

Rain Garden Design



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Area Natural Resources Agent



Find a good spot

- Observe and determine where the water is flowing and where it is going
- Locate at least 10' away from the house foundation if you have a crawlspace or basement
- Locate downslope of foundation
- Locate at least 25' and downslope of a septic system drainfield



Rain Gardens should ideally be between the source of runoff and the runoff destination



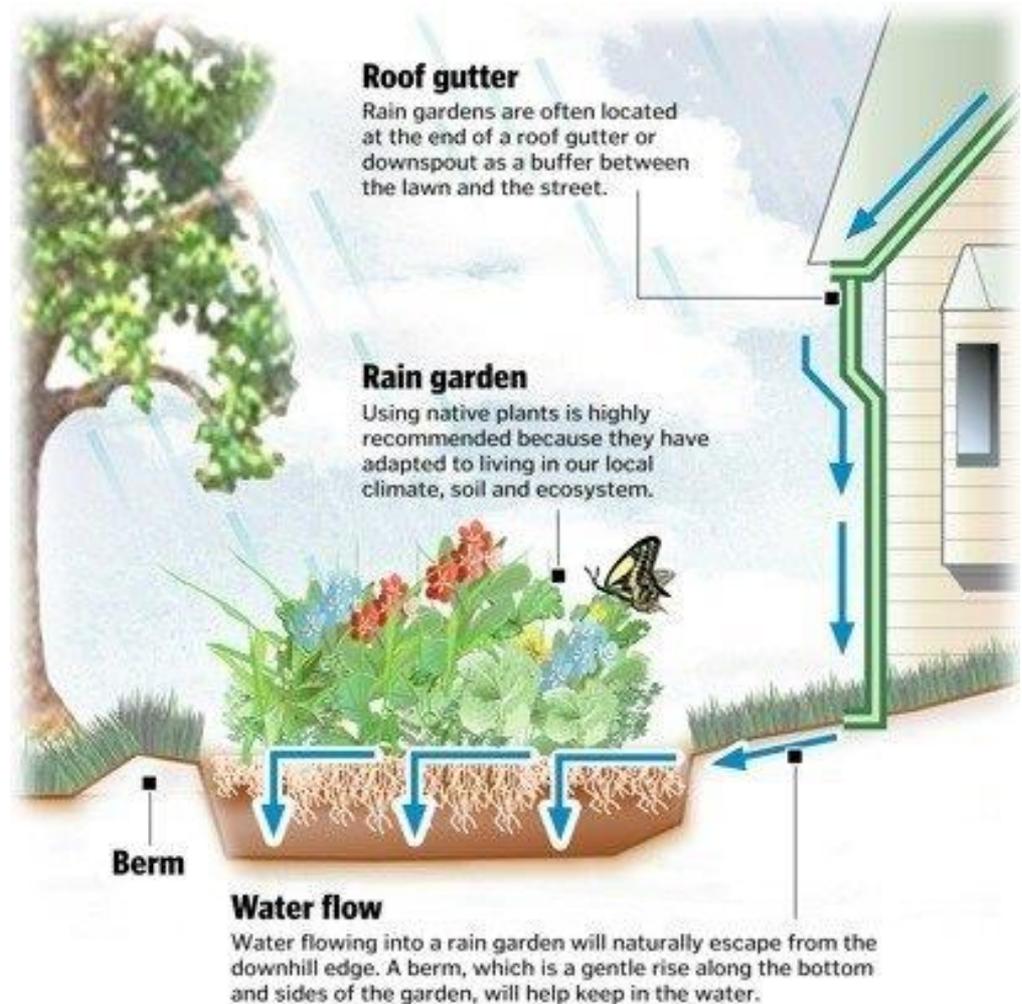
<https://extension.okstate.edu/fact-sheets/sustainable-landscapes-designing-a-rain-garden-for-residential-property.html>

Best site will be in partial to full sun (at least 4 hours of sunlight)





