



**A Resource Guide
for PLANNING,
DESIGNING and
MAINTAINING
a beautiful Rain
Garden.**

RAIN GARDENS

FOR HEALTHY RIVERS & STREAMS

AN AT-HOME GUIDE TO IMPROVING WATER QUALITY

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OVERVIEW

Do you want to be part of improving the health and beauty of our rivers and streams? We've created this simple step-by-step guide to show you how.

A **RAINY DAY STORY...** or what can happen when it rains. If you live in Nashville, much of the land around you has been covered with roads, parking lots, and buildings. Rainwater that falls onto these hard surfaces becomes runoff that flows across paved areas warming and collecting contaminants, such as oil, sediment, pesticides, and pet waste, along its way. This warm polluted water flows into stormwater sewer systems eventually entering streams. Even worse, in some older areas of the city with combined stormwater and sewage pipes, runoff can combine with raw sewage during heavy rains. If the volume of this combined sewage is too great it can overflow untreated into our rivers. All this runoff puts a heavy burden on our streams and leads to flooding, erosion, and habitat loss. This costs our city extra money for water treatment and repairs. As Nashville continues to grow, so does the need to clean and treat our water. Rain Gardens are one of many tactics used to treat stormwater runoff and just so happen to work extremely well in a residential setting.

A good **CLEAN STORY...** or what we can do to help. Rain Gardens are a natural and beautiful way to reduce and clean stormwater. They are shallow, depressed gardens designed to collect rainwater and allow it time to filter into the ground, mimicking natural processes that our earth has done for millennia. This results in cleaner water, less water entering our storm systems, and more water refilling the underground water table that keeps small streams flowing during the dry summer months. Rain Gardens are lovely, lively, colorful, low maintenance habitats for insects and animals. Their native plants provide food to songbirds and butterflies. Improve your local water quality and protect your streams by planting a Rain Garden.

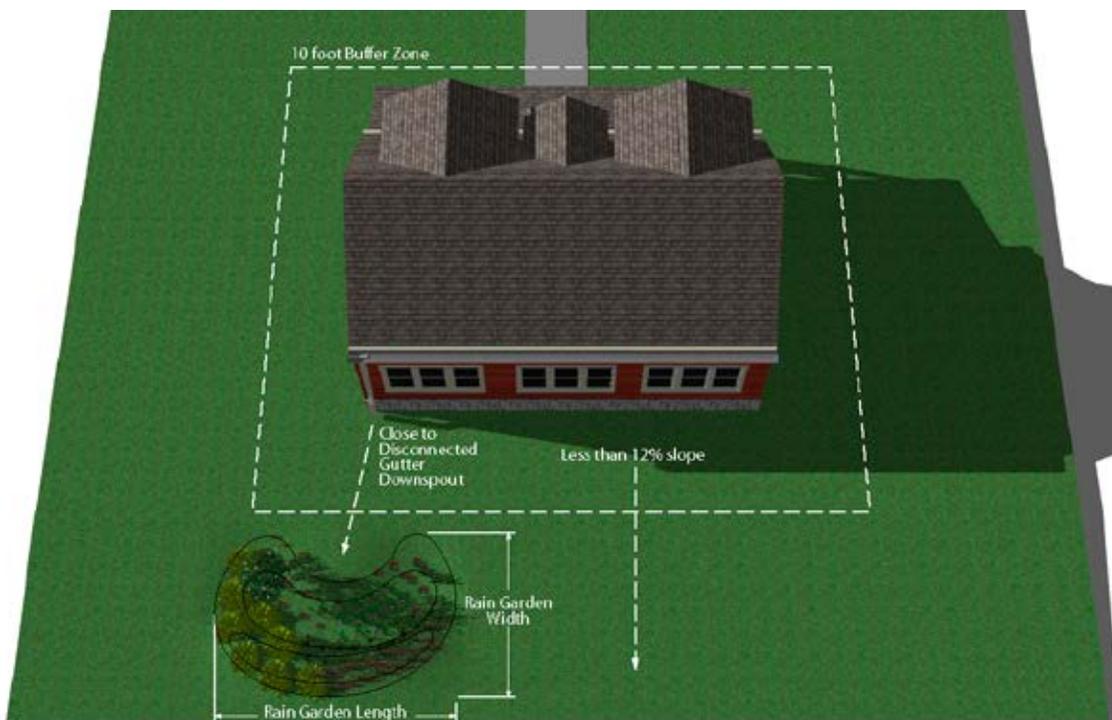
DID YOU KNOW:

Rain Gardens are like a sponge. They soak up water, clean pollutants and slowly release it back into the ground.



PLANNING

Many things need to be considered when locating and planning your rain garden. Although each site is different, the following general guidelines will help make your rain garden a success.



