

### first things first:

#### 1. Call 811

811 identifies and marks underground utilities like cable, phone, electricity and gas. Always determine where utility lines are located BEFORE you dig! You may need to change the location or design of your rain garden to avoid utility lines. Call 811 at least a week before you plan to dig, but you can call as soon as you start thinking about a garden. Dial 811 or visit [www.call811.com](http://www.call811.com).

811 will come and mark your utility lines for free.



### in the simplest terms, you will:

dig a hole s aerate the soil s amend the soil s plant plants s enjoy

### tools you will need:

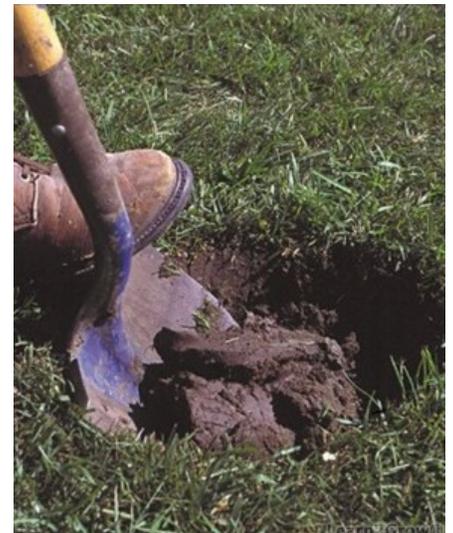
shovels, tarp, rake, rocks, plants, garden hose (or string , flags , spray paint)

### next steps:

#### 2. Infiltration test

Before purchasing any materials and further planning your garden, do an infiltration test to be sure that water will infiltrate into the surrounding soil in just a few days.

- Locate where you would like your rain garden.
- Dig a hole 24 inches deep and 12 inches wide
- Fill it with water.
- If it takes longer than 48 hours to drain, the site is not appropriate for a rain garden .
- If you hit the ground water table while you're digging the hole, the site is also not appropriate for a rain garden.



#### 3. Outline your rain garden

Using a garden hose or some rope or string, layout the shape of your garden. The size you determined for your rain garden was for a rectangle, so lay out the rectangle first, and then

## the steps:

move the length of hose around to the shape you want. The inside area will be close enough to the original rectangle you measure. Step back, take a look, and go back and move it some more until you are happy with the shape. A garden hose is the easiest tool for these quick moves, but you could use string or flags. You may want to let it sit there for a day or two so you can get the feel for how it will look in your landscape. Once you have the shape you want, you could mark the final bedlines with marking



paint or flags. Remember, the size was determined using an average 1 inch storm so if you need to make it slightly bigger or smaller, that's fine. It will either hold a little more or a little less runoff. The garden will have an inflow area where runoff will enter and an outflow area in case you receive more rain than the garden is designed for. Identify these 2 spots when laying out your rain garden. This is where you will incorporate some rocks.



#### 4. Remove any turf

Use it elsewhere to patch up parts of your lawn or compost it.

#### 5. Use a tarp

Lay a big tarp on the ground next to the garden on which to place excavated soil. More than one tarp comes in handy.



#### resources:

- NCSU WECO resources page: [www.ncsu.edu/WECO/](http://www.ncsu.edu/WECO/)
- NCSU Backyard Rain gardens factsheet
- NCSU Backyard rain gardens website
- NCSU provides residential rain garden instruction and certification. Find a list of certified professionals here: [http://www.bae.ncsu.edu/stormwater/training/raingarden\\_professionals.html](http://www.bae.ncsu.edu/stormwater/training/raingarden_professionals.html)
- You can also ask your local garden store or nursery for ideas, especially on design and plant choice.

## 9. Set your inflow

The inflow point, where water enters your garden, can be under some extreme water flow conditions during rainfall events. Use rocks to help dissipate and disperse the energy flow of the water.

## 10. Set your outflow

Excess water that doesn't fit in the rain garden will flow over the lowest point of the berm. Decide where this will be and use rocks and plants to help stabilize this area.

### what rocks?

Rocks are used to slow the flow of water entering and leaving a rain garden. You can use rocks you find around your yard, or purchase gravel or fancier rocks. The rocks help slow down the water so it doesn't erode the edges of the rain garden. Rocks can also be used to channel water from your downspout to a rain garden.



## 11. Plant!

You can now plant your plants. You can also split up this project over a few days and plant next weekend. If it rains water will flow into the rain garden and you might even decide to change the berm or inflow area before you plant.

## 12. Mulch

Mulch does a few things. It lessens the extremes of weather temperature, keeping the soil cooler in summer and warmer in winter. It limits evaporation from the soil, holding moisture for plants. It helps stop weed seeds from sprouting. Triple shredded hardwood mulch is less likely to float during a rain event.

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The depth of your garden, the aeration of the soil and the addition of amendment should result in a rain garden bed that supports plants, allows water to soak into the ground, and holds some ponding water also.

## 6. Dig

When you sized your rain garden you determined how deep it would be. Remove that many inches of soil. For example if you sized your rain garden for 3 inches deep, remove 3 inches of soil. If you sized it for 6 inches, remove 6 inches of soil. Slope the sides of your rain garden and think about where your inflow and outflow will be as you dig. If your digging removes all the topsoil, you may want to dig an inch or two deeper and put back in the top in or two. You may use some of this soil to build a berm and work it in other area of the yard.

## 7. Amend the soil.

Add soil amendment to the garden hole. Soil amendments help provide adequate drainage, reduce pollutant levels, and support plant growth. Turning the amendment into the soil aerates the soil. You want to end up with approximately 25% soil amendment, so if you are going to turn the soil 8 inches deep, add 2 inches of amendment. You may need to add back in some of the soil you removed from the tarp. Compost is often recommended as a soil amendment for residential rain gardens. Compost should be used cautiously when phosphorus removal is a main goal of the rain garden, such as those in the Jordan Lake watershed. Pine bark fines (pea-sized nuggets) is a good choice that breaks down more slowly than compost. It is available at garden stores. If only compost is available, ask for a mix with the lowest phosphorus content available.



## 8. Build a berm

If your rain garden is on a slope, use some of the excess soil to create a berm on the downhill end of the rain garden. This allows water to be retained during a storm. The overflow berm needs to be a few inches higher. It also needs to include the outflow area with rocks. The height of the berm will determine how much water is held in the garden.