Best source of water for your Rain Garden: Downspouts



SOURCE: Cuyahoga Soil and Water Conservation District

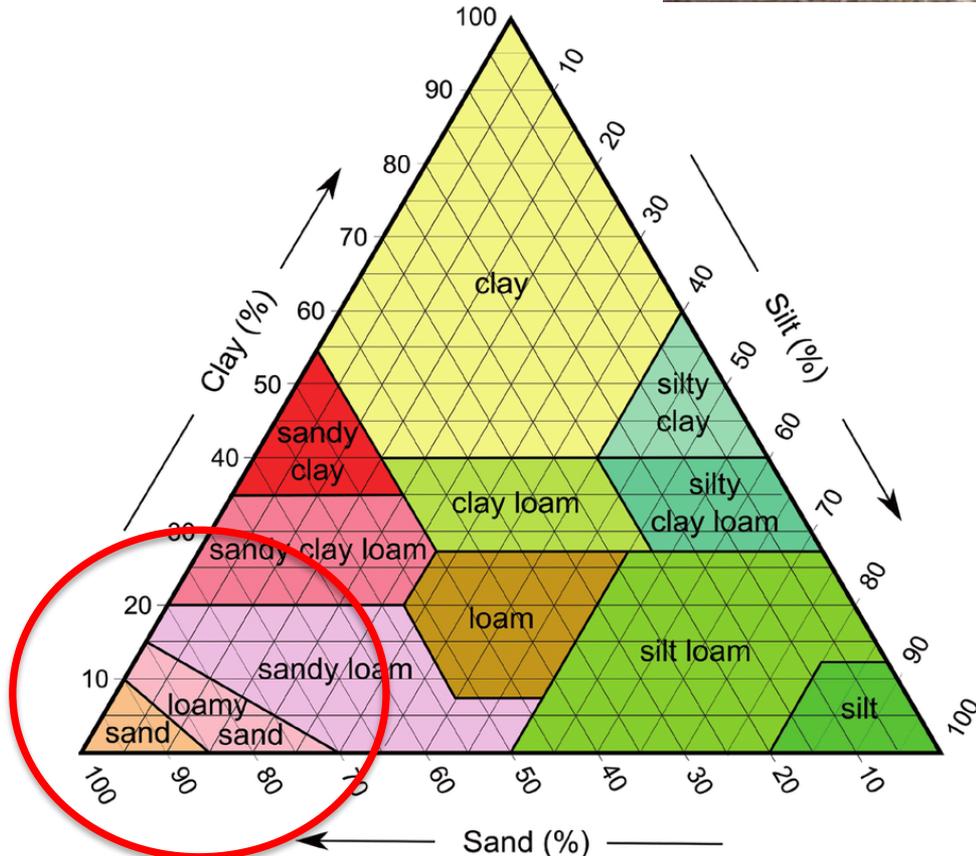
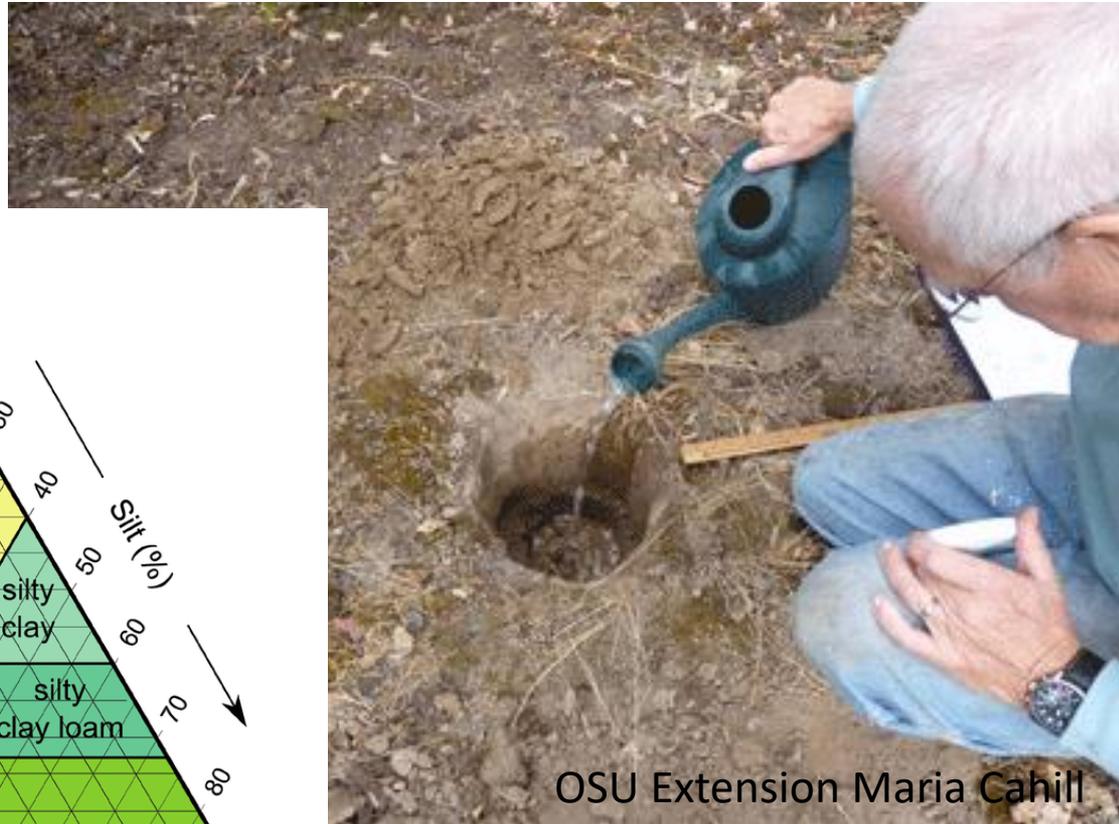
JAMES OWENS | THE PLAIN DEALER