LOCATING YOUR RAIN GARDEN

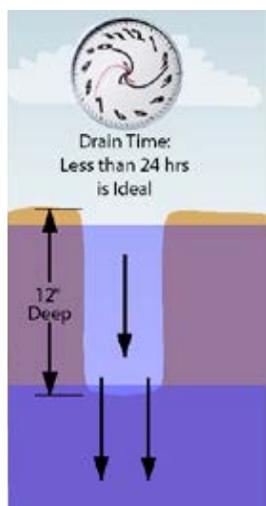
- Build your rain garden at least 10 feet downhill from your or your neighbor's house to avoid water getting in the foundation.
- Never build a rain garden above a septic system or shallow underground utilities.
- If your downspouts are routed into pipes or onto the ground, disconnect them and try to locate your garden to catch and treat the water.
- Make sure your rain garden is not within a stream's floodway or the plants may wash away!
- Tennessee is known for its shallow bedrock, so make sure the soil is at least 24 inches deep in your garden location for proper drainage.
- Try not to build your rain garden under existing trees because it can damage roots.
- **Call TN One Call (811) before you begin to check for underground utilities.**
- Make sure the slope of your site is less than 12% (see page 5). A site too steep will drain too quickly and needs increased excavation work.
- Your rain garden should not be located in an area of your yard where water pools because the water can't drain quickly enough.



WATER INFILTRATION TEST

Once you have picked a potential location for your rain garden, you will need to test the soil to determine if it will drain properly. If the infiltration rate of your soil is too low, water may pond in your garden for too long breeding mosquitoes and killing your plants.

First, dig a hole 12 inches deep, fill it with water and allow the water to saturate the surrounding soil.



Next, refill the hole and time how long it takes to drain. If it drains in:

Less than 24 hours, your infiltration rate is good

Between 24 and 48 hours, your soil will infiltrate, but should be amended with a mixture of 20-30% of the existing soil, 20-30% compost, & 40-60% sand to a depth of 6 inches

Greater than 48 hours, this is not the best spot for a rain garden.

If there are no other suitable locations, you can replace the soil to a depth of 2 feet with a mixture of 20-30% imported topsoil, 20-30% compost, & 40-60% sand.

Another option is to install an under drain system, gravel, or both. Please contact Metro Water Services Stormwater Department for more details at 615-880-2420.

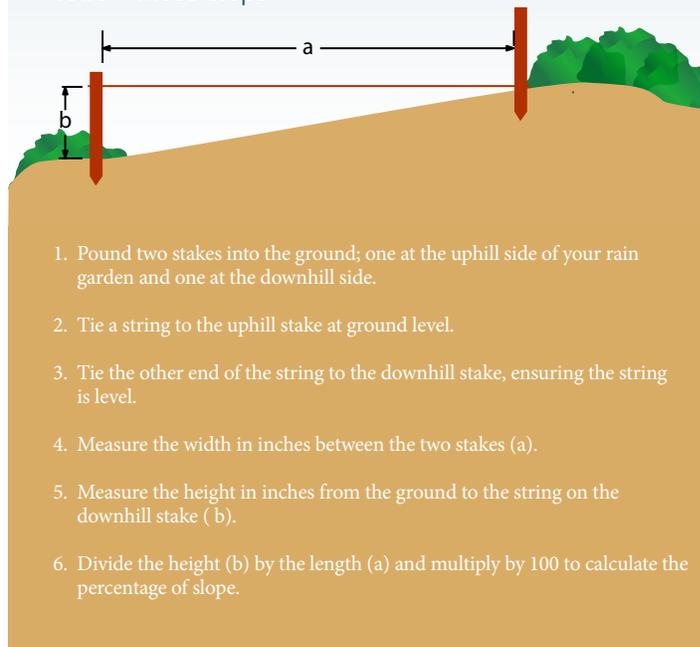
SOIL AMENDMENT

If there are no other suitable locations, you can replace the soil to a depth of 2 feet with a mixture of 20-30% imported topsoil, 20-30% compost, & 40-60% sand.

Another option is to install an under drain system, gravel, or both. Please contact Metro Water Services Stormwater Department for more details at 615-880-2420.

