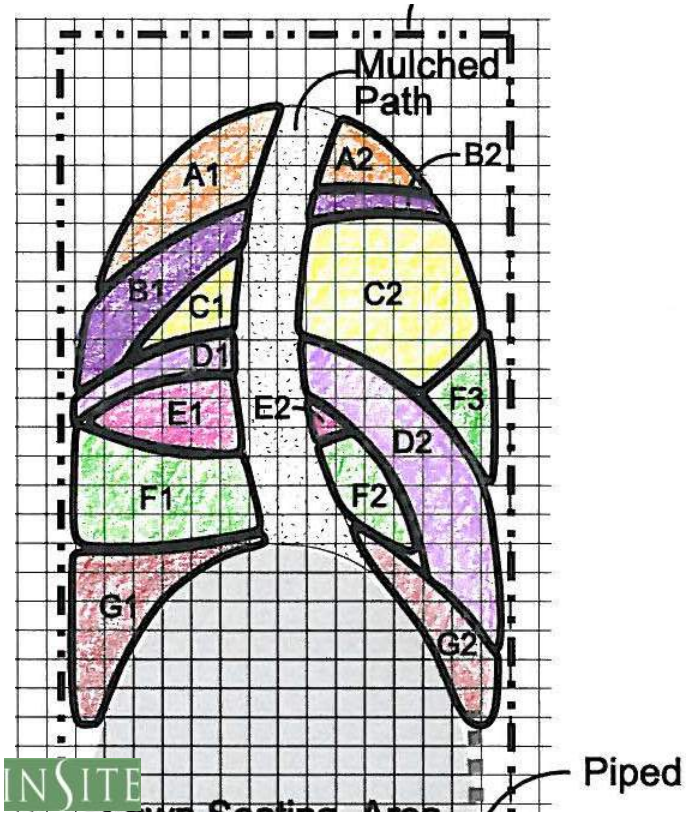
Drainage
Over Land

1) Water will run overland to your rain garden if a downhill channel has been created from your downspout to your rain garden

2) Often water will infiltrate into the ground while moving along the channel

3) Your drainage channel can be made of stones, native plants or simply be a lowered grassy pathway

