



Be Prepared!

Flood Reduction and Prevention Guide



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Hazard Information

Floods are the costliest natural hazard in terms of property damage in Ontario. Floods are typically caused by melting snow, ice jams, high lake levels, and heavy rains and thunderstorms. They can happen at any time of year and in urban and rural areas. Flash flooding can occur in rainstorms or when a storm sewer system is full or plugged – often with little or no warning.

Flood Notifications

The Surface Water Monitoring Centre of the Ontario Ministry of Natural Resources and Forestry provides continual weather monitoring and forecasting, which is made available to Conservation Authorities to use as part of their flood monitoring system. The Surface Water Monitoring Centre also maintains the Provincial Warning System to alert Conservation Authorities of potential meteorological events that could create a flood hazard.

The Ganaraska Region Conservation Authority monitors, on an ongoing basis, weather forecasts and watershed conditions, and uses this information to assess the potential for flooding. When spring melt or severe storms are anticipated the GRCA estimates the severity, location, and timing of possible flooding, and provides these forecasts to local agencies.

When conditions warrant Conservation Authorities will communicate with local agencies using one of the following types of messages.

Flood Message Definitions

- **Watershed conditions statement:** flood outlook gives early notice of flooding based on weather forecasts calling for heavy rain, snow melt, high winds or other conditions
- **Watershed conditions statement:** water safety: indicates that high flows, melting ice or other factors could be dangerous for boaters, anglers and swimmers. However, flooding is not expected.
- **Flood watch:** indicates there is the potential for flooding
- **Flood warning:** indicates flooding is imminent or occurring

Flood message are available on the GRCA website: www.grca.on.ca

Developing a Family Emergency Plan

Visit our website or contact our Emergency Management office to find out what hazards are present in your area and what actions you should take to be more prepared for an emergency or disaster event.

Below are some suggested activities for you and your family:

- Learn the warning systems our municipality uses (RAVE). Make sure you register.
- Develop a family emergency plan.:
- Discuss the flood hazards in your area and the potential disasters that could occur.
- Discuss what to do if advised to evacuate.
- Consider your family pet(s) in your planning. Contact your local disaster/emergency services office or your veterinarian to learn more about what you can do in advance for your pet(s).
- Plan how your family will stay in contact if separated by a disaster or emergency:
- Pick two meeting places:
 1. A location at a safe distance from your home in case of fire.
 2. A place outside your neighbourhood in case you cannot return home.
- Choose a relative or friend who lives outside your community, as a check-in contact for everyone to call.
- Teach children how and when to call fire, police, and emergency medical services, and which local radio station to tune into for emergency information.
- Show family members how and when to shut off water, gas, and electricity at the main switches.
- Learn your community's evacuation routes, as some hazards may force you to leave your home.
- Learn first aid and CPR.
- Consider and meet with your neighbours and plan how you would work together in a disaster situation. Include neighbours with special needs, such as elderly or disabled persons in your planning.

Protecting and Preparing Family and Household Documents

Prepare a 72 hour kit for your home and have smaller emergency kits in each of your vehicles. Maintain the kits (replenish supplies, etc.) and make sure everyone knows where they are stored.

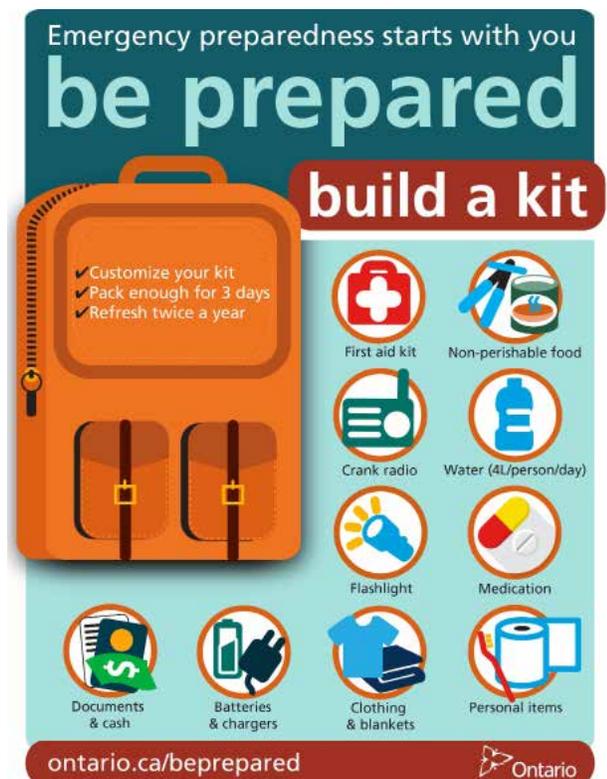
An emergency can isolate you in your home for several days. After a disaster, local emergency services may be responding to the event, but depending on the situation, may not be able to reach everyone immediately. When a disaster occurs, you may not have time to shop or search for supplies; but if you have supplies gathered in advance, your family will be better prepared to withstand isolation or evacuation.