New England Garden and Thread

Infiltration Test

Dig a hole to the depth of 1 foot and fill with water; Repeat this 2-3 times



Determine Drainage of soils

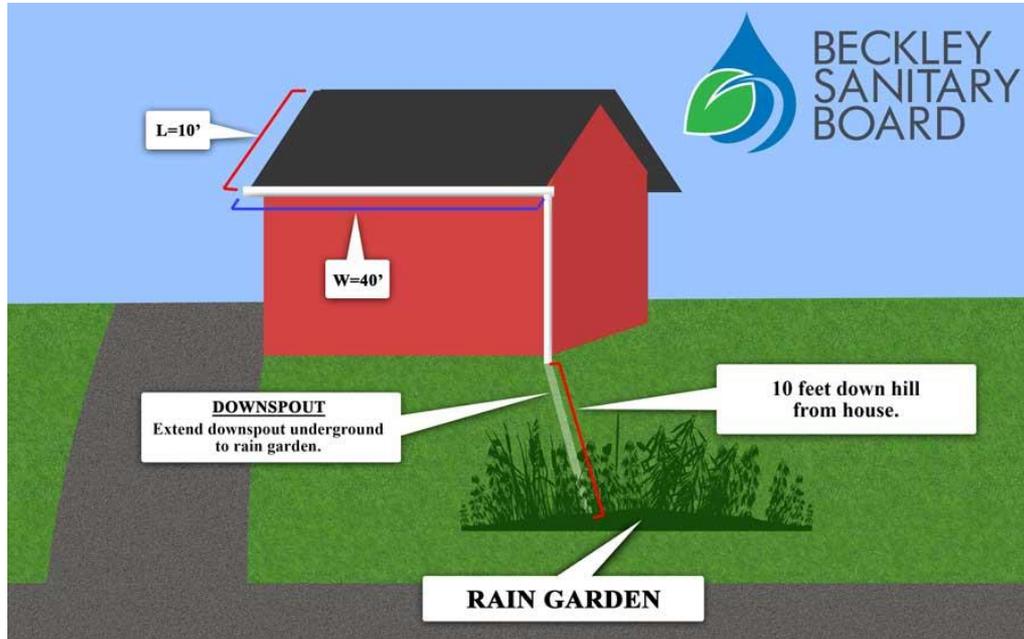
Drainage Time	Rain Garden Type
>12 Hours	Quick Draining Rain Garden
12-72 Hours	Standard Rain Garden
>3 Days	Wetland Garden

I have heavy clay soil. Can I have a rain garden?

Maybe. In clay soils, you may need to design a larger, shallower rain garden to ensure timely drainage of the water. In some locations, amending clay soil with compost can help improve drainage.



