RAIN GARDENS 101

Arden Club Gardeners Gild Meeting

National Estuary Programs

That's us!

Guided by our CCMP

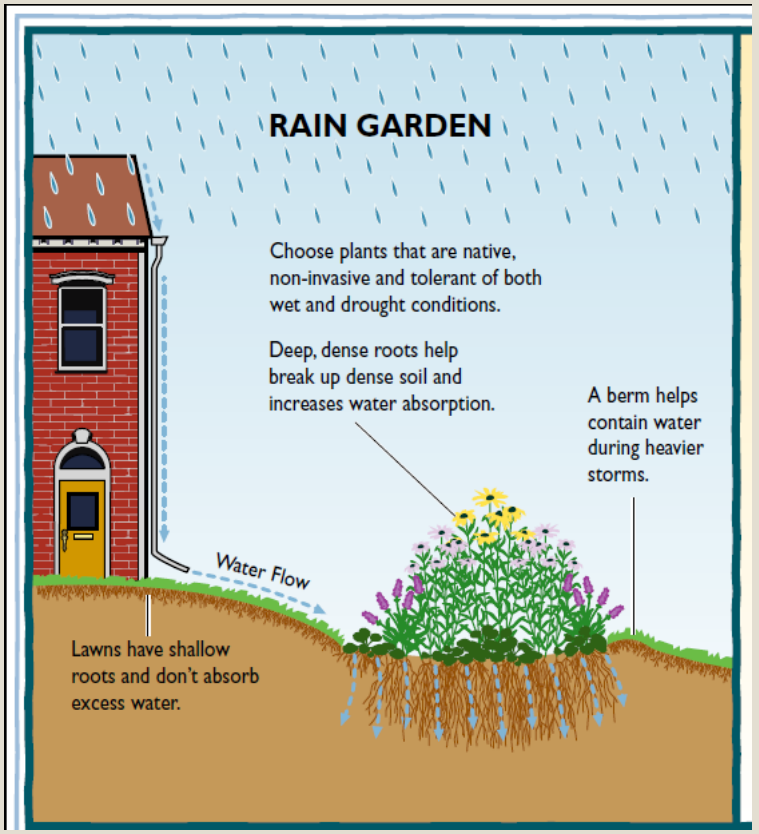
- **Clean Waters**
  - Nutrient Pollutants
  - Other Pollutants
  - Sustain Flow
- **Strong Communities**
  - Resilience and Access
  - Engagement
- **Healthy Habitats**
  - Wetlands
  - Forests
  - Fish & Shellfish

Rain Garden Defined

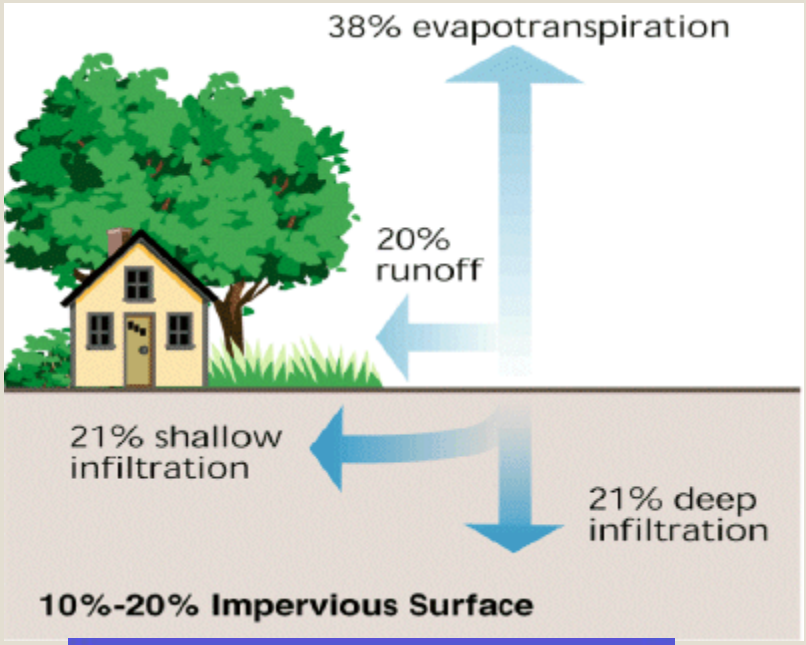
•An attractive landscaping feature planted with perennial native plants.

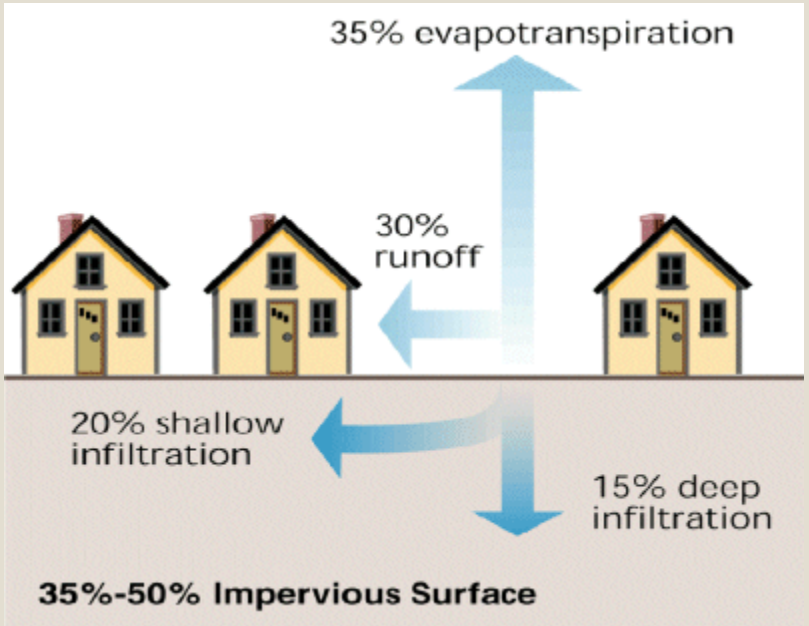
•A bowl-shaped garden, designed to **absorb** stormwater run-off from **impervious surfaces such as roofs and parking lots.**