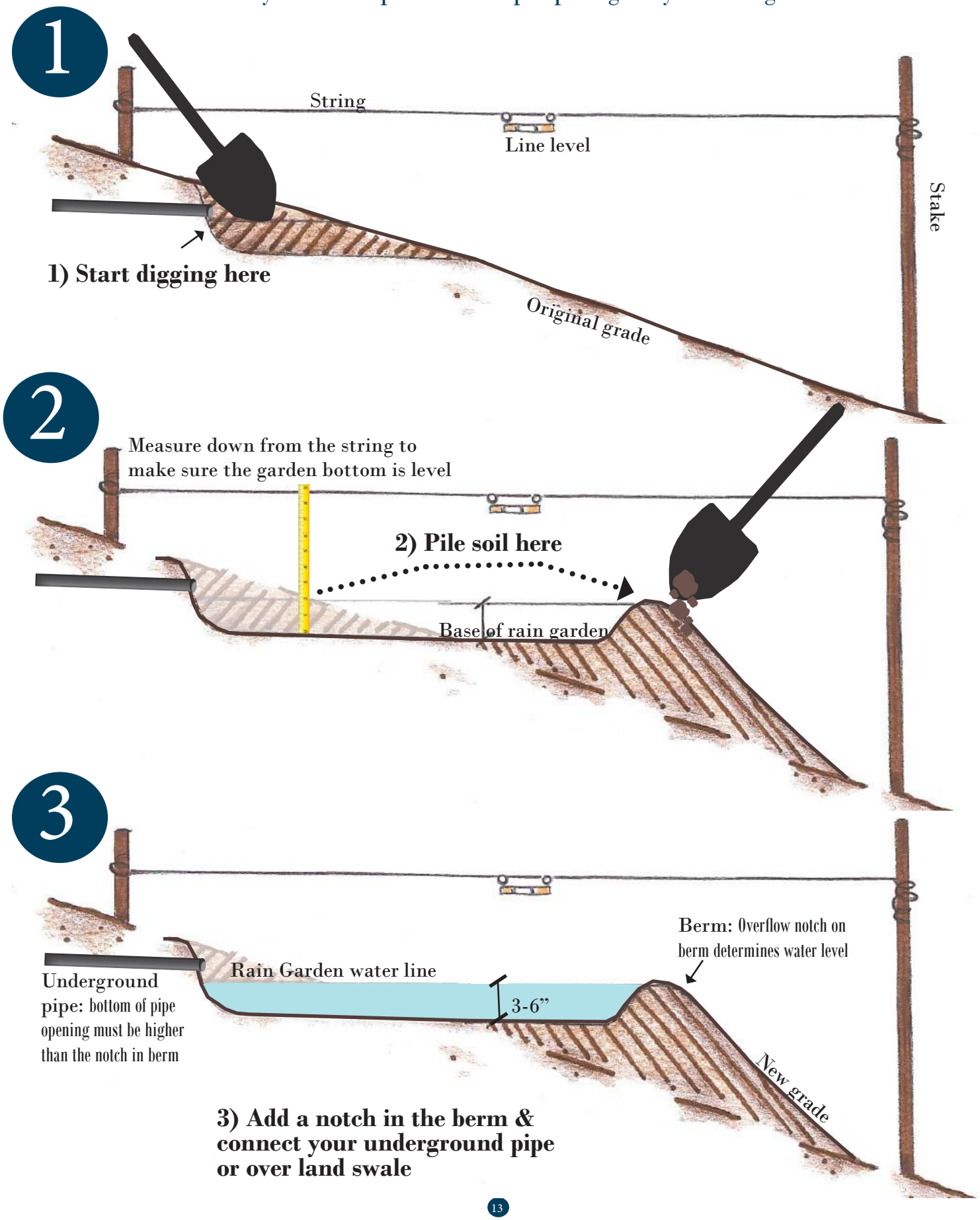
4) Be careful when mowing near your channel



Rain garden in Washtenaw County. Design by Shannan Gibb Randall. Photo credit: Harry Sheehan

Digging on a slope

If using an underground pipe, install the pipe at a downward slope of 1/4" per foot from your downspout to the upslope edge of your rain garden.



Soil preparation

1) Dig the rain garden 2 inches deeper than final intended depth

2) Lay 2 inches of compost down in the rain garden bottom & sides. Till compost into soil and then cover with 2 inches of hardwood shredded mulch. Determine how much compost and mulch is required to cover the garden with the following calculation:

(A * 0.00617) = material in cubic yards

where A = area in square feet of garden. This can be calculated by counting the squares on your base plan drawing

Calculation can be used for either compost or mulch material and is only for depths of 2".

Planting

If you have perennials in your garden that are adapted to both wet & dry conditions, you can transplant them into the rain garden. If you are buying plants, it is recommended to buy plants in pots because seeds can be washed away. Plugs or potted plants have strong root systems that can resist floods.

Dig a hole deep enough that the roots can hang vertically. If the roots are root-bound, break them up. Place the plant deep enough so that the entire root ball is covered but the base of the stem is above the soil. Fill the hole and pat firmly to remove any air space. Keep soil around plants moist for a few weeks and in times of drought. Test the soil by sticking your finger fully into the soil. If your fingertip touches moist, but not soaked soil, you are watering the correct amount.

Notes:

_____
_____
_____
_____
_____

Rain garden at Eastern Michigan University housing. Design by Shannan Gibb Randall. Photo credit: Shannan Gibb-Randall.

RECOMMENDED NATIVE PLANTS

These are the top twenty native Michigan plants used successfully in Washtenaw County rain gardens. The first two rows (in blue) should be planted on the sides of your rain garden, where it is the most dry. The bottom three rows (in green) should be planted on the bottom of your rain garden, where it is the most wet.

