

Rain Barrel Resource Manual

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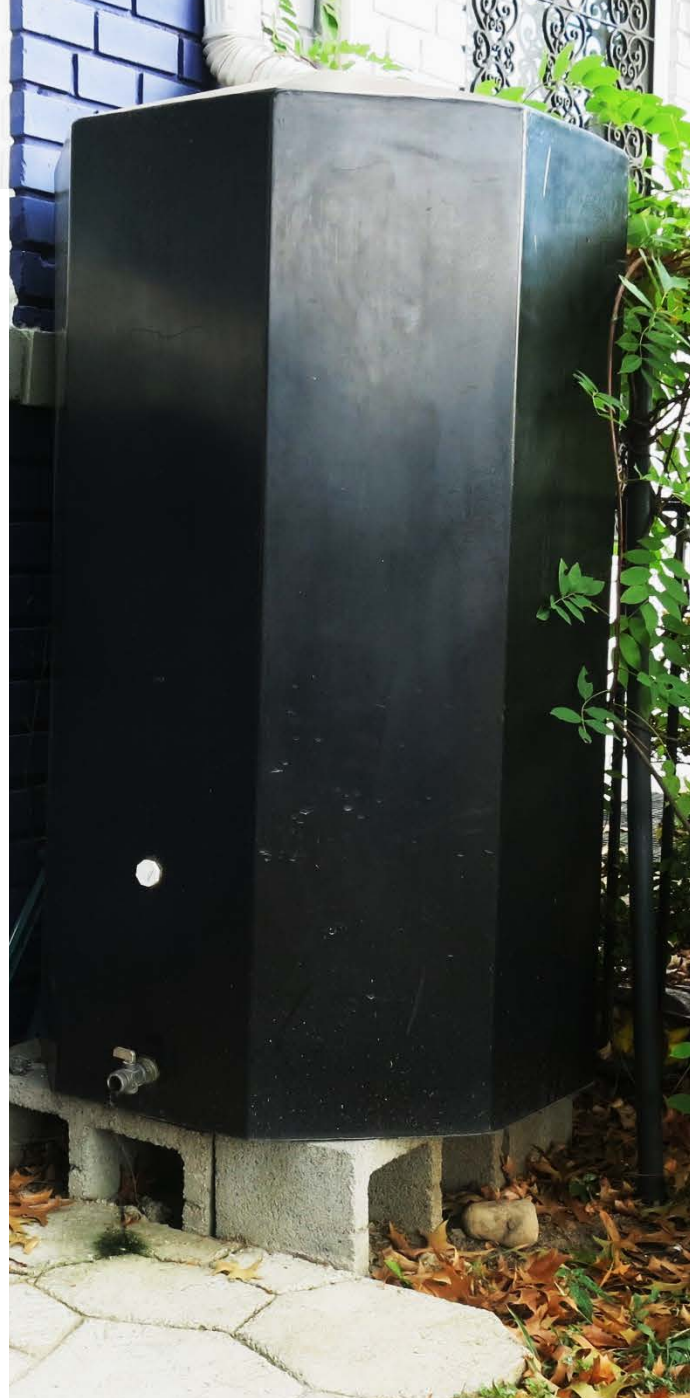
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Glossary

Stormwater:

Rainwater that hits the ground and flows into our waterways while collecting pollutants such as trash, oil, waste, fertilizer, etc.

Downspout:

The pipe that leads water from your roof's gutter to the ground. (This is what the majority of barrels connect onto.)

Spigot:

The small faucet usually located towards the bottom of a rain barrel. (Many homes also have spigots attached to the house for external use. Hoses easily hook onto spigots for easy watering.)

Diverter (box or y-diverter):

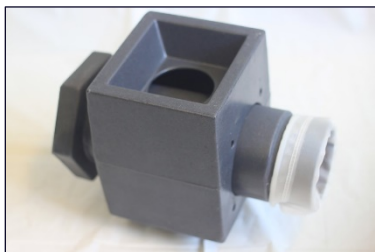
A mechanism used to direct the water from your downspout either into or away from the barrel. You can switch the diverter into collection mode, leading water into your barrel, or into bypass mode, directing water away from the barrel. Diverting water is important during the winter, so water does not collect and freeze in your barrel.

