Rain Barrels

REASONS TO HAVE A RAIN BARREL AT HOME:

Rain Barrels:

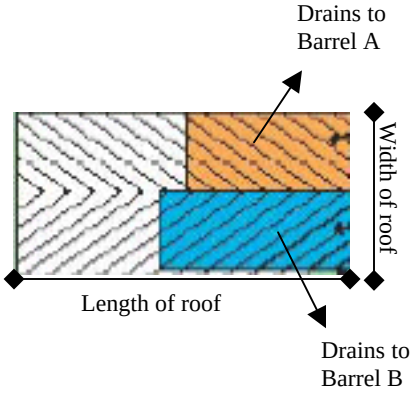
- Keep water out of storm and combined sewer systems
- Protect our rivers, lakes, and streams from runoff pollution
- Control moisture levels around foundation of home
- Provide oxygenated, un-chlorinated water, ideal for plants
- Direct overflow to where you want it
- Reduce water and wastewater bills
- Conserve water in the summer months, when demand is the highest

http://www.ci.minneapolis.mn.us/cso/images/rain-barrel-5.gif

For every inch of rain that falls on a catchment area of 1,000 square feet, you can expect to collect about 600 gallons of water.

Roof catchment area =
total square footage of house
+ extension of eaves

ft^2 = length x width



So, ¼ inch of rain on an average roof = 3 full rain barrels. Ideally, you should have a rain barrel for each downspout of your home.

HOW TO MAKE A RAIN BARREL:

The orange barrels can hold up to 50 gallons of rainwater. They have a lid and lid-ring similar to a canning jar. Aluminum insect screen has been soldered onto the lid to prevent mosquitoes from laying their eggs in the water. The screen also keeps out leaves and other debris.

Barrel with a lid that comes off

Materials:

The following materials are provided in your Rain Barrel Packet:

- 50-gallon barrel (pre-drilled with 15/16^{ths} inch drill bit)
- 14" diameter circle of screen appropriate to prevent mosquitoes from entering the barrel.
- 2 brass spigots with ¾" pipe thread and 1" standard hose fitting
- ¾" pipe threaded overflow adaptor (some have 1" hose fitting)
- 3- ¾" lock nuts
- 3- ¾" rubber washers

Additional materials you'll need if assembling your barrel at home (these will be provided to workshop participants):

- Teflon tape for pipe threads
- Household silicone sealant
- 10" adjustable wrench

Tools:

These tools will be needed if you are not using a pre-drilled barrel provided by the WWTP.

- Gloves
- Safety glasses
- Drill
- 15/16^{ths} inch paddle bit
- Utility knife
- Large adjustable wrench
- Pipe wrench
- Soldering iron to secure screen to a removable lid

These are needed to set up your barrel at home

- Steel wool
- Cinder or concrete blocks
- Hacksaw or tin snips

Participants set up their rain barrels at Rain Barrel Workshops given by the City of Superior.

HOW TO MAKE A RAIN BARREL:

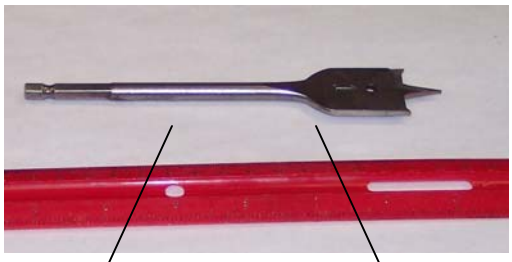
Step 1

The barrels provided with this Workshop Packet likely contained some sort of bulk food, such as vanilla, fruit cocktail, or pickles. All barrels have been thoroughly rinsed, but may have a residual fragrance!

With a drill, use a 15/16^{ths} inch hole saw bit and cut one small hole near the base of your barrel to attach one hose spigot. Turn your barrel one third of the way around to either left or right and drill another hole about halfway up the barrel for a second spigot. Turn your barrel one third of the way around again and drill a third hole about 2 to 3 inches from the top of the barrel for the overflow.

If you are participating in a workshop or purchased your barrel from the City of Superior, the holes will already be drilled.

The spigot, lid, and overflow holes were drilled with a 15/16^{ths} inch paddle bit.