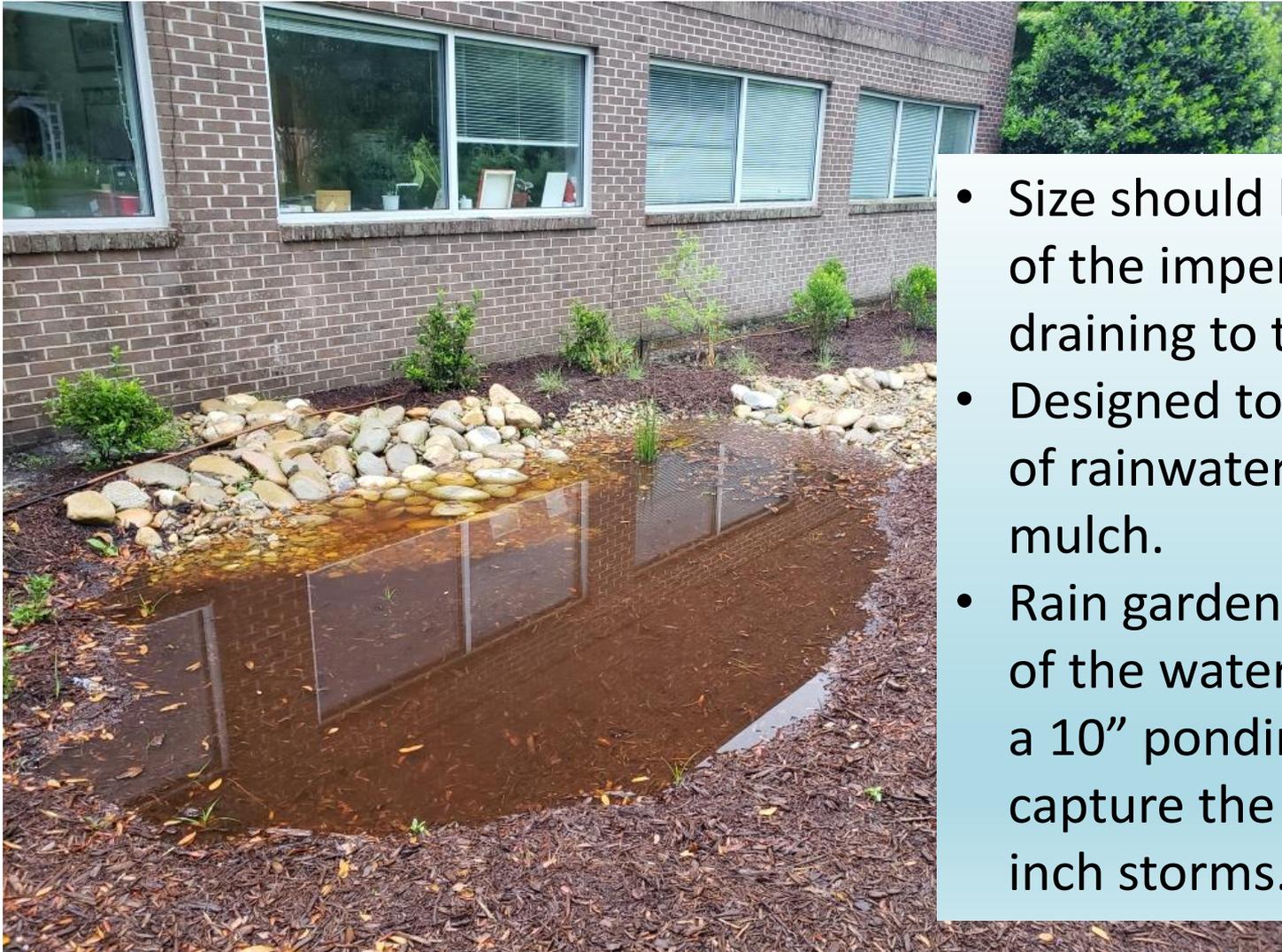
Size the Rain Garden



- Determine which impermeable surfaces will be treated with the rain garden.
- Measure the length and width of these surfaces and multiply together to get the surface area in square feet.

