

Lansing's CSO Control Program Inflow Removal

www.LansingCSO.com

Inflow Helpline: 517.394.5577



Virg Bernero, Mayor

Inflow is stormwater that enters the sanitary sewer system through:

- Disappearing Downspouts
- Catch Basins
- Loading Dock Drains
- Internal Roof Drains
- Yard Drains
- Pumped Footing Drains

These inflow sources can lead to:

- Basement Backups
- Sanitary Sewer Overflows
- Unnecessary Treatment Costs

Stormwater does not need to be treated at a wastewater treatment plant, so it makes economic sense to remove inflow.

What is Inflow?



As part of the CSO Program, every property owner is required to remove all sources of inflow from their private property and to cover associated costs. This brochure will help answer frequently asked questions and provide additional resources.

Property Owners: Know Your Responsibilities!

Inflow sources must be removed from your property **prior to CSO construction** in your area. The City will mail you multiple early reminders, giving you plenty of time to budget and complete the work:

- First notice: 18 months prior to construction
- Second notice: 10 months prior to construction
- Third notice: 1 month prior to construction
- Final notice: 3 days prior to work on your street
- Notices of non-compliance: fines and increased property owner costs can result if inflow sources are not removed prior to construction

The most common correction is a “disappearing” downspout disconnection. This is explained in detail on the inside of this brochure, and costs around \$25 per downspout to complete. You can easily do this work on your own by following the instructions provided.

Other common sources of inflow are shown on the back of this brochure. Below are approximate costs to remove some of these other inflow sources:

- Catch Basins, Patio Drains: \$30 per foot of new pipe
- Sump Pump Disconnections: \$8 per foot of new pipe

These more complex inflow removals may require the assistance of a professional contractor. More detailed information is also available on the City's website at www.LansingCSO.com.

The City of Lansing thanks you in advance for helping to remove inflow sources.

Working together, we can achieve our environmental protection and economic revitalization goals!



Downspout Disconnection Removing the #1 Source of Inflow

Here are the instructions to disconnect a “disappearing” downspout from the sanitary sewer system and to redirect the stormwater flow onto your lawn. All you need are the tools and supplies listed below and a few hours on a day when the temperature will be 50 degrees or warmer (to allow for proper concrete curing.) Remember, you can always call the **Inflow Removal Helpline, 517.394.5577**, if you have a question.

Tools Needed:

- Hacksaw
- Tape Measure
- Hammer
- Screw Driver
- Pliers
- Pencil

Supplies Checklist:

- Sheet Metal Screws
- Downspout Bracket and Elbow
- Downspout Extension, Splash Block
- Thin Wire Clothes Hangers (2)
- Stack of Newspaper
- Concrete Ready Mix
- Bucket or Wheelbarrow
- Water Source (garden hose or container)

Safety Gear:

- Safety Glasses
- Dust Mask
- Work Gloves
- Disposable Gloves



You Can Do It! Everything you need to know to disconnect your own downspouts is on these pages. The City can also give you advice on how to complete other inflow source removal projects. Just call the Inflow Removal Helpline at 517.394.5577.

Downspout Options: The Cheap and the Innovative



Flexible Extension

No matter what downspout option you choose, **make sure stormwater drains at least four feet away from your foundation—more if the ground doesn't slope away from the building.** This will prevent ponding, flooding, and inflow through the foundation drain.

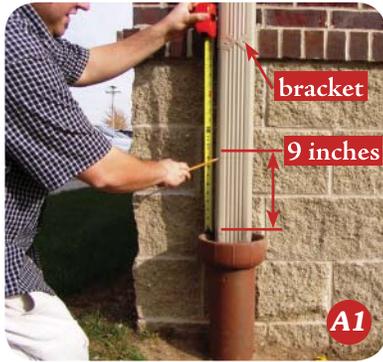
- **Traditional Elbow and Extension:** The extension needs to be at least 4 feet long. Add a splash block if the extension is too short.
- **Swivel/Flip Downspout Extender:** Swivels in any direction to control drainage, flips up and out of the way for mowing.
- **Flexible Extension:** Can be routed around objects or buried underground.
- **Rain Barrel:** Learn how to build your own for under \$20 or find links to purchase one ready-made at www.midMEAC.org/LID.