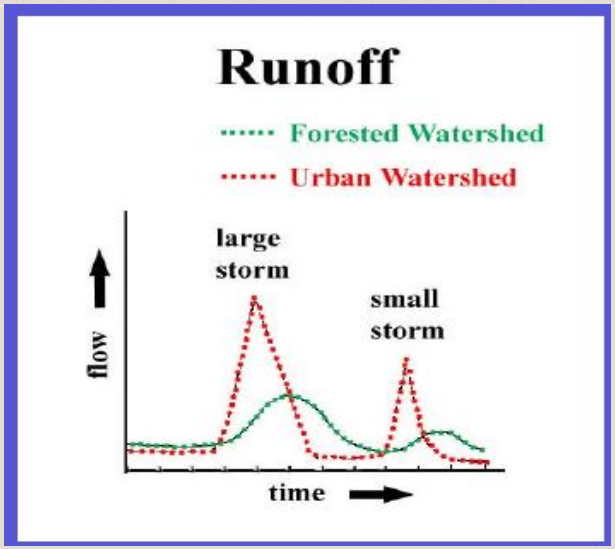
•Rain gardens can be small, formal, home-owner style gardens, large complex bioretention gardens, or anywhere in between

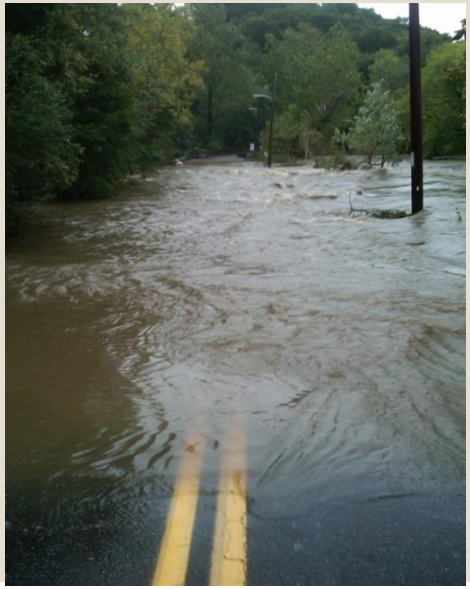


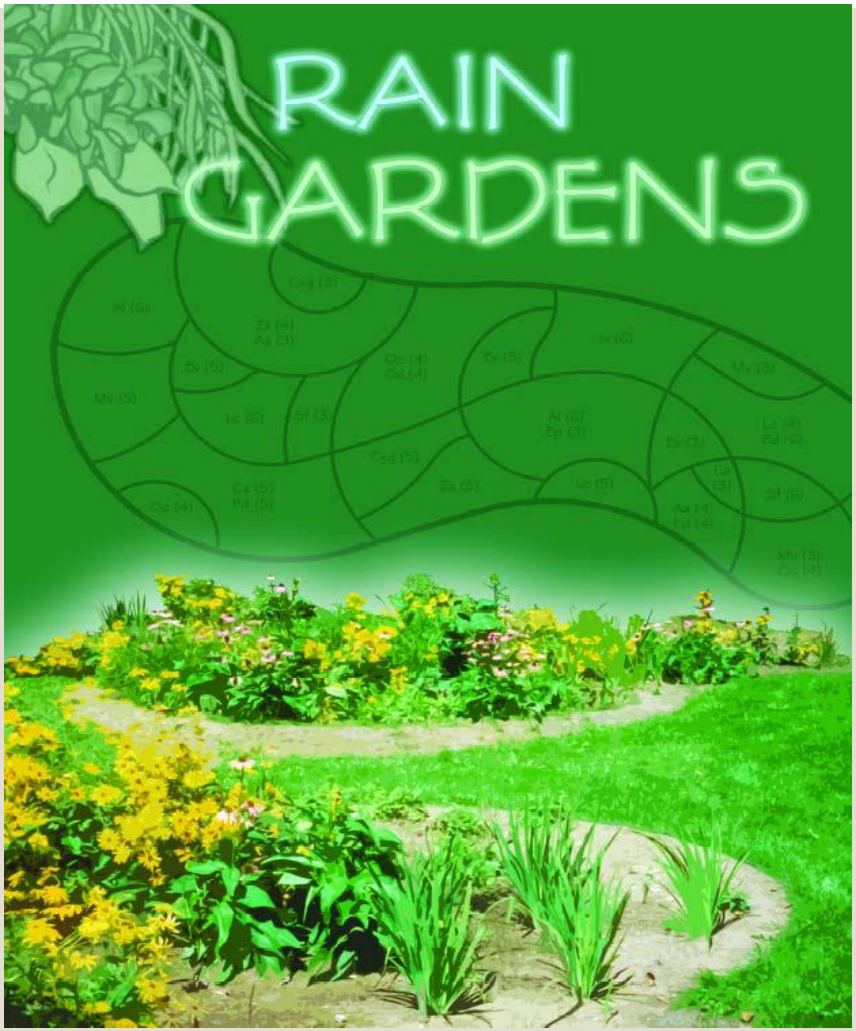
Landscape Changes to Water Cycle











- Increases the amount of water that filters into the ground -recharges local and regional aquifers **(Typically 30% more than conventional lawns)**

