



**Rain Barrel Workshop  
440 Ball Park Road  
Lexington SC 29072  
March 31, 2010**

Thank you for attending Lexington Countywide Stormwater Consortium (LCSC), "Rain Barrel Workshop". We hope today provides educational background about water conservation through the use of a "Green Practices" for you to share with neighbors, family and friends.

A rain barrel is a system that collects and stores rainwater from your roof that would otherwise be lost through diversion to storm drains and streams. Usually a rain barrel is composed of a 55 gallon drum, a vinyl hose, PVC couplings, a screen grate to keep debris and insects out, and other off-the-shelf items. A rain barrel is relatively simple and inexpensive to construct and can sit conveniently under any residential gutter down spout.

The design of the rain barrel you make today is only one of many. The internet provides valuable information on different designs and connecting barrels to capture more water. If you make improvements to the design, or if something doesn't work with the barrel you construct today please let us know.

If you are interested in water quality issues in Lexington County and want to get involved please contact us at 803-359-8515 ext. 116 or at <http://www.clemson.edu/carolinaclear/lcsc/> to become a partner.

The following handout will provide you with the information we will use today and to duplicate this project once you return to your home.

Thank You again from the Lexington Countywide Stormwater Consortium.

# Rain Barrel Construction Design

## Material List

Ref	Item
A	Plastic barrel (food grade or non-hazard approved)
B	1 1/2" x 3/4" threaded bushing
C	3/4" brass hose bib (spigot)
D	1 1/2" threaded hose adapter
E	1 1/2" Conduit locknut (2/pkg) (optional)
F	1 1/2" hose (overflow)
G	1 1/2" hose clamp (optional)
H	Fiberglass screening
I	100% Silicone



Ref A, H

Ref B, C

Ref D, E

Ref F

Ref I

## Equipment/Tools

- Jig saw or Reciprocating saw
- Electric drill and bit
- (1 3/4") Hole Boring drill bit or Paddle bit
- Caulking Gun
- Metal snips or scissors to cut screen
- Adjustable wrench
- Teflon Tape



## Assembly Instructions

1. Rinse your barrel out thoroughly. Avoid using bleach, as it can be harmful to the environment via transport through the storm drain system. For an environmentally safe soap solution, use 2 teaspoons of castile soap and 2 teaspoons of vinegar or lemon juice for every gallon of water used to clean your barrel. One to two gallons of the solution is sufficient to rinse each barrel.



2. Drill a hole in the top of barrel using the electric drill and bit. Use reciprocating saw or Jig saw to cut opening in the top of barrel. Use the hole as an insertion point for the saw blade. Trim away excess plastic shards.



3. Drill a hole (with a 1 3/4" hole saw or 1 3/4" paddle bit) at the top of the barrel for an overflow and one at the bottom of the barrel for the spigot. If barrel will not be elevated locate hole for spigot high enough to attach hose without crimping.



4. To insert spigot; thread the 1 ½" x ¾" bushing with your hand then use a wrench to completely tighten. The threaded bushing will fit tightly in the hole therefore this will take some effort to insert. Run a bead of the 100% silicone sealant on the outside around the bushing (apply generously). Use your finger to smooth the bead, filling in any cracks or voids. Hint: Wet finger with soapy water prior to smoothing bead for easy clean up. Allow silicone to dry according to manufactures specifications. Wrap threaded end of the spigot with Teflon tape and screw into the threaded opening of the 1 ½" x ¾" threaded bushing. Turn until spigot is tight and vertical.



- At the overflow hole; thread one of the 1 1/2" conduit locknuts on the threaded end of the 1 1/2" threaded hose adapter. Then insert the 1 1/2" threaded hose adapter through the overflow hole and tighten with the second 1 1/2" conduit locknut on the inside of the barrel. (If the overflow hole has been drilled correctly the use of the conduit locknuts will not be required hence omit the step above and simply screw the threaded hose adaptor into barrel and continue with directions. Apply a bead of the 100% silicone sealant on the inside and outside of the barrel around the adapter (apply generously). Use your finger to smooth the bead, filling in any cracks or voids. Allow silicone to dry according to manufactures specifications. Slide sump pump hose over overflow adaptor secure with hose clamp if applicable. Another step at this point is to wrap a piece of screening around the adapter and then attach the hose and clamp. This will aid in preventing mosquitoes from entering from into the barrel through the overflow.



- Cut fiberglass screen into a section at least 1" greater than the hole at the top of the barrel. Place the screen over the opening and run a bead of silicone around the 1" overlap. Smooth the silicone bead with your finger keeping the screen taut on top of the barrel and allow time to dry. Repeat step with a second bead at the cut edge of screen, this will prevent raveling.



**7. ENJOY YOUR RAIN BARREL AND START CONSERVING WATER. 😊**



8. Optional Materials-These items can be purchased to enhance your rain barrel.
- Flex gutter extension
  - Mosquito dunks
  - Spray Paint
  - Concrete blocks, pavers, platform

## Rain Barrel Considerations

### Where should the rain barrel located?

The rain barrel should be placed directly underneath the gutter downspout. Pick a downspout that is in a well-drained area (see Overflow Drainage below). Ideally the downspout should be close to the location you want to water and at the same elevation, or greater, than the location you want to water. If neither of these ideal conditions is possible, read on! We suggest a pair of angles in the downspout which will get allow the water to flow to the middle of the screen.



### Overflow drainage

The overflow drainage pipe design will work in a light rain, but rain water will overflow through the top screen in a heavy rain. This is why the barrel should be located in a well-drained area. If you make a disconnect of an existing gutter system place the overflow pipe into the system leaving the foundation of your home. If the overflow pipe will discharge directly on the ground include enough hose to direct flow away from foundation of the home. Please keep in mind that 1/4" rainfall event will typically fill a rain barrel!

### Using a bucket or watering can

This is the simplest and cheapest method of distributing rainwater, but it is the most physically taxing. Be sure that the rain barrel is sufficiently elevated to get a bucket under the spigot. Cinder blocks work sufficiently to achieve proper elevation.



### Using a hose

If the spigot on your rain barrel is at a higher elevation than the area that you want to water, then you are in luck! Attach a hose to the spigot and run it to the area to be watered. Remember the flow is not pressurized, but slow watering of plants and bushes allow for greater infiltration. Watch out for parts of the hose actually being higher than the spigot. Air could get trapped in the hose and the hose will lose its prime!

### Other designs

There are as many rain barrel designs as there are people who build them. We like this design best primarily due to minimal cost. Of course, there are many other designs can be found on the internet and we encourage you to look at them and experiment to find out what works best for you. As you do so, please don't forget us! Tell us your experiences, good and bad.

