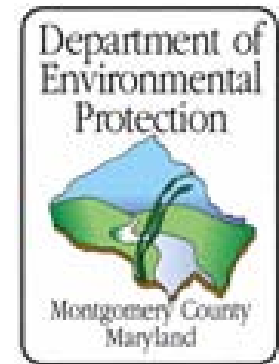
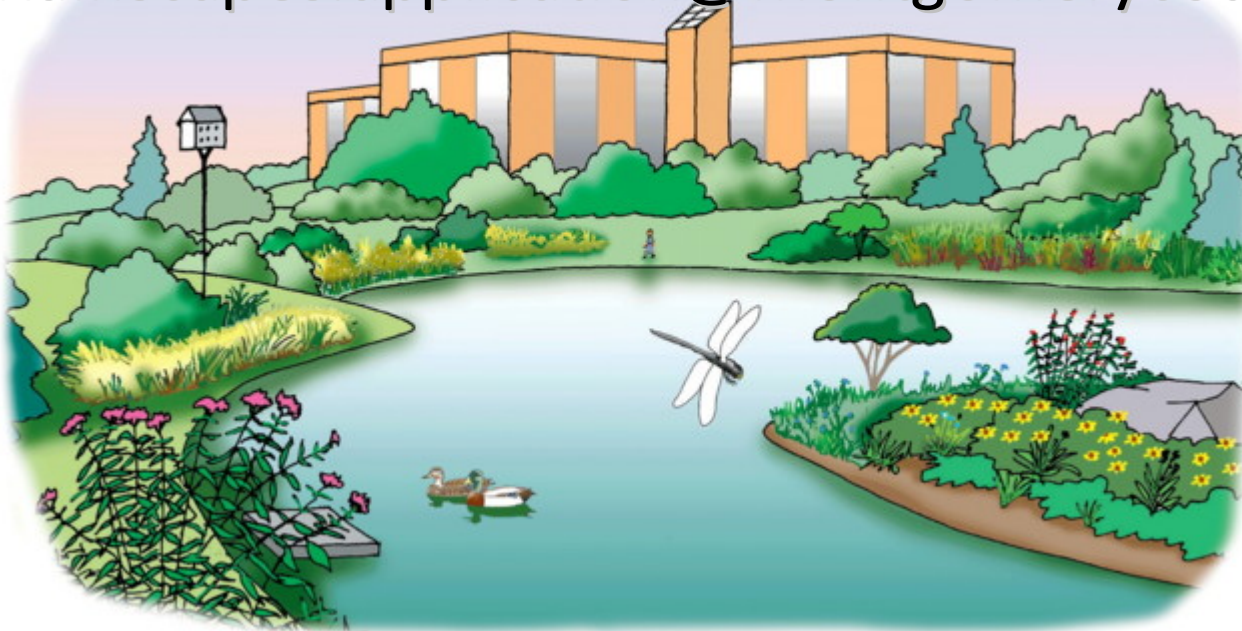


Rainscapes Montgomery County MD

www.rainscapes.org

Rainscapes.application@montgomerycountymd.gov



ann.english@montgomerycountymd.gov

240-777-7700



Rainscapes Practice/ MAXIMUM Rebate amounts*	Residential	Commercial, Multi- Family, Institutional
Rain Gardens	\$1200	\$5000 total- based on \$.50/ sf impervious area treated or \$2500/rain garden whichever \$ is greater
Replacement of turf with conservation landscaping	\$500	\$3000 (based on 50% of actual cost)
Urban Tree Canopy	\$600 per lot/ \$200/tree	\$600 per lot/ \$200/tree
Permeable Pavers	\$1200	\$5000
Green Roofs	\$1200	\$5000
Rain Barrels (\$1/gallon, 200 gallon min)	\$ 200	\$ 200
Cisterns	\$ 500 (\$1/gallon stored)	\$ 2000 (\$1/gallon stored)
Dry wells	\$ 300 based on 50% of actual cost	\$ 300 based on 50% of actual cost

Steps to a RainScapes Rain Garden or a Conservation Landscape:

Assess, Design, Construct, Maintain



- Evaluate water flows on site
- Measure impervious area
- Determine your volume of water
- Determine how runoff is going to get into the garden
- Select a site /Locate where your garden will be
- Do a soil test

- Excavate / prepare the planting area
- Add soil amendments
- Buy and layout the plants
- Plant the garden
- Mulch with 3" of mulch
- WATER!

