

Port Hawkesbury's Homeowners Guide to Flood Prevention and Safety



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Flood Facts

Around the world, floods are one of the most common natural disasters, affecting millions of people every year.

They can be caused by heavy rainfall, snowmelt, storm surges, or overflow of rivers, lakes, and coastal areas. Homes and businesses built in low topographical areas or close to natural water courses are at much greater risk of flooding.

Here in Port Hawkesbury the most common flooding we get is caused by heavy rainfall. While we do have lots of watercourses around us, such as Grants Pond and the Strait of Canso. Neither of these have flooded to the point of endangering homes or other infrastructure.

Climate change is contributing to the increase in rainfall patterns around the world. As global temperatures rise, the atmosphere can hold more moisture, leading to more intense and frequent rainfall events. This phenomenon results in altered precipitation patterns, causing both prolonged droughts and more intense rainfall and flooding in various regions, impacting ecosystems, agriculture, and human settlements.



The water cycle. In natural landscapes, water slowly infiltrates into the earth, and runs off into rivers and streams (left). In urban landscapes, it quickly runs off impermeable surfaces (right).

Your Urban Water Cycle

The Urban Water Cycle is referring to the flow and management of water within an urban or city environment. In our case, it refers to how water flows and is managed throughout Port Hawkesbury. It includes the movement, use, and treatment of water to meet the needs of the town environment.

Water Supply: Involves the collection and treatment of water from Landrie Lake (The raw water supply for Port Hawkesbury) and treated at the Water Treatment Plant to ensure it is safe for drinking.

Distribution: After treatment, the water is sent from Point Tupper to residents of Port Hawkesbury and surrounding businesses.

Water Use: Town residents use water for various purposes such as: drinking, cooking, bathing, cleaning, industrial processes, and irrigation.

Wastewater Collection: After use, water becomes wastewater or sanitary sewer, which includes domestic and industrial sewage. Wastewater is collected through a series of pipes (sewer mains) and conveyed to the Wastewater Treatment Plant towards Port Hastings.

Wastewater Treatment: At the Wastewater Treatment Plant, the collected wastewater undergoes various treatment processes to remove pollutants and contaminants before it is discharged back into the Strait of Canso.

Stormwater Management: Rainwater can pose challenges as it runs off impervious surfaces like roads and buildings. Urban stormwater management involves capturing and controlling rainwater runoff to reduce flooding. The runoff is collected and directed towards storm drains where it is then taken through the storm main and back into the Strait of Canso.

What is sanitary sewer?

Sanitary sewer is used water from households, industrial, commercial, and institutional sources. It is the water that flows from toilets, sinks, showers, and washing machines. Sanitary sewer often contains substances that may pose risks to human and environmental health and is directed from homes and other buildings to nearby wastewater treatment facilities to be treated.

What is stormwater?

Stormwater is rain and melted snow that can soak into the ground, pool on the surface or flow across land to low lying areas or storm drains. Stormwater infrastructure like storm drains, are designed to direct water to natural drainage systems such as brooks, rivers, and streams. In some instances, stormwater can enter the sanitary sewer system through improper connections such as weeping tile systems and roof drains.



Flash Flood Impact on Grants Pond Area of Port Hawkesbury 2023

Types of Flooding:

If you have experienced flooding the first step to protecting and preparing your home against future flooding is identifying the cause. The common types of basement/home flooding are:

Stormwater Flooding

Stormwater flooding is often referred to as overland flooding and is caused by heavy rainfall or snowmelt. This type of floodwater is usually clear and odour free. This can be due to inadequate or damaged roofing, faulty gutters, improper sealing around doors/windows, poor drainage, cracks in foundation or inadequate waterproofing.

Sanitary Sewer Backup

This type of flooding is often greyish in color and has an odour. Sanitary sewer backups will enter the home through cleanouts or plumbing fixtures such as toilets or tubs and often occurs because of a blockage in the sewer lateral that connects a home to the town sewer system under the street.

Both sanitary sewer and stormwater can enter a home during a sanitary sewer backup. This type of flooding occurs most often in neighbourhoods where homes were built more than 30 years ago when it was common practice to connect weeping tile, sump pumps, and downspouts directly to sewer laterals. This is not common practice now.

This old method of managing stormwater on private property causes the municipal sewer system to become overwhelmed with rainwater or melting snow leading to sewer backups and elevated groundwater levels around homes.

Who is Responsible?

The Town of Port Hawkesbury is responsible for maintaining the sewer system comprised of sanitary sewer and stormwater infrastructure.

Homeowners are responsible for the sanitary sewer lateral that runs from their home or building to the property line, typically 30ft from the center of the road in front of house. Homeowners are also responsible for maintaining proper water drainage around their home and other buildings. This includes weeping tile, property grading, and eaves trough.



Inflow and Infiltration

Inflow and Infiltration are terms used in the context of stormwater and wastewater management to describe the sources of water entering sewer systems or treatment facilities. It is one of the largest problems municipalities across Canada are currently dealing with. Rain, melting snow, and groundwater can all cause problems by entering the municipal sewer and storm system.

Inflow

Refers to the additional water that enters a sewer system or treatment facility from external sources, such as groundwater. It occurs when stormwater or other sources of clean water, which should not be in the sewer system, find their way into the piped or treatment plant. Common sources include:

- Rainwater entering leaking or improperly connected sewer pipes.
- Groundwater seeping into cracked or damaged sewer pipes or manholes.
- Surface water, such as runoff from streets, yards, or other paved surfaces, entering storm drains connected to the sanitary system.

Inflow can overload sewer systems, leading to capacity issues, combined sewer overflows and increased treatment costs.