Overflow:

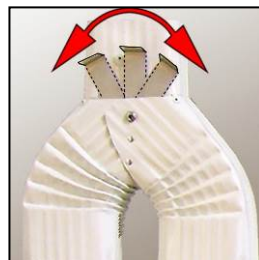
The piping on a rain barrel that carries water out of the barrel onto the ground once the barrel has completely filled up. The overflow is usually attached near the top of the barrel to direct excess water out and away from the barrel.

Soaker Hose:

A hose that has holes in it to allow water to soak out of all parts of the hose, keeping the soil moist.



Diverter box and Filter



Y-Diverter

Basic Barrel Information

Q: How do rain barrels work?

A: A rain barrel connects to your roof's downspout. When it rains, the water hitting your roof flows from the downspout into your barrel. Rain barrels allow homeowners to store rainwater for later use.

Some barrels, like the RiverSides Barrel and Hydra Barrel, have filters to prevent debris from entering through the downspout. These need to be cleaned out periodically and after big rains. With big rains, there is often too much water for your barrel to hold. The barrel has an overflow pipe directing the excess water to flow onto your lawn, garden, or rocky surface.

A rain barrel will not alleviate problems with slow running or obstructed drain leaders or area drains; however, it will capture some stormwater and provide water for irrigating plants and vegetation in your backyard patio. This water should not be used for drinking.

Q: What are the benefits of having a rain barrel?

A: Rain barrels provide many benefits to homeowners and the environment. Using rainwater can significantly reduce your water bill in the summer months. You can use the barrel's rainwater to water your garden, wash tools or a bike, and even supply a fountain. The EPA has stated that using water for outdoor chores can account for as much as 40% of your water use in the summer.

Using rainwater also helps us conserve freshwater. It decreases the amount of water we pull from our aquifers, water table, and local waterways. The rainwater you collect and use on your garden and lawn will help decrease stormwater runoff, and help to restore our groundwater supply. Stormwater runoff creates erosion, destroying stream habitats and leading pollutants such as pet waste, pesticides, fertilizer, and oil into local waterways and ultimately the Chesapeake Bay.

Q: Will a barrel cause mosquito breeding?

A: A covered barrel with a filter screen that is well maintained will not cause mosquito breeding. If you are worried about mosquitoes, you can easily purchase and place mosquito dunks in your barrel, which act as a mosquito guard linked [here](#). They are small doughnut shaped items with chemicals that stop mosquito breeding and last for 30 days.

Q: I have a lot of flooding on my property. Will my barrel help stop the flooding?

A: No. A barrel will collect a certain volume of water from your downspout, but once the barrel has filled up, water will lead out of the overflow just as it had led out of your downspout.

Q: I want to install a barrel on my own. What first steps do you suggest?

A: Step 1 - Watering: Consider where you need water. Will you be watering your lawn, a specific garden, and/or hanging plants? There are many options for water usage, and you can always fill up a watering can for the spots that are far away. Think about where you use the most water.

Step 2 - Access: You want the barrel in an easy-to-access location. It should be at a higher elevation than where you will use the water. Prop up the barrel on bricks or cinder blocks to add elevation and allow a watering can to get under the spigot. Your spigot, overflow hose, and diverting mechanism (for diverting water in the winter) should all be easily accessible.

Step 3 - Space: Barrels come in all shapes and sizes, so once you have decided on a location, make sure the barrel can fit well in that space without obstructing a walkway, basement entrance, electric meter, etc. The ground the barrel will be placed on needs to be level in order to provide stability to the barrel. Barrels filled with water are very heavy and can be in danger of falling over if on uneven ground. Also, consider the roof area leading into the downspout; the larger the roof the more water. If you are connecting a barrel to a downspout that collects water from your main roof, you will want to make sure that the barrel can handle a lot of water.