- Get appropriate permits as required
- Locate your utilities (Call before you dig!)
- Determine your garden size (sf/ depth)
- Select a design template /develop a design – plant list

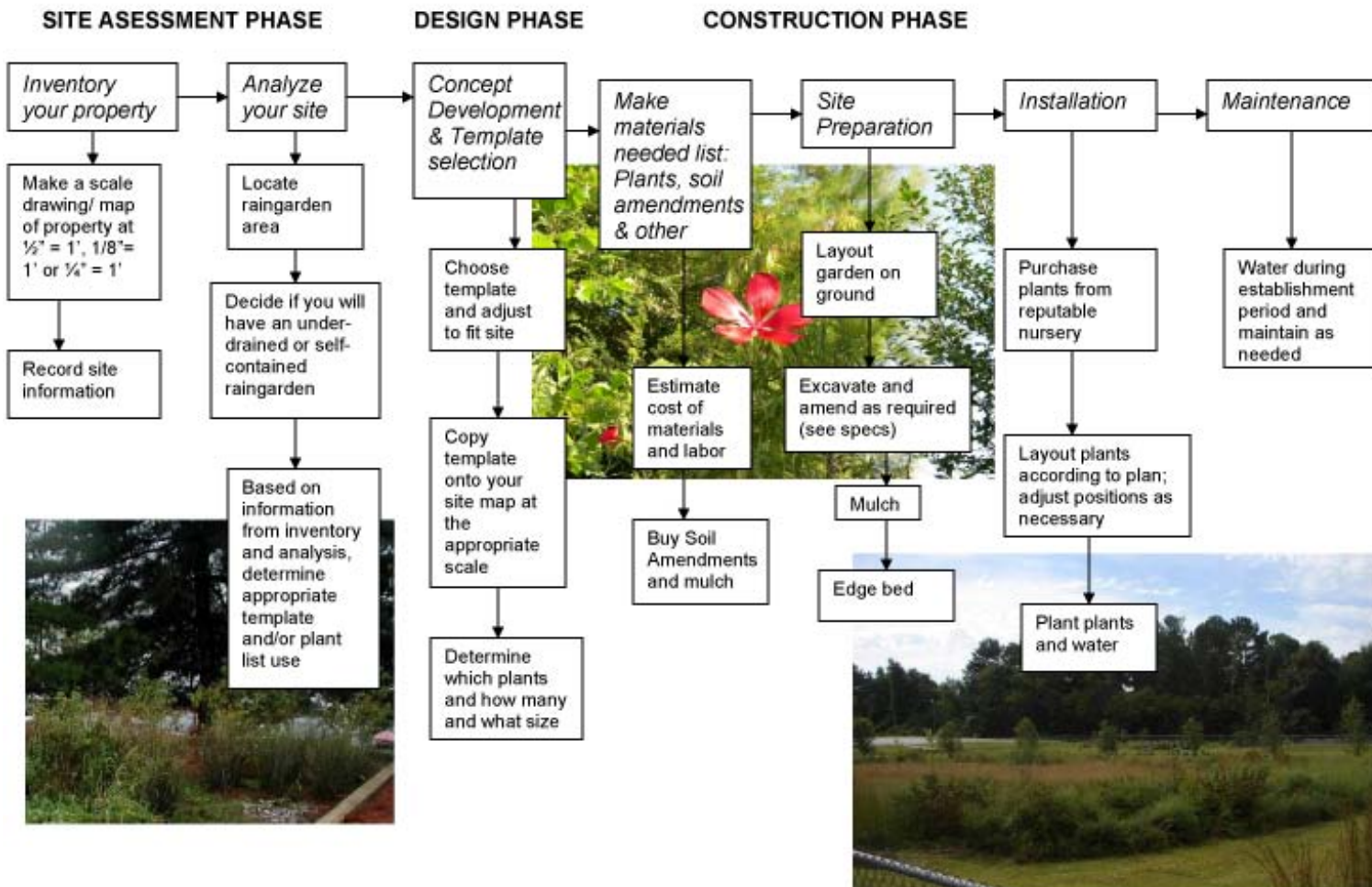
- Mulch annually (remove old)
- Weed seasonally
- Divide plants as needed
- Water as needed

