

Disconnect Your Sump Pump and Perimeter from the Sewer Pipe

In response to U.S. Environmental Protection Agency regulations, and the Iowa Department of Natural Resources, local governments are adopting ordinances or codes prohibiting the intrusion of extraneous storm-related water into sanitary sewers. The City of Huxley has had very strict regulations to reduce extraneous flows to sanitary sewers and will begin to enforce the code to have sump pumps and perimeters removed from the sanitary sewer to help eliminate sanitary sewers from being pumped into storm sewers and the possibility of homes and business's basements being flooded from this practice.

The City of Huxley has two separate systems to convey wastewater and storm water. Catch basins collect storm water from rainfall and snow melt from streets, yards, parking lots and then discharge it to local streams and rivers. Sanitary sewers collect wastewater from toilets, sinks, washing machines, etc and transport it to the wastewater treatment facility where it is treated. Rainwater and groundwater are nominally clean water and do not need to be treated at the wastewater treatment facility.

A sump pump is an appliance in your basement that pumps ground water out from around your basement. Some homes have a sump pump and some do not. Often it is improperly connected to the sanitary sewer system when it should be directed to a garden, yard or storm sewer if available. In the 1960's, 70's and even into the early 80's, it wasn't uncommon for homeowners to connect the sump pump to their plumbing in the basement, which is connected to the municipal sanitary sewer. The sump pump would capture rainwater that entered through the foundation of the home and pump it into the sanitary system. During abnormal storm events and the heavy ground water saturation that we have experienced in the last couple years, this excess rain water going to the sump pump would then be pumped into the sanitary systems and can overwhelm the City's sanitary systems by surcharging the pipes. A surcharged sewer flows at a level greater than the "normal" level. If the home has sanitary fixtures or floor drains at an elevation below the surcharge level, basement flooding can occur. The sanitary sewers have been designed to transfer sanitary waste only. Extraneous storm water flow added to the normal sanitary flow can exceed the capacity of the sanitary sewer resulting in a situation where the sanitary sewer is "surcharged." Basically, surcharging occurs when the amount of flow trying to get through a pipe exceeds the maximum capacity of the pipe thus building up pressure in the pipe. When pressure builds up it seeks to relieve itself through any means possible, one of which is by backing up private sanitary services and filling basements and crawlspaces. Reducing the extraneous flow will reduce the surcharging and sewer back-ups. You may not have basement flooding due to surcharged sewers. But if your plumbing pumps or drains storm-related water into the sanitary sewer, it may well be the cause of flooding in your neighbor's basement or even yours if the water cannot get out. Removal of illegal connections will significantly reduce the flow of extraneous storm-related water in the sanitary sewer system. The cost of treating this clean water could be reduced by reducing the quantity of water from the sanitary sewer.

You may have heard the phrase I and I which stands for *inflow and infiltration*. Inflow and infiltration are terms used to describe the ways extraneous fresh water (groundwater and storm water) enter the sanitary sewer system. Infiltration occurs when groundwater seeps into the sewer pipes through cracks, leaky joints, or deteriorated manholes. Inflow occurs when water is directed from concentrated sources (sump pumps, perimeter drains and downspout drains) into the sanitary sewer.

The water entering the sanitary sewer system creates two main problems:

First, it consumes sewer system capacity. It is estimated that for every inch of rainfall the average house roof sheds about 650 to 1000 gallons of water. An 8-inch sanitary sewer can handle domestic wastewater flow from up to 200 homes, but only 8 sump pumps, operating at full capacity, or six homes with downspouts connected to the sewer, will overload this same 8-inch line. If extraneous freshwater is directed into the sanitary sewer the capacity is overwhelmed, sewers back-up into houses, and the system will eventually overflow releasing raw sewage into the environment. This creates health and safety issues that could have significant costs associated with it.

Secondly, extraneous fresh water that reaches the wastewater treatment plant requires treatment. The size and cost of treatment is increased, it increases wear-and-tear of the equipment, and reduces equipment life span. The added cost of equipment upgrades and operations is then passed onto each customer.