Rain Barrel

STEP A: Disconnect Downspout

A1 Measure nine inches from where the downspout enters the riser pipe and mark the spot with a pencil. If there isn't a bracket securing the downspout to the siding, attach one a few inches above the pencil line using the sheet metal screws, leaving enough room to attach the new extension.



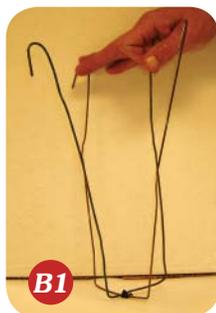
A2 Cut the downspout with the hacksaw, being careful not to cut into the siding (place some newspapers in-between to prevent damage.) Carefully pull out the cut section; the edges will be sharp.



If you want the abandoned riser pipe closer to the ground, cut the pipe to ground level, being careful not to drop anything into the opening. Now that you have removed the downspout from the riser pipe, you need to permanently plug the pipe opening.

STEP B: Assemble Wire Basket

The City requires a permanent plug for the abandoned pipe opening. To start, you need to make a wire "basket" to hold crumpled newspaper and a concrete plug inside the pipe.



B1 Using the pliers, cut off the tops of the two hangers. Bend each hanger piece into a long "U" shape, about fifteen inches long on the sides, and about three inches across on the bottom. At the top of each "U," bend the ends over to create hook shapes. Place the base of one "U" on top of the other to form a cross. Use a piece of scrap wire to secure the midpoint. You now have a wire basket.

Place the basket inside the pipe, securing it to the sides with the hooks, and bending it to fit, as needed. The four hooks should be evenly spaced around the pipe and the bottom should form a cross to hold crumpled newspaper in place.

B2 Starting at the bottom of the wire basket, fill the pipe with tightly crumpled newspaper. Leave about six inches at the top for the concrete plug.

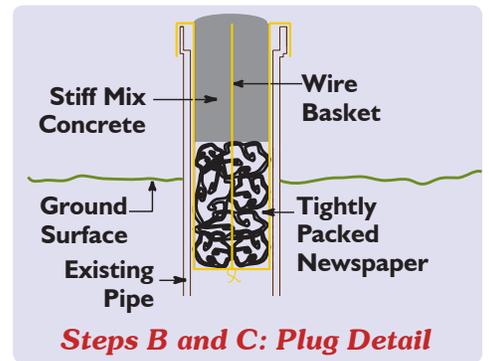


STEP C: Plug Riser Pipe

C1 It is least expensive to purchase an 80-pound bag of concrete and share it with your neighbors. Follow package instructions, and prepare a stiff concrete mix. The concrete should not be runny; it should hold its shape.



C2 Fill the rest of the pipe with the stiff mix, slightly rounding off the top. Be sure to wear disposable gloves; concrete can burn your skin. When dry, the plug should be secure and not able to turn or be removed.



Steps B and C: Plug Detail

STEP D: Attach Downspout Extension

There are many downspout extension options available to suit a variety of needs. Below are general instructions for the most basic installation.

D1 Attach the downspout elbow using sheet metal screws.



D2 Add the extension and place it on top of the splash block to route water away from the building. **It is recommended that water drain at least four feet away from the foundation.** Route the water even farther away if the ground doesn't slope away from the building.



Fact: Every downspout can deliver up to 50 gallons of stormwater a minute during a heavy storm. Downspouts left connected to Lansing's sanitary sewer system burden it with millions of gallons of unnecessary stormwater flow.

Frequently Asked Questions

Do I have to remove inflow sources on my property?

Yes. By law, (City Ordinance 1040.10) property owners cannot discharge “stormwater, surface water, ground water, roof run-off, cooling water, or unpolluted industrial process waters into any sanitary sewer.” State of Michigan Public Act No. 4 of 1998 also requires immediate disconnection of eaves troughs and downspouts from the combined sewer system.

