

# BASEMENT FLOODING

Prevention  
Guide for  
Homeowners



St. Catharines

## Did You Know...?

- Floods are the most common hazards in Canada.
- Water damage is a common cause of loss for homeowner insurance.
- A heavy rainfall can result in flooding, particularly when the ground is still frozen or already saturated from previous storms.

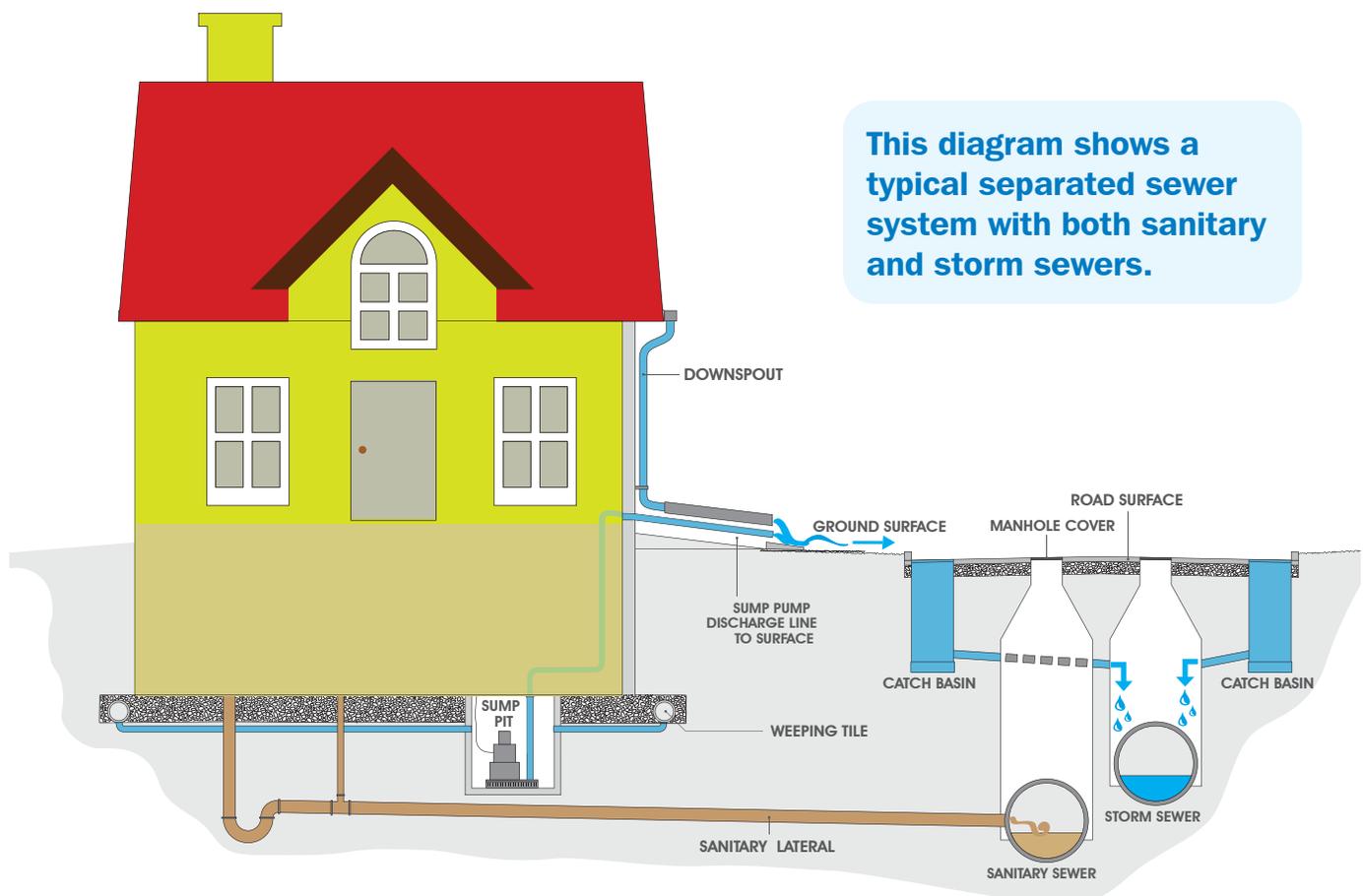
The City of St. Catharines is providing this guide for residents to help increase awareness about flooding and flood prevention. This guide includes the different ways your basement may become flooded, and what you can do to reduce the risk.

## St. Catharines Sewer System

Stormwater and wastewater collected from your home typically drains off your property into the sewer system under your street.