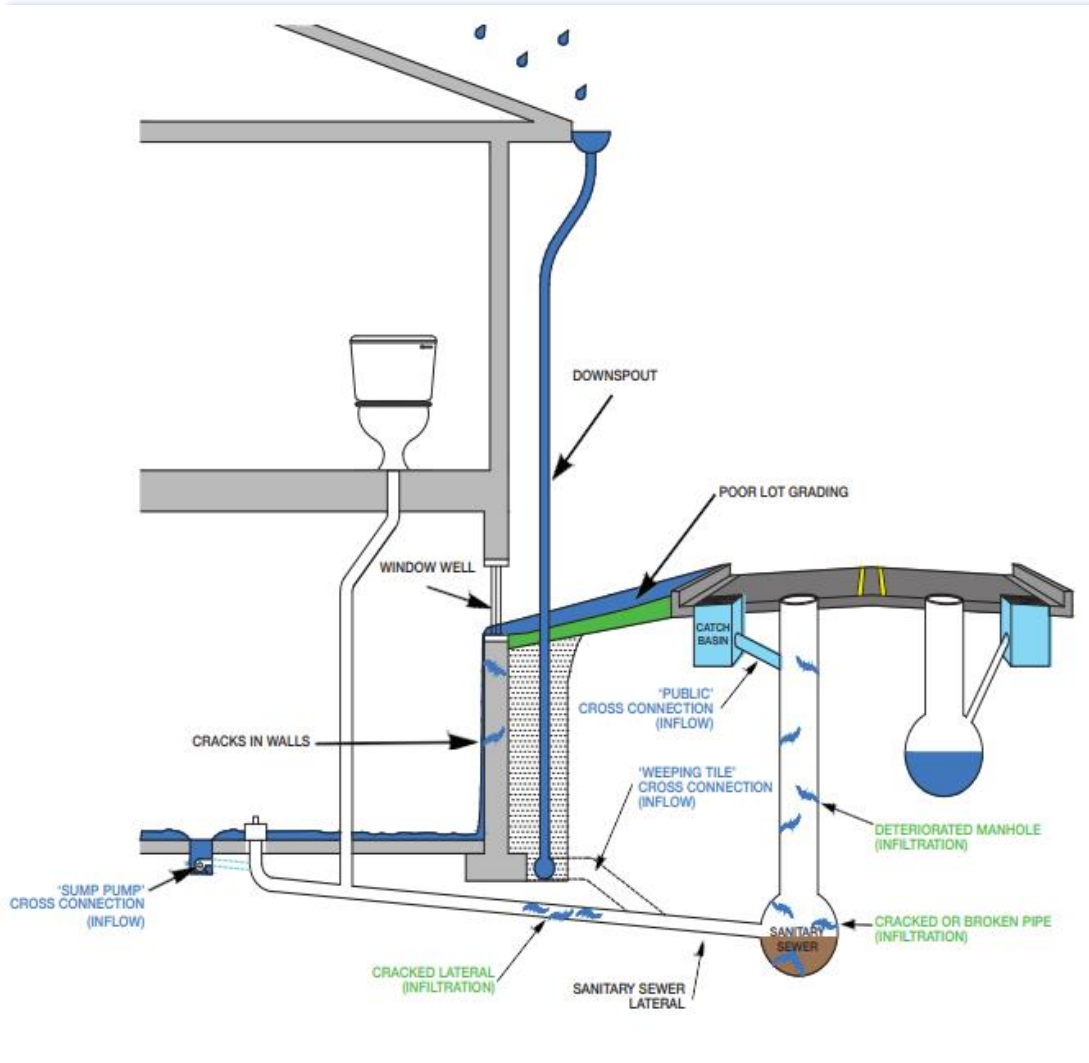
Infiltration

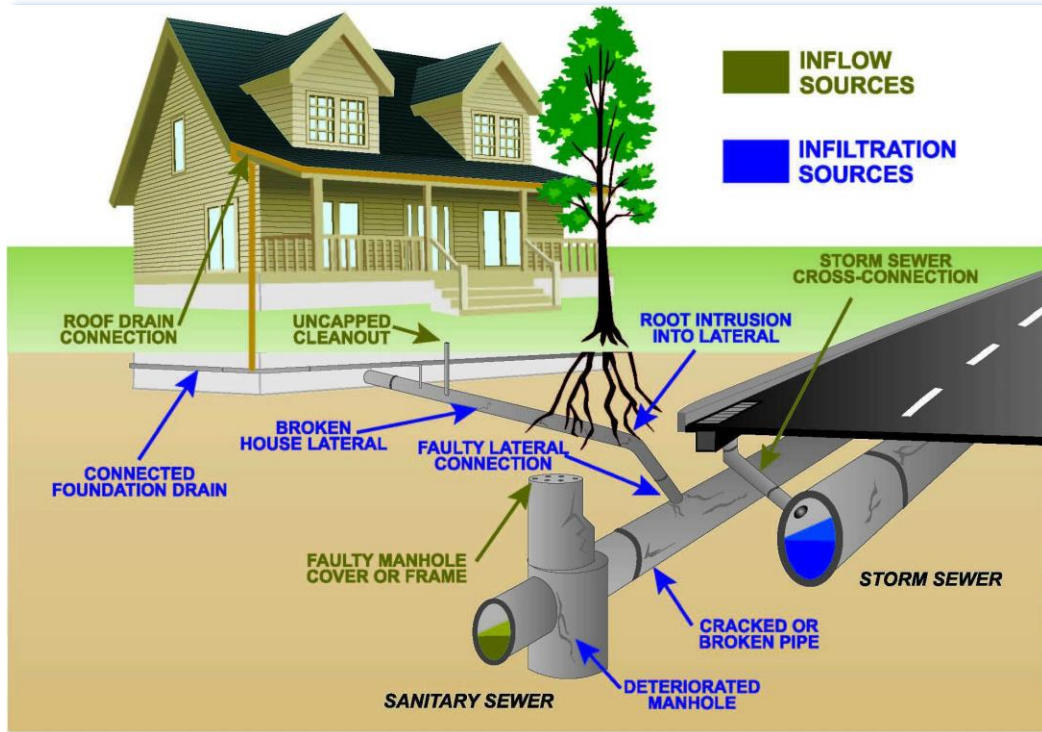
Refers to the flow of groundwater into sewer pipes or other underground structures through leaks, cracks, or porous materials. It occurs when the surrounding groundwater pressure is higher than the pressure inside the sewer system. Common sources include:

- Cracks, fractures or deteriorated joints in sewer pipes or manholes.
- Porous or permeable materials used in sewer construction that allow water to pass through.
- Aging or damaged sewer infrastructure that allows groundwater to infiltrate.

Infiltration can lead to increased flow in the sewer system, which can overwhelm wastewater treatment plants, contribute to sewer backups, and strain the overall system.

Both inflow and infiltration can be a significant challenge for municipal sewer & storm systems. It increases the volume of water that needs to be transported and treated and can lead to unnecessary wear and tear on the infrastructure.





