

# LACKAWANNA RIVER CLEAN

## Rain Barrels

*A better way to manage stormwater*



**“Thinking Globally and Acting Locally”**

A partnership of the Scranton Sewer Authority,  
the Lackawanna River Corridor Association and  
the citizens of Scranton and Dunmore



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## How to build your rain barrel.

*Scranton gets an average of 37 inches of rain a year. Rain that runs off your roof can flow into a sewer pipe, stream or groundwater. Why not put it to another use? A rain barrel can capture some of that rainfall for later use on your property. Capturing and reusing rainwater from your roof surfaces also reduces demand on the sewer system and protects the quality of streams and groundwater.*

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### What is a rain barrel?

A rain barrel is a simple rainwater collector that captures and stores a portion of the runoff from a roof downspout for non-potable, exterior uses, such as irrigation. Rain barrels come in a wide variety of materials, designs, and colors. Common sizes for residential use are 55 gallons and 90 gallons. They are usually installed on the ground next to buildings.

A rain barrel is not a stormwater disposal method, but is a way to capture a small fraction of the rainwater that flows off your roof. The rest of the runoff will still need to go to an approved stormwater discharge location.



### Are there incentives to installing a rain barrel?

Using rain barrels to temporarily store and reuse rainwater can conserve drinking water by providing a water source for gardens. This can also reduce your water bill and corresponding charge on your sewer bill.

If used with an appropriate location where overflow water soaks into the ground, you will be helping our community by being a better steward of our water resources. All Scranton Sewer Authority ratepayers who safely disconnect their downspouts, utilize rain barrels, soakage trenches and rain gardens are cooperating to help reduce combined sewer overflows (CSOs) to the Lackawanna River and its tributaries Roaring Brook, Stafford Meadow Brook and Leggett's Creek.

# 1. Observe your site

To determine if a rain barrel is right for your property, the first step is to identify your site's drainage conditions. Answer the questions below as you walk around your property.

## Where does the runoff from your roof area go now?

Sketch a site plan. Mark the locations of downspouts and roof lines, estimate the square footage of your roof and paved areas, and map where all these areas drain.

## Where would you like to locate your rain barrel?

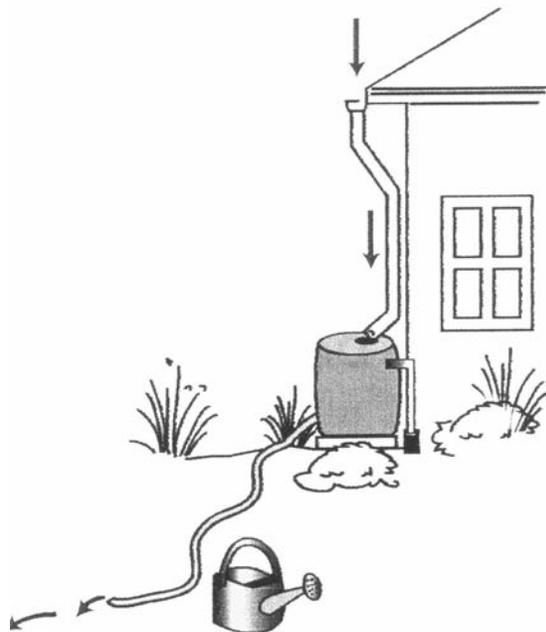
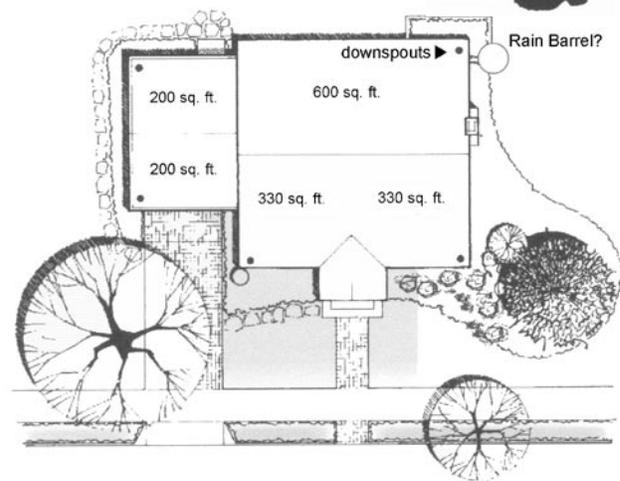
Install your rain barrel based on where you will use the water in your yard. Keep in mind that it may be possible to re-hang the gutter and move the downspout to a more desirable location. The rain barrel must be located at the base of one of the downspouts draining your roof gutter. This is the downspout you will work with.