MEASURING SLOPE

To calculate the percentage of slope follow these steps



SIZING YOUR GARDEN

Whatever the size of your rain garden, catching and infiltrating runoff will improve our water quality. Rain Gardens typically range from 100 – 300 square feet to catch most of the runoff from your yard, although smaller gardens are sometimes necessary due to lot constraints. A simple equation to calculate the best size for your garden is:

$$\text{Rain Garden (ft}^2\text{)} = \frac{\text{Rain Depth (in)} \times \text{Drainage Area (ft}^2\text{)}}{\text{GardenDepth (in)}}$$

Since most of the rainfall events in Nashville are 1 inch or less and your rain garden should be about 6 inches deep, you should use these values in the equation. For example, if the roof area draining to your rain garden is 1000 square feet, then your rain garden will be:

$$\text{Rain Garden} = \frac{1 \text{ in} \times 1,000 \text{ ft}^2}{6 \text{ in}} = 167 \text{ ft}^2$$



DESIGN

Rain gardens come in a variety of shapes and sizes. You can select from the templates in this manual, or invent your own shape. The best designs are typically longer than they are wide, with the longer side perpendicular to the direction of water flowing into your garden. You can also get water to your garden by routing a pipe from your gutters or building a stone lined channel to carry the flow. In any of these cases, you should make certain that the water is not entering your rain garden too fast or erosion may occur.

“The first rule of sustainability is to align with natural forces, or at least not try to defy them.”

—Paul Hawken

FOLLOW THESE SEVEN STEPS FOR SUCCESS.

Tools you'll need:

Tape measure



Shovels



Rake



Trowels



Wheelbarrow



Carpenter's level



Marking paint



String



Eye, hand and foot protection.



Hardhats if using machinery such as a bobcat or backhoe.



GETTING STARTED

- Remember to call TN One-Call (811) in advance to mark underground utilities.
- Rent machinery in advance such as a tiller, backhoe, or bobcat if needed.
- Check the weather forecast and schedule your work for a dry day. Rain will delay construction and cause sediment to wash into the storm system.
- Gather tools and material close to the site.
- Ask your friends and neighbors for help with the construction. If you don't want to build it yourself, hire a professional landscaper with rain garden experience.



SITE PREPARATION

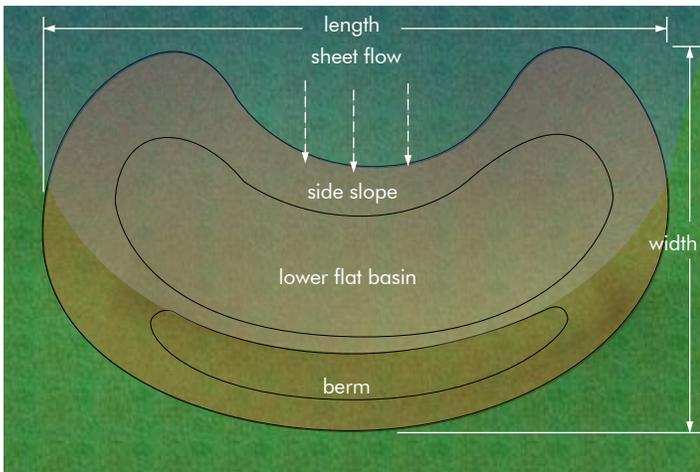
- Mark the outline of the rain garden on the ground with loose chalk, spray paint, stakes, flags or a garden hose.
- Install appropriate erosion controls such as silt fence or fiber logs if you are creating run off sediment or mud that will enter storm drains or water bodies. Refer to The Tennessee Erosion and Sediment Control Handbook for more information:
http://www.tn.gov/environment/wpc/sed_ero_controlhandbook/



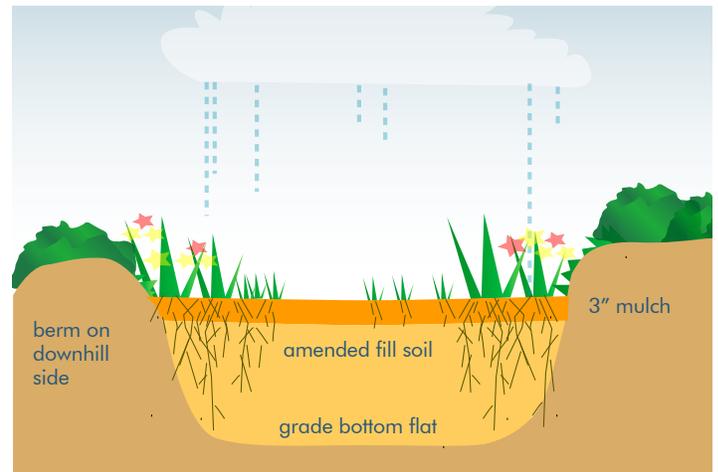
EXCAVATION

- Dig your garden the size, shape and depth that you have determined during planning. Remember to take into account the soil amendment depth (if needed) and the final 3 inch mulch layer. Your final rain garden should be around 6 inches deep.
- Do not compact the soil during excavation.
- It is crucial to make the bottom flat and level so water will infiltrate evenly and not pool. Use survey methods or a carpenter's level laid on top of a board to check and correct your work.
- If your rain garden is on a slope, place excavated soil on the downhill side to be used later to form the berm.

