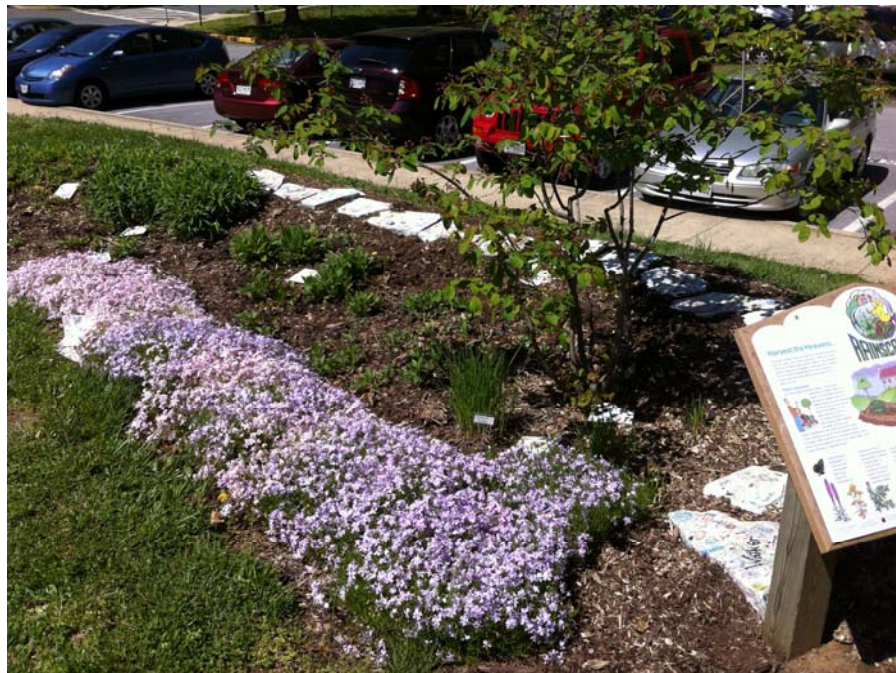




# Planting Design : Plants that Work Guidance for Bioretention and Rain Gardens



*Working together for a cleaner, greener county.*



## Rain Gardens and Bioretention



Planting Design for Bioretention and Rain Gardens  
May 2016

RainScapes Montgomery County MD Department of Environmental Protection  
Watershed Management Operations Division  
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## General Layout:

Right of Way (ROW) and Parking lot rain gardens and bioretention  
Plan for a low maintenance environment:

- Plan for salt tolerance in the Right of way and in gardens catching parking surface runoff
- 3-6 species in a rain garden; no more than 9 overall in the landscape
- Aim for 60% woody, 40% herbaceous species mix
- 4 seasons of interest
- Provide maintenance access
- Consider viewing speed in your layout ; design should be [legible](#) to both pedestrians and car/bus passengers
- In GENERAL: Using masses of single types plants rather than interplanted, especially herbaceous species, simplifies maintenance direction if you have intro level landscape maintenance workers
- If interplanting, consider drawing on a community of plants that would naturally grow together to ensure the maintenance regime can be set up for long term success
- Civic entrances are gateways to the community and should be clear and a point of civic pride- rain gardens can be designed to reflect this
- Signs should be low and [pedestrian](#) oriented in a small site
- Underdrained bioretention gardens are much drier than non-underdrained gardens; adjust species accordingly
- Gardens should drain fully from the surface in 48 hours; if water is on the surface longer than that, you need to evaluate soil drainage.

### Residential Rain Gardens

- Generally, 150-250 SF in size
- Blend into the overall landscape
- Water is generally from roofs and lower salt environments than ROW
- Aim for 60% woody, 40% herbaceous species mix
- 4 seasons of interest
- Provide maintenance access
- Soil replacement is generally not necessary or desirable if the soils perk
- Easily combined with other LID tools such as rain barrels, conservation landscapes and pervious paving

## Plants that work for Right of Way (ROW) Rain Gardens in sun:

### Entry/ inlets:

- *Iris versicolor* – Northern blue flag iris
- *Juncus effusus*- Soft Rush
- *Panicum virgatum*- Switchgrass

### Lower areas of garden, 3-4' or less:

- *Aesclepias incarnata*–Swamp milkweed
- *Aster novae-angliae* – New England aster
- *Eupatorium dubium* ‘Little Joe’ – Joe-Pye weed
- *Hibiscus moeschutus* – Swamp marshmallow
- *Iris versicolor* – Northern blue Flag iris
- *Panicum virgatum* ‘Shenandoah’ – Dwarf Red switchgrass
- *Rudbeckia fulgida* – Black eyed susan
- *Solidago spp.* –Goldenrod; *S. sphacelata* ‘Golden Fleece’ is better behaved