Family records kept at home should be stored in a portable, fireproof, and waterproof container to remain safe in the event of any emergency. Include items such as:

- Mortgage papers, medical records, insurance policies, marriage and birth certificates, wills.
- Bank account and credit card information, stock and bond certificates, tax records, passports, physical computer backups.
- Irreplaceable items (photographs, heirlooms).
- Complete household inventory.
- Important telephone numbers.

Always Keep Water for Emergencies

Store potable water in sealed, unbreakable containers. Adults need a minimum of one litre of water per day for drinking. Hot environments and intense physical activity can double that amount. Children, nursing mothers, and ill persons may need more. Replace stored water every six months.



Prepare a 72-hour Emergency Kit

In an emergency, you will need some basic supplies. You may need to get by without power or tap water. Be prepared to be self-sufficient for at least 72 hours.

Some items you should include in your 72-hour Emergency Kit include:

- Food and Water: Make sure you have at least a three-day supply of food and water on hand for each family member. Select foods that require no refrigeration and are ready to eat with little or no preparation and ideally require no water to prepare. Foods should be non-perishable, such as canned or sealed-package items. In order to properly rotate emergency kit foods with your regular pantry supplies, ensure that best before dates are clearly marked.
 - Ready-to-eat canned meats, fruits, and vegetables.
 - Canned juices, milk, soup (if powdered, store extra water) or cartons of ultra-heat-treated (UHT) milk.
 - Pantry staples such as: sugar, salt, and pepper.
 - High energy foods such as: peanut butter, jelly, crackers, granola bars, and trail mix.
 - Foods for infants, children, the elderly or persons on special diets.
 - Cookies, hard candy, sweetened cereal, instant coffee, tea bags.
 - Medicines required by family members such as insulin or prescriptions. Check with your pharmacist or physician about storing medication.
- A solar, hand wind-up, or battery-operated radio and flashlight in working order, with extra batteries.
- First aid kit and manual.
- Firefighting equipment to suppress small fires, including an all-purpose fire extinguisher (rated A-B-C).
- Personal hygiene supplies.
- Portable heating device such as a catalytic heater using kerosene or propane. Know the hazards of using these fuels and be sure to follow the manufacturer's instructions. Always make sure there is adequate ventilation to prevent the build-up of hazardous fumes.

For additional information, please review the *Public Safety Canada's Emergency Preparedness Guide* at getprepared.gc.ca



Preparing and Protecting Your Home

Insurance

Insurance is readily and reasonably available for homes (and their contents), businesses and vehicles of all types. Check regularly with your insurance agent or broker to ensure sufficient coverage, including any extensions in coverage that may be available, which were not previously.

- Coverage is available for most major hazard, e.g. fire, lightning strikes, an explosion, windstorm, hail, tornado, and many others. Flood coverage can be added to policies.
- Policies may include coverage for damage caused by sewer back-up. Make sure your policy includes sewer back-up insurance.
- Keep a detailed inventory of your residence and/or business. Keep it in your emergency kit. It will be invaluable in the event of loss or damage.
- Make sure your insurance policies and related records are in a safe location and easily available after an emergency or disaster event.
- The Insurance Bureau of Canada has information on all aspects of insurance. Their toll-free number is 1-844-227-5422.
- Know what your insurance company requires should you need to make a claim.
- Know and understand the terms and conditions of your policy. It is a common observation that after an emergency or disaster occurs, a significant number of people state that they were not actually aware of these important details. In some cases, people learned they did not actually have the coverage they had assumed or believed they had paid for. During or after a disaster is not the time to learn this.
- Sewer backup insurance is available on most policies for a small premium. Check with your insurance agent or broker.