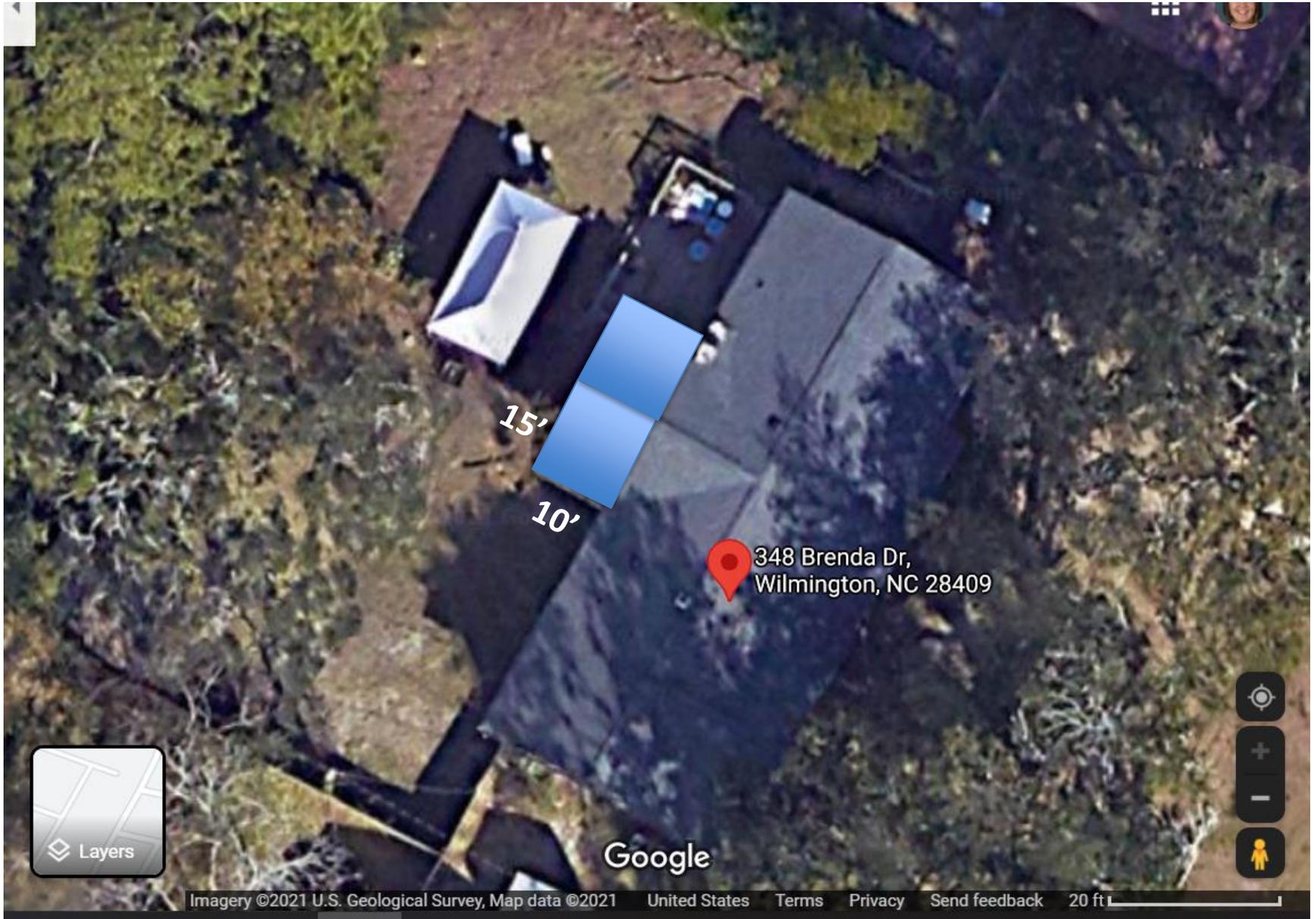
$10' \times 40' = 400 \text{ sqft}$ (Size of your “watershed”)

How big should my Rain Garden be?



- Size should be at least 10% of the impervious surface draining to the rain garden.
- Designed to pond 10 inches of rainwater on top of the mulch.
- Rain gardens that are 10% of the watershed and have a 10" ponding depth should capture the majority of 1-inch storms.





(Length of surface x Width of surface) x .10 = total rain garden area sq. ft.