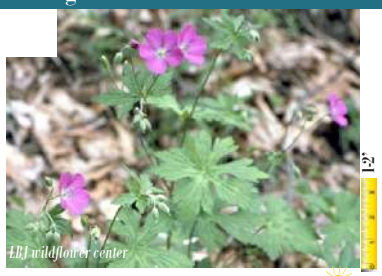
New england aster *Aster novae-angliae*

Blooms: September - October

Canada anemone *Anemone canadensis*

Blooms: May - June

Wild geranium *Geranium maculatum*



Blooms: May - June

Goldstrum black-eyed susan *Rudbeckia fulgida*

Blooms: July - September

Ninebark *Physocarpus opulifolius*

Blooms: May - July

Redbud *Cercis anadensis*

Blooms: May

Wild strawberry *Fragaria virginiana*

Blooms: May - June

Kobold blazing star *Liatris spicata*

Blooms: July

Purple coneflower *Echinacea purpurea*

Blooms: July - August

Switch grass *Panicum virgatum*

Nodding wild onion *Allium cernuum*

Blooms: September - October

Ostrich fern *Metteuccia struthiopteris*

Goldfinger potentilla *Potentilla fruiticosa*

Blooms: June - July

Fox sedge *Carex vulpinoidea*

Red-osier dogwood *Geranium maculatum*

Blooms: May - June

Rose Mallow *Hibiscus moscheutos*

Blooms: August - September

Pink turtlehead *Chelone lyonii*

Blooms: August - September

Sensitive fern *Onoclea sensibilis*

Blue lobelia *Lobelia siphilitica*

Blooms: July - September

Blue flag iris *Iris virginica*

Blooms: May - June

Legend full sun part sun aggressive spreader

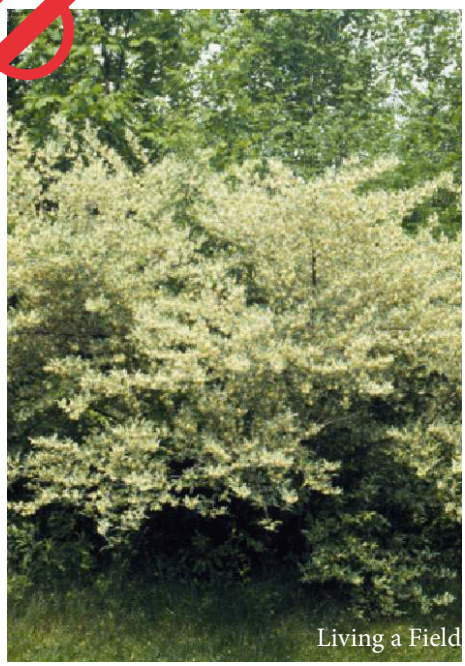
Common invasives

Refrain from buying, planting or allowing these common invasives to grow. Weed them!

Yellow Iris
Iris pseudacorus

Purple Loosetrife
Lythrum salicaria

Garlic Mustard
Alliaria petiolata



Autumn-Olive
Eleagnus umbellata

Dames Rocket
Hisperis matronalis

Phragmites
Phragmites australis

RESOURCES TO BUILD A RAIN GARDEN

Local native plant producers

Native Connections
Jerry Stewart
17080 Hoshel Road
Three Rivers, MI 49093
Phone: (269) 580-4765
Email: jerry@nativeconnections.net
Website: www.nativeconnections.net

The Native Plant Nursery LLC
Greg Vaclavek
PO Box 7841
Ann Arbor, MI 48107
Phone: (734) 677-3260
Email: plants@nativeplant.com
Website: www.nativeplant.com

Oakland Wildflower Farm
Ruth Vrbensky
520 North Hurd Rd.
Ortonville, MI 48462
Phone: (248) 969-6904
Email: oaklandwildflowerfarm@gmail.com
Website: www.oaklandwildflowerfarm.com

