



## Save the Rain for a Sunny Day

A rain barrel connected to your downspout—also known as a rain bank—is a great way to keep stormwater out of the system and to cut down your water bill! Because you are collecting right off the roof, it has few contaminants and is perfect for watering the garden.

## Benefits of Diverting Water from the Downspout

*Text from composters.com*

Diverting water from your downspout into rainwater catchment systems has several advantages:

- Reduces the volume of water flowing to the sewer treatment facility
- Lowers the percentage of roof top rainfall as a component of urban runoff
- Backup source of water during times of drought or between rain showers
- Helps to keep our creeks and beaches clean
- Naturally softened water - great for delicate houseplants, auto cleaning and window washing
- Saves money by lowering your water bill
- Reduces the need for additional tax dollars earmarked for sewer expansion
  - Chlorine-free water helps maintain a healthy biotic community in the soil
  - Educational tool for teaching residents about water conservation



**Residential irrigation** can account for **40% of domestic water consumption** in a given municipality. Rain barrels not only store water, they help decrease demand during the sweltering summer months. **Only 1/4 inch of rainfall runoff from the average roof will completely fill the typical barrel.** Collection of water from rooftop runoff can provide an ample supply of this free "soft water" containing no chlorine, lime or calcium. Because it tends to have fewer sediments and dissolved salts than municipal water, rain water is ideal for a multitude of applications, including biodynamic and organic vegetable gardens, raised planter beds for botanicals, indoor tropicals



like ferns and orchids, automobile washing, and cleaning household windows.

Saving water in this manner will reduce your demand for treated tap water, and save money by lowering your monthly bill. Rain water diversion will also help decrease the burden on water treatment facilities and municipal drainage systems during storms. The storage of rain water is also recommended for general emergency preparedness, or for areas prone to disasters or drought. A good formula to remember: 1 inch of rain on a 1,000 sq ft roof yields 623 gallons of water. Calculate the yield of your roof by multiplying the square footage of your roof by 623 and divide by 1000.

Traditionally, rainwater from your roof flows to the ground via a downspout - a pipe through which water is channeled from your home or building eaves troughs (fancy name for roof top gutters). Some downspouts discharge water directly onto the ground, while others serve as conduits to the sewer system. Depending on your local jurisdiction and building design, water may be discharged into the sanitary sewer system, where it will accompany used household water to a municipal treatment facility; or it will enter the storm sewer system, which is designed to drain streets and parking lots of urban runoff. Storm water then passed into flood control channels and eventually enters the local streams, lakes and wetlands.

In older municipalities, the sanitary and storm sewers are sometimes merged into one system of piping. During dry weather, the combined flow is diverted to the treatment facility for processing. But during heavy downpours or system failures, the facilities become overloaded and can exceed their carrying capacities, polluting local waterways. This unnatural contamination can lead to algae blooms, high bacterial counts, fetid odors, no fishing zones, and beach closures. Newer municipalities usually have infrastructure that separates the two systems, but that results in irrigation overflow from landscaping and farms entering the storm channels as urban runoff, tainting healthy watershed.

## **Rain Bank 101**

from the [University of Florida Extension](#)

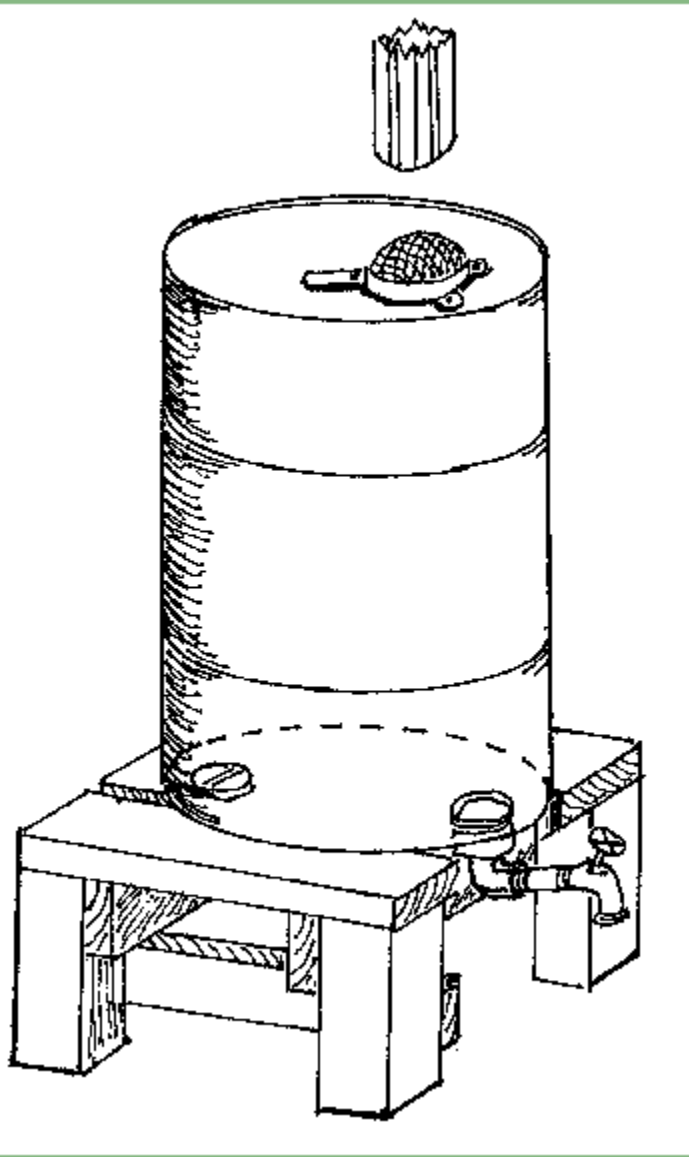
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### **TOOLS:**