*Remember to call TN One-Call (811)



SHAPE OF RAIN GARDEN Generally twice as long as wide. Length is perpendicular to slope.



RAIN GARDEN CROSS SECTION



4 AMENDING THE SOIL

- If your infiltration rate calculation indicated your soil needs amending, backfill the excavated soil mixed to a ratio of 20-30% existing soil or top soil, 20-30% compost and 40-60% coarse sand to the depth outlined in the 'Amending your Soil' section.
- Mix small portions at a time by hand or with machinery. Allow it to settle overnight and add additional soil if needed. Keep the soil level.

Any work within the public right-of-way should be approved by Metro Public Works. 615-862-8782



5 THE BERM

- If the garden is located on a slope, use the remaining excavated soil to construct a berm on the downhill side of the rain garden.
- The berm should be rounded and gradually taper on the sides until it meets the existing lawn. Once the berm is shaped, compact it with your feet or a tamping bar. The berm will act as a dam to hold more water in the garden.
- To prevent erosion the berm will need to be planted with grass or incorporated into the planting design.



6 PLANTING

- Carefully choose native plants that are quality, established nursery stock.
- Store plants in protected shady area until ready to plant.
- Do not allow plants to dry out during storage or installation.
- Lay out plants according to spacing guidelines on design templates and plant lists. Dig holes twice as wide as the root ball.
- Plant the crown of the plant level with the existing soil.
- Gently tamp soil around the roots.
- Do not step on or compact the roots.
- Water immediately after installation.
- Keep tags during warranty period.



7 EDGING & MULCHING

- A strong edge for your rain garden has multiple benefits. Using trenches, metal or plastic edging, stone, brick, or even a thick border of native grasses creates a strong visual line and prevents weeds from creeping into your rain garden. Make sure your edge is buried low enough for runoff to flow over it into the garden.
- Mulch is used to retain moisture, prevent erosion, control weeds and nourish the soil.
- Spread 3 inches of pine straw or shredded wood mulch over the rain garden taking care not to damage plants.
- Include an overflow channel and pack with stone.

PRO TIP:

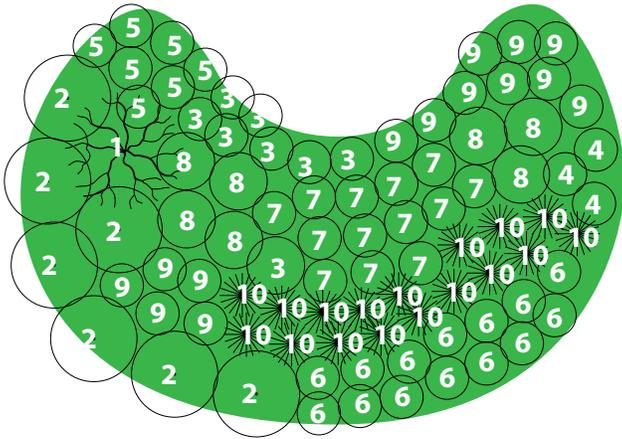
STONE SEDIMENT FOREBAY:

Stormwater runoff is often carrying many things with it. Oil, grease, plastics, sediment, etc. By lining stone along the front of the rain garden, where the flow enters, cleaning becomes much easier. Instead of these contaminants entering the garden and accumulating throughout the garden, they are held in one area that can be cleaned and maintained periodically, drastically cutting down on maintenance.



DESIGN EXAMPLE: FULL SUN

A Colorful, Full Sun Rain Garden Planting Design. Size, 20' x 10'.



Plan View – Full Sun Rain Garden



Perspective View – Full Sun Rain Garden

Native Plant List

KEY	QUANTITY	LATIN NAME	COMMON NAME	SIZE	SPACING	COLOR	HEIGHT
SHRUBS							
1	1	Cephalanthus occidentalis	Buttonbush	2 gal.		White	15'
2	7	Ilex glabra compacta	Dwarf Inkberry	2 gal.			4-6'
PERENNIALS							
3	7	Asclepias syriaca	Common Milkweed	plugs-1 gal	1 plant/18" s.f., o.c.	Orange	2-5'
4	3	Asclepias verticillata	Green Milkweed	plugs-1 gal	1 plant/18" s.f., o.c.	Green	2'
5	7	Coreopsis lanceolata	Lance-leaf Coreopsis	plugs-1 gal	1 plant/18" s.f., o.c.	Yellow	6-8'
6	14	Echinacea purpurea	Purple Coneflower	plugs-1 gal	1 plant/18" s.f., o.c.	Purple	3-4'
7	13	Iris virginica shrevei	Blue Flag Iris	plugs-1 gal	1 plant/18" s.f., o.c.	Blue	1.5-3'
8	8	Monarda didyma	Bee Balm	plugs-1 gal	1 plant/2 s.f., o.c.	Red	3'
9	14	Rudbeckia hirta	Black-eyed Susan	plugs-1 gal	1 plant/18" s.f., o.c.	Yellow	3'
GRASSES & SEDGES							
10	17	Carex stricta	Tussock Sedge	plugs-1 gal	1 plant/18" s.f., o.c.		2-3'