### Lower areas of garden >3'/ woody species

- *Amelanchier canadensis* -shadbush
- *Ilex verticillata* (M-F pair)- winterberry holly
- *Itea virginiana* (choose a dwarf) – Virginia sweetspire
- *Magnolia virginiana* – Sweetbay magnolia

### Side slopes

- *Amelanchier laevis* -Serviceberry
- *Echinacea purpurea* – Purple coneflower
- *Ilex opaca* ‘Maryland Dwarf’ – Dwarf American holly
- *Ilex vomitoria* ‘Shilling’s Dwarf’ – dwarf Yaupon Holly (coastal plain/ zone 7A or higher or in a place with heat island effects)
- *Liatrus spicata* – Blazing Star
- *Muehlenbergia capillaris* – Pink Muhly Grass (*Spring planting ONLY*)
- *Panicum virgatum* ‘Shenandoah’ – Dwarf Red switchgrass
- *Schizachyrium scoparium* ‘Standing Ovation’ – Standing Ovation Little Bluestem



## Plants that work for ROW in the Shade

Entry/ inlets:

- *Juncus effusus*- Soft Rush
- *Lobelia silphilitica* Great Blue Lobelia
- *Chasmanthium latifolium* River Oats

Lower areas of garden, 3-4' or less:

- *Aesclepias incarnata*—Swamp milkweed (half day sun)
- *Iris versicolor* – Northern blue Flag iris (half day sun)
- *Panicum virgatum* 'Shenandoah' – Dwarf Red switchgrass

Lower areas of garden >3'/ woody species

- *Amelanchier canadensis* –Shadbush
- *Clethra alnifolia* - Summersweet
- *Itea virginiana* (choose a dwarf) – Virginia sweetspire
- *Magnolia virginiana* – Sweetbay magnolia

Side slopes

- *Amelanchier laevis* –Serviceberry (half day)
- *Chasmanthium latifolium* – River Oats / Upland Sea Oats
- *Deschampsia cespitosa* - Tufted hair grass
- *Ilex opaca* 'Maryland Dwarf' – Dwarf American holly

## Residential Rain Gardens in the sun

Entry/ inlets:

- *Iris versicolor* – Northern blue flag iris
- *Lobelia cardinalis* – Cardinal flower
- *Juncus effusus*- Soft Rush
- *Panicum virgatum*- Switchgrass

Lower areas of garden, 3-4' or less:

- *Aesclepias incarnata*—Swamp milkweed
- *Aster novae-angliae* – New England aster
- *Aster oblongifolius* – Aromatic aster
- *Eupatorium dubium* 'Little Joe' – Joe-Pye weed
- *Hibiscus moeschutus* – Swamp marshmallow
- *Iris versicolor* – Northern blue Flag iris
- *Panicum virgatum* 'Shenandoah' – Dwarf Red switchgrass

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- *Rudbeckia fulgida* – Black eyed susan
- *Solidago sphacelata* ‘Golden Fleece’. – Golden Fleece Goldenrod

#### Lower areas of garden >3’/ woody species

- *Amelanchier canadensis* –shadbush
- *Chionanthus virginicus* Fringe tree
- *Cornus amomum* –Silky Dogwood
- *Ilex glabra* -Inkberry
- *Ilex verticillata* (M-F pair)- winterberry holly
- *Itea virginiana* (choose a dwarf) – Virginia sweetspire
- *Magnolia virginiana* – Sweetbay magnolia
- *Photinia arbutifolia* or *melanocarpa* Red or Black Chokeberry

#### Side slopes

- *Aesclepias tuberosa* Butterflyweed
- *Amelanchier laevis* –Serviceberry
- *Betula nigra* - River Birch
- *Echinacea purpurea* – Purple coneflower
- *Hydrangea quercifolia* ‘PeeWee’
- *Ilex opaca* ‘Maryland Dwarf’ – Dwarf American holly
- *Ilex vomitoria* ‘Shilling’s Dwarf’ – dwarf Yaupon Holly (coastal plain/ zone 7A or higher or in a place with heat island effects)
- *Panicum virgatum* ‘Shenandoah’ – Dwarf Red switchgrass
- *Rhus aromatica* Lo-Gro - Aromatic sumac
- *Rudbeckia fulgida* ‘Goldsturm’ – Black-eyed susans

## Residential Rain Gardens in the shade

#### Entry/ inlets:

- *Juncus effusus*- Soft Rush
- *Lobelia silphilitica* –Great Blue lobelia
- *Chasmanthium latifolium* River Oats