Step 2

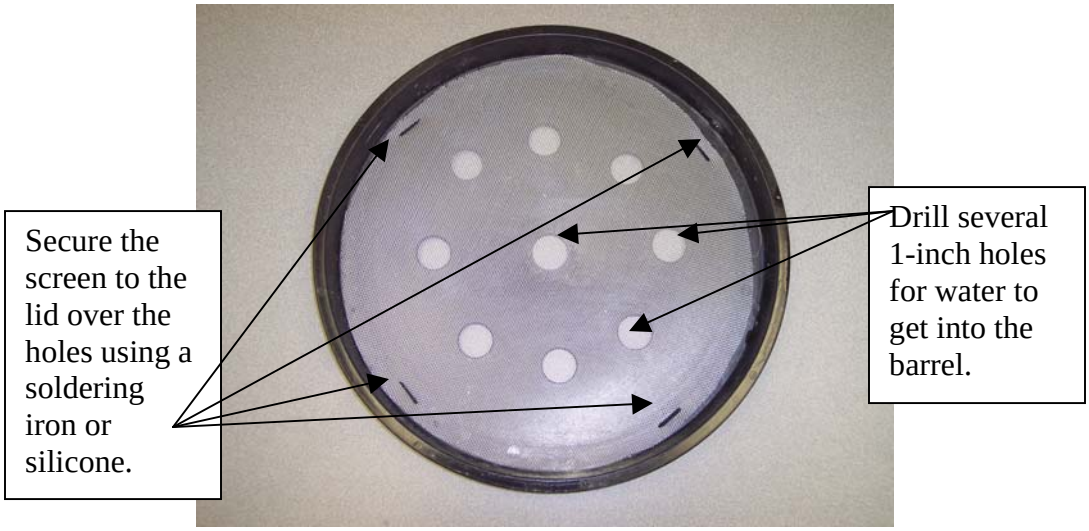
Cut nine 15/16^{ths} holes in the lid of the barrel to serve as inlets for rainwater. Use a standard drill unit with a 15/16^{ths} inch paddle bit and cut holes so they are well-distributed across the surface of the barrel lid. Note: cutting into plastic requires extreme care. Be sure the barrel is secure.

Cut a circle 14 inches in diameter out of aluminum insect screen, similar to that on your screen door or windows.

Remove the ring that secures the lid to the barrel. Secure the screen to the lid over the holes using a soldering iron or silicone.

Keep the lid off the barrel for Steps 3 - 6. When your barrel is fully assembled, replace the ring over the lid to secure the lid onto the barrel.

Barrels purchased from the City of Superior have the holes drilled and the screen soldered for you.

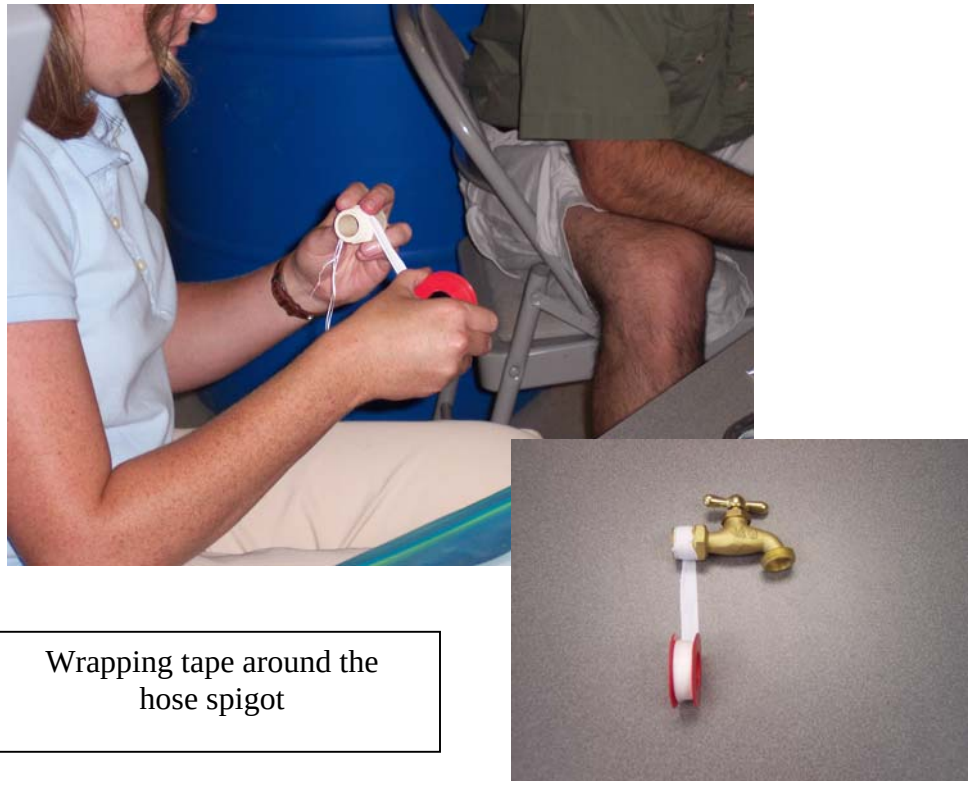


Step 3

Wrap Teflon tape clockwise (holding the spigot in your left hand with the threaded end facing you, wrap the tape with your right hand clockwise) around both spigots and overflow adaptor threads to ensure a good seal.

