RIVERSMART HOMES RAIN BARREL RESOURCE MANUAL

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ALLIANCE for the Chesapeake Bay
DEPARTMENT OF ENERGY & ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

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.

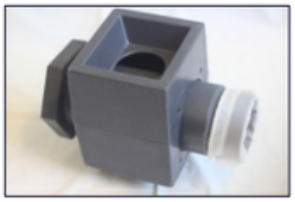
INLET
The connection between the downspout and barrel.

FILTER BASKET- STORMWORKS HYDRA BARRELS
The filter basket located along the inlet on the Hydra barrels. Prevents leaf debris and mosquito larvae from entering the barrel.

FILTER SOCK- RAINGRID RIVERSIDES BARRELS
Prevents leaf debris and mosquito larvae from entering the barrel. The filter on the RiverSides barrels is located inside the diverter box

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. It is important to divert water in the winter so that water does not collect. Water that is collected can freeze, swell and cause the barrel to crack.

RAINGRID RIVERSIDES DIVERTER BOX



STORMWORKS HYDRA Y DIVERTER

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.

SPIGOT
The small faucet usually located towards the bottom of a rain 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.

HOW DO RAIN BARRELS WORK?

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

Some barrels, like the RiverSidess Barrel and Hydra Barrel, have a filter or screened inlet to prevent debris from entering through the downspout. These need to be cleaned out regularly and after large rain events. 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 or garden and away from the house and foundation.

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 use around the yard. This water should not be used for drinking.

WHAT ARE THE BENEFITS OF HAVING A RAIN BARREL?

Rain barrels provide many benefits to residents 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 causes erosion, destroys stream habitats and carries pollutants such as pet waste, pesticides, fertilizer, and oil into local waterways and ultimately the Chesapeake Bay.

WILL A BARREL CAUSE MOSQUITO BREEDING?

Well maintained barrels will not cause mosquito breeding. A properly maintained filter keeps the barrel a closed system where mosquitos cannot access the water inside to lay their eggs.

I HAVE A LOT OF FLOODING ON MY PROPERTY. WILL MY BARREL HELP STOP THE FLOODING?

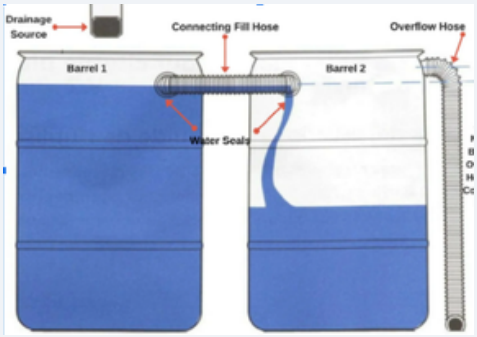
No. A barrel will collect a certain volume of water from your downspout, once the barrel is full the water will be directed out of the overflow and away from the barrel.

I WANT TO INSTALL A BARREL ON MY OWN. WHAT FIRST STEPS DO YOU SUGGEST?

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.
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 should all be easily accessible.
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 is appropreiately sized to caputre the amount of water draining to it.
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.
    - 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.
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.

I HAVE A LARGE ROOF AREA. CAN I GET TWO BARRELS ATTACHED TO ONE DOWNSPOUT?

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 - RiverSidess 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 Nancy Reyes at nreyes@allianceforthebay.org.



CLEANING A RAIN BARREL

Pour equal parts vinegar and warm water into the barrel and roll the barrel on its side to clean the inside and collect any debris that may have entered the barrel. Mixture can be left overnight to help loosen any built up debris. When ready, tip the barrel upside down to drain the water and sediment. Then rinse the barrel thoroughly and allow the barrel to dry for 24 hours before setting the barrel to collect. More detailed instructions are linked here: Keeping Water Clean in a Rain Barrel: The Essential Guide.

RAINGRID RIVERSIDES SOCK FILTER

1. Remove the filter cylinder from the diverter box
2. Invert the sock and remove all debris
3. Rinse the filter to remove sediment using collected water from the barrel
4. Replace filter cylinder into diverter box with sock filter inverted

STORMWORKS HYDRA FILTER BASKET

1. Remove all debris from filter basket
2. Rinse filter basket to remove sediment with collected water
3. Replace filter basket ensuring it is in place

WHAT HAPPENS IF MY SOCK FILTER HAS FALLEN INTO THE BARREL?