American Roots
Trish A. Hacker Hennig
1958 Hidden Lake Trail
Ortonville, MI 48462
Phone: (248) 627-8525
Email: americanrootsnat@aol.com
Website: americanrootswildflowers.com

Borealis Seed Company
Suzanne Rabitaille
Judy Keast
529 W. Bluff Street
Marquette, MI 49855
Phone: (906) 226-8507 office
Phone: (906) 345-9636 nursery
Email: srborealis@peoplepc.com
Email: judykeast@peoplepc.com

Hidden Savanna Nursery
Chad Hughson
18 N. Van Kal Street
Kalamazoo, MI 49009
Phone: (269) 352-3876
Email: info@hiddensavann.com
Website: www.hiddensavanna.com

Michigan Wildflower Farm
Esther Durnwald
11770 Cutler Rd.
Portland, MI 48875-9452
Phone: (517) 647-6010
Email: wildflowers@voyager.net
Website: www.michiganwildflowerfarm.com

Provenance Wildflower Farm
Tania Hanline
16791 210th Street
LeRoy, MI 48655
Phone: (231) 768-4603
Email: provenancewildflowerfarm@yahoo.com
Website: www.provenancewff.com

Sandhill Farm
Cheryl Tolley
11250 10 Mile Road
Rockford, MI 49341-7954
Phone: (616) 691-8214
Email: cherylt747@gmail.com

Wetlands Nursery, Inc
Jewel Richardson
13428 Caberfae Hwy.
Wellston, MI 49689
Email: aquaticplantlady@gmail.com
Phone: (231) 848-4202

WILDTYPE Design Native Plant & Seed, LTD
Bill Schneider
900 North Every Rd.
Mason, MI 48854
Phone: (517) 244-1140
Email:
orders@wildtypeplants.com
Website:
www.wildtypeplants.com
www.MNPPA.org

PLANT NURSERIES

- ☐ Bloom Garden Center
- ☐ Plymouth Nursery
- ☐ English Gardens
- ☐ Abbott Nursery
- ☐ Lodi Farms
- ☐ Northfield Farms (wholesale)
- ☐ Christensen's (wholesale)

Free plants

Wild Ones Seed Exchange
First Wednesday in May

Wild Ones Native Seed Cleaning/ Exchange
Second Wednesday of January,
6:45-8:30pm at Matthaei Botanical Gardens room 125.

Old West Side Ann Arbor Garden Club Spring Plant Exchange
In May. Grace Shackman: gmshackman@comcast.net

Wild Ones Native Plant Exchange & Sale
Second Wednesday of May, 6:00-8:00, Native Plant Nursery, 3052 Nordman Rd., Ann Arbor
http://wildones.org/chapters/annarbor/

Need native plants? Have extras to share? Join the AA Wild Ones at our annual plant exchange. Native plants will also be for sale, thanks to Greg Vaclavek, owner of the Native Plant Nursery and our host. Staff from the nursery will be on hand to offer advice and answer questions. Take advantage of this special opportunity to visit the nursery, which is not open for retail sales at any other time of the year.

Directions: From central Ann Arbor, take Packard Road east past the intersection with Eisenhower Parkway. Pass Buhr Park/Cobblestone Farm on the north, and turn south at the second street, Nordman Road. Turn west at the first street, Butternut and park along the street. Enter the nursery through the gap in the hedge on the north side of Butternut.

Note: Because the Native Plant Nursery is not a retail business, this sale is held with special permission. Please do not visit except during this sale! To purchase plants at other times, stop by the nursery's booth at the Ann Arbor Farmer's Market, May through September.

Arbor Seeds Plant Exchange
June - 1575 Knight Rd in Scio Twp. Linda Ridley
lridl734@gmail.com

Please come even if you have no plants or seeds to exchange – we always have lots! Please label your plants. A permanent marker on masking tape works well. Information about what the plant prefers and how fast it spreads is also helpful. Mosquitoes may be bad.

If you have plants to share but can't come on the day, you can drop them off at my house ahead of time if you'd like.