## Where does that downspout currently drain?

The downspout you will divert to your rain barrel probably drains into a standpipe or to your yard. This is the stormwater discharge point and is the same location where the rain barrel should overflow to. If you wish to change your stormwater discharge point, please refer to step 2.



Example site plan: locate existing downspouts



## 2. Plan your rain barrel

Rainwater collection for residential, external, non-potable uses such as irrigation, do not require a city permit, but there are still design considerations to follow.

### Overflow

All rainwater collection systems must have an overflow to a safe disposal location. The average residential roof generates about 30,000 gallons of rainfall runoff every year, and an average 55 gallon rain barrel captures only a fraction of that. Even if you have multiple rain barrels, you must have an overflow to a safe discharge location.

If your rain barrel overflows into the standpipe, be sure the overflow pipe is attached and sealed to the standpipe opening.

If the downspout to be connected to your rain barrel currently drains to a surface infiltration area in your yard, the overflow from your rain barrel should also discharge to that location.

If the downspout currently drains to a standpipe and you wish to change your overflow disposal to surface infiltration in your yard, you must meet the safety guidelines detailed in *A better way to manage stormwater - Downspout Disconnection* or the *A better way to manage stormwater - Rain Gardens* guide (see page 9 of this document).

### Safety Considerations

- Your rain barrel must be secured on a firm, level surface. A full 55-gallon rain barrel weighs over 400 lbs. and tipping is a risk if it's unsecured or on uneven ground.

- The barrel must be structurally sound and should be a food-grade container made to hold liquid. Containers such as trash cans are not designed to withstand the pressure of the water.
- The barrel must have a lid and a sturdy fine mesh covering all openings to prevent mosquitoes and debris from getting inside.
- The water from the rain barrel should never be used for drinking, cooking or other potable uses.
- Your rain barrel must have an overflow to a safe discharge point.
- If you use a moss-control product on your roof, be sure to use a product that is garden-safe.

### Larger or more complex systems

More complex rainwater collection systems have a much larger storage container (a cistern), and/or use pumps to move water to desired locations.

Rain water captured by a cistern may be used for non potable uses around the home. These projects involve factors not applicable to simple rain barrels, such as plumbing and electrical work, soil excavation, or concrete foundations and other structural components. For rainwater collection projects of this scale, you should consult a professional to review design, construction, permit requirements and safety considerations.

### 3. Construction

Many nurseries and yard supply stores sell fully assembled rain barrels, but you can get an unmodified barrel and convert it into a rain barrel yourself. Assemble your tools and supplies then follow the construction steps illustrated on the following page.

#### Tools

*If you build your own rain barrel:*

- drill
- inch hole saw for overflow pipe
- one-inch spade bit for spigot
- tin snips or heavy-duty scissors for cutting screen
- adjustable wrench
- utility knife
- safety glasses

*To disconnect your downspout to your rain barrel:*

- hacksaw
- drill
- tape measure
- screwdriver or nut driver
- pliers or crimpers



#### Materials

- One 55 to 90-gallon food grade plastic barrel (can be found online or at local restaurant suppliers, nurseries, or gardening supply stores)

*Find the following items at most plumbing or hardware stores:*

- hose spigot with 3/4 inch threaded inlet and 3/4 inch male hose end
- two 3/4 inch galvanized locknuts to secure spigot from the inside of the barrel
- four 1-inch (opening) washers to provide rigid surface to fasten hose bib
- Teflon tape
- silicon adhesive or outdoor caulking
- two 8"x 8" x 12" concrete or wooden blocks
- window screen mesh (enough to cover the barrel opening)
- downspout elbow to route the downspout to the barrel
- clincher strap (attaches downspout and barrel to house)
- small pieces of wood blocking to use behind clincher strap (if necessary)
- any additional materials necessary for the overflow location
- 1/4" #6 sheet metal screws for downspout
- 3/4" screws for clincher strap
- 2" overflow pipe fittings

## Construction in 6 Easy Steps

**1 Inlet:** Create an opening with fine screening through which the rain barrel will collect water from the downspout elbow. This can be a single screened opening large enough to accommodate the downspout elbow (as shown in the photo), or a series of smaller screened openings directly in the top of the barrel.