Find your sump pump. If the sump pump is connected to any other pipe in your home, it is most likely improperly connected. The drainage pipe from your sump pump should go from the pump directly outside your home at ground level. When a sump pump is re-plumbed to pump ground water to the yard or storm sewer, that water no longer takes up space in the sewer system.

Before you disconnect make sure your sump pump is only draining clear floodwater from your basement. Sump pumps used to drain a washing machine or sink drain should **NOT** be discharged into your yard or the storm sewer. Not only is it important to ensure the pumped water is draining properly away from your home, but once the sump pump is disconnected from the sanitary pipes, the pipes need to be properly sealed to prevent potentially dangerous sewer gases from escaping into your home.

Disconnecting your own sump pump is possible if you are skilled at plumbing and electrical work. While it may appear relatively simple for the homeowner to perform the disconnection themselves, a licensed and bonded plumber will ensure the disconnection is done safely and done right.

The following are some possible solutions:

1. The sump pipe could be run overland to a ditch or swale that could drain to another location. Also, a long flexible tube that can be moved around the yard to avoid discharge in only one portion of the yard could be used.
2. The sump pump can be run underground through a 4" or 6" diameter perforated PVC pipe, with holes at the bottom and backfilled with washed gravel. An overflow tube should be placed at the opposite end to allow the water to escape in the event that the volume of the pipe is exceeded. This pipe tube is located at a convenient area of the yard such as a garden.
3. Route the sump pump to a City storm sewer via a 1 ½ " or 2" pipe and tie into the back of an inlet or the crown of the mainline pipe by way of a core hole. No breaking out of the concrete pipe is allowed. Whether the homeowner or a hired contractor will be making the tap a permit and street deposit will be required with proper inspections made by public works staff.

Note- Caution must always be taken to prevent freezing in pipes. This could be done by placing a tee where the pipe exits the building. One branch could go underground and the other could be capped off or valved to pump into the yard during the winter. Another option is to have the 2" diameter sump pump tie into the larger 4" or 6" pipe at the house allowing for expansion and overflow. Pipes flowing overland should be kept no farther than 10 feet from the house in winter to avoid icy sidewalks.

The City has completed studies conducted by City staff for the purpose of identifying illegal connections to the sanitary sewer lines. Such studies included televising, smoke and dye testing of the sewers and house lines and house inspections. City staff will be performing home inspections and conducting surveys this summer to continue to identify these sources of inflow and infiltration. All employees of the **City of Huxley** will have valid identification for your protection. If you should have any questions, please **call 515-597-2256 or e-mail publicworks@huxleyiowa.org**.

Lot Drainage Tips

1. Install an effective drainage system and keep downspouts clean.
2. Keep your drainage system clear so that water can move freely down and away from the side of your house.
3. Attach extensions so that water is delivered at least 10 feet from the foundation.
4. Disconnect any downspouts or 'clear' water connections that drain directly into the sanitary sewer system.
5. Grade and landscape your lot to move water away from the house.
6. Ensure a positive slope away from the wall for at least the first 10 feet. The ground should drop a minimum of 6 inches in this area.
7. Use landscaping to disperse the water more evenly.
8. Seal the cracks between your house and your driveway or sidewalk.

If You Have a Sump Pump

1. Sump pump pipes should discharge water at least one foot from the foundation wall. *(The flow from here should meet or exceed the slope of 6 inches for the first 10 feet).*
2. If your sump pump discharges on the ground, place a splash pad below where the sump pump discharge pipe comes through the foundation wall.
3. Never turn off your sump pump. If you can have a spare pump in the house, just in case.
4. It is dangerous to drain sump water onto the sidewalk. The resulting algae and ice build-up create a slippery surface that can create a liability issue. However, the flow should not be directed onto an adjacent property or City property.
5. Consider a backup battery system for your sump pump in case of power outages.