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

1. Empty the barrel and remove it from the base
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. Roll the barrel on its side to retrieve the filter sock
4. Add 1 or more screws to attach the filter to the cylinder to prevent it from falling into the barrel in the future
5. Reconnect the diverter box and reattach the barrel to the downspout.

WHY ISN'T MY RAIN BARREL FILLING UP FAST?

Your filter might be clogged with debris. Start by cleaning the filter and the inlet, where the downspout meets the barrel, to make sure it is not obstructed by leaves or other debris. If this does not work, there may be a drainage issue with your downspout or gutter. After cleaning the gutters, look through your downspouts to assess the situation.

HOW DO I ADJUST A Y-DIVERTER?

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

WHY ISN'T WATER COMING OUT OF MY BARREL?

1. Check if your barrel's spigot is in the open setting.
2. Ensure the barrel is in collection mode.
3. 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. Rain 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.

WHY ISN'T WATER COMING OUT OF MY BARREL?

If water still does not come out, there may be 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 us a tube brush or drain snake to 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 tube brush.

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.

IN ADDITION TO CLEANING THE LEAF LITTER AND DEBRIS FROM THE BARREL'S FILTER WEEKLY AND AFTER EACH RAIN EVENT, IT IS IMPORTANT TO INSPECT;

1. Gutter and downspout connections
    - Storms may affect the barrel and downspout. To prepare for events of high wind, barrels can be drained and remove in advance of a storm or left filled with water and secured against the house.
2. Water collected in the barrel should be used in a timely manner, within a week roughly.
    - In addition, barrels should emptied before each rain event to maximize the amount of water captured.
    - Water sitting in the barrel for long periods will cause 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.
3. Overflow is draining evenly to prevent water from pooling at the overflow outlet and is dispersing into the lawn or garden. *Rocks can be placed at the outlet to help reduce the water's speed.
4. Base is level and the barrel is centered on the base
    - Changes in weight can impact the ground area, making it off kilter or uneven.
    - Since the barrel's water pressure relies only gravity, any shift in the base could cause a decrease in pressure
5. Hose is firmly connected and functioning properly
    - 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 and will need to be replaced in time.
    - Due to low water pressure, standard hoses will not work on barrels.
        - A pump can be added to the barrel to increase water pressure for use with a standard hose or for water use up hill. Most transfer pumps require an electrical source and tend to be loud. Below are 2 examples, please note: The RSH program does not endorse the items listed below.
            - **WAYNE PC2 PORTABLE TRANSFER WATER PUMP**
            - **115V 330 GALLON PER HOUR WATER TRANSFER PUMP**

WINTER CARE

It is important to ensure the barrel is properly winterized before the first freeze of the season. Water collected in the barrel can freeze and cause the barrel to swell or crack.

RAINGRID RIVERSIDES BARRELS

1. Set the diverter to bypass
2. Drain the barrel and leave the spigot open

STORMWORKS HYDRA BARRELS

1. Set the Y diverter to bypass
    - *the side the toggle is on is the side the water will be directed to
2. Drain the barrel and leave the spigot open
3. Cover the inlet with a tarp

PREPPING FOR THE SPRING

After the last frost of the season, prep the surrounding area before redirecting the water to the barrel.

1. Clean the gutters and downspout draining the rain barrel
2. Check the downspout connections for leaks and ensure it is firmly attached to the house
3. Relevel and reconfigure the base

Once the area is prepped, to begin collecting water:

1. Close the spigot
2. Clean the filter
3. Set the diverter to collect

RAIN BARREL MAINTENACE VIDEO

The video liked here: RiverSmart Homes rain barrel maintenance video demonstrates proper techniques to ensure water is being captured efficiently while maintaining the longevity of the rain barrel.

WHAT IS THE DIFFERENCE BETWEEN THE RIVERSMART HOMES REBATE PROGRAM AND GRANT PROGRAM?

