

LACKAWANNA RIVER CLEAN

Downspout Disconnection

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



Scranton Sewer Authority
Lackawanna River Corridor Association
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What is downspout disconnection all about?

Scranton gets an average of 37 inches of rain a year. Some of that rain runs off your roof and gutters and downspout and in many older homes it runs into cast iron standpipes around your homes foundation. These pipes are connected to your homes sewer pipe. So the rainwater that flows into those pipes quickly becomes polluted and adds to the load of stormwater that flows into our sewer system. That causes our municipal sewers to overflow into the Lackawanna River, Roaring Brook, Leggett's Creek, or Stafford Meadow Brook.

You can disconnect your downspouts to redirect rainwater to your yard or garden. Containing rainwater from hard surfaces on your property also reduces the demand on the sewer system and protects the quality of our river, streams and groundwater.

How can I disconnect my downspouts?

You can disconnect your downspouts from the cast iron standpipes and direct the flow of rainwater into landscaped areas or onto your lawn. Disconnection can be a low maintenance option to help move rainwater away from your building foundation and allow it to soak into the ground.

Disconnecting includes cutting the downspout; attaching elbows, extensions, and splash blocks to direct the water to flow away from the house; plugging the standpipe; and securing the new elbow and rain leader as needed.

Other brochures are available from the Scranton Sewer Authority (SSA) or the Lackawanna River Corridor Association (LRCA) that show you how to build a rain garden, a soakage trench or install a rain barrel to help you better manage stormwater around your home. (You can read and download a copy of these brochures from www.scrantonsewer.org or from www.lrca.org).

Why should I disconnect my downspouts?

When you contain the rain on your

property, you are helping to reduce pollution that impacts the Lackawanna River. You are being a better steward of our local environment. And you are showing your neighbors and fellow citizens that you are in compliance with our municipal stormwater ordinances. In Scranton, File of Council No. 19 2006 makes it illegal to discharge stormwater into the sanitary sewer system.

One of the most serious water pollution problems affecting the Lackawanna River and streams across the country is the over flows of municipal combined sewer systems that happens during rain and snow storms. These events are called Combined Sewer Overflows or CSO's. The sewers serving many of our neighborhoods are known as Combined Sewer Systems.

In many of the older neighborhoods of Scranton and Dunmore, the sewer pipe under the street collects wastewater from homes and businesses. This system was built over 100 years ago. At that time it drained our wastewater directly to the river or a nearby stream. The stormwater catch basins along our streets also drained stormwater into the same pipe. The rain gutters around our homes drain into cast iron stand pipes at the homes foundation

that are also connected to our homes sewer and to the pipe in the street.

As stormwater flows off our roofs, sidewalks, driveways and parking lots, and flows into this combined sewer system, it flows down hill towards the river. When the Scranton Sewer Authority treatment plant was built in the 1960's, a major investment was made to build a main "Interceptor Sewer" line along the Lackawanna River and up several tributary streams.

As the name implies, this pipeline "intercepts" our sanitary wastewater flows and conveys the wastewater to the treatment plant. Stormwater flowing into this system quickly exceeds the capacity of the interceptor sewer line. To prevent backups of this combined sewer flow into our streets and basements, it has been allowed to discharge into the river.

The Clean Water Act governs water quality across the United States. It now requires municipalities with Combined Systems and CSO's to reduce and eliminate the overflows. The Scranton Sewer Authority is working with the Pennsylvania Department of Environmental Protection and the United States EPA to meet new requirements under the Clean Water Act.

The Downspout Disconnection program is an important part of this work. Participation and involvement by residents of Scranton and Dunmore is essential to helping our community meet the requirements of our nation's Clean Water Act.

Are there incentives?

The Scranton Sewer Authority is conducting this Downspout Disconnection Program on a neighborhood-by-

neighborhood basis. Several target neighborhoods will be selected each year. The Authority will provide downspout disconnection materials to participating homeowners who want to do the work themselves. General contractors and plumbing contractors licensed to work in Scranton and Dunmore are qualified to install the disconnections at reasonable cost.