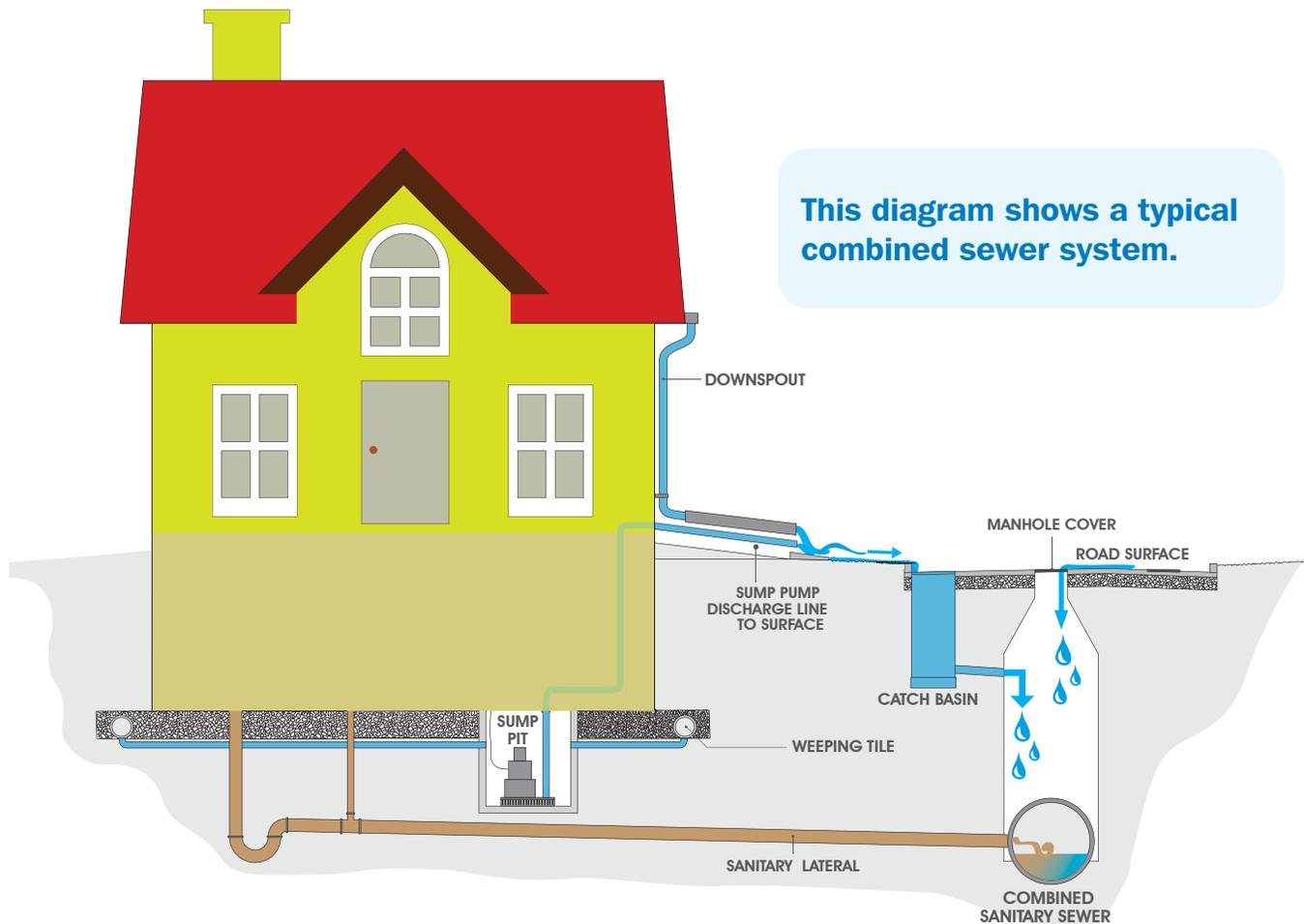
**Storm sewers** collect rain and snow melt from properties and streets and directs it to nearby creeks and ultimately to Lake Ontario.

**Sanitary sewers** collect sanitary sewage from household drains and direct it to wastewater treatment plants where it's thoroughly treated. If your street is serviced with both sanitary and storm sewers this is considered a separated sewer system.



This diagram shows a typical separated sewer system with both sanitary and storm sewers.

**Combined sewer systems** are an older sewer system designed to collect both storm and sanitary water in one pipe and direct it to a wastewater treatment plant. This can put considerable pressure on the system during intense rain storms.



## Types of Basement Flooding

### Infiltration Flooding

When the area surrounding your home becomes saturated with water or the groundwater level rises above the level of your basement floor, water may infiltrate your basement through cracks in the foundation walls and floor. This type of flooding may also occur during a power outage if you have a sump pump without a back-up system.