- Helps protect communities from flooding and drainage problems

- Helps protect streams and lakes from pollutants carried by urban stormwater

- Enhances the beauty of yards and neighborhoods

- Provides valuable habitat for birds, butterflies and many beneficial insects

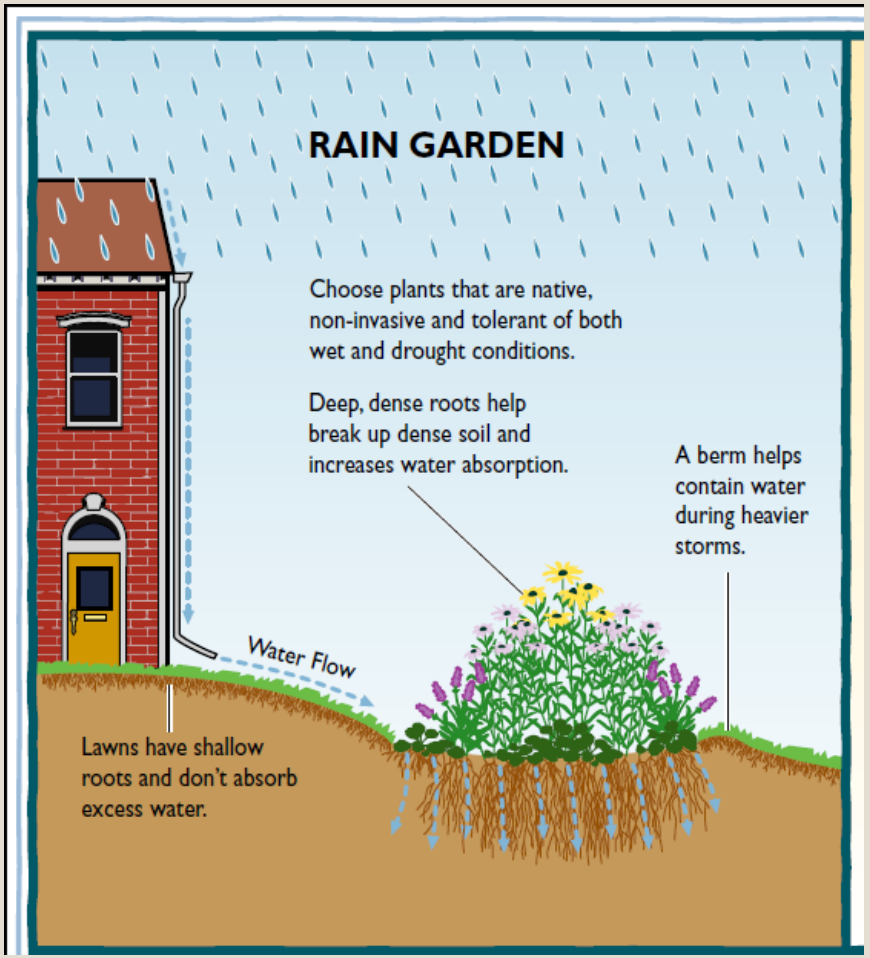
What a rain garden is NOT

- A wet spot in a lawn or other area
- A pool of standing water
- Areas with no inlet or outlet for water flow

Consider wetland creation instead!

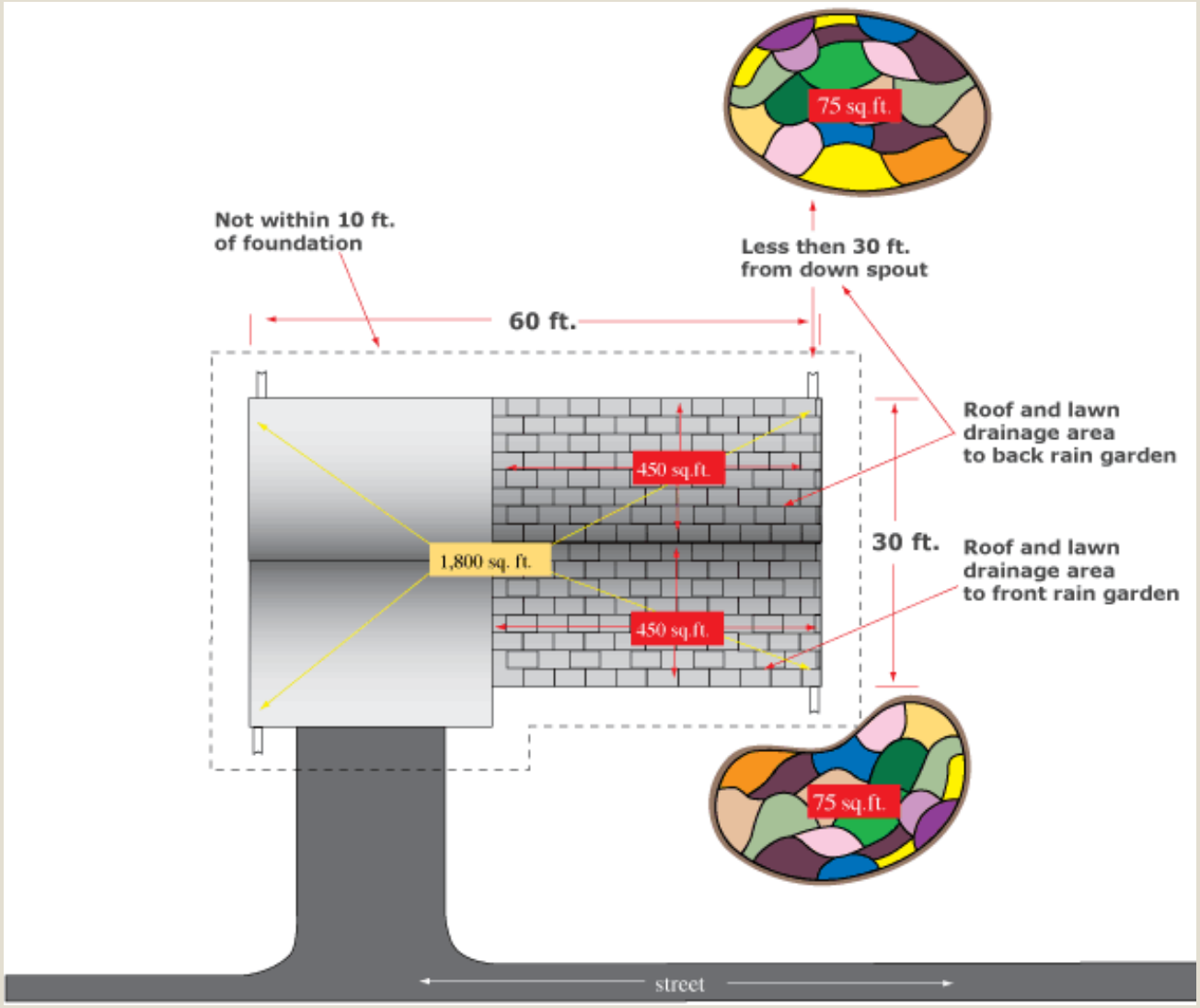
Choose the Right Place

- At least 10ft away from a structure
- Near direct source of runoff (downspouts)
- Full sun is better
- Area with few trees will be easier to dig
- Area with an acceptable overflow pathway
  - This can be a natural gradual slope, or man made piping