Clickable chart at the www.lowimpactdevelopment.org/raingarden_design

Low Impact Development Center

www.lowimpactdevelopment.org

HOW TO DESIGN AND BUILD A RAIN GARDEN Overview of three phases



Rain Garden Sizing Chart – Calibrated for Montgomery County, MD

Rain garden sizing: inches of rain captured

Rain garden area (sq. ft.)	1 foot planting bed							2 foot planting bed						3 foot planting bed					
	Impervious drainage area (sq. ft.)							Impervious drainage area (sq. ft.)						Impervious drainage area (sq. ft.)					
	100	200	300	400	500	600	100	200	300	400	500	600	100	200	300	400	500	600	
10	0.8						1.1	0.6					1.5	0.8	0.5				
15	1.2	0.6					1.7	0.9	0.6				2.3	1.1	0.8	0.6	0.5		
20	1.6	0.8	0.5				2.4	1.2	0.8	0.6	0.5		3.2	1.6	1.0	0.8	0.6	0.5	
25	2.1	1.0	0.7	0.5			3.0	1.5	1.0	0.8	0.6	0.5	4.0	2.0	1.3	1.0	0.8	0.7	
35	3.0	1.5	1.0	0.8	0.6	0.5	4.3	2.2	1.4	1.1	0.9	0.7	5.7	2.8	1.9	1.4	1.1	0.9	
50	4.5	2.2	1.5	1.1	0.9	0.7	6.4	3.2	2.1	1.6	1.3	1.1	8.3	4.1	2.7	2.1	1.7	1.4	
75	7.0	3.5	2.3	1.7	1.4	1.2	9.8	4.9	3.2	2.4	1.9	1.6	13	6.3	4.2	3.2	2.5	2.1	
100	9.5	4.8	3.2	2.4	1.9	1.6	13	6.6	4.4	3.3	2.7	2.2	17	8.5	5.7	4.3	3.4	2.8	

- “1 foot planting bed” refers to planting media depth; all assume 6” of ponding
- The numbers in the colored area indicate inches of rain captured/ treated/ SF of RG at a particular depth

Other guidance on Sizing a Rain Garden

- Rainscapes.org presentations online
- Several online guides are available for determining the appropriate size for the rain garden.
- Websites:
 - <http://www.rainkc.com/index.cfm/fuseaction/home.showpage/pageID/17/index.htm>
 - http://www.lid-stormwater.net/bioretenction/bio_sizing.htm
 - http://www.dof.virginia.gov/mgt/resources/pub-Rain-Garden-Tech-Guide_03.pdf
 - http://www.dof.virginia.gov/mgt/resources/pub-Rain-Garden-Tech-Guide_05.pdf
 - <http://www.dof.virginia.gov/wq/index.shtml>

On-line Plant Selectors & Mulch Calculators

Click Here for Rain Barrel and Plant Sources

WATER
The future is clear

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10,000 Rain Gardens

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Mulch Calculator

Enter the average length and average width in feet of the area you want to add mulch to and then select the depth (2" or 3") and then click **submit** and we'll let you know how many cubic yards of mulch you will need.

With dimensions of 6 ft x 20 ft, you will need approximately 1.00 cubic yards of mulch, or roughly 14 bags.

Length (ft): 20
Width (ft): 6
How Deep: 3" - Three Inches

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<http://www.rainkc.com/>

Find the Right Plant

Use this feature to help **select the best plants for your site**. Keep in mind that your rain garden, unlike a water garden, will be dry most of the time. **Plants should be able to tolerate short periods of inundation, but not require constant, high moisture**. Select plants with moderate moisture requirements for areas that will have moist, well-drained soil. For drier sites like the edge of your rain garden, use plant that have low or moderate moisture requirements. You can also use this feature to select by color, height and use.

Have a **large site or bioswale**? Replace perennials and grasses with shrubs and trees for moist sites. With a variety of different species, your rain garden will be functional and beautiful long into the year.