DID YOU KNOW:

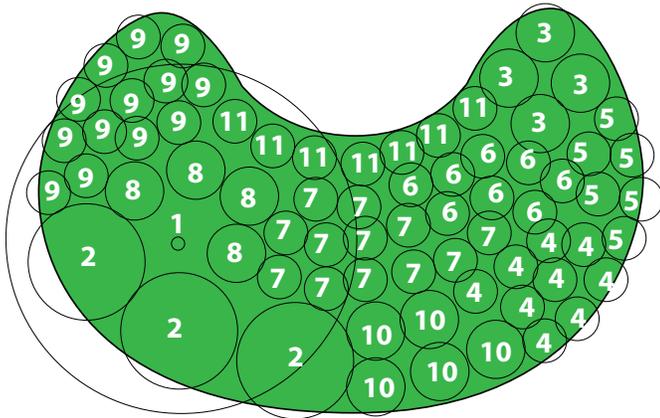
Rain Gardens can reduce the amount of nitrogen entering storm sewers by 40% or more.

North Carolina State University

DESIGN EXAMPLE: SHADE / PARTIAL SHADE



A Shaded Rain Garden Planting Design. Size, 20' x 10'



Plan View - Shaded Rain Garden



Perspective View - Shaded Rain Garden

Native Plant List

KEY	QUANTITY	LATIN NAME	COMMON NAME	SIZE	SPACING	NOTE	COLOR	HEIGHT
TREES								
1	1	<i>Cercus canadensis</i>	Redbud	1-2" cal.			Purple	20-30'
SHRUBS								
2	3	<i>Itea virginica</i>	Virginia Sweetspire	2 gal.	4' o.c.		White	4-8'
PERENNIALS								
3	4	<i>Aster novea-angliae</i>	New England aster	plugs-1 gal.	1 plant/24" s.f., o.c.		Blue/Purple	3-4'
4	9	<i>Coreopsis major</i>	Tickseed coreopsis	plugs-1 gal.	1 plant/18" s.f., o.c.		Yellow	3'
5	6	<i>Heuchera americana</i>	Alumroot	plugs-1 gal.	1 plant/18" s.f., o.c.		Pink	1'
6	8	<i>Lobelia cardinalis</i>	Great blue lobelia	plugs-1 gal.	1 plant/18" s.f., o.c.	Riparian	Blue	1.5-3'
7	12	<i>Lobelia siphilicata</i>	Cardinal flower	plugs-1 gal.	1 plant/18" s.f., o.c.	Riparian	Red	2-4'
8	4	<i>Osmunda cinnamomea</i>	Cinnamon Fern	plugs-1 gal.	1 plant/24" s.f., o.c.	Riparian	Green	3-4'
9	13	<i>Phlox divaricata</i>	Blue phlox	plugs-1 gal.	1 plant/18" s.f., o.c.		Blue	.5-2'
10	5	<i>Polystichum acrostichoides</i>	Christmas fern	plugs-1 gal.	1 plant/24" s.f., o.c.	Evergreen	Green	2'
11	7	<i>Stylophorum diphyllum</i>	Wood poppy	plugs-1 gal.	1 plant/18" s.f., o.c.		Yellow	1.5'

DID YOU KNOW:

Rain gardens can reduce water temperatures by five to ten degrees Fahrenheit.