Area= Length x Width

Total Watershed=

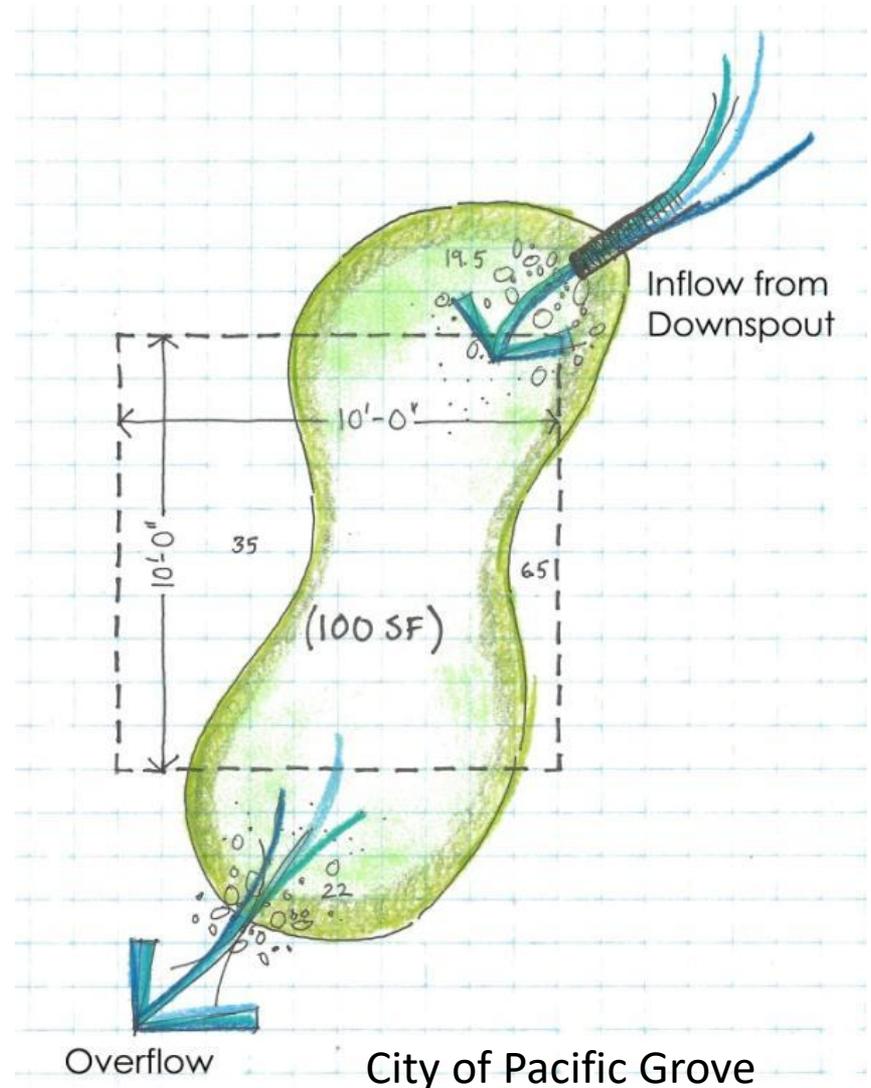
$(10' \times 15') + (10' \times 15') =$

$150 + 150 = 300$ square feet

Multiply watershed size
by .10

$300 \times .10 = 30$ sq feet

So, my rain garden
could be 5' x 6'





$$20 \times 75 = 1500 \text{ sq feet}$$

$$1500 / 3 = 500 \text{ sq feet}$$

$$500 \times .10 =$$

50 square foot

Get ready to Build



Tools needed:
Rope, spray paint
Shovel
Hard rake

Call before you dig!

5 STEPS FOR SAFE DIGGING

Working on an outdoor project? Always call 8-1-1 first, because you never know what's below. Here are five easy steps for safe digging:

Source: call811.com

1. NOTIFY

Call 8-1-1 or make a request online two to three days before you start.



2. WAIT

Wait two to three days for a response to your request. Affected utilities will send a locator to mark any underground utility lines.



3. CONFIRM

Confirm that all affected utilities have responded by comparing the markers to the list of utilities the 8-1-1 call center notified.



4. RESPECT

Respect the markers provided by the affected utilities. They are your guide for the duration of your project.



5. DIG CAREFULLY

If you can't avoid digging near the markers (within 18-24 inches on all sides, depending on state laws), consider moving your project.