Rain Garden Plant Exchange
September - Washtenaw County Rain Garden Program. Contact Susan Bryan.
bryans@ewashtenaw.org

Give away/get plants from friends and exchanges! The best way to garden.

Carex vulpinoidea Fox Sedge. Photo credit: Lady Bird Johnson Wildflower Center

Cornus amomum. Silky dogwood. Courtesy of Ladybird Johnson Wildflower Center

Compost vendors

1 cubic yard of farm compost or topsoil weighs approximately 1 ton

Pickup truck capacities: most 1/2 ton pickup trucks and short bed pickup trucks have a volume capacity to hold 1.5 cubic yards but most don't have the weight capacity to safely haul more than 1 cubic yard. 3/4 and 1 ton pickup trucks have the capacity to hold up to 2 cubic yards.

Coverage for spreading compost, topsoil or mulch:

1 cubic yard @ 1" depth covers 324 square feet
2" depth covers 162 square feet
3" depth covers 108 square feet
4" depth covers 81 square feet

Or use the calculator on the link below to estimate how many cubic yards you need:
gardenplace.com/content/calculator/mulch_calc.html

City of Ann Arbor Compost

Bulk municipal compost and mulch are available for sale year round for $20/cubic yard. Compost delivery is available. On Saturdays during the spring, Ann Arbor residents can self-load 1 free cubic yard of compost and mulch. With a free online Recyclebank coupon, they are also eligible for a free cubic yard with a purchase. Call (734) 489-4518 for more information or visit a2gov.org for information on trash, recycling and compost. Visit recyclebank.com for information on the recycle bank coupon.

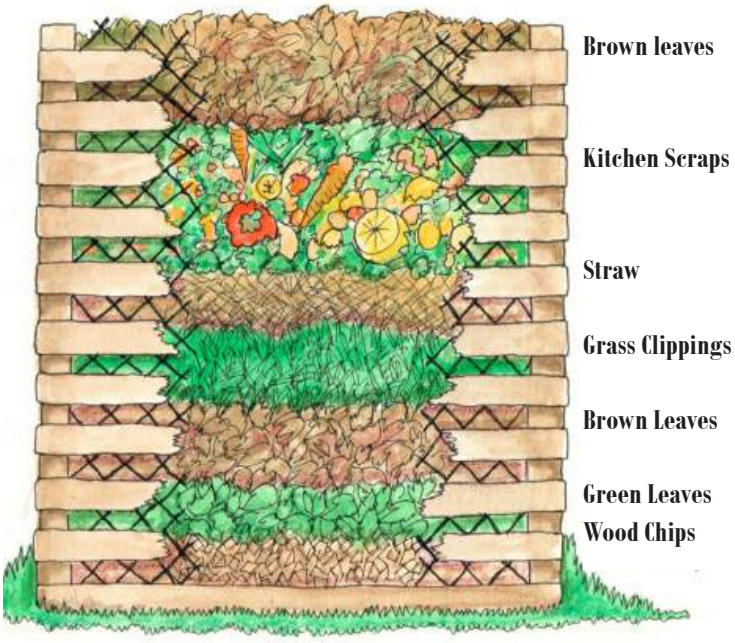
4150 Platt Road, Ann Arbor 48108
July-March:
Monday-Friday from 8am-4pm
April-June:
Mon-Friday from 8am-4pm &
Saturdays 8am-12pm

Ypsilanti Township Compost Site

One-Stop Location for recycling, refuse & compost. Compost is $10/cubic yard and there are discounts for locals. Call (734) 482-6681 for more information.

2600 E. Clark Rd (Between Ford Blvd. & Ridge Rd)
April to November:
Monday-Friday from 9am-5pm
Saturday 9am-4pm
December to March:
Saturday ONLY from 9am-4pm

Ypsilanti Township Compost



Build your own compost with kitchen food scraps and yard waste. Graphic courtesy of landscapeforlife.org

Ypsilanti City Residents may obtain up to 4 free passes per year to utilize the Ypsilanti Township compost facility on Clark Road. Passes are available at the Department of Public Services. Proof of residency is required.