Low Impact Development (LID) Center



PERENNIALS: FULL SUN

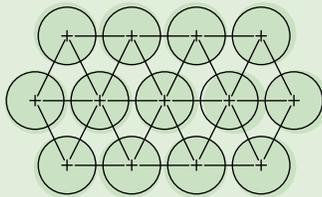
FULL SUN				
LATIN NAME	COMMON NAME	MOISTURE	COLOR	HEIGHT
<i>Asclepias incarnata</i>	Marsh milkweed	Wet	Pink	3-4'
<i>Asclepias purpurescens</i>	Purple milkweed	Moist	Purple	3'
<i>Asclepias syriaca</i>	Common milkweed	Moist-Dry	Orange	2-5'
<i>Asclepias tuberosa</i>	Butterfly milkweed	Dry-Moist	Orange	2'
<i>Aster laevis</i>	Smooth Aster	Moist	Blue	2-4'
<i>Aster novae-angliae</i>	New England aster	Wet-Moist	Blue	2-5'
<i>Conoclinium coelestinum</i>	Mist Flower	Moist-Dry	Blue	1-2'
<i>Coreopsis major</i>	Tickseed coreopsis	Moist-Dry	Yellow	3'
<i>Coreopsis lanceolata</i>	Lance-leaf coreopsis	Moist-Dry	Yellow	6-8'
<i>Coreopsis verticillata</i>	Thread-leaf coreopsis	Dry-Moist	Yellow	2.5-3'
<i>Echinacea pallida</i>	Pale purple coneflower	Dry	Purple	2-3'
<i>Echinacea purpurea</i>	Purple coneflower	Moist-Dry	Purple	3-4'
<i>Echinacea tennesseensis</i>	Tennessee Coneflower	Dry-Moist	Purple	1.5-2'
<i>Eutrochium maculatum</i>	Joe pye weed	Moist	Purple-Pink	4-7'
<i>Liatris spicata</i>	Dense blazing star	Wet-Moist	Purple	2-4'
<i>Monarda didyma</i>	Bee balm	Wet-Moist	Red	3'
<i>Monarda fistulosa</i>	Wild Bergamot	Moist	Purple	1-3'
<i>Penstemon digitalis</i>	Smooth white beardtongue	Wet	White	2-3'
<i>Phlox paniculata</i>	Garden phlox	Moist	Pink-Purple	2-4'
<i>Phlox subulata</i>	Moss phlox	Moist	Pink/Blue/White	.25-.5'
<i>Pycnanthemum tenuifolium</i>	Slender mountainmint	Moist	White	1.5-2.5'
<i>Pycnanthemum muticum</i>	Blunt mountainmint	Wet-Moist	Pink	1-3'
<i>Ratibida pinata</i>	Gray-headed coneflower	Moist	Yellow	3-5'
<i>Rudbeckia hirta</i>	Black-eyed Susan	Moist-Dry	Yellow	3'
<i>Rudbeckia triloba</i>	Brown-eyed Susan	Moist	Yellow	2-3'
<i>Salvia lyrata</i>	Lyre-leaf sage	Moist	Purple	1-2'
<i>Solidago rugosa</i>	Rough-leaved goldenrod	Wet	Yellow	1-6'
<i>Veronacastrum virginicum</i>	Culver's root	Dry	White	3-6'



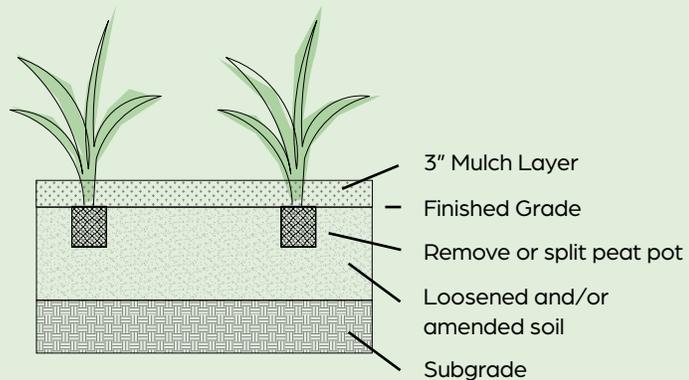
PERENNIALS: SHADE

SHADE				
LATIN NAME	COMMON NAME	MOISTURE	COLOR	HEIGHT
<i>Aquilegia canadensis</i>	Wild columbine	Moist-Dry	Pink	1-2.5'
<i>Arisaema dricontium</i>	Green dragon	Wet-Moist	Green	3'
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	Moist	Green	1.5-2.5'
<i>Baptisa australis</i>	Blue false indigo	Dry-Moist	Indigo Blue	3-4'
<i>Dryopteris australis</i>	Dixie Wood Fern	Moist	Green	4-5'
<i>Geranium maculatum</i>	Wild geranium	Moist	Pink	2'
<i>Heuchera americana</i>	Alumroot	Moist-Dry	Pink	1'
<i>Iris cristata</i>	Dwarf crested iris	Moist-Dry	Purple	.25'
<i>Lobelia cardinalis</i>	Cardinal flower	Wet-Moist	Red	2-4'
<i>Lobelia siphilicata</i>	Great blue lobelia	Wet-Moist	Blue	1.5-3'
<i>Mertensia virginica</i>	Virginia bluebells	Moist	Blue	1.5'
<i>Osmunda cinnamomea</i>	Cinnamon Fern	Wet-Moist	Green	3-4'
<i>Phlox divaricata</i>	Blue Phlox	Moist	Blue	.5-2'
<i>Polemonium reptans</i>	Jacob's ladder	Moist-Dry	Blue	1'
<i>Polystichum acrostichoides</i>	Christmas fern	Moist-Dry	Evergreen	1-2'
<i>Stylophorum diphyllum</i>	Wood poppy	Wet-Moist	Yellow	1.5'

PLANTING DETAIL



NOTE:
PLANT
PERENNIALS USING
TRIANGULAR
SPACING.