Prevention Measures

Did you know that the roof of a typical family home can create a significant amount of stormwater runoff? A single home can produce over 2,650 litres of runoff during a single 15 mm storm. With Port Hawkesbury's average annual rainfall of 1,446 mm, that means a single home can produce 255,460 litres of runoff each year!

Now consider a neighbourhood of homes with their roof drains and weeping tile systems connected to sanitary sewer laterals and we can easily understand how the municipal sewer system quickly becomes overwhelmed with stormwater.

Capturing even a small percentage of that runoff can help protect our homes, our infrastructure, and our environment.

Homeowners play a crucial role in preventing flood damage to their properties by taking proactive measures to mitigate potential risks. Here are some flood prevention measures that homeowners can implement:

1. Elevate Electrical Systems and Appliances

Raise electrical circuits, switches, and circuit breakers at least 1 ft above the base flood elevation level. Elevate HVAC systems, water heaters, and other appliances to reduce the risk of electrical and equipment damage.

2. Install Sump Pump

Consider installing a sump pump in the basement or low-lying areas to help remove excess water and prevent flooding.

3. Seal Cracks and Openings

Seal any cracks or openings in foundation walls to prevent water from seeping into the basement. Apply waterproofing coatings on the exterior to protect against future water.

4. Use Flood Resistant Building Materials

When renovating or building, use flood-resistant materials such as waterproof insulation, treated lumber, and flood-resistant drywall in flood prone areas in home.

5. Install Check Valves

Install Backflow Prevention devices or check valves on plumbing lines to prevent sewage from backing up into the home. **Questions related to backflow prevention devices can be directed to the Eastern District Planning Commission at 902-625-5361.**

6. Keep Gutters and Downspouts Clear

Regularly clean and maintain gutters and downspouts to ensure proper water flow away from the foundation. Direct downspouts away from the house and towards areas with good drainage.

7. Grade Land Away from Foundation

Ensure that the ground around the house slopes away from the foundation to direct water away.

8. Elevate or Relocate Utilities

Raise electrical meters, HVAC units, and other utilities above potential flood levels. Consider relocating utilities to higher ground if possible.

9. Purchase Flood Insurance

Consider purchasing flood insurance, even if the property is not in a high-risk flood zone. Standard homeowner's insurance typically does not cover flood damage. Check with your insurance provider on the details of your policy's coverage.

Implementing these preventative measures can significantly reduce the risk of flood damage to a home and increase its resilience during potential flood events. Homeowners should also stay informed about local flood risks, weather forecasts, and issued warnings.

Disconnect and Redirect

In Port Hawkesbury, weeping tile and downspouts connected to the sewers add large volumes of water to the system that contributes to overloading which can cause:

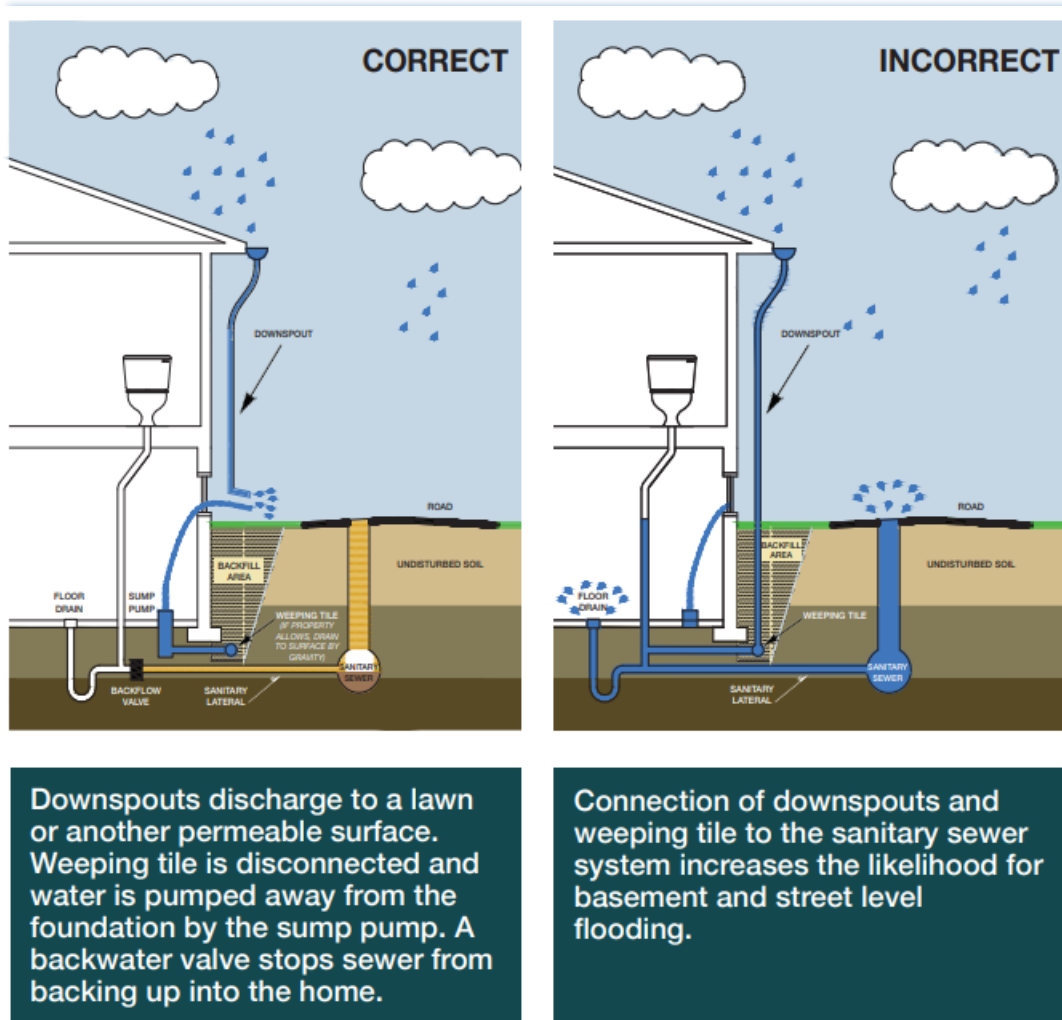
- Sewer back-ups into homes when the wastewater collection system cannot take on more water.
- Sewage overflows into the urban and natural environment.
- High wastewater treatment costs associated with pumping and treating stormwater that would not otherwise be treated.
- Flood damage costs.
- Reduction in the efficiency of the wastewater treatment processes when treating excess stormwater. The best way to manage stormwater is to direct it away from the home and allow it to soak back into the ground.