14 W. Forest Ave, Ypsilanti
Monday-Friday from 8 am-4 pm

Tuthill Farms & Composting

Compost or Screened Topsoil-Compost Blend is $20.00/ cubic yard. Call (248) 207-6201 for more information.

10505 Tuthill Road South Lyon, MI 48178.
May to December:
Monday - Saturday from 7am-5pm

Chelsea Compost

The Transfer Station has top soil for $25.00/cubic yard and unscreened compost for $12.50/cubic yard. Woodchips are available for $10.00/cubic yard during certain times of the year. Contact (734) 475-7955 for more information.

8025 Werkner Road
Wednesday, Thursday & Friday from 9am-4:30pm
Saturdays from 9am-4pm.

ADDITIONAL INFORMATION

Rain Barrels

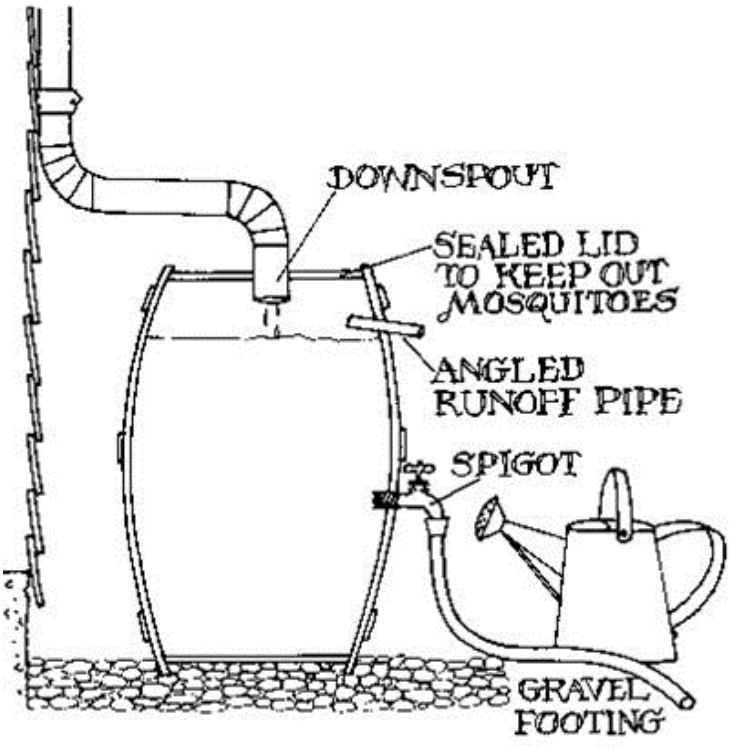
What is a Rain Barrel?

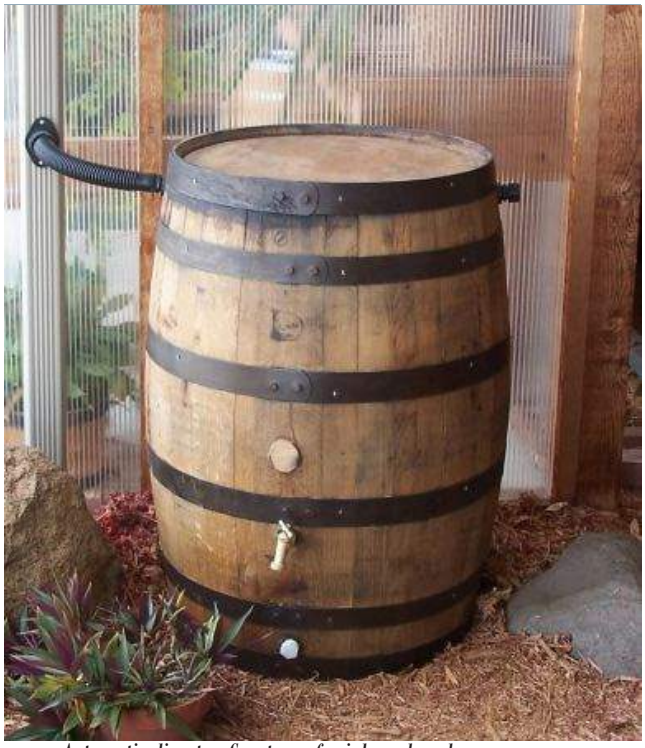
A rain barrel collects and stores rainwater from your rooftop to use later for things like lawn and garden watering. Water collected in a rain barrel would normally flow through your downspout, onto a paved surface and eventually into a storm drain. A rain barrel can be used in tandem with a rain garden, with the overflow directed to the garden.