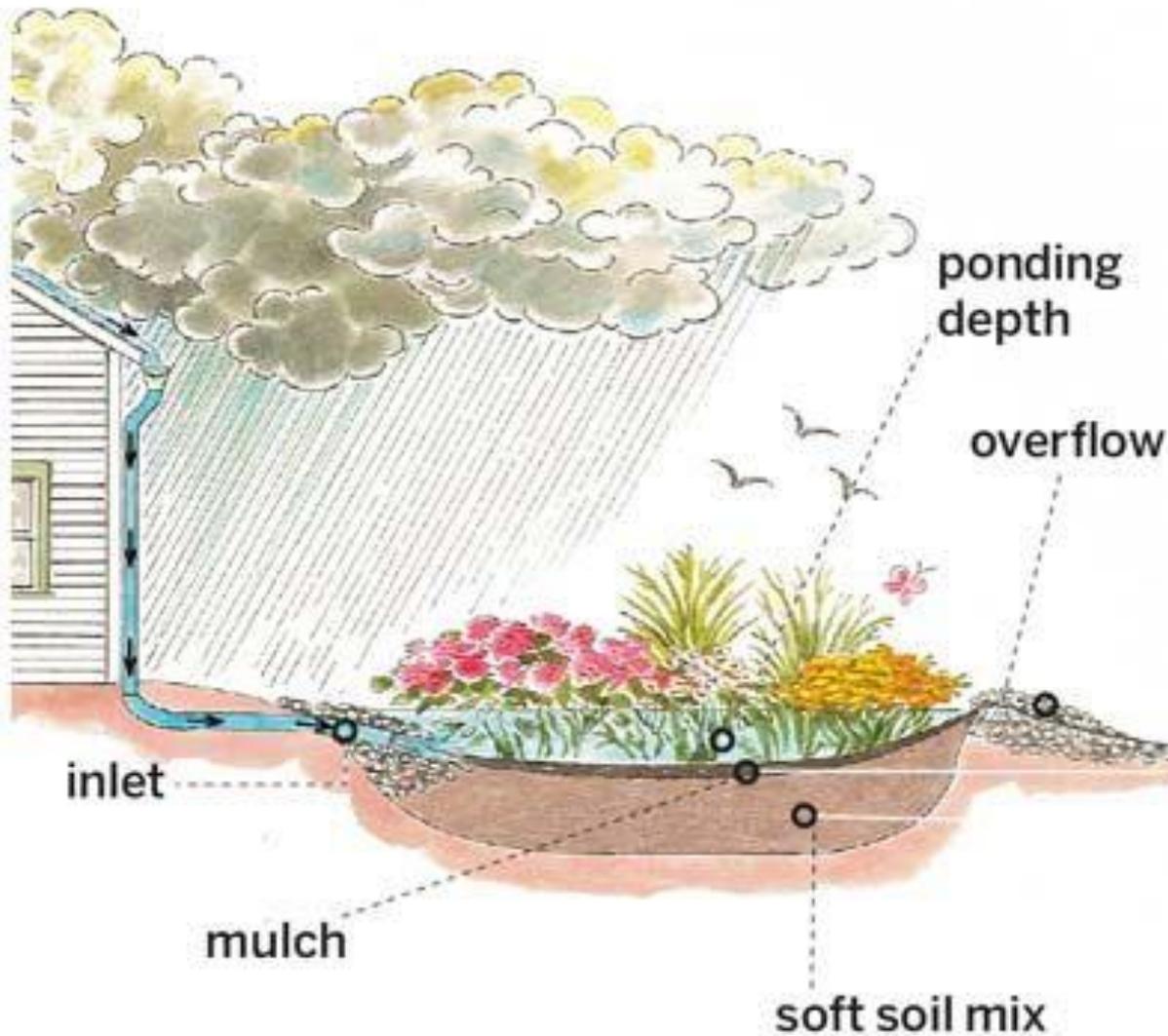
- Remove turf
- Dig to account for 10" ponding depth



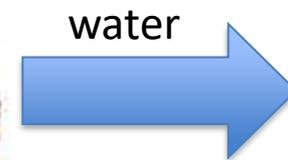


- Rough up 4-6" of the bottom so it is not compacted
- Mix in compost or good quality topsoil to improve drainage and help plants





Rain gardens are designed to capture the first 1" of rainfall. They should have a distinct entrance and exit to deal with overflow.