NATIVE TREES & SHRUBS

LATIN NAME	COMMON NAME	LIGHT	MOISTURE	COLOR	HEIGHT
<i>Aronia arbutifolia</i>	Red Chokeberry	Sun-Pt Shade	Dry-Wet	White	6-10'
<i>Callicarpa americana</i>	American Beautyberry	Sun-Pt Shade	Dry-Moist	Blue	5'
<i>Cercus canadensis</i>	Eastern Redbud	Sun-Shade	Moist	Pink	20-30'
<i>Cephalanthus occidentalis</i>	Button Bush	Sun-Pt Shade	Moist-Wet	White	6-12'
<i>Clethra alnifolia</i>	Summersweet	Sun-Pt shade	Moist-Wet	White	3-8'
<i>Cornus amomum</i>	Silky Dogwood	Sun-Pt shade	Moist	Yellow-White	6-12'
<i>Cornus florida</i>	Flowering Dogwood	Pt shade	Moist	White	15-30'
<i>Hamamelis virginiana</i>	Witch-hazel	Sun-Pt shade	Moist	White	15-20'
<i>Hibiscus moscheutos</i>	Swamp Mallow	Sun	Dry-Moist	White-Pink	3-7'
<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea	Pt shade- Shade	Moist	White-Pink	6-8'
<i>Ilex glabra</i>	Inkberry	Sun-Pt shade	Moist-Wet	Evergreen	5-8'
<i>Ilex verticillata</i>	Winterberry	Sun-Pt shade	Moist-Wet	Red Berries	3-10'
<i>Illicium parviflorum</i>	Small Anise Tree	Pt shade- Shade	Moist-Wet	Yellow-Green	10-15'
<i>Itea virginica</i>	Virginia Sweetpire	Sun-Pt shade	Dry-Moist	White	3-4'
<i>Lindera benzoin</i>	Spicebush	Sun-Pt shade	Moist	Green-Yellow	6-12'
<i>Magnolia virginiana</i>	Sweetbay Magnolia	Sun-Pt shade	Moist-Wet	White	10-30'
<i>Physocarpus opulifolius</i>	Ninebark	Sun-Pt shade	Dry-Moist	White-Pink	5-8'
<i>Rhamnus carolina</i>	Carolina Buckthorn	Sun-Pt shade	Moist	Green-White	10-15'
<i>Sambucus canadensis</i>	Elderberry	Sun-Pt shade	Moist-Wet	White	5-12'

GRASSES & SEDGES

FULL SUN				
LATIN NAME	COMMON NAME	MOISTURE	COLOR	HEIGHT
<i>Equisetum hyemale</i>	Horsetail	Wet	Green	3'
<i>Juncus inflexus</i>	Hard Rush	Red	Green-Brown	1-3'
<i>Muhlenbergia capillaris</i>	Pink Muhly Grass	Dry-Moist	Pink	2-3'
<i>Panicum virgatum</i>	Switchgrass	Moist-Wet	Green	3-6'
<i>Schizachyrium scoparium</i>	Little Bluestem	Dry-Moist	Purple-Brown	2-4'
PART SHADE				
<i>Chasmanthium latifolium</i>	River Oats	Moist-Wet	Green-Brown	2-4'
<i>Carex appalachica</i>	Appalachian Sedge	Dry	Green	.5-1'
<i>Carex pennsylvanica</i>	Pennsylvania Sedge	Dry	Green	.5-1'



RAIN GARDEN MAINTENANCE

During the first several years your plants are getting established and will need extra maintenance and watering. After establishment maintenance is low. Watering is required during droughts.

Plant Material Tasks

Check plants for signs of distress such as wilting, yellow/brown leaves etc. Relocate or amend soil as needed. Remove weeds by hand and limit use of herbicides. Limit foot traffic in the beds so as to not compact the soil! Deadhead and clean dead debris from plants in early spring before new growth appears.

Berm Tasks

After a heavy rainstorm, check for failure such as water going through the berm. Erosion ridges can lead to failure. Repair as needed.

Ponding Tasks

If areas do not drain, this indicates the soil pores have become clogged or the soil may have become compacted. Soil may need to be replaced or loosened. Remove excessive accumulated sediment or debris.