Step 4 - Overflow: In most cases, the rain barrel will not be large enough to capture *all* the water from a downspout. It will fill up quickly in a heavy storm, so you need to create an efficient overflow mechanism. A diverter kit works well for smaller barrels; it acts as one pipe for the inflow and outflow of water. If the inflow connection pipe is larger than the overflow connection, water may back up in the barrel and leak out of the top. You can learn more about how to install the overflow connections and diverter kits [here](#).

Step 5 - Maintenance: Make sure your barrel has a filter that captures leaves, debris, and mosquitoes at the inflow. The filter will need weekly cleaning to prevent clogging.



Barrel attached to a rain garden

Barrel Maintenance and Troubleshooting

Q: How do I clean my rain barrel?

A: RiverSmart Homes Program Barrels: You can clean your barrel in many ways. First, you should keep the filter free of debris. If you have a RainGrid RiverSides barrel, pull the filter cylinder out of the diverter box, invert the sock, and remove the debris. We suggest using some of the barrels collected water to help clean the filter of debris. You will need to scrape the debris off the filter sock and shake the cylinder, so the debris dislodges and falls out of the cylinder. Remember to put the sock back in place before returning the cylinder into the diverter box.

If your RiverSides barrel has lost its filter sock, you will need to retrieve it and the debris that has fallen into the barrel.

1. Empty the barrel and remove it from its stand.
2. Remove the diverter box by taking out the cylinder and unscrewing the bolts holding the box to the barrel (don't lose the gasket between the box and barrel!)
3. Pour a very small amount of bleach in the barrel, about 2-4 tablespoons, then pour in a gallon of water.
4. Roll the barrel on its side to collect debris and clean the inside, then tip it upside down to pour out the water and debris.
5. Rinse the barrel thoroughly and wait 24 hours before collecting water again. Then, reconnect the diverter box and put the barrel back in its place.

Non-Program Rain Barrels: Rain barrels all have some sort of filter screen preventing debris from entering the barrel. When you are preparing to clean your barrel, examine the barrel to see if the lid is removable or if there is a specific method to clean your barrel. You can use a VERY small amount of vinegar and bleach solution to clean out the barrel. Add 1/4 teaspoon of common household bleach for every gallon of water storage. You MUST rinse the barrel thoroughly and allow the barrel to dry for 24 hours before using again. More detailed instructions are linked [here](#).

Q: I have a large roof area. Can I get two barrels attached to one downspout?

A: Yes, most barrels can be connected, or 'daisy-chained', together. There may be an additional hole at the bottom or top of a barrel for this connection. When connecting two barrels it is important to remember the flow of the water and how elevating the barrels can come into plan. The RiverSmart Homes Program Barrels - RiverSides and Hydra barrels - can daisy-chain with their same styles. If you need more information about appropriate set up for a daisy-chain connection you can email Maya Sterett at msterett@allianceforthebay.org.

Q: How do I adjust a y-diverter?

A: The y-diverter has a small toggle in the middle of it that can move from side to side. Wherever the toggle is pointing is where the water will flow. For example, if you move the toggle to point to the right, the water will flow through the right leg of the y-diverter.

Q: Why isn't my rain barrel filling up fast?

A: Your filter might be clogged with debris. You need to clean the filter as stated above. If this does not work, there may be a drainage issue with your downspout or gutter. You will need to clean your gutters and look through your downspouts to assess the situation. It's also worth taking a look at the inlet, where the downspout meets the barrel, to make sure it is not obstructed by leaves or other debris.

Q: Why isn't water coming out of my barrel?

A: First, check if your barrel's spigot is in the open setting by toggling the small handle.

Second, check if your barrel is in collection mode. It might not even be collecting water. You can tell if there is water in your barrel by giving it a small push (or nice hug) and feeling the weight. If it won't budge, then it has water.

Third, check if your barrel's spigot is connected to a hose. If so, disconnect the hose and see if water comes out of the spigot when you turn it on. Our barrels do not have enough water pressure to push water through a standard hose. We suggest using a soaker hose or filling up a watering can. If you have a soaker hose connected, there may be a blockage in the hose itself.