Preparing and Protecting Your Home

Why Flooding Occurs and Prevention Tips

Municipal governments prevent flooding by maintaining the sewage systems. If you experience drainage problems, begin by ensuring that the source of flooding is not on your property. All homeowners should take steps to flood proof their property. The key to this is understanding why flooding occurs.



Sanitary Sewer

The sanitary sewer is a pipe located in the street that is designed to transport wastewater from your home to be properly treated before released back into the environment. This consists of water from sanitary fixtures and floor drains inside your house. In older homes weeping tiles around the foundation of your home may also be connected to the sanitary sewer.



Storm Sewer

The storm sewer is a pipe located under roadways designed to carry rainwater and snow melt runoff from the street and discharge it to nearby lakes and creeks. Sometimes groundwater from weeping tiles around the foundation of your home are connected to the municipal storm system. Storm sewers are usually larger than sanitary sewers because they are designed to carry heavy amounts of flow.



Rain and Snow Melt

Rain and snow melt should flow into the storm sewer or soak slowly into the ground without entering the sanitary sewer. Inflow and infiltration of the sanitary sewer from illegal connections (ie. sump pumps), maintenance hole lids, and faulty pipes can cause a supercharged sewer flow during extreme weather.



Basement Flooding

Basement flooding can occur if the home has sanitary fixtures or floor drains below the supercharged level. Most homes are equipped with roof drainage systems that discharge the water collected by eaves troughs directly onto the ground. Excess water that does not infiltrate into grassy areas will run into the street where it enters the storm sewer. It is very important that downspouts are not connected to your weeping system or to the storm sewer to allow rainwater to infiltrate and recharge groundwater levels rather than inundate the storm sewer system.

Preparing and Protecting Your Home

Why Flooding Occurs and Prevention Tips cont.



Basement Flooding cont.

If rainwater is not drained away from your house it may soak down to your foundation and create problems: it can damage your foundation; seep through cracks in your basement wall, causing dampness; or overload the municipal sewer system by draining through weeping tiles (if connected), causing a sewer backup.

You can prevent this by:

- Filling any settlement next to your house and ensure that the ground slopes away from your house on all sides.
- Always keep your downspout extension in place.
- Check to see that your downspout extension drains a good distance away from your house in an area that will not erode.
- Be careful that water does not drain into your neighbor's property.
- If your downspout is connected to the weeping tile adjacent to your home, disconnect it immediately.

You may also consider taking the following precautions to your home, but these changes vary in complexity and cost. You may be able to do some flood-proofing tasks yourself, while other changes need a qualified contractor or tradesman.



Backwater Check Valves

One aspect of flood protection involves the installation of backwater check valves on underground sanitary piping to basement fixtures. Main building drains which carry sewage from the house fixtures to the public sewer or a septic system should also be considered. In older homes this drain is not typically designed to prevent sewage from backing up in a storm event.

A backwater check valve may be installed by a homeowner or you may need to hire a qualified plumber to install it. A plumbing permit must be obtained through the municipality and the device must be inspected by Northumberland County Plumbing Services prior to covering.

Preparing and Protecting Your Home

Why Flooding Occurs and Prevention Tips cont.



Backwater Check Valves cont.

The backwater check valve must be in the nominally open position and be a full port type meaning it must always be open and the same size as the pipe. In a reversal of flow the check value will close stopping sewage from entering your house. A Canadian Standards Association (CSA) approved inline sewer backwater valve should prevent sewer backup when maintained and checked regularly.



Sump Pump

Basement sump pumps should be equipped with backup power to ensure they continue to operate in a storm event. Other important considerations for your sump pump include:

- Disconnecting your sump-pump discharge pipe if it is connected to a sanitary pipe within your home. Instead, redirect the discharge pipe to a grassy/garden area outside your home or to a French drain.
- If your weeping tile is not connected to a sump pump, it may be connected to a sanitary building drain or a storm building drain underground outside your house. Care must be taken if choosing to change this. The installation of a sump-pit and sump-pump is required to divert the weeping tile to the pit.
- Any type of excavating required for these modifications can be dangerous and should only be done by a skilled excavator and plumber. Water collected in the new sump pit from the weeping tile should be pumped up and discharged to a grassy/garden area or French drain on your property away from the house.



Other considerations

The Town of Cobourg's Building and Planning Department and Northumberland County's Plumbing Inspection Services Department can offer further advice on flood proofing considerations or requirements that might be specific to your geographic location.