Soil Tasks

Perform a pH test as needed for excessive acidity or alkalinity. Adjust pH with amendments if needed. The University of Tennessee Soil, Plant and Pest Center, located at Ellington Agricultural Center in Nashville will perform inexpensive soil tests, recommend amendments and is a great resource for other questions concerning the health of your rain garden.

Mulch Tasks

Check regularly to see that mulch has not washed away. Add a fresh layer of mulch in early spring after clean-up.



DEADHEADING – or cutting off blooms after they fade, but before they go to seed, will generate more blooms and fuller growth.



ESTIMATING RAIN GARDEN COSTS

An important part of planning your Rain Garden is knowing what it will cost. Rain Gardens of Nashville has provided information on average costs for materials and labor in the Middle Tennessee area for your use. These prices can vary based on individual conditions.

ITEM	UNIT	AVG. COST	NOTES
EQUIPMENT:			
Backhoe w/operator	per hour	\$50-\$100	
Backhoe only	per day	\$200-\$300	
Tiller	per day	\$75	
SOIL AMENDMENTS:			
Compost	cubic yard	\$30	6" layer of amended soil with 20-30% compost for a 20' x 10' rain garden = 1 cubic yard
Coarse sand w/o delivery	ton	\$20-\$30	6" layer of amended soil with 40-60% sand for a 20' x 10' rain garden = 2 tons
Delivery	each	\$50	
PLANTS:			
Trees	caliper inch	\$100/inch	Plants with installation- multiply plant cost by 2.5
Shrubs	1 gal.	\$15-\$25	
	2 gal.	\$20-\$30	
Perennials, grasses	plugs	\$20/flat	
	4" pots	\$4-\$6	
	1 gal.	\$7-\$9	
MULCH:			
Delivered and installed	lump sum	\$250	3" layer of mulch for 20' x 10' rain garden = 2 cubic yards
Mulch only	cubic yard	\$50-\$70	

Rain Garden Construction Cost comparison

Cost for 10' x 6' Do It Yourself Rain Garden - \$200 - \$300 Includes no rental or delivery costs.

Cost for 20' x 10' Do It Yourself Rain Garden - \$750-\$900 Includes no rental or delivery costs.

Cost for 20' x 10' Do It Yourself Rain Garden - \$1,200- \$1,700 Includes backhoe rental and material delivery

Cost for 20' x 10' Rain Garden constructed by Landscape Contractor - \$3,500 - \$4,500

For additional cost saving tips contact: info@cumberlandrivercompact.org

ADDITIONAL RESOURCES



10,000 Rain Gardens. <http://www.rainkc.com/>

How to build your own rain garden. Mid-America Regional Council.
<http://www.marc.org/environment/water/pdfs/raingardens.pdf>

Rain Garden Design and Construction. Northern Virginia Soil and Water Conservation District.
<http://www.fairfaxcounty.gov/nvswcd/raingardenbk.pdf>

Rain Garden Design Templates. Low Impact Development Center.
http://www.lowimpactdevelopment.org/raingarden_design/whatisaraingarden.htm

Rain Garden Handbook for Western Washington Homeowners. Washington State University.
http://pierce.wsu.edu/Lid/raingarden/Raingarden_handbook.pdf

Rain Gardens: A Do-It-Yourself Guide for Homeowners in Middle Tennessee. Patty Ghertner.
<http://www.cumberlandrivercompact.org/pdf/raingardenguide12109.pdf>

Rain Gardens: A How-to manual for homeowners. Wisconsin Department of Natural Resources.
<http://dnr.wi.gov/runoff/pdf/rg/rgmanual.pdf>

Rain Gardens for Home Landscapes. Clean Water Campaign, Atlanta, GA.
http://www.cleanwatercampaign.com/files/rain_garden_brochure.pdf

Rain Gardens Technical Guide. Virginia Dept of Forestry.
http://www.dof.virginia.gov/mgt/resources/pub-Rain-Garden-Tech-Guide_2008-05.pdf

Start-To-Finish Rain Garden Design: A Workbook for Homeowners.
Faribault County Soil & water Conservation District.
<http://www.faribaultcountyswcd.com/FileLib/Rain%20Garden%20Design%20Templates.pdf>

Three Rivers Garden Alliance. <http://raingardenalliance.org/>

Special thanks to Rebecca Dohn of Metro Water Services of Nashville and Davidson County for her assistance creating this Guide and to Dodd Galbreath of Lipscomb University for his helpful comments.

This Guide was produced by Ashworth Environmental Design, LLC with this second edition edited by Cumberland River Compact.



Rain Gardens for Nashville was created through a water quality partnership between the Nashville District of the US Army Corps of Engineers and Metro Water Services of Nashville and Davidson County.

Further updates to this manual were made possible through funding from the Tennessee Department of Agriculture.