If water still does not come out, there may be a piece of debris inside your barrel that is blocking the spigot. This can happen when debris gets past the filter and the barrel fills up. The barrel's water pressure will hold a piece of debris at the spigot outlet and may act as a stopper. Unfortunately, this is just an issue that comes with all barrels, so we always reiterate cleaning the filter. The best way we have found to get the item out of the way is to get a sturdy twig or stick and slightly poke the inside of the spigot to see if you can move the piece of debris. Water should stream out when the item has moved over. You may need to hold it at bay for a bit so it does not fall back and block the spigot again. If you are able, pull the piece of debris out using the stick.

If the debris is too large to come out of the spigot hole, then you will need to remove the diverter box. Temporarily unscrew the diverter box from the barrel. If the barrel does not have any water, fill it with a garden hose to 1/5 full or so. Then, tip the barrel

over so any debris can come out of the larger inlet at the top where the diverter box was connected. This might need to be repeated to make sure it is clean inside. Then, reattach the diverter box to the barrel.

Q: Where can I find rain barrel maintenance information?

A: If you participated in the grant program, you were given a rain barrel maintenance checklist during the barrel installation. (You can request another copy of the checklist from Maya Sterett at msterett@allianceforthebay.org.) More maintenance information can be found [online](#) on the Alliance for the Chesapeake Bay [website](#) or on the Department of Energy and Environment [website](#).

Here are some basic maintenance tips from our experiences:

- **Inspect** your downspout and make sure it is still firmly connected to your gutter and side of the house. Make sure it is still securely mounted.
- **Clean** out the leaf litter and debris from your filter. If you find more debris than usual, it may be time to clean out your gutters.
- **Check** and make sure your overflow is draining evenly. We do not want the water to pool at the overflow outlet but to disperse in your lawn or garden. To promote dispersion in the yard, you can put down a splash pad beneath the overflow outlet with some rocks on top to reduce the water's speed.
- **Use** the water in the barrel in a timely manner. We recommend using the water within a week and before a big rain event. Water sitting in the barrel for long periods will make the barrel bow out and potentially harm it by making it crack or fall. If you are traveling for an extended period of time and have someone checking on your home, ask them to empty the barrel of any water when they stop by. If someone isn't checking, put the barrel on divert/bypass mode. If your barrel does not have a divert mechanism, then disconnect the diverter kit and cap it or the downspout hole while you're away. If you vacation in the summer, keep at least 3 inches of water in the barrel to hold it down in case there is a storm.
- **Re-level** the ground area under the barrel every six months to a year. The changes in weight from the barrel will impact the ground area, making it off-kilter or uneven. Keep an eye on this, and make sure to re-level when you see it going off balance.
- **Storms** may affect the barrel and downspout. Severe storms could pull down a barrel if it is not weighed down enough (such as in the winter or early spring) and could potentially take down the downspout. You are welcome to drain the barrel and remove it in advance of a storm or make sure it is filled with water and secure against the house. Similar precautions should be taken in the event of high winds.

- **Hoses** are a great addition to barrels; however, keep in mind the type. Low-flow soaker hoses usually work best since barrels do not have much water pressure. Due to the low water pressure, standard hoses will not work on barrels unless you have installed a pump. If you participated in the RiverSmart Homes installation program, you were provided with a 20-foot low-flow soaker hose. This is a basic hose provided to get you on the right track for water and barrel use. This hose does not have the same life span as a barrel, so it will need to be replaced at some point. If you are interested in a pump on a grant barrel so you can water a garden that is further away, we suggest purchasing and installing a transfer pump. Most transfer pumps need an electrical outlet, but will work well with a standard garden hose. [Here](#) and [here](#) are examples of transfer pumps for purchase.
- **Watering** with your barrel can be done with a soaker hose, pump, standard hose, or watering can. We usually suggest barrels be elevated so you can fit a watering can under the spigot.
- **Location** is very important to consider for the barrel. Keeping it near a garden (preferably uphill) will help your watering process. Also, try to keep the barrel away from meters or other electrical outlets.

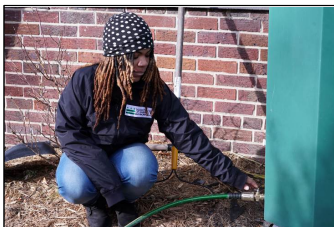
Q: What happens if the barrel is broken due to lack of maintenance?