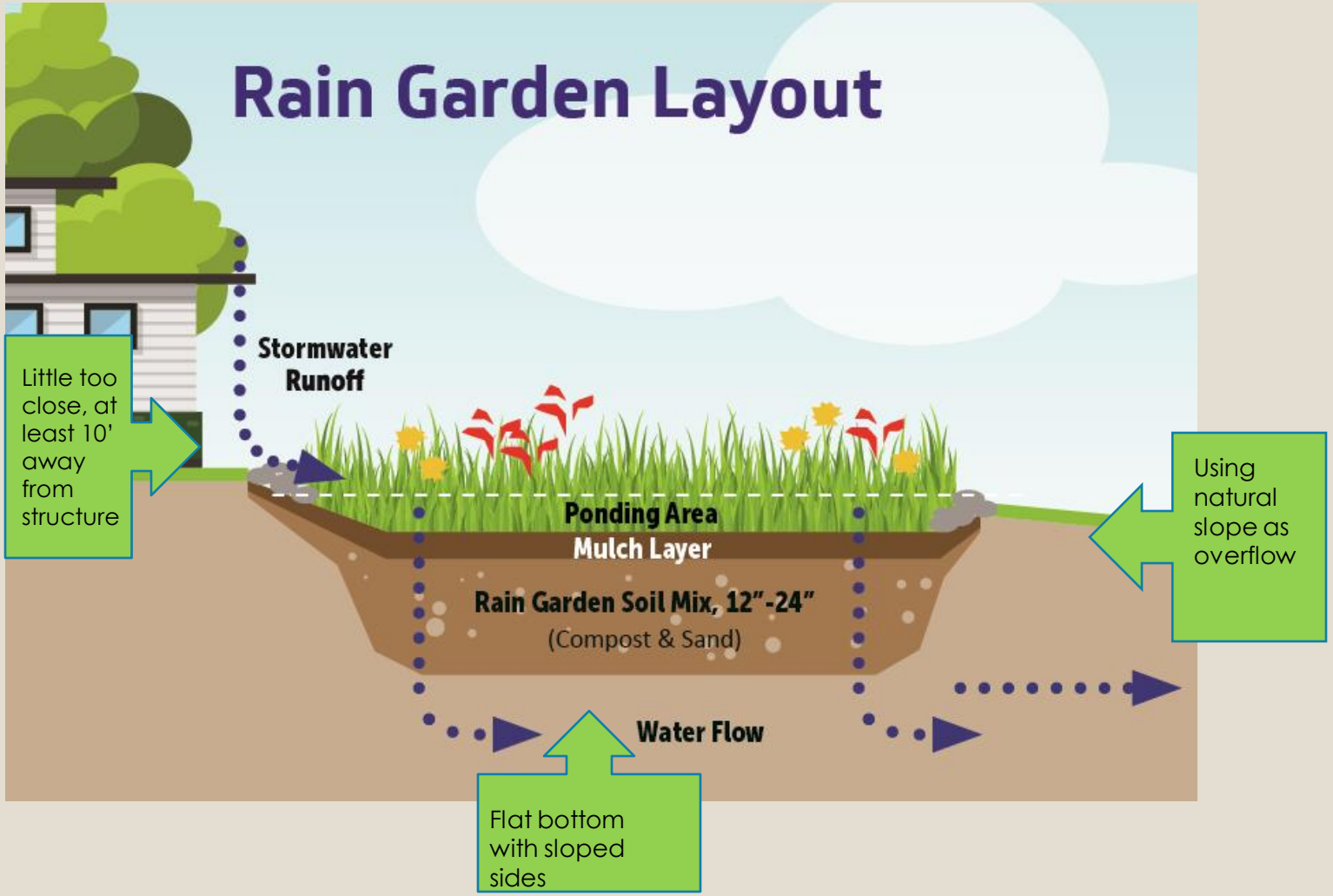
Measure

- A typical home rain garden ranges from 100 to 300 square feet and often captures the runoff from one downspout
- To calculate approximate size, measure the amount of impervious surface you would like it to capture (L X W)---rain gardens are generally between 7-20% of the impervious surface
- Size of the storm matters, rain gardens will rarely handle ALL the run off from severe storms, overflow is a must.
- Smaller rain gardens are still worth it!


75 sq ft.
Not within 10 ft.
of foundation
Less then 30 ft.
from down spout
60 ft.
Roof and lawn
drainage area
to back rain garden
450 sq.ft.
30 ft.
1,800 sq. ft.
Roof and lawn
drainage area
to front rain garden
450 sq.ft.
75 sq.ft.
street

Check Drainage and Soil

- Conduct a percolation test
  - Dig hole 6inches deep, 6inches wide
  - Hole should be saturated (either after a rain, or the day before by you)
  - Fill saturated hole with water, water should **drain 0.25in in an hour or be gone after 24 hours.**
- Soil—extremely compacted soils will not pass perc test, you may amend soils before planting your rain garden. Other soil types will generally be fine with native plantings.
- Rain gardens are typically 4-8” deep

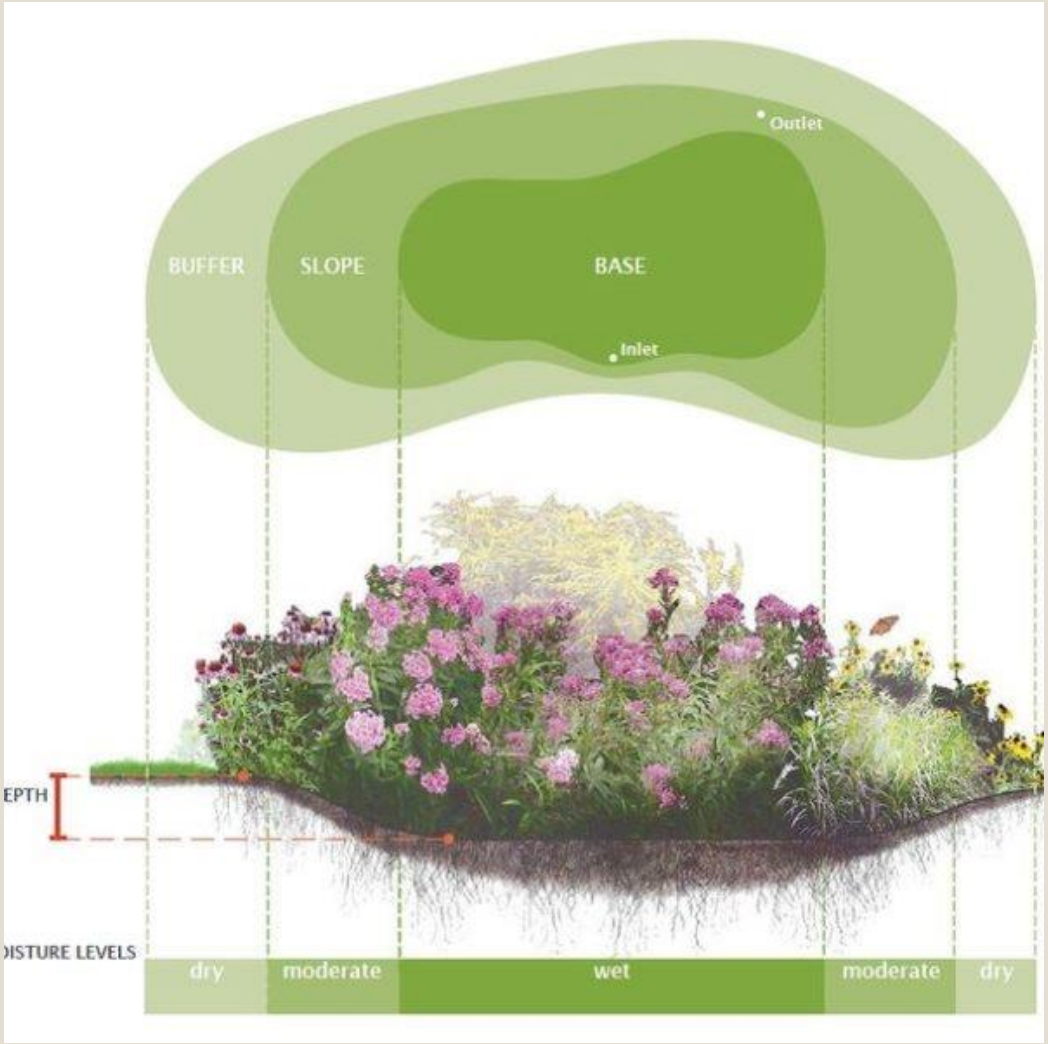

Rain Garden Layout
Stormwater Runoff
Little too close, at least 10' away from structure
Ponding Area
Mulch Layer
Rain Garden Soil Mix, 12"-24"
(Compost & Sand)
Water Flow
Using natural slope as overflow
Flat bottom with sloped sides

Feeling discouraged?