Homeowners who disconnect their rain leaders from the sewer system are demonstrating civic and environmental responsibility. They are, in a meaningful way, "Thinking Globally and Acting Locally". They are acting to do their part as stewards of our Lackawanna River Watershed. They are showing their concern to their fellow citizens who live downstream.

Where do I start?

Begin by preparing a good plan to ensure that the stormwater soaks into the ground without damaging your foundation or that of your neighbors. This brochure describes a simple, four – step process to help you disconnect your downspouts.



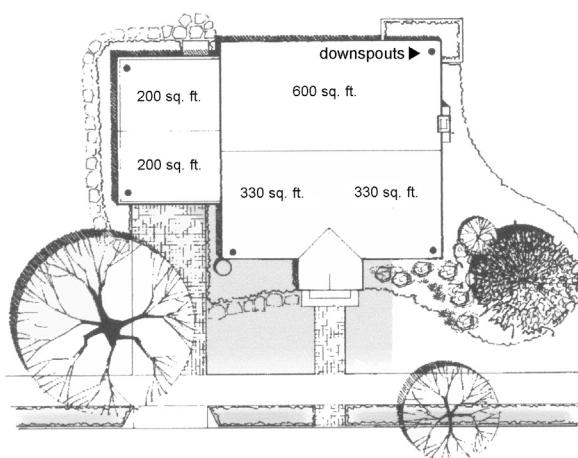
1. Observe your site

Find out where the runoff from your downspouts goes, including your house, garage and other covered surfaces. Are your downspouts draining to your lawn or are they connected to the sewer system or possibly, drywells. Downspouts that are connected to standpipes may drain to the sewer system. If your downspouts drain to soakage trenches, or drywells on your property and are in good working order you do not need to disconnect.

Draw what you see

Sketch a site plan of your home and your lot. Mark the locations of downspouts and roofline and estimate the square footage of your roof area. Map out areas in your yard downslope of the structures where you might disconnect downspouts.

Example site plan: locate existing downspouts



Safety considerations



Slope: Add or remove soil to make sure that the slope of the ground allows water to flow away from structures. However, do not disconnect downspouts on slopes over 10%.

Drainage: Avoid disconnecting downspouts in an area too small for good drainage (see guideline on next page).

Extensions: Disconnected downspouts must be extended at least 6 feet from a basement foundation wall and at least 2 feet from an at grade foundation or crawlspace. Downspout extensions and surrounding landscape surface must drain water away from any structures.

Property Lines: The end of your downspout extension must be at least 5 feet from your neighbors' property line and 3 feet from the public sidewalk. You may need more room if your yard slopes toward the neighbor or the sidewalk.

Access: Avoid disconnecting downspouts or adding downspout extensions across a walkway, patio, and driveway or in front of a gate because of possible tripping hazards.

Other hazards: Do not disconnect directly over a septic tank , drain field or underground oil tank unless they have been decommissioned, do not disconnect within 10 feet of a retaining wall.

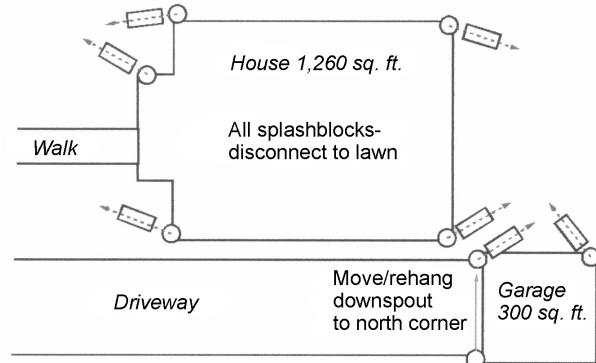
2. Design your disconnection

Mark downspouts to be disconnected on your existing site plan. Mark where you might pitch gutters, move downspouts, remove walkways or other impervious areas, or add extensions or elbows to get around plants or other obstructions.