This will also help provide a snugger fit into your barrel and can help prevent leaking.

If the spigot seems loose in the hole, wrap extra Teflon tape for an even snugger fit. If the spigot is screwed all the way into the hole but it still spins, don't worry – the spigot fits tight enough in the rain barrel to prevent leakage. If you are concerned about leakage, put silicone around the spigot where it connects to the exterior of the barrel.



Wrapping tape around the hose spigot

Step 4

Secure one ¾" hose spigot in the hole about halfway down the barrel. Put one ¾" rubber washer on from the inside of the barrel. Place a bead of silicone between the washer and the barrel wall to ensure a tight seal. Secure the spigot with one ¾" galvanized locknut.

¾" Hose Spigot (faucet is threaded to attach a hose)

¾" Rubber Washer

¾" Galvanized Locknut

Reach into the barrel to fasten the washer and locknut on the upper spigot and overflow while holding the spigot securely.

Step 5

Secure the second hose spigot to the lower half of the barrel by screwing the threaded end of the spigot into the hole closest to the bottom of the barrel. Attaching the washer and locknut to the lower spigot requires reaching all the way down into the barrel (some people find it easier to lay the barrel on its side for this step). It helps to have someone hold the lower spigot in place while the locknut is being put on, to prevent the spigot from spinning. Because of the curved surface at the bottom of the barrel, it may be difficult to get the washer and locknut to fit on the end of the spigot – if so, just use the Teflon tape and a bit of silicone to secure the spigot from the outside – this is usually adequate enough to prevent leakage. If the spigot seems loose in the hole, wrap extra Teflon tape for a snugger fit.

A view inside the barrel of the lower spigot secured by a washer and locknut. Can you reach all the way in the barrel?

Doing the Rain Barrel Reach!

Step 6

Similar to Steps 4 and 5, install the overflow fitting in the top hole. The double-threaded overflow fittings may be used. If you have one of these, make sure to use the end with **four threads** when screwing the overflow fitting into the barrels. The end with seven threads will be used to attach to the end of a hose.

Secure one ¾" male PVC adaptor in the hole near the top of the barrel. This is for overflow. Reach into the barrel through the louver hole to fasten the washer and locknut on the overflow.

Put a ¾" rubber washer on from the inside of the barrel. Apply a bead of silicone around the washer where it faces the inside of the barrel. Secure the adaptor with the ¾" galvanized locknut.

¾" PVC adaptor (not double-threaded)

¾" Rubber Washer

¾" Galvanized Locknut

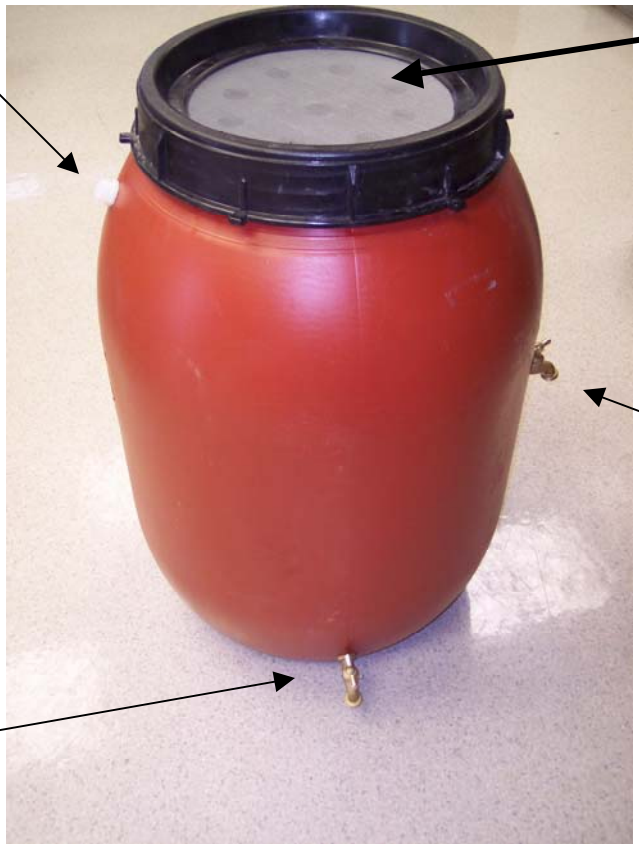
Putting in a threaded adaptor.