A: Barrels can break from lack of maintenance (not winterizing the barrel, not releveling when needed, etc.). If the barrel was installed through the RiverSmart Homes grant program and the home has not reached the program's barrel maximum, then the homeowner could pay a copayment and recycling fee for the contractor to replace and recycle the broken barrel.

If the home has reached the barrel maximum, then the homeowner can purchase and install a new barrel on their own and apply for a partial reimbursement through the RiverSmart Homes Rebate Program. RiverSmart do not sell or install barrels through the rebate program.

Q: What if the RiverSmart installed barrel (not rebate) breaks after 10 years?

A: We celebrate the wonderful life that barrel lived, recycle it for free, and install another one. The homeowner would need to cover the copayment for the new barrel.



Series of photos depicting barrel maintenance. First: closing the spigot in the spring. Second: cleaning the filter sock on the diverter box. Third: cleaning the top and filter basket. Fourth: adjusting the y-diverter toggle for the spring.

Winter and Spring Care

Q: How do I winterize my rain barrel?

A: Water should not be in the barrel when the temperature drops to freezing. Each barrel is different; some barrels you may need to drain, flip upside down, and cover. While our barrels are very sturdy, water could still freeze in them, which could crack the barrel. We want to make sure all our barrels are safe during the freezing weather.

RiverSmart Homes Installation program barrels:

RiverSides Barrel (octagonal/round):

Step 1: Empty the barrel of water.

- Open the spigot and drain the water out of the barrel. Keep the spigot open during the winter

Step 2: Clean out the filter.

- Find the cylinder attached to the diverter box. Pull the cylinder out and clean the filter inside, then push the cylinder back into place

Step 3: 'Divert' the water.

- Turn the cylinder 180 degrees, so it reads 'divert.' This will lead the water through the overflow tubing, diverting it from the barrel. Some water may leak into the barrel, but that is fine as long as the spigot stays open.

Hydra Barrel (rectangular):

Step 1: Empty the barrel of water.

- Open the spigot and drain the water out of the barrel. Keep the spigot open during the winter.

Step 2: Clean the filter.

- Clean the top filter of debris.

Step 3: Turn the dial on the y-diverter.

- Turn the knob on the y-diverter. The y-diverter is the connection on your downspout slightly above your barrel that leads the water into the barrel. Turn the knob so it is on the opposite side of its current position. An easy trick to remember for diverting and collecting water on the y-diverter is the side the knob is on shows the direction the water will flow. If the knob is on the right side, the water will flow through the right prong/downspout tubing. If the knob is on the left side, the water will flow through the left prong/downspout tubing.

Step 4: Cover the top (if expecting snow).

- Cover the top of the barrel with a tarp if you expect snow or rain so it does not pile/collect.

For other rain barrels, follows these steps:

Step 1: Drain your barrel completely.

- Remove the hose, open the spigot and drain the water out of the barrel. Keep the spigot open during the winter.

Step 2: Clean the filter.

- Clean debris from the filter screen.

Step 3: Redirect water to overflow connection.

- Disconnect diverter from the barrel to redirect water to the overflow downspout, away from the home foundation.
- If your barrel does not have a diverter kit attached, move your barrel from under the downspout and attach a flexible extension to the downspout to redirect the water away from the home foundation.

Step 4: Store rain barrel (optional).

- Storing your rain barrel in the garage or basement during winter can prevent incidental damages. Turning the barrel upside down can also prevent water accumulation if you plan to leave it outside.

Q: How do I transition my barrel to collect again in the spring?

A: Please note there may be more freezing temperatures in the spring, either at night or in the day. You will need to drain your barrel and put it in bypass mode to prevent any water from freezing in your barrel. For **RiverSmart Homes program barrels:**

RiverSides Barrel (octagonal/round):

Step 1: Close the spigot.

- Your spigot should have been open during the winter to let out any water inadvertently collected. It is now time to close the spigot and resume water collection.

Step 2: Clean out the filter.