#### Lower areas of garden, 3-4’ or less:

- *Carex stricta* Tussock Sedge
- *Heuchera Americana* (coralbells)
- *Deschampsia cespitosa* Tufted hair grass (half day sun)
- *Heuchera macrorhiza* ‘Autumn Bride’
- *Osmunda cinnomomea* (Cinnamon fern)
- *Tiarella cordifolia* (foamflower)

### Lower areas of garden >3'/ woody species

- *Alnus serrulata* - Smooth Alder
- *Amelanchier canadensis* –shadbush
- *Cephalanthus occidentalis* - Buttonbush
- *Clethra alnifolia*- Summersweet
- *Itea virginiana* (choose a dwarf) – Virginia sweetspire
- *Lindera benzoin* - Spicebush
- *Magnolia virginiana* – Sweetbay magnolia
- *Sambucus canadensis* - Elderberry

### Side slopes

- *Amelanchier laevis* –Serviceberry (half day)
- *Chasmanthium latifolium* – River oats
- *Fothergilla gardenii* – Fothergilla; 'Mt. Airy', 'Blue Mist'
- *Ilex opaca* 'Maryland Dwarf' – Dwarf American holly
- *Polystichum acrosticoides* Christmas fern

## Bioretention in the sun (underdrained)

### Entry/ inlets:

- *Iris versicolor* – Northern blue flag iris
- *Juncus effusus*- Soft Rush
- *Panicum virgatum*- Switchgrass

### Lower areas of garden:

- *Aesclepias incarnata*–Swamp milkweed
- *Asclepias syrica* Common milkweed
- *Aster novae-angliae* – New England aster
- *Baptisia australis* - Baptisia
- *Eupatorium dubium* – Joe-Pye weed
- *Hibiscus moeschutus* – Swamp marshmallow
- *Iris versicolor* – Northern blue Flag iris
- *Panicum virgatum* -Switch Grass
- *Rudbeckia fulgida* – Black eyed susan
- *Solidago spp.* –Goldenrod; *S. sphacelata* 'Golden Fleece' is better behaved
- *Vernonia altissima*-Ironweed

### Lower areas of garden >3'/ woody species

- *Amelanchier canadensis* –shadbush
- *Ilex verticillata* (M-F pair)- winterberry holly
- *Itea virginiana* (choose a dwarf) – Virginia sweetspire
- *Magnolia virginiana* – Sweetbay magnolia
- *Photinia arbutifolia* Red Chokeberry

### Side slopes

- *Amelanchier laevis* -Serviceberry
- *Coreopsis verticillata* ‘Moonbeam’ or ‘Zagreb’ - Tickseed
- *Echinacea purpurea* – Purple coneflower
- *Ilex opaca* ‘Maryland Dwarf’ – Dwarf American holly
- *Ilex vomitoria* ‘Shilling’s Dwarf’ – dwarf Yaupon Holly (coastal plain/ zone 7A or higher or in a place with heat island effects)
- *Physocarpus opulifolius* – Common ninebark
- *Liatrus spicata* – Blazing Star
- *Muehlenbergia capillaris* – Pink Muhly Grass (*Spring planting ONLY*)
- *Panicum virgatum* ‘Shenandoah’ – Dwarf Red switchgrass

## Bioretention in the shade (underdrained)

### Entry/ inlets:

- *Juncus effusus*- Soft Rush
- *Lobelia silphilitica* Great Blue Lobelia
- *Chasmanthium latifolium* River Oats

### Lower areas of garden:

- *Aesclepias incarnata*–Swamp milkweed (half day sun)
- *Baptisia alba*- White Baptisia (half day sun)
- *Iris versicolor* – Northern blue Flag iris (half day sun)
- *Panicum virgatum* ‘Shenandoah’ – Dwarf Red switchgrass

### Lower areas of garden >3'/ woody species

- *Amelanchier canadensis* –Shadbush
- *Fothergilla gardenia* – Fothergilla
- *Hydrangea quercifolia* ‘Alice’ (halfday sun)



- *Itea virginiana* (choose a dwarf) – Virginia sweetspire
- *Cornus sericea* Yellowtwig dogwood
- *Lindera benzoin* Spicebush
- *Magnolia virginiana* – Sweetbay magnolia
- *Photinia macrocarpa* – Black chokeberry

#### Side slopes

- *Amelanchier laevis* –Serviceberry (half day)
- *Chasmanthium latifolium* – River Oats / Upland Sea Oats
- *Deschampsia cespitosa* - Tufted hair grass
- *Eurybia divaricata* – White wood aster
- *Ilex opaca* 'Maryland Dwarf' – Dwarf American holly