### Overland Flooding

When excess water flows over the ground due to intense weather conditions it may enter your basement through exposed window wells, vents and other openings.

## Sewer Backup Flooding

When normal wastewater levels are exceeded in the sewer due to an intense weather event, an overload of inflow and infiltration can cause wastewater to surcharge into your home. Blockages in sewer laterals or the main sewer can also cause sewage to backup into your home. Tree roots, fats, oil and grease in sewer lines are the most common causes of sewer blockages.

# Flood Prevention

## Immediate Protection

### Dispose Of Fats, Oils and Grease (FOG) In Your Green Bin

As FOG cools it separates and floats on the water surface, collecting and forming stubborn deposits on plumbing and sewer lines. This may result in the clogging of pipes and sewers, unpleasant odors, sanitary sewer overflows and basement flooding.

- Never pour FOG down your drains.
- Do not put objects down the toilet or drains that your plumbing system was never intended to handle.

### Outdoor Landscaping and Maintenance

Some simple yard maintenance around your property may greatly reduce your risk of basement flooding.

- Ensure borders around flower gardens do not create dams that retain water.
- Clear debris such as leaves, twigs and other sediments from your eaves troughs and downspouts to ensure proper drainage.
- Clear all debris and obstacles from the closest catch basin as they may inhibit flow and cause ponding. Only clear catch basins if you can do so safely.
- When considering extensive landscaping be mindful of projects that may jeopardize the natural flow of water across your property or your neighbour's property.
- Check basement window well drains for blockages and consider window well covers to prevent overland flooding.

## Sump Pump Maintenance

Sump pumps are designed to pump water collected by weeping tiles in the basement sump pit onto your yard and away from your home.

- If your home is equipped with a sump pump, regularly activate the sump pump float to ensure it is functioning properly.
- During floods it is common for households to lose power; you may want to consider installing a backup system in your sump pit for such occasions.
- Follow the sump pump maintenance requirements listed in the manufacturer's manual or contact a qualified plumbing contractor.

## Foundation Leaks

Homeowners can protect themselves by inspecting their foundation for possible sources of infiltration.

- Waterproof cracks in your foundation walls, floors, windows and ensure all exterior conduits are adequately sealed.

## Downspout Disconnection

Downspouts connected directly to the sewer can overwhelm the system and cause basement flooding during intense storms.

- Detach your downspouts so water drains onto your lawn, garden or flowerbed.
- Make sure your disconnected downspouts are draining properly, **ideally a minimum of two metres** away from your foundation's walls.
- Avoid directing downspout discharge towards your neighbours' property or directly on sidewalks.



## Rain Barrels

Investing in a rain barrel can help prevent overland flooding by reducing the amount of water on your property and the amount of water entering the sewer system.

- Ensure your downspout is connected to the rain barrel properly and the overflow hose is directed towards an area where water can easily be absorbed.
- The rain barrels' overflow hose must be directed towards your lawn or flower bed and not onto your neighbours' property.

## Long-term Protection

### Weeping Tile Disconnection

Weeping tiles are a perforated piping system that surrounds the basement footing. It is designed to receive water that has seeped down the foundation walls and directs it away from your home. During intense storms weeping tiles connected directly to the sanitary sewer can overwhelm the system and cause sewage to backup into your home.

- Consider having a qualified plumber investigate disconnecting your weeping tiles from the sanitary sewer system.

### Proper Lot Grading

Over time landscaped soils around your home can settle and ultimately slope towards your foundation. This can result in an increased possibility of water entering through cracks in your foundation or overloading your weeping tiles.

- If your property slopes towards your house you should get your property re-graded. Talk to a landscaping professional to discuss your options.

### Sanitary sewer backups

Sanitary sewer backups can occur from blockages in the main sewer or surcharging during intense weather events resulting in basement flooding.