Why use a Rain Barrel?

Rain barrels help lower water costs by storing approximately 1,300 gallons of water during peak summer months. Using stored rainwater on your garden or lawn instead of directing rooftop runoff to the storm drain network helps recharge groundwater naturally. Rain barrels reduce water pollution by limiting stormwater runoff, which can contain pollutants like sediment, oil, grease, bacteria and nutrients. Rain barrels are inexpensive and easy to install.

Information courtesy of the Washtenaw County Conservation District. More information and to order rain barrels or diverters online, visit http://www.washtenawcd.org/





Automatic diverter. Courtesy of rainbarrelsandmore.com

Rain Barrels Available through Washtenaw Conservation District

- Barrels have a screw-on top with holes for water entry and aluminum screen to keep out leaves, debris and mosquitoes
- They have a shutoff valve that can connect to a hose or can be used to fill a watering can
- Recommended placement is 12" high using an optional pedestal, cement blocks or other materials
- Barrels are designed to leave outside year round

Automatic Diverters Available through Washtenaw Conservation District

Automatic Diverters are also available for connecting rain barrels to downspouts. When it rains, some water will flow from the diverter, through the hose to the barrel and some water will also continue to flow down the lower section of the downspout. When the rain barrel is full, then all the water will flow down the downspout. A 55 gal. rain barrel will take about 1 hour to fill with a Diverter installed (15-20 minutes without). Using the Diverter eliminates the need for an overflow hose to be connected to the barrel and routed to an overflow location. Sizes are available to fit 2"x 3" or 3"x 4" downspouts and hose is included.

A² Stormwater Credit

If you live in Ann Arbor, you can take steps to reduce your stormwater bill by reducing stormwater runoff at the source. This is the best way to create a healthy watershed.

If you are a one or two family residential customer, consider taking advantage of these three optional stormwater credits. Please call (734) 794-6320 or email storm@a2gov.org with the description of your credit and your address.

Make your Home a RiverSafe Home Partner

Receive a quarterly credit of $1.40 on your stormwater bill. Review Washtenaw County's online RiverSafe Home information and take the survey. The survey is also available by mail by phoning (734) 222-6833. Participants also receive a RiverSafe Home plaque to display. There is no cost to enroll at: www.ewashtenaw.org/riversafe. Once you have completed the survey, please email storm@a2gov.org with your address to receive the credit.

Install Rain Barrels on your Downspouts

Receive a quartely credit of $2.03 on your stormwater bill for 1-5 rain barrels. Rain barrels are sold locally at many garden centers and online. Check a2gov.org storm for announcements of periodic local rain barrel workshops and bulk sale opportunities, as available.

Create a Rain Garden, Cistern, or Drywell

Install one of these options per property to receive a quarterly credit of $3.17. In addition to being beneficial for the watershed, rain gardens can be a very attractive landscape feature.

Requirements for Rain Garden Credit:

Size:

1) Minimum 130ft^2 and 3"- 6" deep throughout
2) Must have vegetation to absorb runoff. Native perennials are preferred to encourage infiltration

Infiltration:

1) Ground should infiltrate within 24 hours.
2) At least 50% of your property's roof area (at least half of your home's downspouts) should drain to the rain garden or the rain garden must capture runoff from impervious area on your property that is equal to 50% of your roof area.