Why do I need to do this?

The City is working toward completion of a 30-year program to separate its combined sewer system. This is required to prevent combined sewage overflows into the Grand and Red Cedar Rivers. Once the system has separate sanitary and storm sewers, all stormwater will need to be directed to storm sewers or basement backups could occur. **Believe it or not, a single downspout illegally connected to the City’s sanitary sewer can lead to a basement backup at a nearby home!** Each property owner is responsible for making sure that all sources of water from their property are routed correctly.

Am I responsible for the cost to remove inflow sources from my property?

Yes, but the City is assisting by providing a free Helpline for property owners who have questions or require advice on how to remove their inflow. The Helpline number is 517.394.5577.

Will I need to hire someone?

Most inflow removal projects are easy enough for a do-it-yourselfer to complete. See the instructions inside this brochure and visit www.LansingCSO.com for additional details. However, there are some complicated inflow removal projects (driveway drains and patio drains) that may require a permit and a licensed contractor. For assistance, call the Helpline at 517.394.5577.

What if I’m still not sure what I have to do?

Call the Inflow Removal Helpline at 517.394.5577 for friendly advice and assistance. Most inflow disconnections are easy to do, and we will be happy to help you learn how to do it!

When do I have to finish?

Inflow sources must be removed before CSO construction begins in your area. A notice and detailed schedule will be mailed to you, but consider removing inflow sources immediately.

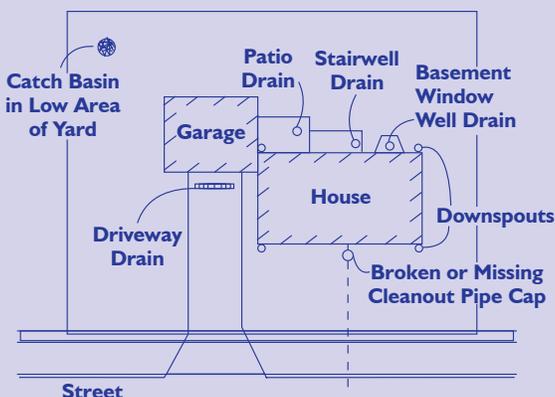
What if I don’t get it done?

A project representative will inspect your property when construction begins in your neighborhood. If your property has improper inflow sources, you must correct them within 15 days. Properties remaining in violation will face fines and other penalties.

Where can I learn more? The City of Lansing’s Public Service Department is committed to providing outstanding customer service, including ongoing public outreach activities and easily accessible information.

- **www.LansingCSO.com** has in-depth inflow removal details, up-to-date project information, contacts, and much more.
- **Inflow Removal Helpline 517.394.5577** Call for advice, answers, and to schedule inflow removal inspections.

Other Inflow Sources: Learn to Identify Them



There are a number of other ways stormwater can enter the sanitary sewer system besides downspouts. **It is important that ALL inflow sources be identified, removed and redirected.** To make sure this happens, and that the storm sewers in your area are designed to serve your needs, **property owners will be asked to complete a pre-design questionnaire prior to construction in their area.**

To complete the questionnaire, review the diagram to the left, then walk around your home and identify any potential inflow sources to be removed. Note these findings on the pre-design questionnaire and return it to the City by the due date. To ensure all sources are identified, City inspectors will visit your neighborhood.

One typical problem to look for is a broken or missing cleanout pipe cap. Caps can be easily broken if hit by a lawn mower. Replacement caps are inexpensive, easy to install and readily available at hardware or building/plumbing supply stores. Some cleanout pipes are buried. It’s important to locate yours and make sure it’s capped.

For a more detailed description of typical inflow sources, please go to www.LansingCSO.com or call 517.394.5577.

GO GREEN! With Rain Gardens and Rain Barrels

A rain garden or rain barrel would be the perfect way to soak up stormwater from your disconnected downspout! Visit www.midMEAC.org/LID to learn more about these green and beautiful backyard features.