- Electric Drill
- Drill bit ½-inch to 1-inch
- Drill bit 3/16-inch
- Drill bit 1/8-inch
- Jigsaw
- Marking pen
- Phillips screw driver
- Pocket knife
- Work-bench
- Extension cord
- Safety glasses

### **SUPPLIES:**

- Plastic drum (55 gal. is best). Barrels that have carried food products are recommended. Some cleaning product barrels are OK after rinsing. Do NOT use petroleum or toxic chemical barrels.
- The following are all PVC fittings
- Two-inch male adapter
- Two-inch male slip x 3/4-inch female threaded adapter
- 3/4-inch male threaded x 3/4-inch female threaded elbow (3/4 inch street el)
- Four inch long 3/4-inch threaded nipple
- The following can be either metal or plastic:
- 3/4-inch female sillcock or hose bibb
- PVC cement
- Teflon™ tape or Teflon™ pipe joint compound
- Silicone sealant
- Three stainless steel sheet metal screws #10 x 3/4 inch
- Stainless steel mesh with plastic rim kitchen strainer (4 to 6 inch diameter)



## INSTRUCTIONS:

1. Turn the barrel so that the end with no openings is facing up.
2. Fit the strainer on the end which is facing up so that it lays flat.
3. Mark around the perimeter of the strainer, remove strainer and draw another line about  $\frac{1}{2}$  inch inside the perimeter line.
4. Drill a pilot hole using the large bit just inside the inner drawn circle.
5. Using the saber saw follow the inner circle line until the circle is removed. Remove the circle if it has fallen into the barrel. This is a good time to make sure the barrel is clean inside.
6. Drill pilot holes in the strainer flanges and handle using the  $\frac{3}{16}$ -inch bit. Place the strainer on the barrel and mark the hole locations on the barrel.
7. Drill pilot holes in the barrel using the  $\frac{1}{8}$ -inch bit.
8. Partially screw into the strainer the #10 screws. Check to make sure the strainer holes match the barrel holes.
9. Apply silicone sealant to the strainer rim and place the strainer into position. Tighten screws until just snug. (Pat yourself on the back, you have just completed the first part of the barrel).
10. Place the barrel on its side. Unscrew one of the plastic filler plugs in the other end of the barrel.
11. Apply PVC cement to the two-inch male adapter sleeve and place the two-inch male x  $\frac{3}{4}$ -inch female threaded adapter inside and press together for a few seconds.
12. Insert street el into the  $\frac{3}{4}$ -inch hole of the adapter. Use teflon tape or sealant on all threaded parts.
13. Insert 4 inch nipple into street el.
14. Screw assembly into barrel. Four-inch nipple will work as a wrench to tighten first two fittings.
15. Connect water faucet to 4-inch nipple. Hand-tighten to proper position.



16. Place barrel on level, sturdy base. Direct downspout over the strainer. (Hooray, you now have a functioning rain barrel).

Leave 4" or larger air gap between down spout and strainer (if screening water).

Mount rain barrel as high as practical to use gravity to increase pressure.

## Rain Bank "Security"

The water caught in your rain barrel should not be used for human consumption unless you have used a high quality filtration system after extracting the water from your barrel.

- Don't allow the water to overflow and saturate the ground around your home's foundation; use an adjustable diverter or an overflow pipe, available from stores and companies selling rain barrels and accessories.
- Place the barrel on cinder blocks or an outdoor wood stand; this allows the spigot to work better.
- Wooden rain barrels should always have at least 3-5 gallons of water in them, to keep them from drying out and shrinking.
- Agitate your rain barrel before using the water. This will help prevent the build up of sediment in the bottom of the barrel.
- Roof top debris can enter rain barrels that are directly connected to downspouts. It is advisable to create or install some type of gutter guard that keeps leaves and pine needles out of the rain barrel.
- Empty your rain barrel no more than a week after a rain event to prevent the water from becoming stagnant.
- Mosquito Dunks are available in most home improvement stores and on many Internet websites, such as [abundantearth](http://abundantearth.com).

A common concern is the possibility of mosquitoes breeding in the stored water. Precautions should be undertaken to minimize infestation. Top or side mesh screens or plastic lids will act as a barrier to insects, but eggs may still drop through or wash in from the gutters. Non-toxic water treatment is a simple, proactive approach to pest management. (MOSQUITO DUNKS are an example of an ecological solution to mosquito control.)

Mosquito Dunks are available on many Internet websites, such as [abundantearth](http://abundantearth.com). Just be sure you're using the all-natural B.t.i. (*Bacillus thuringiensis* subspecies *israelensis*) dunks. B.t.i is a live bacterium that kills mosquito larvae but is harmless to other living things.

## Winterizing

Winterizing your barrel:

- During the winter, bring in the barrels or turn your barrel upside down so freezing water does not crack or damage the barrel.
- Connect your downspout to an elbow extension that will divert the water away from your house.



These are the rain barrels at the ISD Campus.