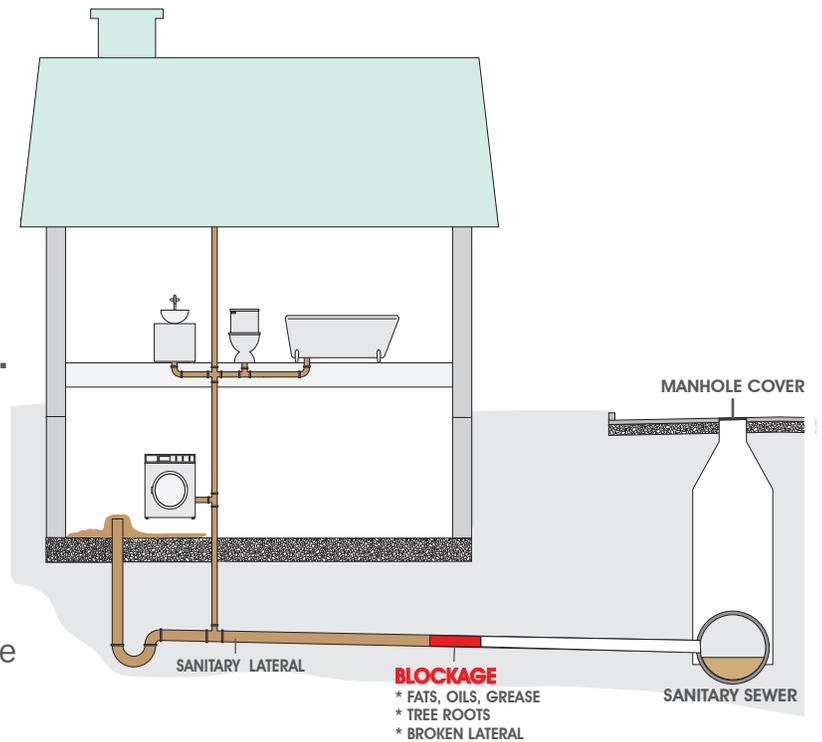
- Homeowners can install a backwater valve which can prevent wastewater from backing up into your home.
- Homeowners who have had documented basement flooding problems related to sanitary sewage backups due to sanitary sewer surcharge may qualify for the City's Flood Alleviation Program (FLAP).

## Sanitary Lateral Blockage

The sanitary lateral is the pipe that delivers the wastewater from your home to the main sewer. Sanitary laterals can become blocked with grease or tree roots, which can lead to sewer backups and result in basement flooding.

**Homeowners are responsible for the sanitary lateral up to the property line.**

- If a blockage occurs have a drainage contractor visit your home to inspect your lateral.
- If you have a history of tree root blockages in the lateral, consider hiring a professional to re-line the pipe or clear it on an annual basis.



## St. Catharines Flood Alleviation Program (FLAP)

### What Is Flap?

The City of St. Catharines Flood Alleviation Program (FLAP) provides grants of up to \$3,500 to help cover the costs of installing protective devices such as a sump pump and backwater valve. These devices can help provide immediate basement flooding protection and decrease the volume of rainwater discharged into the sewer system.

### How Do You Qualify?

Homeowners who have had a sanitary backup as a result of sewer surcharging may be eligible for the FLAP program. **For more information about the FLAP program call 905.688.5600**

## Insurance Considerations

Homeowners are encouraged to check with their insurance company to ensure they have adequate flood coverage. Flood coverage varies, so it is important to have an insurance representative explain it in detail before you agree to a policy. In general, infiltration and overland flooding is not covered by most home insurance policies. Sewer backup flooding may be covered if your policy has a sewer backup clause. Talk to an insurance representative and know your options. If your basement is flooded, keep an itemized list of items affected by the flood.

# What To Do If Your Basement Is Flooded

Report basement flooding to the City by calling 905.688.5600.

Determining the cause of basement flooding is not always easy. The City needs as much information as possible from affected residents, including:

- Where is the water coming from?
- When did it start?
- How much water is there?
- What is the clarity of the water?

## Contact Information

Dial 911 **ONLY** in case of an emergency

City of St. Catharines:  
905.688.5600

## Turning Off The Water

If the flooding is due to a burst water supply pipe in your home, and if you are safely able to do so, shut off the main incoming water valve (typically located by the water meter). This could help minimize the damage.

Water from a burst supply line will be clean, and likely coming down through the house from an upper level.

If flooding is due to a sewage backup (or you're not sure), don't flush the toilet, run a washing machine, dishwasher or any other feature with a drain since this can increase the flooding.

## Safety First:

- Water could extinguish a pilot light on a gas appliance. If you detect gas, leave the house immediately and contact your gas company.
- Open windows to let fresh air in.
- Keep children and pets out of the area until cleanup has been completed.
- Wear overalls, gloves, protective eyeglasses, rubber boots and a mask.
- Remove dry belongings as quickly as possible.
- Remove water using old rags and towels. A wet/dry vacuum may also help with this.
- Discard all contaminated items that cannot be washed and disinfected. Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Wash all surfaces with hot water and liquid detergent, rinse and thoroughly dry and ventilate the area. Use a de-humidifier and fans if necessary. Sanitize walls and floors.
- Wash all clothes worn during the cleanup in hot water (check manufacturer's washing instructions) and detergent. These clothes should be washed separately from uncontaminated clothes and linens.