Let's examine what happens during extreme rain events when your roof drains or weeping tile are connected to the sewer system:

- As soon as the rain begins to fall roof drains collect rain and direct this water through the downspout into the sanitary sewer system.
- The sewers fill up with more water than they were designed to collect and eventually cannot take on any more water.
- Rainwater seeps into the soil and is collected by the weeping tile within minutes after the rain starts.
- The sewer system becomes overloaded, and stormwater mixed with sewage can back up into homes.
- Your basement may not flood but having your roof drains or weeping tile connected to the sewer system may be causing your neighbours to have a flooded basement. Likewise, your neighbours could be contributing to flooding in your home.
- To manage stormwater correctly weeping tile can discharge overland by gravity flow if slope permits or it can be connected to a sump pit equipped with a sump pump.
- When the sump pit fills with water and the sump pump turns on, water is pumped out of your home overland and away from your foundation wall to the ground surface.

Disconnecting weeping tile from the municipal sanitary collection system should be assessed on a case-by-case basis with the advice of a professional.

Roof drain connected to municipal sanitary sewer vs. directed into the ground and away from the house. A neighbourhood of rooftop runoff adds up quickly causing surcharging. This is how back-ups are caused.



Disconnecting Your Downspout

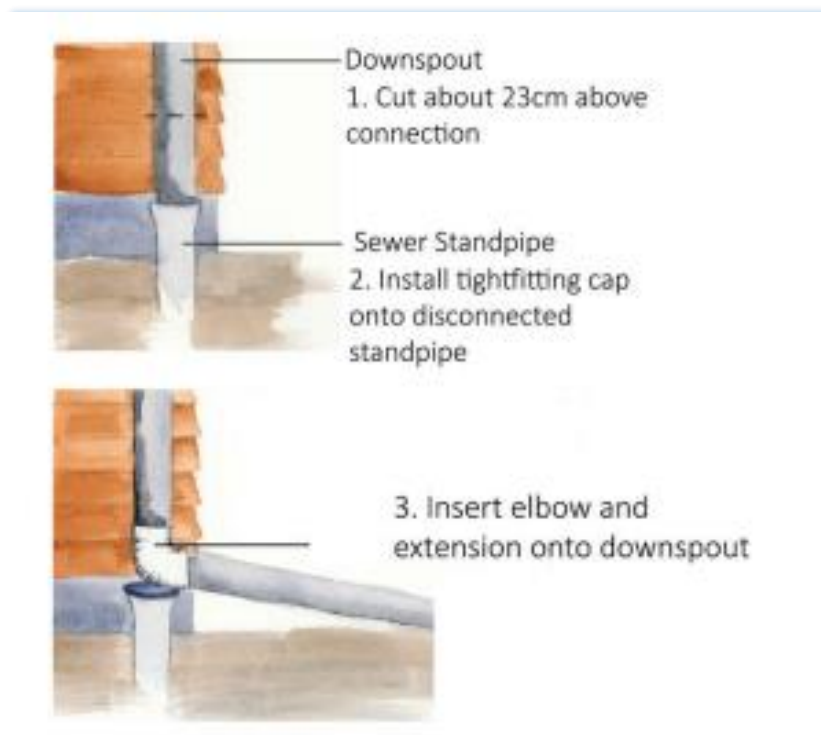
Before you disconnect:

1. Ensure water will flow away from the building's foundation.
2. Extend your downspout at least 2 meters (6 feet) away from foundation walls to prevent water damage. Make sure the water flow won't cause harm to your neighbors' property or flow onto driveways and sidewalks. Redirecting the flow into a rain barrel or water garden can turn a nuisance into a valuable resource.
3. Use a splash pad to guide water flow and protect against erosion.
4. Be mindful not to create tripping hazards by adding extensions across walkways or in front of gates and doorways.
5. Avoid creating dangerous conditions in winter when water flow may freeze.
6. Consider extending downspouts under decks, patios, or to grassed or garden areas for effective water management.

How to disconnect your downspout

Once you are ready to disconnect, you can do it yourself or hire a contractor.

1. Assemble the tools and supplies you will need: hacksaw, tape measure, rubber or PVC standpipe cap, hose clamp (optional), hammer, screwdriver, drill, pliers, metal file, sheet metal screws, downspout elbow, downspout pipe extension, downspout brackets, and personal protective equipment such as gloves and safety glasses.
2. Measure your downspout from the top of the sewer standpipe and mark it about 23 cm (or 9 inches) above the standpipe. Depending on the length of your extension, you may need to cut it higher.
3. Cut the downspout with a fine blade hacksaw at the mark and discard the piece. Use a metal file to remove the rough edge of the downspout.
4. Be sure to cap the sewer standpipe. This prevents water from going in and animals from getting trapped. You can use a simple rubber or PVC cap secured by a hose clamp or a wingnut test plug.
5. Insert downspout into the elbow.



6. Measure and cut your downspout extension to the desired length.
7. Connect the extension by slipping it over the end of the elbow. The extension should be at least 2 metres long.
8. Secure the elbow and extension with sheet metal screws at each point where the downspout, elbow, and extension connect (pre-drilling the holes will help). If desired, use a splash block at the end of the extension to prevent soil erosion. Avoid draining water onto impermeable plastic weed block or cloth. The

extension can be cut higher and connected to rain barrel or directed into a rain garden.

Rainscaping

Rainscaping, also known as rain gardening or stormwater landscaping, is a sustainable landscaping approach designed to manage and utilize rainwater runoff from rooftops, driveways, and other impervious surfaces. The concept behind rain scaping is to manipulate the landscape in order to mimic natural hydrological processes. Thus, enabling rainwater to infiltrate into the soil promoting groundwater recharge and reducing stormwater runoff. These are also known as low impact developments (LIDs).

What's the topography like? Is it low lying, is it sloping, these are that affect how rainwater will move and what you need to consider when deciding how you are going to go about rainscaping your property.

Water naturally soaks into the ground, where it replenishes groundwater and streams as well as adds moisture to the soil. Therefore, enabling ecosystems to thrive. Replacing lawn with vegetation will increase the infiltration on your property substantially reducing the overall effect rainwater might have.

