



Image courtesy of Krisztian Varsa

Slow it Down and Soak it In: Disconnecting and Redirecting Your Downspouts

Impervious surfaces* such as roofs, increase runoff by preventing rain water from being absorbed into the ground. In precipitation events, stormwater runs over impervious surfaces and picks up pollutants such as nitrogen, phosphorous, suspended sediments, organic chemicals, heavy metals, and oil which are washed directly into our storm systems and local waterways.

Downspouts collect stormwater from roofs and gutters and transport the stormwater away from buildings. Often, the stormwater is directed to another impervious surface such as a street where the water picks up additional pollutants. Downspout disconnection is an affordable way to slow down and soak in stormwater runoff.

*Impervious surfaces are natural or man-made materials which prevent infiltration of water into soil. These man-made materials include roads, sidewalks, parking lots, driveways and rooftops.

What is a Downspout Disconnection?

By disconnecting a downspout, the flow of the stormwater off a roof is no longer directed to an impervious surface, but instead to a pervious surface such as a yard, garden, or conservation landscape.

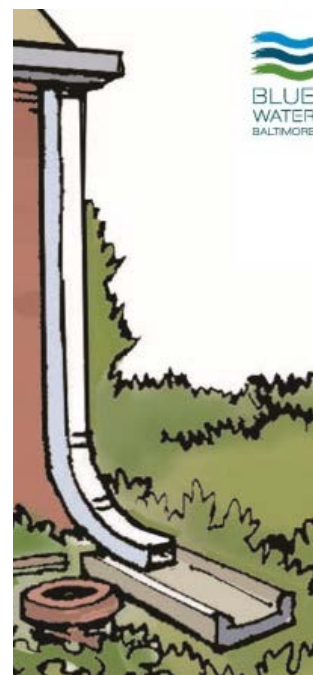


Image courtesy of Blue Water Baltimore

Benefits of Disconnecting and Redirecting a Downspout

Disconnecting a downspout reduces the volume of stormwater and pollutants entering storm drains.

Water quality and personal benefits of downspout disconnection include:

- Reducing flooding and erosion
- Preventing pollution
- Recharging groundwater
- Conserving water

A disconnected downspout can be redirected into rain gardens, conservation landscaping, or a water harvesting system such as a rain barrel. This water can be reused for landscape needs. Read more about the benefits of rain barrels in the *University of Maryland Extension Rain Barrel Extension Brief*.

The greatest benefit of disconnecting a downspout is contributing to the overall health of your local waterways and the Chesapeake Bay.

Tools & Materials Needed

Tools: Hacksaw, drill, pliers, screwdriver, tape measure, shovel (optional).

Materials: Metal screws or adhesive, standpipe cap, downspout elbow and extension, splash pad or loose rocks.

How to Disconnect a Downspout

First, obtain and complete any applications, plans, reviews, and permits from the local government, homeowners association, or regulating authority for the downspout disconnection practice.

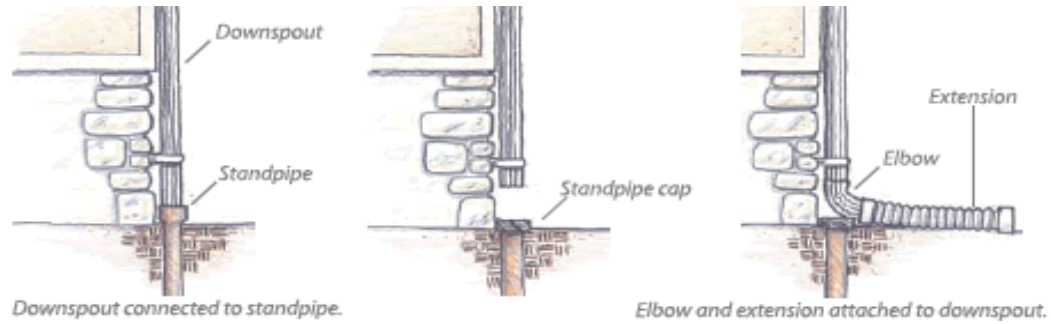


Figure 1. Image courtesy of Mid-America Regional Council

Step 1: Determine where stormwater will go

Before disconnecting a downspout, consider the following guidelines for redirecting stormwater:

1. The downspout should redirect stormwater away from the building a **minimum** of 5 feet from homes with crawlspaces or 10 feet for homes with basements.
2. The point where stormwater reaches the pervious surface should be at least 6 feet from any impervious surface.
3. The downspout must be directed to pervious surfaces such as a yard, garden, forest, or conservation landscape with no greater than 5% slope (equal to a 6-inch rise over 10-foot run).

Observe where the stormwater will flow before disconnecting - perform a test with your hose.

Step 2: Cut the existing downspout

To redirect the stormwater from the vertical pipe, the first step is to cut the existing downspout pipe.

1. Measure nine inches above where the downspout pipe enters the ground at the standpipe (Figure 1).
2. Using a hacksaw, cut the downspout.
3. Remove the excess pipe.

Step 3: Cap the standpipe

To prevent stormwater and debris from entering, cap the standpipe.

1. Measure the standpipe diameter.
2. Install an accurately fitting plug or cap.

3. Do *not* plug the standpipe using rags or other materials that could cause blockages in the stormwater system. Capping is best.



Figure 2. Image courtesy of Blue Water Baltimore

Step 4: Install new elbow and extension

The elbow and extension directs the water away from the building. There are various methods to redirect the stormwater, including: similar downspout pipe material, plastic hoses, or a flexible extension.

1. If necessary, crimp the current downspout to slide on the new elbow or extension;
2. Attach elbow or extension to the downspout over the existing downspout;
3. Based on the disconnection type, either use adhesive or screws to attach elbow or extension;
4. If removed for installation, reinstall a hanger bracket above the new disconnection point.

Step 5: Add a splash pad

The stormwater flowing from the roof to the gutters and downspout is moving very quickly and should be slowed to avoid erosion on pervious surfaces. Splash pads can aid in directing stormwater further from a building (Figure 2). There are several types of splash pads including:

- Plastic or stone splash guards
- Loose stone or rocks

Disconnected downspouts can be redirected to rain gardens, which are planted depressions designed to collect and absorb rain water coming from the disconnected downspout. Learn more about the benefits of rain gardens in the *University of Maryland Rain Garden Extension Brief*.

Step 6: Maintenance

Once the disconnection is complete, continue normal gutter and downspout cleaning to remove debris and maintain the area around the splash pad to ensure no erosion is occurring.

Additional Resources

Blue Water Baltimore Disconnection Guide:
<http://www.bluewaterbaltimore.org/programs/clean-waterways/waterauditprogram/downspout-disconnection/>

Alliance for the Chesapeake Bay Resource Guide:
<http://stormwater.allianceforthebay.org/take-action/structural-bmps/downspout-disconnect/>

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Lackawanna River Clean Disconnection Guide:
<http://www.lrca.org/lrca/SpecialProjects/pdf/DownspoutDisconnect.pdf>