**2 Overflow:** Drill a hole near the top of the barrel to accommodate an overflow pipe that is at least 2 inches in diameter. If the overflow pipe elbow seals and seats securely, it can be threaded directly into the barrel opening. If not, it should be secured with washers on both sides of the barrel and a nut on the inside. Use Teflon tape around the threads and a bead of silicon caulking around the opening to ensure a tight seal.



**3 Foundation:** Create a raised, stable, level base (like concrete blocks) for the rain barrel to sit on. You might want to test stability by filling the rain barrel with water before attaching to your structure. A full rain barrel is very heavy and tipping is a risk if it's unsecured or on an uneven surface.



**4 Downspout:** Cut the downspout with a hacksaw so that the elbow will sit just above the rain barrel inlet. Attach the elbow over the downspout with a screw and secure the downspout to the house with the strap.



**Attach Barrel:** Set up the barrel beneath the elbow and secure the barrel to the house with a strap. Cut and attach the overflow pipe to the overflow elbow and direct to the existing discharge location.

**5 Outlet:** Drill a hole near the bottom of the empty barrel to attach the drain spigot. If the spigot seals and seats securely, it can be threaded directly into the barrel opening. If not, it should be secured with washers on both sides of the barrel and a nut on the inside. Use Teflon tape around the threads and a bead of silicon caulking around the opening to ensure a tight seal.



**6 Use:** After a rainfall, fill a watering can using the bottom spigot or attach a hose to use the water where it's needed.



## 4. Maintenance

**Simple maintenance of your stormwater system can prevent problems.**

- Clean gutters at least twice a year, more often if you have trees.
- Make sure gutters are tilted to direct water to downspouts and fix low spots or sagging areas along the gutter line with spikes or place new hangers as needed.
- Make sure roof flashing directs water into the gutter.
- Make sure all parts are securely fastened together and the rain barrel is securely fastened to the building or a secure footed foundation block.
- Clean out the rain barrel and check for leaks at least once a year. Check and clear downspout elbows, rain barrel screening, and overflow to prevent clogging. Caulk any gutter, downspout, barrel, and overflow leaks and holes.
- Make sure the rain barrel remains securely screened to prevent mosquito entry.
- If overflow is to a surface infiltration area, monitor the overflow area and regrade soil if necessary to make sure water drains away from structures and does not flow onto pavement, sidewalks, or neighboring properties.



## Resources

### **Lackawanna River Clean Rewards**

Lackawanna River Clean Rewards is the stormwater information resource for residents of Scranton and Dunmore. Through a public education partnership, the Scranton Sewer Authority and the Lackawanna River Corridor Association are providing information and technical support for homeowners to better manage stormwater on their properties. You can contact the Authority or the LRCA to request information and technical assistance to disconnect downspouts or get advice on the installation of other stormwater management techniques that are appropriate to your property.

Download all *A better way to manage stormwater* brochures at [www.scrantonsewer.org](http://www.scrantonsewer.org) or [lrca@lrca.org](mailto:lrca@lrca.org).

## **Downspout Disconnection Program**

The Authority offers both technical assistance and free downspout disconnection materials such as PVC elbows and leaders, concrete splash blocks, stand pipe plugs and caps, brackets and screws to homeowners in the Downspout Disconnection Program targeted neighborhoods.

For more program information call the Authority at 570-348-5330 or the LRCA at 570-347-6311 or visit [www.scrantonsewer.org](http://www.scrantonsewer.org) or [www.lrca.org](http://www.lrca.org)

Other publications in this brochure series:

***A better way to manage stormwater - Downspout Disconnection***

***A better way to manage stormwater - Rain Barrels***

***A better way to manage stormwater - Rain Gardens***

***A better way to manage stormwater - Soakage Trenches***

Scranton Sewer Authority  
312 Adams Avenue  
Scranton PA 18503  
570-348-5330  
[www.scrantonsewer.org](http://www.scrantonsewer.org)

Lackawanna River Corridor Association  
2006 North Main Avenue  
Scranton PA 18508  
570-347-6311  
[www.lrca.org](http://www.lrca.org)

To help ensure equal access to this program, The Authority will reasonably accommodate persons with disabilities.

Call 570-348-5330

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