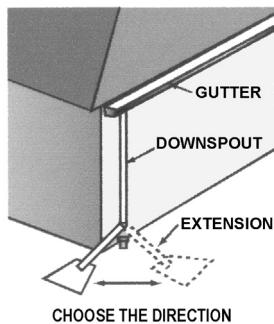
Make sure you have enough landscaped area for roof generated stormwater to soak safely into the ground. The ground area must be at least 10% of the roof area that drains to the disconnected downspout.

For example, to drain 500 square feet of rooftop, there should be at least 50 square feet of landscape.

roof area	sizing factor	landscape area size
500 sq. ft.	x 10%	= 50 sq. ft. (or 5' x10')

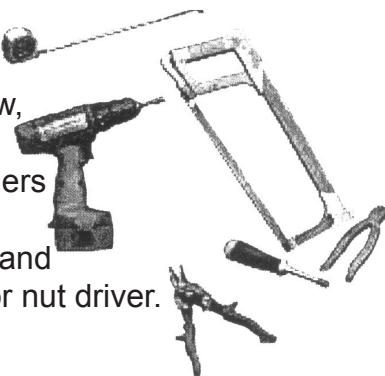


You may have more than one option for directing each downspout. Consider combining elbows and extensions to send water to the side or front, or to get around obstacles and drain water away from the house. Downspouts can also be relocated along the gutter to a safe drainage location.



Tools

You will need a hacksaw, a drill, a pair of needle-nose pliers or crimpers, a tape measure, and a screwdriver or nut driver.



Materials

Make a list of the parts and materials needed. Downspout elbows and extensions come in a few standard shapes, sizes, colors, and materials to fit your gutters. Ask if the materials you choose can be painted to match your paint color or blend into your landscaping. Sewer standpipes must be sealed with a rubber cap secured by a hose clamp or with a wing-nut test plug. Most standpipes are between three and five inches wide. Measure the inside diameter of yours before shopping.

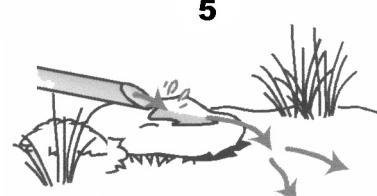
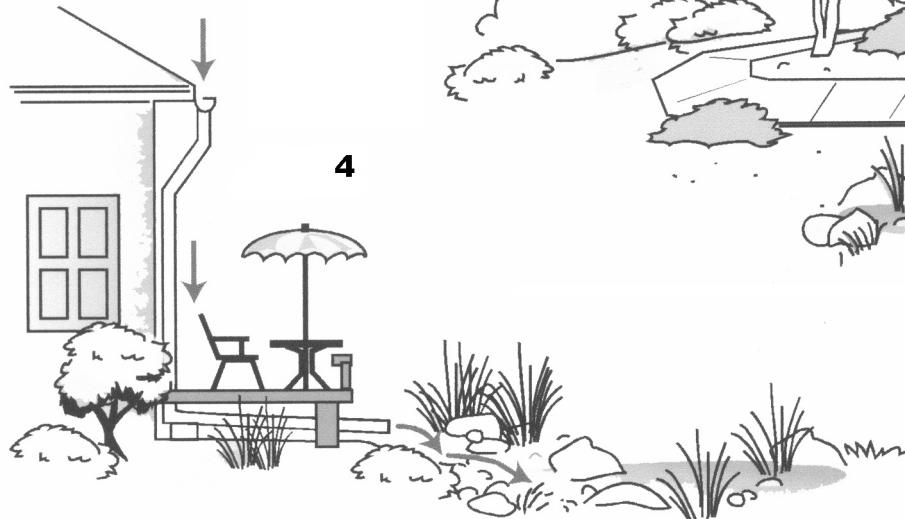
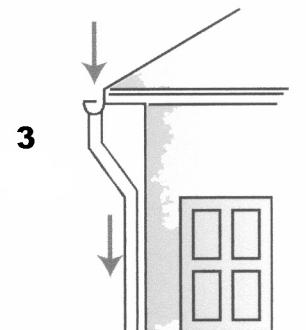
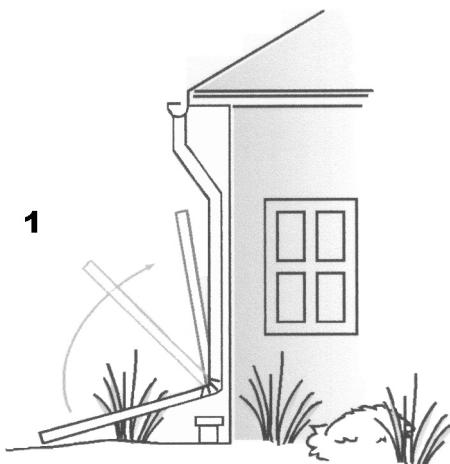
Some downspouts are attached only to the gutter and the sewer standpipe. If so, you may need to secure your downspout to your house with a bracket or strap to keep it in place when you disconnect.