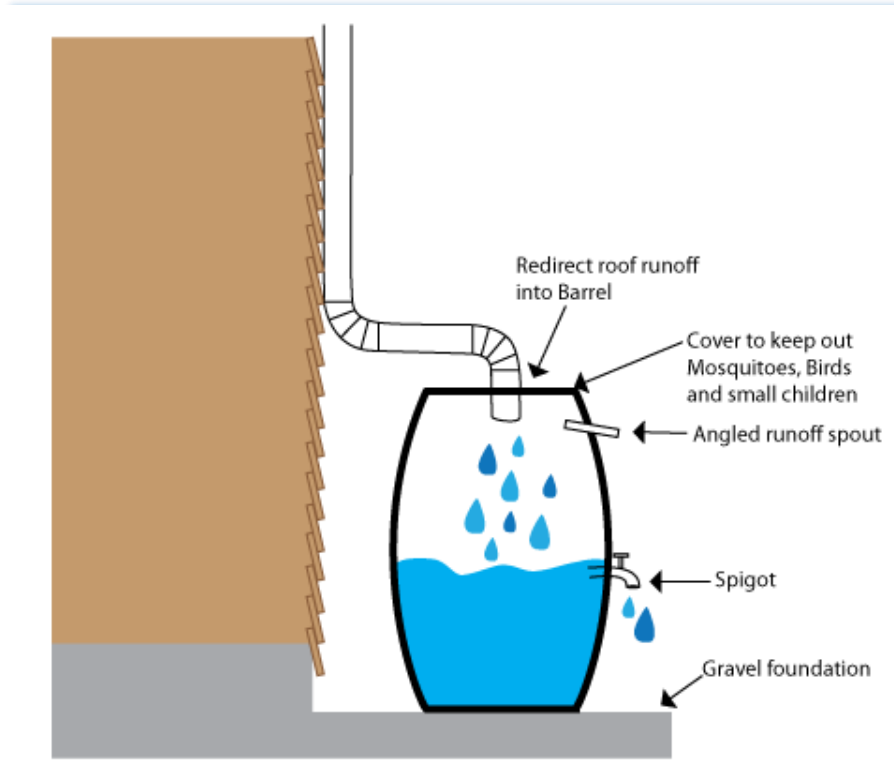
Rain barrels

Rain Barrels and cisterns collect rainwater from rooftops, which can then be used for non-potable purposes such as watering plants and gardens. This reduces the demand for treated water and helps conserve water resources.



Rain Barrel Tips

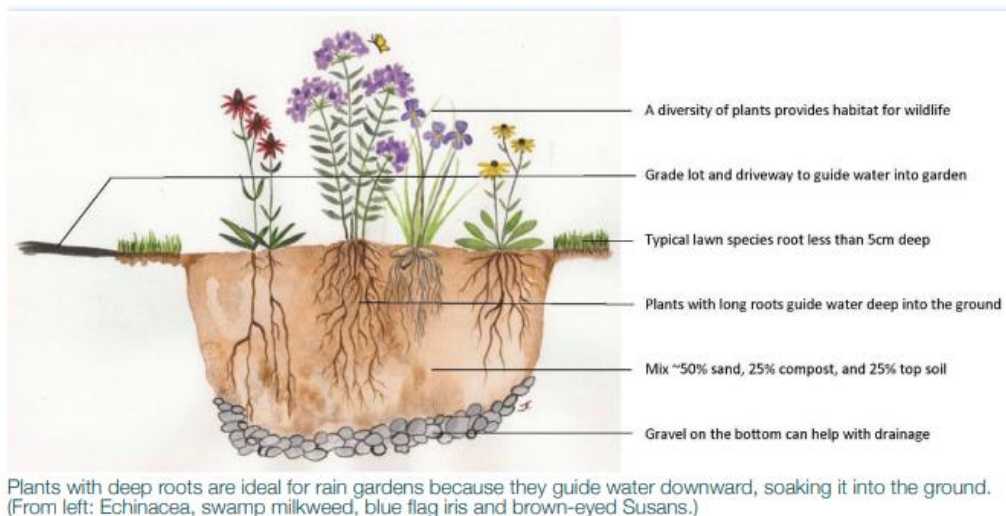
- Water flow is influenced by both water pressure and gravity, making it more efficient when the barrel is full and elevated.
- To ensure stability, it's important to place rain barrels on a solid surface such as cinder blocks, pavement, or bricks, as they can sink into the ground when full.
- When the barrel reaches full capacity, consider using an overflow device to redirect excess water away from the foundation.
- For optimal functionality, it's recommended to have a closed lid or screen on the rain barrel. This prevents debris from entering and helps prevent mosquitoes from breeding inside.
- To maintain a steady supply of stored water, it's advisable to use the water in your rain barrel regularly, leaving room for the next rainstorm.
- Prior to winter, ensure to drain the barrel, clean it with a non-toxic cleaning solution, and inspect all connections for any needed repairs.
- Store the empty barrel upside down during winter to prevent freezing until it's ready for use again in the spring.
- Regularly clean eavestroughs and downspouts to minimize clogging and optimize rainwater collection.
- Rain barrels can be easily acquired from hardware or gardening stores, as well as online. On average, they range in cost between \$55 and \$120, but you also have the option to create your own rain barrel on a budget.



Rain Gardens

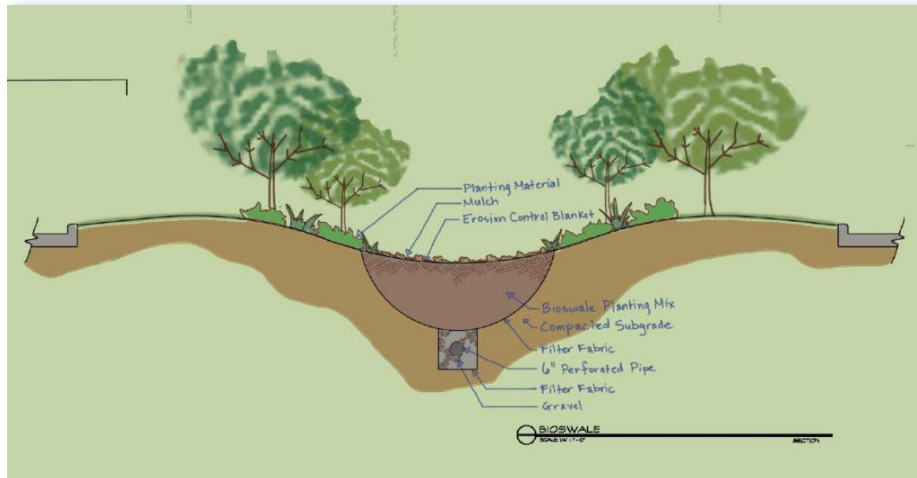
Rain Gardens are designed depressions in the landscape that collect and store rainwater runoff. They are typically planted with native vegetation and have well-drained soils to allow water to infiltrate slowly. Rain gardens capture and filter rainwater, removing pollutants before it seeps into the ground. They protect water quality and reduce the amount of water entering the sewer system.