Make a shopping list with **"My Plant List"**. Just click this button on each plant you select. Creating a rain garden or adding a rain barrel is a fun family project. Either project can be done in a weekend.

Plant Picker

Plant Type: ANY TYPE | Annuals | Butterfly Attracting | Conifers | Drought-Defiant | Midwest Native | None | Ornamental Grass | Rain Gardens and Bioswales | Salt-Tolerant

Height: Inches

Spread: Inches

Hardiness Zone:

Control-click (Mac uses Command-click) to select multiple types to include in the search.

Check any box below to find only plants having the specific characteristic(s). Otherwise, leave all boxes unchecked to maximize your search results based on the criteria above.

Deer Tolerance

Low
 Medium
 High

Exposure

Full Sun
 Full Sun to Part Shade
 Part Shade to Full Shade
 Full Sun or Full Shade
 Full Shade

Habit

Evergreen
 Semi Evergreen
 Deciduous
 Annual
 Perennial
 Tropical

Landscape Use

Ground Cover
 Shrub
 Tree

Water Needs

High
 Medium
 Low

Show only plants having ALL checked characteristic(s) above
 Show plants having ANY checked characteristic(s) above



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PLANT SELECTOR

Use this tool to help choose the best native plants for your particular situation. Choose as many of the criteria as you want from the fields below and the plants matching your needs will be chosen from the total list.

Criteria

Purpose: Any

Type: Any

Environment: Soil Moisture: Sun Exposure:

Dry Sun
 Medium Partial
 Wet Shade
 Lake plant

Bloom: **Color:** Any **When:** Any

[Show All Plants](#)

Plant List

There are 234 plants matching your criteria

Alumroot	Type	Sun Exposure	Soil Moisture	Height	Color	Blooms
<i>Heuchera richardsonii</i>	Flower/Forb	Sun Partial Shade	Dry	6 Inches	White	May-June

<http://rainkc.com/index.cfm/fuseaction/plants.search/index.htm>

<http://www.bluethumb.org/plants/>

MONTGOMERY COUNTY MD



B – Polystichum acrostichoides



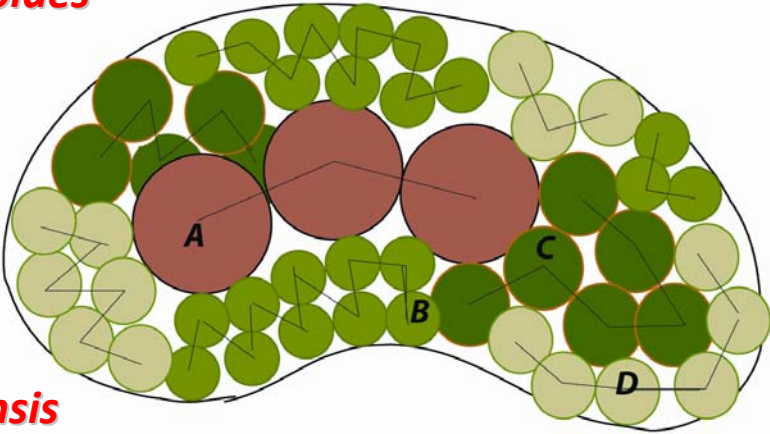
A – Leucothoe fontanesia 'Nana'



A – Ilex glabra 'Densa'



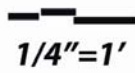
C – Thelypteris noveboracensis



D – Woodwardia virginica

- A - Lindera benzoin (Spicebush), Ilex glabra 'Densa' (Inkberry), Leucothoe fontanesia 'Nana' (Drooping Laurel), or Osmunda cinnomoea (Cinnamon Fern)*, 4' o.c.**
- B - Polystichum acrostichoides (Christmas Fern), 15" o.c.**
- C - Thelypteris noveboracensis (New York Fern), or Baptisia alba (Rattlebox) 24" o.c.**
- D - Woodwardia virginica (Virginia Chain Fern), 18" o.c.**

Fern Garden - 200 sf
Center plants indicated vary in height
***space Cinnamon Fern 18" o.c.**