Use durable, gutter-grade materials such as aluminum, steel, copper, vinyl, and plastic. Black ABS SCH 40 plastic is a durable option found in most hardware stores and home centers. **Do NOT use corrugated black plastic (ADS), roll-out-hose, PVC pipe, dryer hose, swivel or open-trough materials because of their limited durability.**



Other suggestions

- 1 Consider installing a hinged downspout elbow and enclosed extension that you can flip up against the house during dry weather or lawn mowing. The extension must be enclosed, not an open trough. (see diagram 1)
- 2 Think about creating a space to disconnect by removing paved surfaces, such as concrete pathways, patios or unused driveway area.
- 3 Replace pavement or concrete with pavers or gravel where appropriate to allow for infiltration. (see diagram 3)
- 4 Extend downspouts underneath a deck or raised patio to get runoff to a landscaped area. (see diagram 4)
- 5 Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of downspouts to control erosion, help direct runoff, and add visual interest. (see diagram 5)
- 6 Incorporate other stormwater management systems into your downspout disconnections, such as a rain garden, soakage trench, or rainwater harvesting system. See page 10 for more information.



3. Disconnect

All disconnections should meet the safety considerations found on page 5 and the water should flow away from all structures.

A Measure the existing downspout from the top of the standpipe and mark it at about 9 inches above the standpipe. You may need to cut the downspout higher depending on the length of your extension.

B Cut the existing downspout with a hacksaw at the mark. Remove the cut piece.

C Plug or cap the standpipe using an in-pipe test plug or an over-the-pipe cap secured by a hose clamp. Do NOT use concrete to seal your standpipe.