- Find the cylinder attached to the diverter box. Pull the cylinder out and clean the filter inside, then push the cylinder back into place

Step 3: 'Collect' the water.

- Twist the cylinder 180 degrees, so it reads 'collect'. This will lead the water back into your barrel, only going into the overflow tubing when the barrel is full.

Hydra Barrel (rectangular):

Step 1: Close the spigot.

- Your spigot should have been open during the winter to let out any water inadvertently collected. It is now time to close the spigot and resume water collection.

Step 2: Clean the filter.

- Clean the top filter of debris.

Step 3: Move the lever on the y-diverter, leading water into the barrel.

- The y-diverter is the connection on your downspout slightly above your barrel that leads the water into your barrel. Move the lever, so it is on the opposite side of its current position. An easy trick to remember for diverting and collecting water on the y-diverter is the side the lever is on shows the direction the water will flow. If the lever is on the right side, the water will flow through the right prong/downspout tubing. If the lever is on the left side, the water will flow through the left prong/downspout tubing.

Rebate Rain Barrels:

Step 1: Close the spigot.

- Your spigot should have been open during the winter to let out any water inadvertently collected. It is now time to close the spigot and resume water collection.

Step 2: Clean the filter.

- Clean the top filter of debris

Step 3: Redirect water to collect in the barrel.

- Reconnect the diverter to the barrel to allow it to collect water again.
- If no previous diverter was connected, remove the flexible extension and place the rain barrel under the downspout to collect water. (These types of barrels are required to have some sort of long tubing connected to the second or highest spigot on the barrel to act as the overflow connection.)

TIP: Make sure your overflow leads to a vegetated area such as a garden, tree, or lawn, so when we have heavy rain, the water will disperse and soak into the ground. To prevent the water from pooling in one location, you may need a splash pad under the overflow outlet.

Q: Can I drink the water from my rain barrel?

A: NO! This water is not potable, so please do not drink it. The water has been in contact with many different chemicals and bacteria from your roof, gutter, and downspout and thus is not safe to drink.

Q: Can I use the water from my rain barrel to water my vegetable/edible garden?

A: If you would like to use your rainwater for an edible garden, please research your roof material and best practices to limit the spread of bacteria and pollutants. Contact Maya Sterett for more information: msterett@allianceforthebay.org.

Rain Barrel Program FAQ

Q: Where can I learn more about rain barrels and other ways to conserve and reduce stormwater?

A: You can visit [Reduce your Stormwater](#) with the Alliance for the Chesapeake Bay or check out this [fact sheet](#) about rainwater harvesting. Search online to learn more about rain barrels and water conservation. RiverSmart Homes has many options for stormwater reduction, including installing rain gardens, trees, bayscaping (native landscaping gardens), and permeable pavers. You can also plant a drought-resistant lawn, drought-resistant plants, or native plants to reduce your water use and depend solely on rainwater. More information about RiverSmart Homes can be found on [Front Door DC](#). Community gardens are also a great way to promote conservation and stormwater awareness. Get your friends, family, and neighbors involved in water conversation! Tips for barrel accessories can be found [here](#).

Q: What is the difference between the RiverSmart Homes *rebate* program and *grant* program?

A: With the *rebate* program, you must install your own rain barrel (either DIY or using a contractor) per the rebate criteria located on page two of the rebate homeowner guide found [here](#). Then, you send an application and necessary materials to the Alliance for the Chesapeake Bay. If your barrel meets the rebate program criteria, you will be provided with a rebate for your barrel starting at \$2 per gallon, not exceeding the barrel's price or \$1,000 per home. Furthermore, you can find a list of acceptable rebate rain barrels [here](#). More details on the rebate program can be found on [Front Door DC](#).

The *grant* program does all the work for you. You simply sign up [here](#) for an auditor to come to your home and review your property layout. They will walk you through the program and find the best location(s) for your rain barrel(s). Once the audit is complete, you will be added to our waiting list and contacted by the Alliance. Alliance will then connect you with your designated contractor. The contractor will coordinate with you an installation time and walk you through the rain barrel specifications. You will need to provide a one-time copay of \$50 and a signed copy of the maintenance form.