Rain
 Garden
 template
 for shade/
 deer
 pressure
 areas

MONTGOMERY COUNTY MD



B – Liatrus spicata



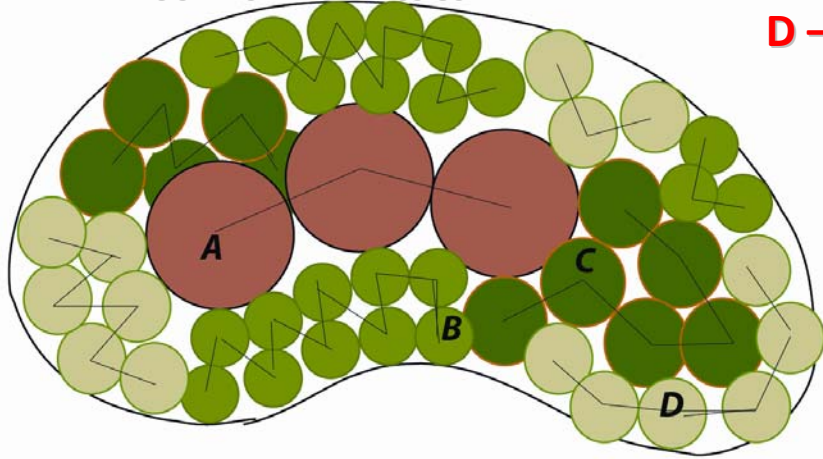
A – Viburnum dentatum



D – Aesclepias tuberosa



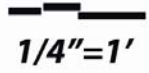
B – Phlox subulata



C- Echinacea 'Kim's Knee-Hi'

- A - Viburnum dentatum 'Emerald Luster' or 'Blue Muffin' (Southern Arrowwood), Ilex vomitoria 'Schilling's Dwarf' (Dwarf Yaupon Holly*), Viburnum dilatatum 'Henneke' AKA 'Cardinal Candy' (4' o.c.)**
- B - Liatrus spicata (Blazing Star**), 15" o.c.**
- C - Echinacea purpurea 'Kim's Knee-Hi' or 'Magnus', 'Bright Star' (Purple coneflower), Amsonia tabernaemontana (Bluestar Flower) 24" o.c.**
- D - Aesclepias tuberosa (Butterflyweed), 18" o.c.**

Sunny Garden - deer resistant- 200 sf
***Center plants indicated vary in height**
****could have Phlox stolonifera as the row along the outer edge of the garden with taller Liatrus behind**



Rain Garden
 template for sun/
 deer pressure
 areas

Rain Gardens: Inspection and Maintenance is key

- Water ponding for more than 24 hours may indicate a problem
- Erosion usually occurs where flow is concentrating
- Check soil pH every few years to ensure that soil media is not too acidic
- Inspect plant health and aerate as needed
- Mulch by hand 1 or 2X/year (remove old mulch)



Further education

- Oh deer, there goes my garden – check plant lists for deer preference e.g. Landscape Plants Rated by Deer Resistance
by Pedro Perdomo, Morris County Agricultural Agent; Peter Nitzsche, Morris County Agricultural Agent ;David Drake, Ph.D., Extension Specialist in Wildlife Management
 - <http://njaes.rutgers.edu/deerresistance/default.asp>
- Visit some rain gardens and conservation gardens to decide what works for you
 - Brookside Gardens
 - http://www.mcparkandplanning.org/brookside/virtual_tour.shtm#raingarden
 - The American Horticultural Society – River Farm (Alexandria)
 - The Capitol Hill Rain Garden
 - National Wildlife Federation
 - <http://www.nwf.org/backyard/index.cfm>
 - Audubon at Home
 - http://www.audubon.org/bird/at_home/



Resources



■ rainscapes.org

■ Rainscapes gazette:

<https://ext01.montgomerycountymd.gov/entp/s1p/esubpublic/newssubscriber.do>

■ Rainscapes Rewards application

– www.montgomerycountymd.gov/rainscapes

■ How-to Manuals for Rain Gardens

– http://www.chesapeakeecologycenter.org/images/CECGardenBooklet_websm.pdf

– http://www.lowimpactdevelopment.org/raingarden_design/

■ USFWS: Native Plants for Wildlife Habitat and Conservation Landscaping