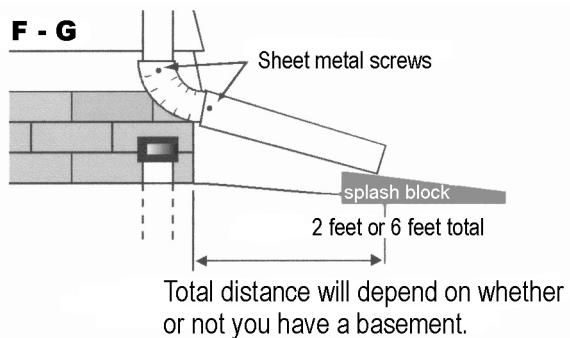
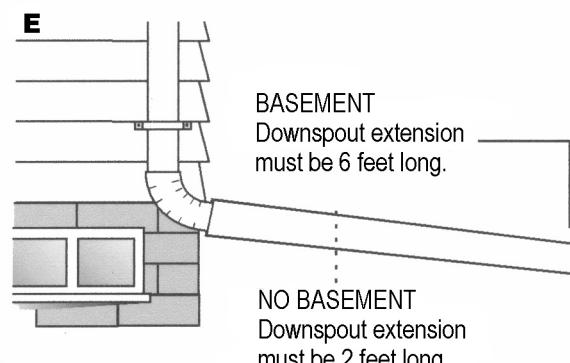
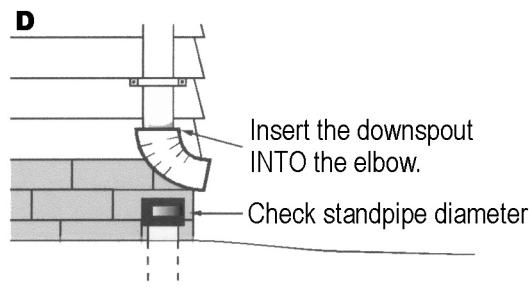
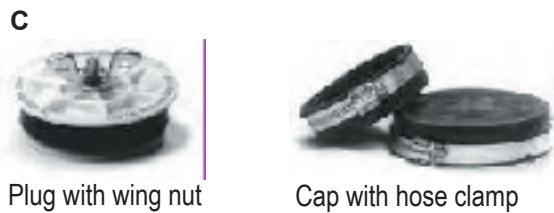
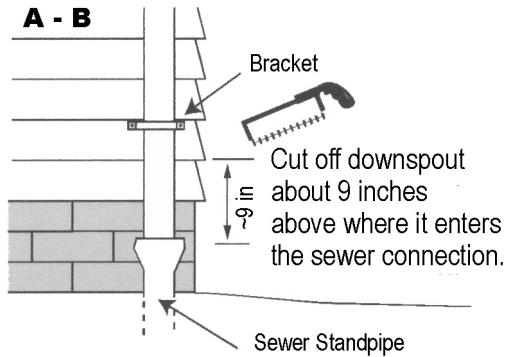
D Attach the elbow. Be sure to attach the elbow OVER the downspout. Do NOT insert the elbow up inside the downspout or it will leak. If the elbow does not fit over the downspout, use crimpers or needle-nose pliers to crimp the end of the cut downspout so it slides INSIDE the elbow.

E Measure and cut the downspout extension to the desired length. Attach the extension to the elbow by slipping the extension OVER the end of the elbow. Do NOT install the elbow over the extension or it will leak. The length of the extension will depend on site conditions and where you want the downspout to drain.

- Downspouts must drain at least 6 feet from basement walls and at least 2 feet from crawl spaces and concrete slabs.
- The end of the downspout must be at least 5 feet from your property line, and possibly more if your yard slopes toward your neighbor's house.

F Secure the pieces with sheet metal screws at each joint where the downspout, elbow, and extension connect. It helps to pre-drill holes for the screws.

G Using a splash block at the end of the extension is optional, but it will help prevent soil erosion.



4. Maintenance

Proper maintenance of your gutters, downspouts, and landscaping can reduce problems.

Gutters:

- Clean at least twice a year, and more often if you have overhanging trees.
- Make sure gutters are pitched to direct water to downspouts.
- Caulk leaks and holes.
- Make sure roof flashing directs water into the gutters.
- Look for low spots or sagging areas along the gutter line and repair with spikes or place new hangers as needed.



Downspouts:

- Check and clear elbows or bends in downspouts to prevent clogging.
- Each elbow or section of the downspout should funnel into the one below it. All parts should be securely fastened together with sheet metal screws.

Landscaping:

- The ground should slope away from structures.
- Don't build up soil, bark dust, or woodpiles against the siding.
- Avoid draining water onto impermeable plastic weed block or cloth.

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 or lrca@lrca.org.

Additional Information

There is a vast amount of information available on the internet. We recommend these websites:

www.stormwatercenter.net

www.epa.gov/owow/nps

www.cwp.org

www.depweb.state.pa.us/portal/server.pt/community/dep_home/5968

www.pacd.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 or www.lrc.ca.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***

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570-348-5330
www.scrantonsewer.org

Lackawanna River Corridor Association
2006 North Main Avenue
Scranton PA 18508
570-347-6311
www.lrc.ca.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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