- Wet spots?—Planting wetlands can be just as beneficial
- Trees?—Plant more trees!
- Space issues?-think rain barrels, storm water planters, etc. Every little bit helps.
- Right conditions in the wrong spot? Extended piping is an option

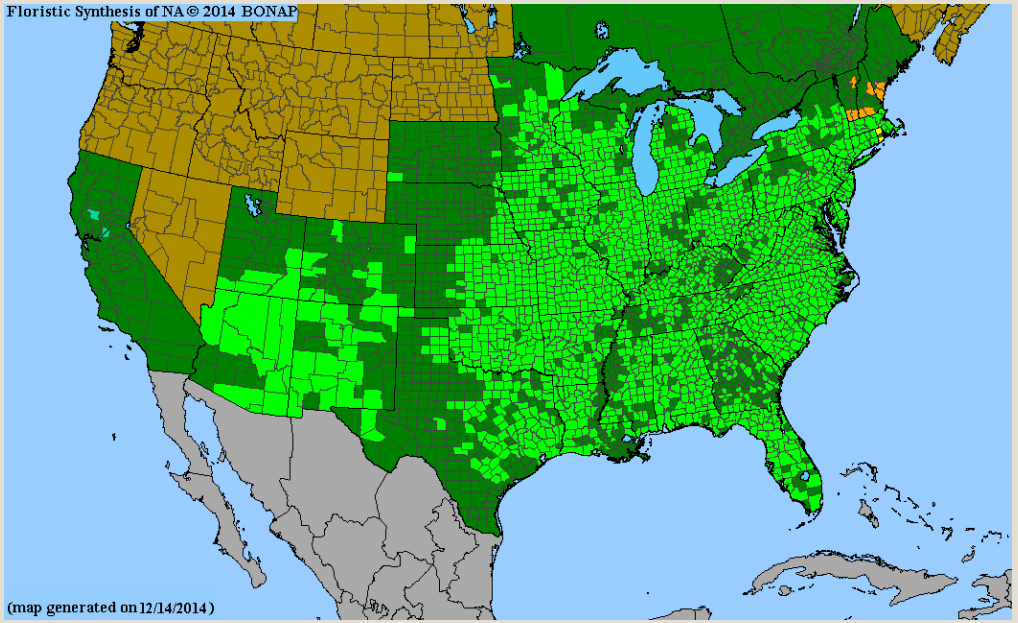


Choosing Plants



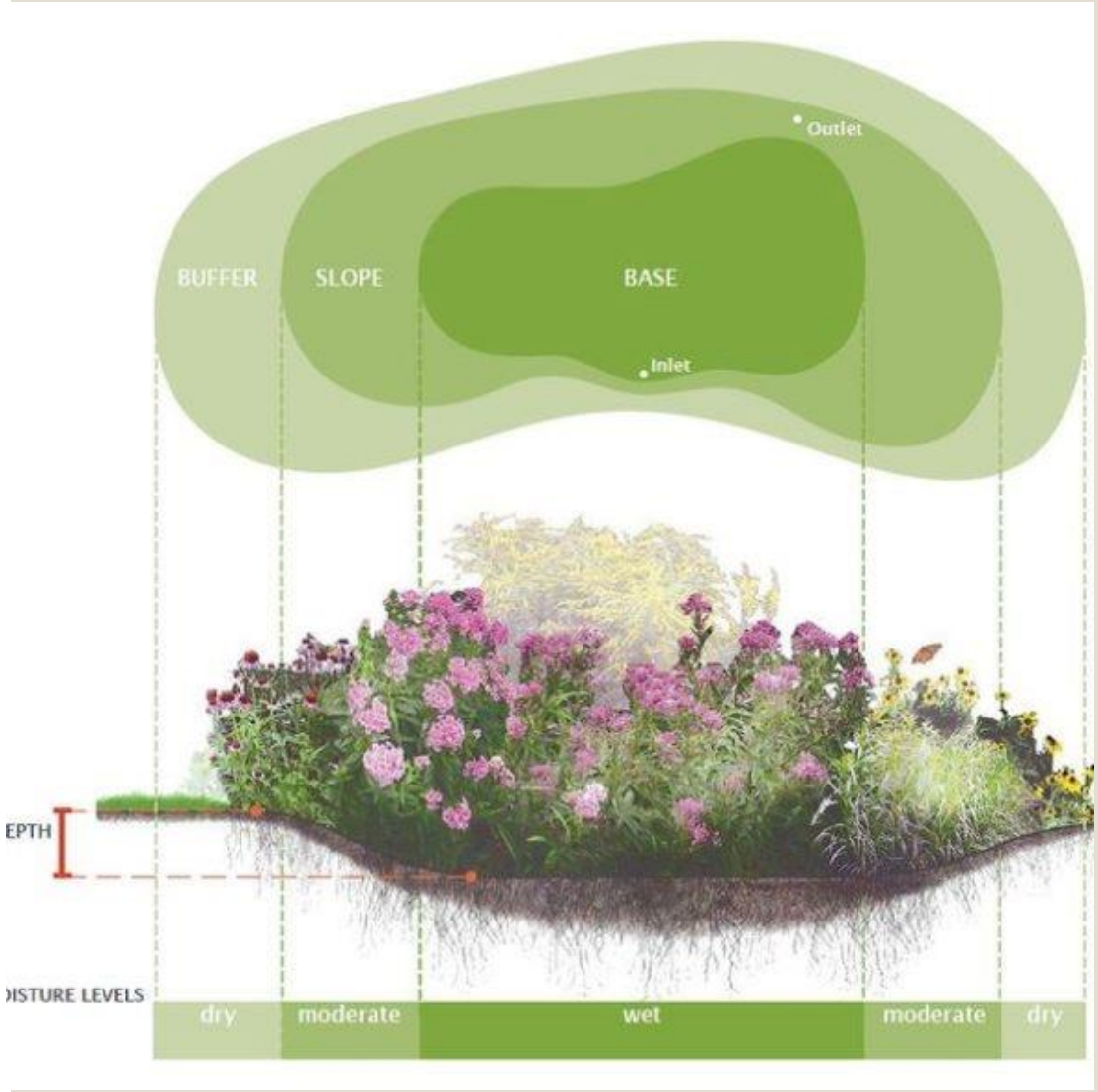
Choose Native!