Q: How many rain barrels can I get through the grant and rebate programs?

A: You can receive a maximum of three rain barrels through the *grant* program. The *rebate* program does not have a barrel maximum but caps at \$1,000 per home based on the \$2 per gallon rate described above.

Q: Can I get a rain barrel if I already have a rain garden attached to the downspout?

A: YES!! We love attaching barrels to downspouts connected to a rain garden. It creates a beautiful relationship between the two projects. It also usually means that the barrel is nearby for easy water access when caring for your garden.

Q: Where can I buy a new RiverSides barrel filter?

A: The RainGrid company that manufactures the RiverSides barrel sells filters on their website [here](#).

Q: I was already audited for the grant program, but I don't want to wait for my rain barrel. Can I skip the wait, buy my own barrel, and get the rebate?

A: Yes, but you will need to install the barrel yourself or hire a contractor to install it. You also need to submit a rebate application with the necessary materials, even if you have a completed audit. The rebate program does not sell rain barrels; you must find a vendor online or at a store.

Q: Do I have to install my own rain barrel for the rebate program?

A: Yes, you need to install your rain barrel either yourself or through a contractor. The grant program provides you with a contractor who will complete the installation. (If you are having difficulty finding a contractor, review this list of certified rain barrel installers [here](#).)

Q: Why does my overflow piping need to be 2 inches or more in diameter for the Rebate Program?

A: The water from your roof draining into your barrel comes from a downspout of about 3-4 inches in diameter. When your barrel fills to the overflow point, you need an overflow hose to offset the inflow from a 3-4 inch diameter downspout. If your overflow hose is not large enough, the water will spill over the top of the barrel. Overflow piping larger than 2 inches will give you a more effective outflow. We suggest the overflow piping have the same width/diameter as your downspout.

Q: Why does the spigot have to be on the bottom hole (no more than 3in from the ground) for the Rebate Program?

A: The spigot must be no more than 3 inches from the ground so you can access as much water as possible.

Resources and More Information

Understanding Stormwater Runoff and Its Effects ->

https://www.wvca.us/bay/files/bay_resources_homeowners/60_Rain_Barrel_Facts.pdf

<https://www.epa.gov/sourcewaterprotection/urbanization-and-stormwater-runoff>

How to Reduce your Water Footprint ->

<https://www.epa.gov/watersense/start-saving>

<https://www.watercalculator.org/>

Learn about RiverSmart Homes Click Here ->

<https://www.allianceforthebay.org/project/riversmart/>

<https://www.riversmarthomes.org/about>

Additional Overviews of RiverSmart Rain Barrel Click Here ->

<https://doee.dc.gov/service/riversmart-homes-rain-barrels>

<https://www.allianceforthebay.org/project/riversmart/>

<https://stormwater.allianceforthebay.org/take-action/installations/rain-barrels>

RiverSmart Rebate Rain Barrel Program Click Here ->

<https://doee.dc.gov/node/1089492>

Hardware Maintenance Videos and Resources Click Here ->

<https://www.riversmarthomes.org/rainbarrels>

Pests and Mosquitoes Resources Click Here ->

<https://www.amazon.com/Mosquito-Dunks-102-12-Killer-Pack/dp/B0002ASQ4A>

Where to Shop for Replacement and Repair items ->

[https://media.alexandriava.gov/docs-archives/tes/oeq/info/](https://media.alexandriava.gov/docs-archives/tes/oeq/info/rainbarrelaccessoriesmaintainingshorterlinksrev.pdf)

[rainbarrelaccessoriesmaintainingshorterlinksrev.pdf](https://media.alexandriava.gov/docs-archives/tes/oeq/info/rainbarrelaccessoriesmaintainingshorterlinksrev.pdf)

To purchase RiverSides Filter ->

<https://shop.raingrid.com/>

Where to Shop for More Rain Barrels ->

<https://www.wayfair.com/storage-organization/sb0/rain-barrels-c1786809.html?redir=rain+barrels>

Contractor Installer list ->

https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/2020%20Rain%20Barrel%20Rebate%20Installer%20List.pdf