Rocks helpful for dissipating energy





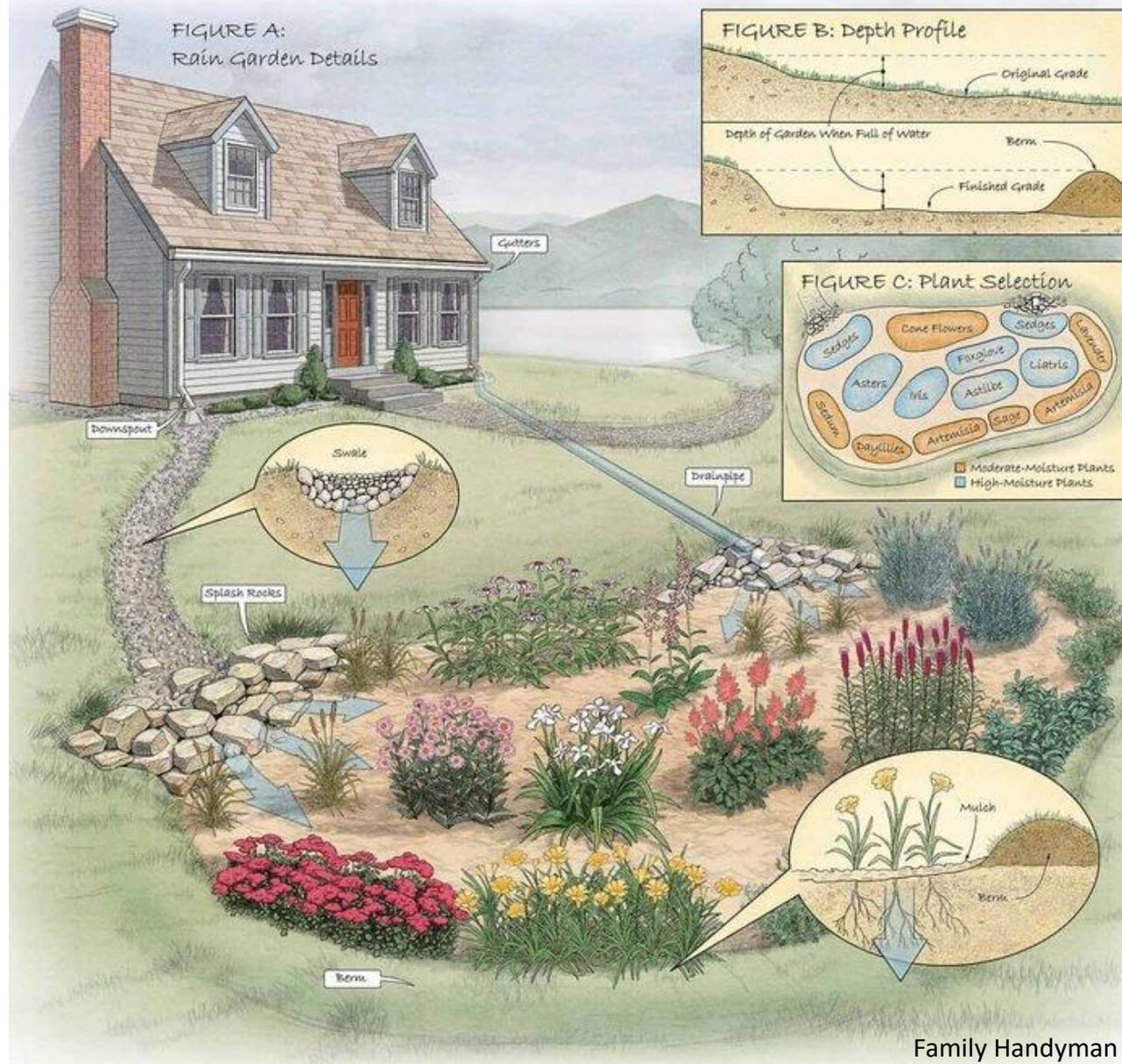
Mulching













Will there be standing water?

Does it form a pond?



M. Waldvogel, NCSU

Won't rain gardens breed mosquitos?



Will I have to water the rain garden?