- Flora of Delaware Online Database
- BONAP
- Using Delaware Flora Database
- Using BONAP



Why Natives?

- Support local wildlife and ecosystems
- Best suited for local weather, soil and other conditions
- Best for water conservation
- Low maintenance once established



Different plants for different zones based on how much water they like

3 zones in a rain garden-

1. Wet most of the time
2. Wet sometimes
3. Wet only occasionally

Pick **at least 3** plant types for each zone

3 Zone Types

1) Wet most of the time- **OBL**, **FACW**, **FAC**
2) Wet sometimes- **FACW**, **FAC**, **FACU**
3) Wet only occasionally- **FAC**, **FACU**

- **Obligate Wetland (OBL)-** occur almost always in wetlands
- **Facultative Wetland (FACW)-** usually occur in wetlands but occasionally found in non-wetlands
- **Facultative (FAC)-** equally likely to occur in wetlands or non-wetlands
- **Facultative Upland (FACU)-** usually occur in non-wetlands but occasionally found in wetlands

Best Place to find this info: https://plants.usda.gov/home-search plant, click "Wetland Tab"

Wet most of the time- **OBL**, **FACW**, **FAC**

Iris versicolor, blue flag Iris, **OBL**

Vernonia noveboracensis, NY Ironweed, **FACW**

Lobelia cardinalis, Cardinal flower, **OBL**

Wet sometimes- FACW, FAC, FACU

Verbena hastata, Swamp verbena, **FACW**

Eupatorium perfoliatum, Common Boneset, **FACW**

Clethra alnifolia, Sweetpepper bush, **FAC**

Wet only occasionally- **FAC, FACU**

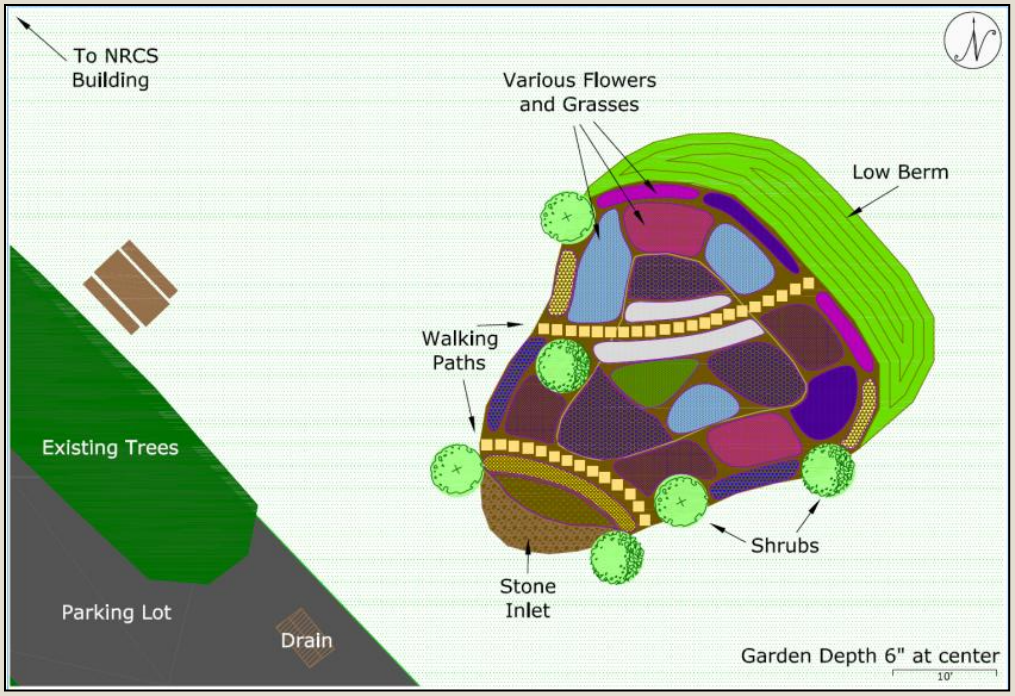
Schizachyrium scoparium, Little bluestem, **FACU**