- Before digging, make sure to contact local utilities to avoid any interference with buried infrastructure.
- When choosing a location for a rain garden, ensure it is away from underground piping, such as water and sanitary sewer lines.
- Test the soil's permeability using a ribbon test (refer to page 20 for instructions).
- Keep the rain garden at least 3 meters away from any building foundation.
- Excavate the garden and fill it with a soil mix consisting of approximately 50% sand, 25% compost, and 25% topsoil.
- Consider adding a "river" of gravel or stones through the rain garden for enhanced aesthetics and water flow.
- Elect for native plants that are both drought and flood resistant and avoid using invasive species. Native plants with deep roots can draw water deeper into the ground effectively.



Bioswales

Bioswales are shallow, vegetated channels designed for sustainable stormwater management. They slow down and filter stormwater runoff, allowing it to infiltrate into the ground. With native plants and soil acting as filters, bioswales remove pollutants and improve water quality. They are eco-friendly, aesthetically pleasing and an effective solution for managing stormwater in urban areas, reducing flooding, and supporting biodiversity.

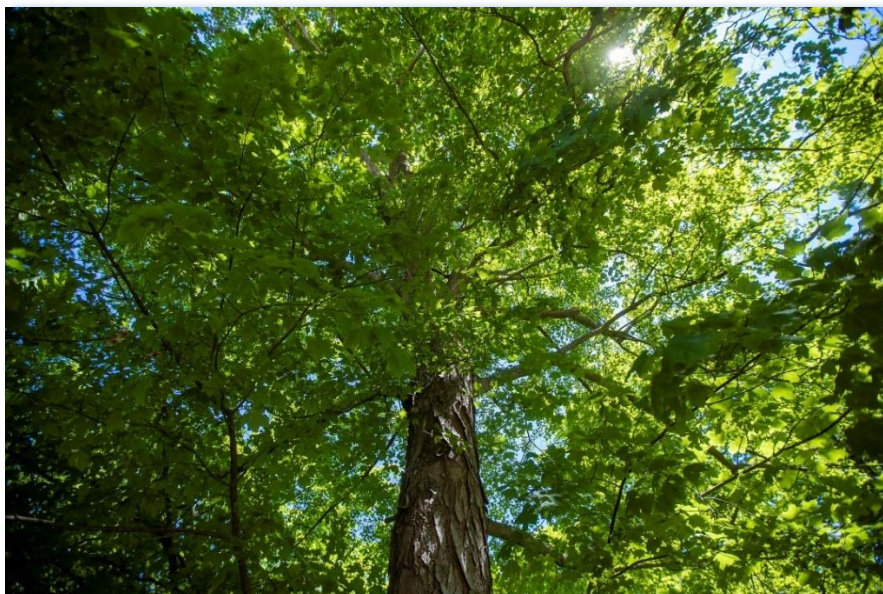


Trees and Stormwater Management

In a report by TD Economics, Toronto's trees were found to provide benefits valued at over \$81 million. Approximately 66% of this value is attributed to their role in managing stormwater.

Trees, being stationary, naturally develop their architecture to maximize the capture and absorption of precipitation. They help manage stormwater by intercepting rain and snowmelt, slowing down runoff, holding water, and enhancing water absorption into the soil. Additionally, trees play a significant role in reducing soil erosion and can sequester certain toxins like fuels and metals.

In urban areas, trees directly reduce the amount of stormwater runoff entering wastewater collection systems, thereby lowering the risk of flooding. The report highlights that for effective stormwater management, the presence of more trees has a positive impact.



Mini Forest Restoration

"Mini Forest Restoration" involves creating a simulated forest ecosystem to manage and slow down water even on elevated land without pooling. By laying dead logs and brush in a designated bed, covering it with compost and soil, and planting directly into the mound, water absorption is facilitated as the dead wood decomposes, releasing nutrients gradually. Hardwood logs can decompose for over 20 years, supporting plant growth and providing habitat for various beneficial fungi and insects.

Wetland Gardens

If you have an area that refuses to drain, a wetland garden is a proactive way to combat it. A wetland garden is a specially designed garden that mimics a natural wetland ecosystem. It features waterlogged soil, native wetland plants, and water features like ponds or streams. Wetland gardens provide several benefits, including stormwater management, biodiversity support, water filtration, and wildlife attraction. They also offer educational value and create a habitat for various plant and animal species. Proper planning and maintenance are essential for the success of a wetland garden.

1. **Site Selection:** Choose a low-lying area with good sunlight for the wetland garden.
2. **Plan and Design:** Create a layout with water features, boggy areas, and varied elevations to mimic natural wetlands.
3. **Plant Selection:** Choose native wetland plants that thrive in wet conditions.
4. **Planting:** Arrange and plant the selected plants according to their water requirements.
5. **Water Management:** Monitor water levels and maintain proper hydration for the wetland garden.



Stormwater and the Environment

Excessive stormwater flows and overland flooding resulting from overwhelmed wastewater collection systems have adverse consequences not only for homes and buildings. But also, for the local environment. The following are some of the ways stormwater and wastewater overflows can detrimentally affect ecosystem health.

Water Quality Degradation:

Stormwater and wastewater overflows can carry a range of pollutants including chemicals, oils, heavy metals, and harmful microorganisms. When discharged into water bodies, these contaminants degrade water quality, making it unsafe for aquatic life and humans.

Habitat Destruction:

Excessive stormwater runoff can cause erosion and lead to the destruction of natural habitats, negatively impacting plant and animal species that depend on stable environment. It also carries sediments from eroded soil, construction sites and urban areas. These sediments, when deposited in water bodies, can smother aquatic habitats, impairing the growth and reproduction of aquatic organisms.

