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How to Safeguard Your Home and the Environment by Disconnecting Downspouts

Stop Sewer Backups

Connected downspouts — what are they?

Many older homes, especially in cities, have gutters connected directly to the sanitary sewer. This means that rain from the roof runs directly into the sewer. Not all downspouts that look like this picture are connected to the sanitary sewer; some may empty into a storm drain. Call your local sewer system authority or public works department to find out if your connected downspout empties into the sanitary sewer.

Why is this a problem?

The problem is too much water. Sanitary sewer systems can only handle a certain amount of water. During a rainstorm, water gets into the sewer from connected downspouts and other sources. When there is too much water for the system, the excess has to go somewhere, and that somewhere is often somebody's basement, a manhole, or a nearby creek or river. Municipalities have a legal requirement to stop water from overflowing out of sewers. Even if the water does not overflow, it's still a problem, because the wastewater treatment plant has to treat the extra water.

Why should you care?

Sewage backups and overflows are messy, costly, and a threat to health and the environment.

Cleaning house. When there is a sewer backup into a house, the homeowner may have to pay the cost to clean up, repair damage, and replace ruined carpets and furniture. Basic homeowner's insurance often does not cover this damage (unless the policy has an added clause or "rider").

Health. Raw sewage contains microorganisms that can cause diseases such as hepatitis, giardiasis, and gastroenteritis.

Long term environmental damage. Raw sewage in streams and lakes can cause illnesses in fish, kill aquatic life, and make the water unusable for swimming, fishing, and as a drinking water source.

Higher costs mean higher utility rates. The utility ends up treating the extra water, and may even have to increase the size of the treatment plant. The utility may also have to pay fines when raw sewage is released to the environment. Increased utility costs are passed along to consumers as rate increases.

What can you do?

You should check to see whether disconnecting your home's downspouts can help solve the problem. Disconnection is usually a simple, relatively inexpensive process. The steps are shown on the inside of this brochure. Your local sewer system authority or public works department should be able to tell whether your downspouts are connected to the sanitary sewer and, if so, whether disconnection makes sense.

You can also let other people know why downspouts need to be disconnected and how sewer overflows cost the entire community.

How to Disconnect Your Downspout

Check Before You Start

The steps outlined below are general guidelines for disconnecting downspouts and do not apply in all situations. Contact your local sewer system authority or public works department to see what specific guidance is available and to obtain information on local conditions, materials, and regulations. You may want, or be required, to hire a professional contractor or plumber to do the work. In some areas, an inspection of the disconnection is also required. Be aware, too, that some municipalities discourage or prohibit downspout disconnection due to local zoning or concerns about runoff.

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1. Tools and materials you are likely to need:

safety glasses
work gloves
hammer
chisel
hacksaw
measuring tape
screw driver
trowel or other digging tools
bucket (for concrete)
spare gutter pipe
splash block
gutter "elbows" or other discharge devices
flexible/corrugated pipe
concrete mix (or other permanent, weatherproof sealant)
plastic boot cap

2. Safety

Make sure that you have the safety equipment that you need, including work gloves and safety glasses. Many disconnections involve hammering and sawing which can be hazardous to your eyes. Aluminum gutters can be extremely sharp after being cut, so protect your hands with work gloves.

3. Call before digging

If you bury part of your discharge pipe, remember that even digging a shallow trench can sever a utility line. To be safe, call your local utilities (most jurisdictions have a "call before you dig" hot line) to make sure you avoid digging near service lines.

Disconnection Steps

STEP 1 — Remove downspout from boot

Unless your gutter downspout can be easily lifted out of the boot, you'll need to cut it just a few inches above the boot—making sure that you've left enough room for the downspout "elbow" or other end-of-pipe device.

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STEP 2 — Remove the boot (Optional)

You can leave the boot in place, or remove the boot for a more finished look. To remove the boot, cut it with a hacksaw, or hammer and chisel. Be sure to wear safety glasses, and remove sharp edges that remain on the pipe after cutting.

STEP 3 — Seal the boot

The boot must be permanently sealed to keep water from entering the sewer line. There are different ways to seal the pipe so before proceeding, check to find out what approach is recommended for your area. Some jurisdictions suggest the following method:

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The pipe can be sealed with concrete or other material that makes a permanent, weatherproof seal. Before starting, check the pipe to make sure that you will not block any other junction (such as your washing machine draining into the same pipe). Then push balled-up newspaper tightly three or four inches down into the boot. Make sure that the fit is snug, otherwise the concrete could actually block the sewer. Carefully pour the concrete or other material that gives a permanent weatherproof seal into the pipe, and smooth the top surface.

Other areas do not recommend using newspaper and suggest the use of friction or sewer plugs, which are often available from licensed contractors.

STEP 4 — Redirect rainwater with end-of-pipe device(s)

The last step is to redirect the rainwater away from the house. The exact approach depends on individual conditions. It is important that the rainwater discharges a safe distance from your foundation (three or four feet is usually enough), that the runoff is not a nuisance to your neighbors, or causes other problems, like discharging across a sidewalk so that ice forms in the winter.

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Sometimes all that is needed is an "elbow" pipe to the bottom of the gutter downspout and a plastic or concrete splashblock. Other situations (such as sloping ground) may require a different solution. There are a number of devices available designed to channel the rainwater away from your home (ask a hardware store to recommend the best one for your needs).

Check with your local sewer system authority or public works department for other redirection options in your area.

Disconnection is usually a simple, relatively inexpensive process.

Special Situations

Steep Slopes

If the gutter is next to a steep slope, be careful that the discharge from the new downspout will not wash away soil on the hillside. There are two ways to avoid this: attach a pipe long enough to drain the rainwater to a safe area, or install an attachment that controls how fast water comes out of the gutter. Always make sure that you are not draining water onto a neighbor's property and that runoff from your downspouts does not cause erosion or flooding of your neighbor's yard. Do not discharge stormwater too close to your property line.

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Extended Boot

Some older homes have boots that extend several feet above the ground. You can leave the boot in place and permanently seal the top of the pipe (step 3) or you can remove the tall boot. If you remove the boot, you will usually need to install a new section of gutter pipe and then an end-of-pipe device (step 4).

Inadequate Drainage

Some gutters may be located on very flat ground with no place for the water to drain. One solution is to pipe the water safely away from the house with a pipe attached to the downspout's "elbow." Another option is to use a device that will disperse the water enough so that it doesn't form a puddle. Make sure that it is draining away from your foundation.