# Homeowners Rain Barrel Do It Yourself Toolkit

## What Is a Rain Barrel?

A rain barrel is simply a barrel used to collect rainwater from your roof and gutter system. This rain water can then be used in your garden or yard. A typical store-bought barrel is 55 gallons.

## Why a Rain Barrel?

When you collect rainwater from your roof and direct it to a rain barrel, you reduce runoff into the street ("stormwater"). By this very act you:

- ***Reduce flooding*** by reducing the water that would flow into the street and storm drain.
- ***Protect water quality*** by reducing overflows of sewage where old combined sanitary and storm sewer systems exist - which many communities have.
- ***Save water*** by reducing the need for extra irrigation in your garden.

## How Does the Rain Barrel Collect Water?

***Downspout Disconnect Method***

With this method, you simply cut the gutter's downspout approximately one-foot above the rain barrel, install the elbow joint on the cut downspout, and place the rain barrel underneath it. The rain barrels used for this method usually have an opening with a screened top to keep leaves and debris out, yet let the water in from the elbow joint. This method is simple to install (see Figure A).

***Downspout Diversion Method***

For this method, a hole is drilled into the downspout and a specially designed bypass valve is placed into the downspout slightly above your rain barrel. The bypass valve is connected by a hose or pipe directly into a fitting slightly below the barrel rim. Water flows into the barrel until full, then the water flows only through the original downspout (see Figure B). Its primary benefit is its sealed barrel top, which helps keep out insects and other small debris. You may need to order the bypass valve on-line.

*Note: In NYC, the Department of Environmental Protection requires all rain barrels be installed using this "close feed" configuration.*

**Figure A: Downspout Disconnect**

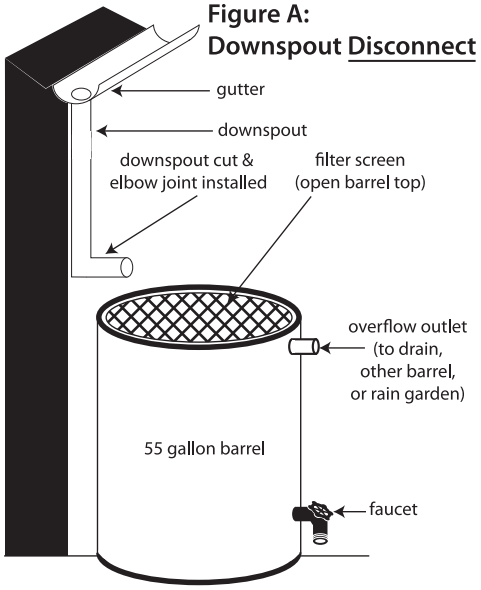
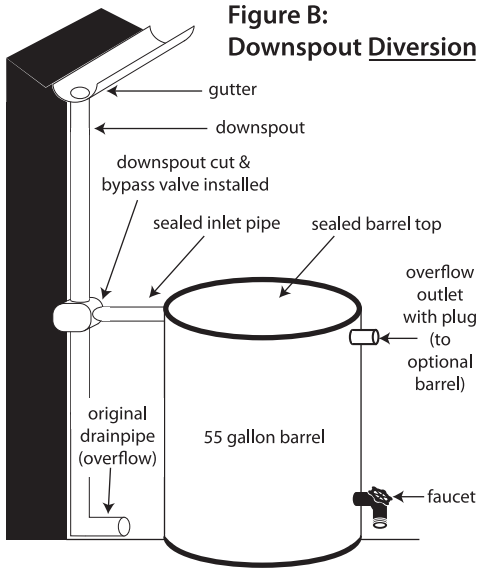



**Figure B: Downspout Diversion**




## How Do I Get Water from the Barrel?

- **Faucet:** Most barrels include a standard ¾" size threaded spigot or tap that allows you to fill a bucket or watering can or attach a garden hose so that you can water your garden.
- **Hose:** Some barrels come with a short hose directly attached.

## What About Overflow?

Most barrels will come with an overflow opening fitted with a hose. This hose allows you to feed excess water safely back into the gutter drain, into the yard away from the foundation, into a rain garden, or into another barrel(s). If you use multiple barrels, you still have to determine where the final overflow goes!

## How Many Barrels Do I Need?

The number your property could use depends upon:

- How many garden and vegetable beds you want to water with this system.
- Whether the planting beds are fairly close to downspouts. (You could put barrels in more than one location).
- How much rain you want to capture (or divert from the streets).