- **REBATE PROGRAM**

You must install your own rain barrel (either DIY or using a contractor of your choice) per the rebate criteria located on page two of the rebate guide. Then, submit an application and necessary materials through DOEE's SGS database. If your barrel meets the rebate program criteria, you will be provided with a rebate for your barrel refunded at $2 per gallon captured by the barrel plus $150 towards the costs of a contractor and any additional supplies needed, not exceeding the barrel's price or $1,000 per property. Furthermore, you can find a list of acceptable rebate rain barrels on page 4 of the rebate guide. More details on the rebate program can be found on Front Door DC.

- **GRANT PROGRAM**

The grant program does all the work for you. You simply sign up 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 $100 per barrel and a signed copy of the maintenance form.

HOW MANY RAIN BARRELS CAN I GET THROUGH THE GRANT & REBATE PROGRAMS?

- **REBATE 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.

- **GRANT PROGRAM**

Through the grant program, each property is eligible for a a maximum of 2 rain barrels.

CAN I GET A RAIN BARREL IF I ALREADY HAVE A RAIN GARDEN ATTACHED TO THE DOWNSPOUT?

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.

WHERE CAN I BUY A NEW RIVERSIDESS BARREL FILTER?

The RiverSides filter socks are designed to last the lifetime of the barrel and should only need to be replaced if it is missing. A link to the RainGrid website can be found on page 12 in the resources section of this manual.

WHAT HAPPENS IF THE BARREL IS BROKEN DUE TO LACK OF MAINTENANCE?

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 participant 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 participant can purchase and install a new barrel on their own and apply for a partial reimbursement through the RiverSmart Homes Rebate Program. RiverSmart does not sell or install barrels through the rebate program.

WHAT IF THE RIVERSMART INSTALLED BARREL (NOT REBATE) BREAKS AFTER 10 YEARS?

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

WHY GET A RAIN BARREL THROUGH THE REBATE PROGRAM INSTEAD OF THE RIVERSMART HOMES (RSH) GRANT PROGRAM?

Although the RSH rain barrel grant program provides a barrel and an assigned contractor to install it for you, the rebate program provides participants with more flexibility in terms of timeline and barrel type. Specifically, it offers an opportunity to:

- Select a barrel other than those provided by RSH or build your own;
- Avoid long wait times associated with the RSH grant rain barrel program;
- Choose your own installer from the list of recommended installers;
- Install a rain barrel yourself.

DOES MY RAIN BARREL QUAILIFY FOR STORMWATER CREDIT TOWARDS MY WATER BILL?

Yes! Upon approval, residents can earn a discount of up to 55% off the DOEE Stormwater Fee and up to 20% off the Clean Rivers Impervious Area Charge (CRIAC) based on the amount of stormwater collected. For more information, please visit the RiverSmart Rewards website or contact riversmart.rewards@dc.gov

CAN I DRINK THE WATER FROM MY RAIN BARREL?

NO! Water collected in a rain barrel has been in contact with many different chemicals and bacteria from the roof, gutter, and downspout and thus is not safe to drink.

WHERE CAN I LEARN MORE ABOUT RAIN BARRELS AND OTHER WAYS TO CONSERVE AND REDUCE STORMWATER?

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!

UNDERSTANDING STORMWATER RUNOFF AND ITS EFFECTS

- EPA: Urbanization and Stormwater Runoff
- West Virginia Conservation Agency: Rain Barrel Facts

HOW TO REDUCE YOUR WATER FOOTPRINT

- EPA: Start Saving
- Water Footprint Calculator

LEARN MORE ABOUT RIVERSMART HOMES

- RiverSmart Homes
- Alliance for the Chesapeake Bay

LEARN MORE ABOUT RIVERSMART HOME RAIN BARRELS

- Rain Barrel: Grant Program
- Rain Barrel: Rebate Program
    - Rain Barrel Rebate Guide

RAIN BARREL INSTALLERS IN THE DC AREA

- List of contractors who install rain barrels

WHERE TO PURCHASE BARRELS & SUPPLIES

- RiverSides Sock Filter
- Rain Barrels & Accessories