Excess Nutrients:

The nutrients present in stormwater, such as nitrogen and phosphorus (often picked up from fertilizers) can cause eutrophication when they enter water bodies. This excessive nutrient enrichment leads to rapid algae growth, which depletes oxygen levels and disrupts aquatic ecosystems.

Contamination:

Bodies of water, including oceans, lakes, ponds and streams are often significantly impacted by stormwater runoff. According to the National Oceanic and Atmospheric Administration (NOAA), approximately 80% of ocean pollution stems from land runoff, making it a major source of contamination.

Before a Flood

Planning For Emergencies

Emergencies happen all the time, help is not always readily available which is why it is important to be prepared. Planning for possible emergencies is an easy thing to do that you will thank yourself for in the future. You should always be prepared to take care of yourself and your loved ones for 72 hours.

1. Know the Risks

The Town of Port Hawkesbury is susceptible to various types of natural disasters. Hurricanes and extreme rain are the most common type that is experienced here. There

Insurance Considerations

When flooding occurs, water damage can have wide-ranging and costly effects on homes. The Insurance Bureau of Canada (IBC) highlights flooding as the most common and expensive climate issue impacting Canadians. To prepare for flood events, homeowners can take several steps:

1. Maintain a detailed inventory of valuable household items, preferably through a video inventory, to facilitate insurance claims.
2. Review your insurance policy to understand what items are covered.
3. Consult with your insurance representative to ensure you have appropriate coverage, as overland flooding is generally not covered, and specific sewer backup coverage may be necessary for water damage in the basement.

For comprehensive information on water-related insurance considerations, visit the IBC website (<https://www.ibc.ca/>).

In cases of flooding due to overland flooding during storms, blocked or full sewer pipes, leaking foundation walls, or poor lot drainage, homeowners are responsible for losses and repair costs caused by flooding.

To prevent disaster, follow the indoor and outdoor preventive measures recommended in this booklet.

By being proactive and prepared, homeowners can better mitigate the impacts of flooding and protect their properties and valuables.

During a Flood

Reducing Property Damage

To help minimize property damage during anticipated flood conditions, such as heavy rains, prolonged precipitation, or snowmelt, consider taking the following precautions:

- Inspect and clear all drains, gutters, and downspouts to remove any accumulated leaves and debris.
- Close all basement and low-sitting windows to prevent water from entering.
- Verify the proper functioning of backwater valves and sump pumps. Consider having a generator as a backup power source to keep the sump pump running during electrical outages.
- Safeguard valuable items, including furniture, electronics, and cherished belongings, by moving them out of basements and even ground level floors if necessary.
- If your home is at high risk for flooding, consider permanently relocating furnaces, electrical panels, and hot water tanks to higher locations well above the water line.
- Roll up any movable rugs and transfer important files and paperwork to higher levels in the home.

By proactively implementing these measures, you can help protect your property from potential flood damage and enhance your preparedness during flood events.

Flood Conditions and Possible Hazards

Floods can pose significant risks to the safety and well-being of you and your family. When flood events occur, hazardous conditions can rapidly emerge both inside and outside of your home. Here are important hazards to be aware of:

- Floodwaters present various dangers. Standing water may be electrically charged inside the home or due to downed power lines outdoors. Avoid entering water if there are potential electrical hazards.
- Floodwaters can contain hazardous substances such as home heating oil, raw sewage, glass, and dangerous chemicals and debris. Keep family members and pets away from standing water and floodwaters outside. Only enter a flooded area if you have appropriate personal protective equipment.
- Floodwaters can move swiftly, making driving or walking through a flooded area perilous due to an increased risk of drowning. Manhole covers could be out of place or sinkholes and erosion formed which are a danger for vehicles and people.
- Buildings, roadways, and other structures can become unstable during a flood. Evacuate your home if you notice any structural damage. Avoid driving on flooded roads that could collapse if compromised by floodwaters.

Staying informed about these hazards and taking necessary precautions will help ensure the safety of you and your loved ones during flood events.

What to Do if Your Home or Basement is Flooded

- Your top priority is ensuring the safety of yourself and others in the home. If floodwater has reached electrical outlets or the electrical panel, immediately contact Nova Scotia Power to shut off the electricity and prevent the risk of shock or electrocution. Avoid attempting to turn off the power yourself if the area around the main breaker or fuse box appears unsafe.
- Be cautious as floodwater may extinguish the pilot light on a gas appliance. If you smell gas, evacuate the house immediately and contact your oil company.
- Assume that everything floodwaters come into contact with is contaminated and keep your family and pets away from flooded areas.
- If you suspect any structural or foundation damage, leave your home until it can be inspected by a professional.
- If you believe water is entering your home through the sanitary sewer lines or if you have a backwater valve activated by floodwaters, refrain from using sinks, toilets, showers, or the washing machine. Using these fixtures can cause water to back up into your house as it will not be able to drain properly.

Oil Spills

Nova Scotia Environment defines domestic oil spills as releases of petroleum at a private residence or small apartment complex. The landlord, occupant, or company has the

responsibility to contact the proper authorities (listed below) if a domestic oil spill occurs during a flood. Negligence could result in contamination of soil and groundwater, which would affect drinking water sources, adjacent properties, and private wells.

Here are some homeowner or occupant responsibilities for managing spills once they have occurred:

- For initial emergency response, the individual may hire a contractor to contain the release.
- If the spill is larger than 100 litres or has a smaller volume but is a threat to the environment (i.e. spilled into an ecosystem like a brook), you are required under the Nova Scotia Environment Act to report the spill to Nova Scotia Environment at 902-625-0791 (after hours: 1-800-565-1366).
- If the spill is less than 100 litres the person responsible or the person who has control, management, or charge of the spill is obligated to immediately notify the municipality. Spills to the TOPH sanitary sewer system must be reported to TOPH Public Works (902) 625-1975.
- If you find an oil leak from a car, furnace, oil tank, etc., place a pan underneath to capture the spill if it is safe to do so.
- If it is spreading, use an absorbent material like kitty litter to stop the flow. Contact the appropriate professional maintenance personnel to fix the problem.
- Never flush a fuel or oil down the toilet or drain.
- Do not throw away material or soil that has been contaminated with fuel, as they are flammable and a hazard to the environment. Instead, it must be disposed of at an approved facility.
- Contact your insurance company to discuss cleanup coverage, because part or all the cost may be covered. If it is not covered, you are liable for the cost.
- If you believe your property is contaminated, contact an environmental services professional to carry out the remediation process.