An adaptor secured by silicone, washer, and locknut

Your Rain Barrel!

Place your downspout on top of the barrel. Water will enter through the screen, but mosquitoes will not.

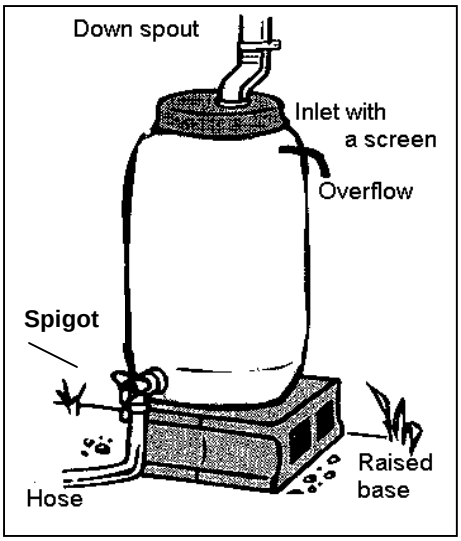
Overflow: upper 1/3 of the barrel. Attach a garden hose or connect to a second barrel using PVC pipe.



Upper hose spigot (about halfway down the barrel) for a watering can or hose.

Lower hose spigot (near the bottom of the barrel) for a garden hose.

Tips for Using Your Rain Barrel at Home:



http://ottawa.ca/city_services/water/images/barrel4.gif

- Put concrete or cinder blocks on level ground under the downspout to provide a base under the rain barrel. Make sure the barrel is level, not leaning and ready to tip over! 50 gallons of water weighs about 400 pounds!!

- Make sure the barrel is high enough to allow a bucket to be placed under the upper spigot. The higher you can place your barrel, the more water pressure you can get from a hose.

- Shorten your downspout using a hacksaw or tin snips. Dull the cut edge with steel wool. Set the end of the downspout just above or on top of your barrel. If you experience uncontrolled splashing, make sure your downspout is as close to the top of the barrel as possible.

- If you don't want to cut your downspout, downspout adaptors can be found at local hardware stores – their length can be adjusted to fit from the gutter to the top of the rain barrel.

Milt, a former graduate of the Rain Barrel Workshop, and his trouble-shooter!

- If your barrel overflows through the top, enlarge the overflow holes to 2” or add an additional overflow on the opposite side of the barrel from the existing overflow adaptor.
  - If your barrel overflows/fills quickly, reduce the amount of area draining to the barrel by diverting water coming off the roof to other downspouts and by adding barrels to the other downspouts. You can also set up multiple barrels in a cascade arrangement.

- During heavy rain (>1”), run garden hoses away from your house into your yard/garden and open spigot valves to drain away from your house. Your rain barrel will overflow during a heavy rain event, so try to prevent it from overflowing near your foundation!

- Periodically check your barrel to ensure that it remains in good working order.

- To prevent algae growth, do not let water remain in your barrel more than 5-7 days. If algae grows, rinse your barrel with a VERY dilute (5%) bleach solution (3/4 cup chlorine bleach per 1 gallon of water should do). Rinse well. Keeping your barrel out of direct sunlight may also help.

- In winter, you may take your barrel indoors, or simply leave the barrel out with all spigots open. This will help to control snowmelt from your roof during winter warm-ups and spring thaws.

Be creative! These barrels take paint well, but make sure to use paint specifically designed for plastic. Crylon Infusion and Plasticoat are two types of paint that work well, but be careful when handling your barrels as the paint can rub off.

From this...

To this…

Or this!

Barrels in action...

We hooked up a rain barrel near one of our rain gardens and ran a soaker hose from the lower spigot on the barrel through the garden. Think of all the stormwater that can be saved after a rainstorm!

Water from the roof of the building is funneled into the barrel and saved.

Funneling the water through the barrel helps to control erosion from the downspout and the heavy water pressure from destroying the yard and garden.

We found that it took about 12 hours to empty a rain barrel through the soaker hose in this garden. After the barrel fills, we just open the valve on the spigot and leave it open for about four hours in the morning. We can water our garden for three days on a single barrel. We will soon add a second barrel since we found that we lose a considerable amount of water through the overflow.

Send us a picture of your Barrel in Action!

You may purchase pre-drilled barrels and hardware kits, described in the materials section of this instruction booklet, from the City of Superior Wastewater Treatment Facility (barrel + hardware).

Barrel styles and kit cost are subject to change without notice, cannot be special ordered, and all sales are subject to stock on hand.

Let us know how your barrel works!
Problems...Ideas...Troubleshooting

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