*This toolkit is distributed in partnership with:* **Hastings-on-Hudson**

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## How Many Barrels Do I Need? (continued)

Here are some general "rules of thumb" to calculate how many barrels you might use:

- A FULL 55-gallon rain barrel will evenly water a 10 ft. x 20 ft. vegetable bed with a ½" of water. About 1" of water would be needed weekly during the summer (depending on what you are growing and how hot it gets) which equals two barrels a week.
- A 200 sq. ft. roof can collect as much as 125 gallons of water/hour during heavy rains—a little over two barrels.
- To help even out variation in rainfall amounts week-to-week, install additional rain barrels connected to the first.

## What Else Should I Know About Installation?

- Rain barrels are sold in various sizes, from 35 gallons to over 80 gallons. 50-60 gallon rain barrels are commercially available in a wide range of styles. Prices range from $85 to $250, depending upon size, style, and manufacturer.
- Check the manufacturer's installation instructions before finalizing placement or cutting your original downspout.
- Install your rain barrel close to a downspout and on a patch of ground approximately 2-feet by 2-feet.
- Make sure your location allows room for your setup, your overflow, and additional expansion barrels (if desired). Position the barrel to allow easy access to the manual water tap and to allow the overflow hose to feed safely into, for instance, a garden bed, a trench to a rain garden, or back to the original drain pipe.
- If installing multiple barrels, each barrel must be slightly lower than the proceeding barrel so that the water will overflow properly and fill the next one in sequence.
- If there is not a pre-existing faucet in your barrel (or hole for installation), cut into the barrel and insert the faucet near the bottom of the barrel to maximize the amount of water that drains from it.
- Level the ground and then add a 2"-3" layer of sand for final leveling of the barrel.
- Consider elevating your rain barrel (*see note in BOX and Figure C*).

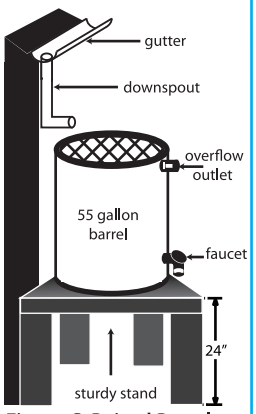

**Figure C: Raised Barrel**

## Can I Hook It Up to Drip Irrigation?

You can connect your elevated rain barrel to a low pressure drip irrigation system using ½" plastic feeder pipe and ¼" plastic distribution hose with in-line drip emitters installed next to each plant. By watering slowly over time (drip emitters provide between .5 to 4 gallons per hour), less water is lost to evaporation, and the supplied water will soak deeper into the root zone of the plant. You can also use a programmable timer to automate the irrigation system.

## Is There Any Maintenance?

During the winter, you will need to restore the original drainage path so that the rain flows into your original downspout ONLY, bypassing the barrel. Water left in a rain barrel might freeze and crack the barrel. So, before the first frost:

- drain the barrel(s) completely,
- clean out any debris, store so it stays clean, and
- replace the (previously) cut drain pipe section.

In the Spring, after the danger of a hard freeze has passed;

- reconnect your rain barrel to the downspout,
- clean the gutters of leaves and debris, and
- check for leaks or faulty fittings.

## What About Mosquitoes?

Always completely cover the input opening of a **downspout disconnect** barrel with fine screening to keep mosquitoes out. If you use up the water in your barrels every 7 days, you will not have a mosquito problem.

## How Do I Keep Leaves & Debris Out?

To keep debris out of a **"downspout disconnect"** rain barrel, fit a filter screen over the top of the barrel; most come with this unless homemade.

If you are using a **"downspout diversion"** rain barrel, consider installing a leaf guard in the gutter or downspout to prevent clogging your bypass valve. Details on this should be available on-line when ordering the bypass valve.

Any organic matter (leaves, pine needles, etc.) which gets into the valve or barrel will decompose and require periodic cleaning out. It's much easier to keep this stuff out of the barrel than to clean out the muck later.

## Why Should I Consider Elevating My Rain Barrel?

**Two reasons: Gravity and Ease of Use!**

- Without raising the barrel, water pressure will be too low to deliver water through a hose or drip system. A barrel raised 24" above ground level should provide enough pressure to run a garden soaker hose. Also, if you are watering terrain downhill from the barrel, every foot of drop will also increase flow pressure.
- Extra height will facilitate easier access to the tap.

You can buy a stand for your rain barrel or build a platform for it. Be sure that any stand you use is stable and secure. Remember, water is heavy: 55 gallons of water weigh over 450 pounds!

### ☑ Do List

- Make sure your barrel is functioning properly so that water is flowing into the barrel and that the overflow actually flows to where you want water to go, not into your basement.
- Make sure open-topped barrel configurations ("downspout disconnect") have screens in place to keep out insects, small animals and young children.
- Properly construct and secure raised barrel platforms.

### ☒ Don't List

- Do not drink the water from your rain barrel. Water coming from your roof is considered NOT SAFE by State and County Health Departments (without first boiling and/or treatment with chemicals including chlorine). Put **DO NOT DRINK** label on barrel.

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