After a Flood

Health and Safety

Flooded homes can pose numerous dangers, even after the floodwaters have receded. There is a risk of exposure to waterborne diseases and lingering toxins. Here are important considerations to keep in mind following a flood event:

- Call your insurance company as soon as possible and report property damage caused by the flooding.
- Take photos of damage caused by the flooding and keep receipts from emergency repair or clean-up work.
- Children and pets should not go near damaged areas until cleanups and repairs are complete.

- Mould and waterborne diseases are hazards associated with flooded homes. Consider hiring a professional cleaning company to clean up your home or basement.
- If you must enter a building that has flood damage, for example to begin cleanup, protect yourself with long sleeves and pants, gloves, rubber boots, a mask, protective eyewear, etc.
- Use dehumidifiers and fans to help dry your home quickly and prevent further damage from mould growth.
- Thoroughly clean walls and floors using a solution of household bleach (mix 1 cup bleach with 19 litres of water).
- Any drywall or insulation that has been contaminated should be removed and properly disposed of.
- All surfaces should be sanitized with hot water and liquid soap. Rinse and ensure the area dries completely by giving it time and good ventilation.
- Avoid all electrical equipment. Hire a professional electrician to determine if there are hazards present.
- Any contaminated items that cannot be disinfected should be discarded (especially textiles).
- All clothing worn during your cleanup should be washed in hot soapy water.
- Any food items – packaged or not – that were in contact with floodwater should be disposed of.

Flood Prevention Checklist

- Know Your Risk: Understand your property's flood risk by checking flood maps and consulting local authorities or emergency management agencies.
- Create an Emergency Plan: Develop a family emergency plan that includes a meeting place, contact information, and evacuation routes.
- Emergency Response Kit: Prepare an emergency response kit ahead of time. Better safe than sorry.

Indoors

- Elevate Electrical Systems: Elevate electrical outlets, switches, and appliances above potential flood levels to prevent water damage and electrical hazards.
- Install Sump Pumps and Backwater Valves: Consider installing sump pumps and backwater valves to prevent water damage. Disconnect sump pump from municipal lines.
- Inspect and Repair: Inspect and repair cracks in your foundation, walls, floors, windows. Inspect your plumbing to ensure it is working smoothly and safely.
- Generator: Have a backup generator to ensure the sump pump can continue working if power goes out.

Outdoors

- Inspect and Repair: Inspect and repair cracks in your foundation, walls, floors, windows. Inspect your plumbing to ensure it is working smoothly and safely.
- Disconnect: Disconnect downspouts, weeping tile, and sump pumps from the sanitary sewer system, and redirect them to designated areas that allow for water absorption, preventing any adverse effects on roadways and neighbouring parties.
- Rain scaping: Install a rain garden, bioswales, rain barrel, etc., to help soak up and divert water. The rain scaping techniques will not only collect rainwater in low points but also enable it to be filtered by soil, organic matter and plants. Direct the slope of your yard away from your house. Make sure any redirected water is draining at least 2m away from your home.
- Clear Drains and Gutters: Regularly clean and maintain drains, gutters, and downspouts to ensure proper water flow away from your property.
- Elevate Outdoor Equipment: Elevate outdoor HVAC units, generators, fuel tanks, to protect them from floodwater damage.
- Ensure weeping systems are working properly.
- Make sure any basement windows are covered so that water cannot enter.

Emergency Contact Information

Dial 911 only in case of emergency.



Town General Information	(902) 625-7893
Public Works Department	(902) 625-1975
Eastern District Planning Commission	(902) 625-5361
Manager of Engineering and Public Works	(902) 625-7899
Public Works (after hours & emergency)	(902) 625-1975
Police (Non-emergency Line)	(902) 625-2220
Nova Scotia Environment and Climate Change	1-800-565-1633
Nova Scotia Environment Local	(902) 625-0791

Utilities

Nova Scotia Power Outages	1-800-428-6004
Nova Scotia Power Utility Poles	1-800-428-6230

Fire Department

Port Hawkesbury Fire Department	(902) 625-1313
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Bell Aliant	1-888-214-7896
Eastlink	1-888-345-1111

Glossary

Catchment is the collection of water specifically over a natural drainage area or catchment basin.

Ecosystems are communities of living organisms interacting with each other and their physical environment.

Invasive plants are usually introduced to a given location. They are plants that have not evolved with the present ecosystem, and they upset the natural balance with aggressive growth behaviours, uninhibited by natural predators or limitations in the area, outcompeting the present vegetation.

Low impact developments (LIDs) are structures and techniques that homeowners can do on a small scale to simulate what happens to rain and snowmelt in nature. These can include landscaping like rain gardens and bioswales or they can include techniques such as porous paving and redirecting downspouts. LIDs allow us to use stormwater as a resource.

Surcharged sewers are overwhelmed with extra flow.

Native plants are indigenous to a given location. They are plants that have evolved to thrive with the temperatures, precipitation, soil, etc. in a given habitat.

Naturalized plants are introduced to a given location. They are plants that are not native to the area but thrive in the present conditions and do not appear to upset the natural balance of that ecosystem.

Non-potable water is water that has not been treated, examined, or approved safe for drinking.

Pervious or **permeable** means that it allows water to move through, such as gravel as a pervious driveway. Contrary, examples of impervious or impermeable materials are paved driveways or rooftops that do not allow water pass through and so it must move over top as runoff.

Pollinators are animals that move pollen from the male parts of a plant to the female parts allowing seed production to occur. Insects, such as native bees and ants, birds, and mammals are examples of pollinators.

Runoff is precipitation that flows over surfaces because it was not able to be absorbed.

Sanitary Sewer is the system of municipal infrastructure that carries wastewater from homes and businesses, including drainage from sinks and toilets.

Wastewater is any water that has been affected by humans including sanitary sewer and stormwater.

Backwater Valve (sometimes called a backflow or sewer backup valve) is a valve you can install on your sewer line and is designed to allow water or sewage to flow only one way—out of your house. Sudden heavy rainfall can overwhelm city sewer lines, causing water or sewage to flow back towards your home. A backwater valve prevents sewage from flowing backwards into your house during such events.

Please contact a building inspection official at the Eastern District Planning Commission for any questions related to backwater valves. 902-625-5361.