Symphyotrichum laeve, smooth blue aster, **FACU**

Rudbeckia hirta, Black-eyed Susan, **FACU**

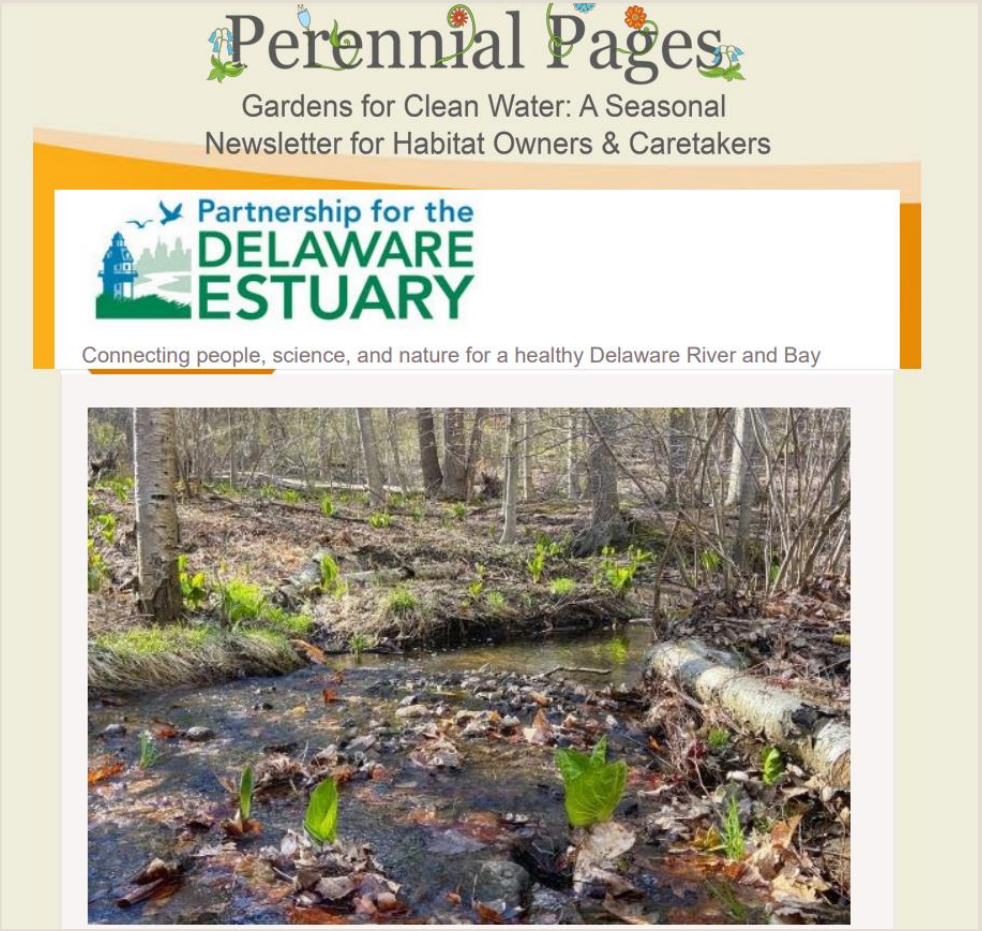
Other planting considerations

- Height
- Seasonality
- Color palette
- Maintenance



Maintenance

- Not “set it and forget it”
- Water
- Weeding
- Pruning/dividing
- At least 3 years to fully establish



Resources

- Partnership for the Delaware Estuary
- Delaware Nature Society
- Lady Bird Johnson Wildflower Database
- Prairie Moon Nursery
- North Creek Nurseries

Thank You!

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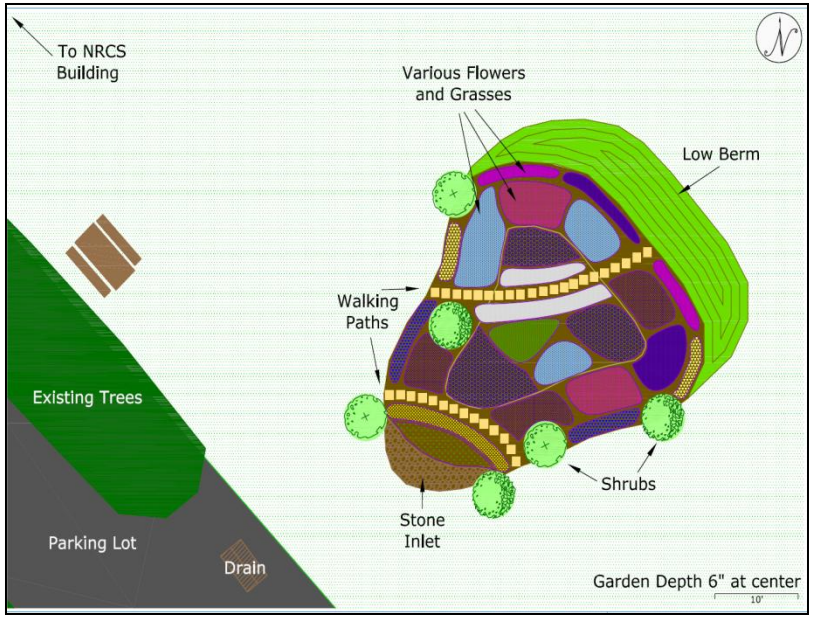
sbouboulis@delawareestuary.org

Quick How To:

- **Choose the right place**
- **Measure**-,
- **Check drainage** and **evaluate soil**
- **Design garden** and find native plants for sun or shade – design templates and plant guide online below
- **Get out your gloves and tools**!
- **Maintain** rain garden: water and weeding



Example rain garden design from project in Dover, DE

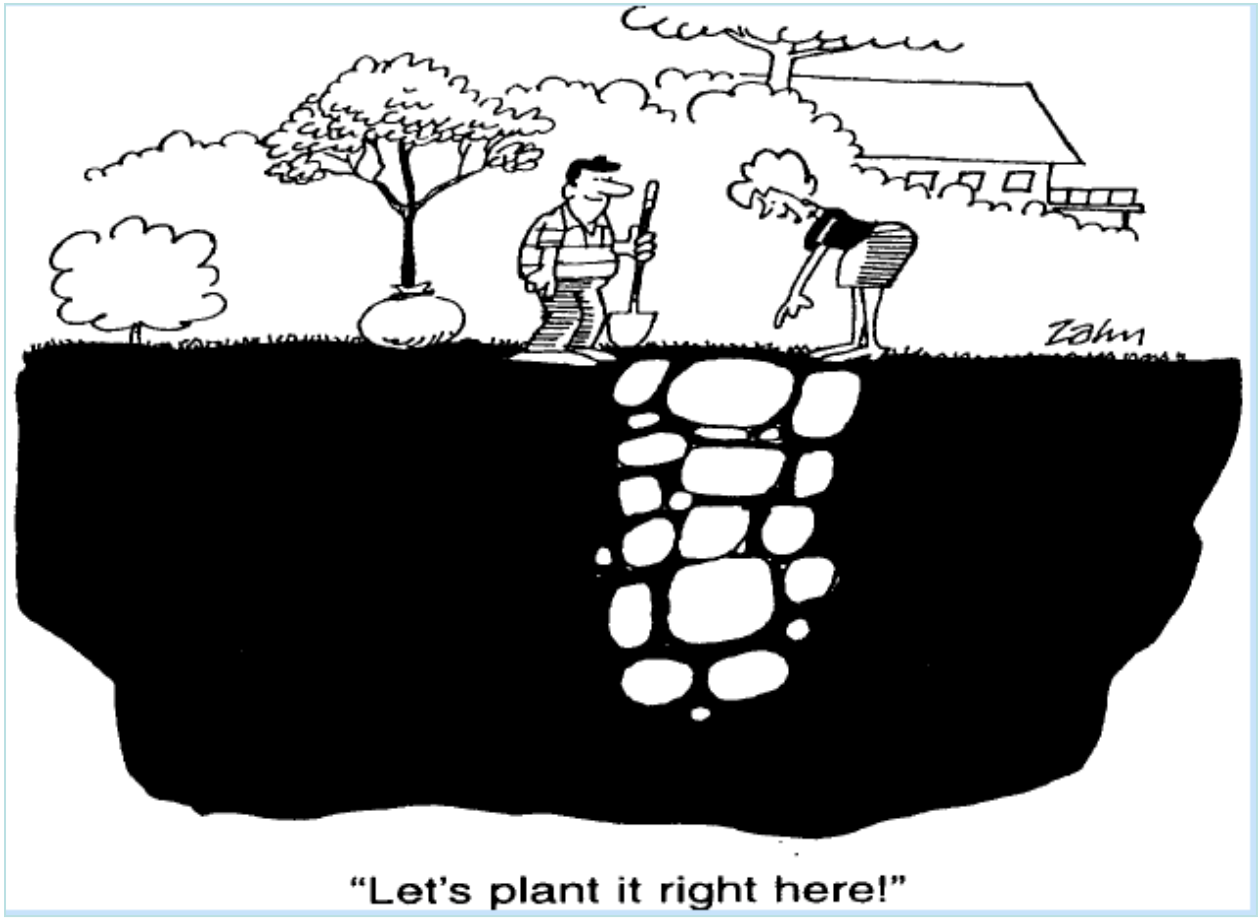
So What is a Rain Garden?