Other Recommendations

Garden should be kept at least 10 feet away from foundations and should overflow safely. Overflows should not go directly to a sidewalk, steep slope, retaining wall, or to a neighbor's property.

To Request a Credit or Additional Information

Contact storm@a2gov.org and indicate the size of the feature and the percent of your roof runoff that is captured by the feature.

Rain garden in southeast Ann Arbor. Design by Susan Bryan. Installed by Matt Demmon. Photo credit: Susan Bryan

RAIN GARDEN QUESTIONNAIRE

Make sure you've answered all of these questions when developing your own rain garden or working on someone else's rain garden

Yes/No

☐ ☐ Is your rain garden within Ann Arbor city limits?

Address:_____

Make sure you apply for your stormwater credit!

Why do you want a rain garden? _____
_____

☐ ☐ Do you have a location(s) in mind?

Describe_____

Whom do you prefer do the work?

☐ Do it all myself or with family/friends
☐ Use a rain garden contractor
☐ A combination of the above

How tall would you prefer your garden to be? _____
_____

Do you like grasses?_____

How much do you like to weed?_____

☐ ☐ Is there a well?

Where is it? _____

☐ ☐ Is there a septic system?

Where is it? _____

☐ ☐ Does runoff drain to street storm sewers?

☐ ☐ Or swales?

Where are the: underground utilities? phone, cable, electric, gas, water, sewer, GeoThermal system, other:
_____
_____

☐ ☐ Did you call Miss Dig?

Yes/No

☐ ☐ Is there a basement?

Where do the roof gutters & downspouts drain to? ___
_____

Where do the paved areas drain to?_____
_____

Sketch the paved areas, the roof and where the downspouts go:

How long does it take an 18" deep hole, filled with water, to drain? (percolation test):_____
_____

Soil type (circle): Clay, sandy, loamy, mixture, unsure

Does the property currently have any of the following:

☐ ☐ Flooding in basement
Where?_____

☐ ☐ Erosion
Where?_____

☐ ☐ Wet areas after a large storm
Where?_____

Are there any other upcoming projects? Remodeling, gardening, etc? Should this project wait for any of those projects to be completed?

Created by: Roger A. Moon; Washtenaw County Master Rain Gardener '12

Additonal Resource Guides

1. Washtenaw County Rain Garden website and Map Washtenaw
www.ewashtenaw.org/raingardens & mapwashtenaw.ewashtenaw.org

2. Washtenaw County sample gardens for different light and soil requirements www.ewashtenaw.org/raingardens

3. "The Blue Thumb guide to Rain Gardens: Design and Installation for Homeowners in the Upper Midwest". Rusty Schmidt, Dan Shaw, and David Dods. Available by emailing: raingardens@yahoo.com, via Amazon or from the Minnesota Sea Grant

4. Rain garden iPhone App, by UCONN, CT Sea Grant, Connecticut Cooperative Extension & CLEAR program. You must choose a state and Michigan isn't listed as an option so choose Connecticut

5. Rain Garden Manual – Ohio County Rain Garden Manual

6. Wisconsin Extension Pamphlet - Rain Gardens, a How To Manual for Homeowners

7. "Lakescaping for Wildlife" Minnesota Department of Natural Resources. Available via Amazon, or directly from the Minnesota State Bookstore

8. Rain Garden Forum: www.wildlifegardeners.org
www.tinyurl.com/MRGforum

Washtenaw County Water Resources Office
705 N. Zeeb Rd., PO Box 8645, Ann Arbor, MI 48103
734-730-9025
Learn more about Rain Gardens: www.ewashtenaw.org/raingardens
Take the Master Rain Gardener class: www.ewashtenaw.org/MRG
Follow the Water Resources Commissioner's Office on Facebook.

Design, all uncredited pictures and diagrams by Catie Wytychak
Written by Susan Bryan