Rain Gardens are designed to work in much the same way as natural wetland ecosystems – they provide wildlife habitat, store and filter stormwater and recharge underground aquifers.

Unlike wetlands, they allow water to infiltrate quickly into the ground instead of pooling on the surface.

Construction

- Call before you dig! www.missutility.net
- Know your site to avoid surprises



RAIN GARDENS

Frequently Asked Questions:

- Does a Rain Garden form a pond?
- Are they a breeding ground for mosquitoes?
- Do they require a lot of maintenance?
- Is a rain garden expensive?

Answers:

No.

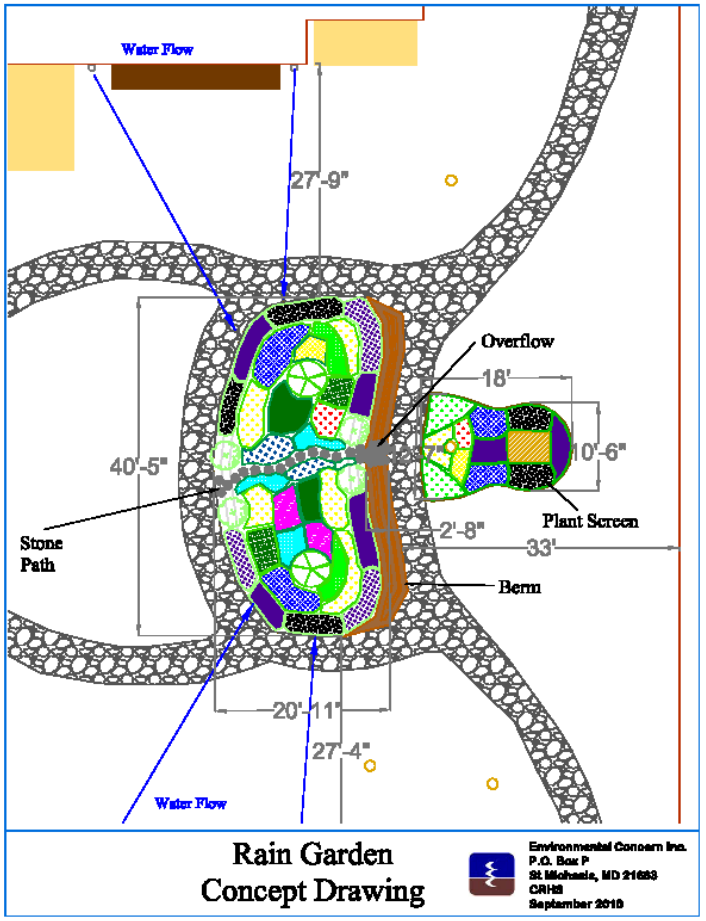
No.

Rain gardens can be maintained with little effort after the plants are established.

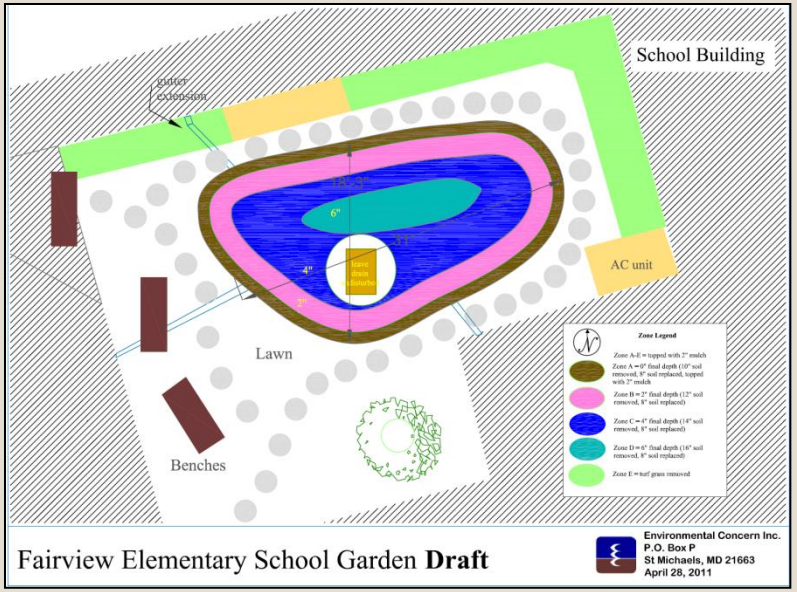
It doesn't have to be: Examples- Family and friends, & native plants.

3 Rain Gardens in the St. Jones Watershed – Funded by DE Clean Water Advisory Council

1. Caesar Rodney High School

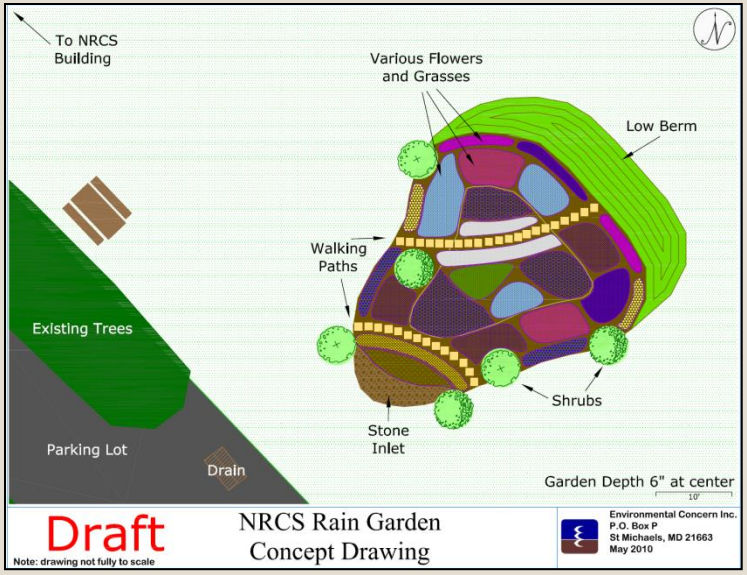


2. Fairview Elementary School



Rain garden planting in the rain!

3. NRCS and North Dover Elementary School



Register Your Rain Garden

- Check the Rain Garden for the Bays Campaign at www.raingardensforthebays.org