Always consult a qualified plumber before you install any sewer backup protection devices. Plumbing fixtures such as toilets, sinks, showers, floor drains, and washing machines that are set below ground level require special protection from sewer backup.

Sandbagging

Sandbags will not stop the water completely but can reduce the amount of water entering your home. The Town of Cobourg's sandbagging policy outlines the Responsibility of Resident(s) and Property Owner(s), which includes:

- Mitigating flooding on private property.
- Obtaining sand and sandbags for use on private property.
- Obtaining instructional information to build a sandbag wall.
- Proper disposal of sand and sandbags at a waste management facility.

During low level flooding, sandbags placed in the right locations around your home can reduce the impact of flooding. As little as 25 sandbags can reduce the damage to your home built on a slab. It is not necessary to place a sandbag wall around your house to provide protection. Sandbags or similar products can be purchased from many hardware or garden supply stores.

How to Fill the Sandbags

- Only use sand to fill hessian bags. Do not use dirt.
- Only fill sandbag two-thirds full.
- Do not over fill the sandbag as it will be too heavy to carry.
- Do not tie the top of the sandbag.
- Take care when filling and lifting the sandbag, to avoid injury.

How to Lay Sandbags

- Lay sandbags like brickwork. Stagger rows so that the joints do not line up.
- Start at one end and work to the other end.
- Ensure the unfilled part of the bag is covered by the next bag.
- Tuck flap under the bag at the end of the row.
- If the sandbag wall is going to be more than five (5) bags high, you will need to lay two (2) rows wide.
- Flattening the top of the sandbag row before adding the next row will help the structure.



Where to Place Sandbags

Inside Your Home:

- Cover drainage holes in home including, showers, toilets and sinks to stop back flow of water.
- Place a small wall across doorways, at least the height of the expected water level. Be careful not to trap yourself inside.
- If available, plastic sheeting may be used under the sandbags to reduce seepage.



Sandbagging cont.

Where to Place Sandbags cont.

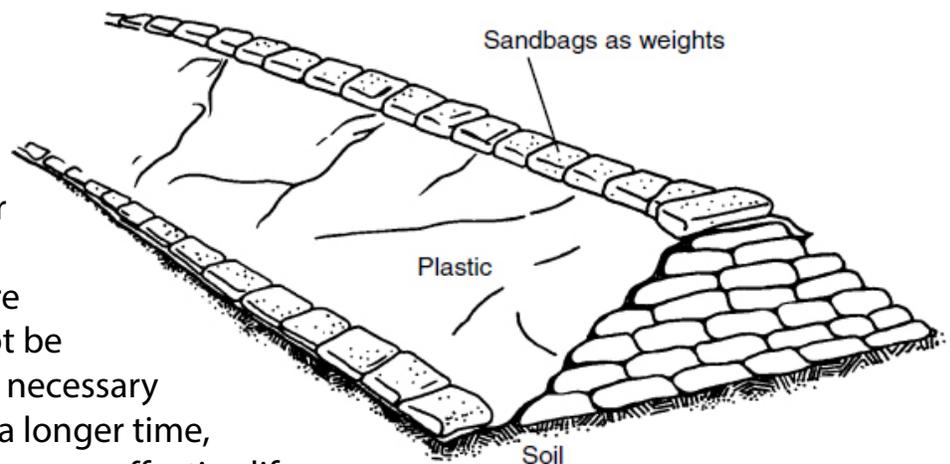
Outside Your Home:

A properly built sandbag wall can prevent or reduce flood damage during an emergency, however it is important to select an appropriate location before you begin assembly. Some key considerations include:

- Selecting the location that takes advantage of natural land features to keep the wall as short and low as possible. Avoid any obstructions which would weaken the wall.
- Do not build the wall directly against a building. Leave about 8 feet to maneuver between the sandbags and buildings.
- Remove all ice and snow from a strip of land at least as wide as the base of the sandbags.
- If the sandbag wall needs to be more than about 3 feet high, remove a strip of sod to provide better anchorage.
- The number of bags needed for 100 linear feet of wall is:
 - 800 bags for 1-foot-high wall
 - 2,000 bags for 2-foot-high wall
 - 3,400 bags for 3-foot-high wall

Limitations

It is important to know that sandbags will not seal out water. Sandbags deteriorate when exposed for several months to continued wetting and drying. If bags are placed too early, they may not be effective when needed. If it is necessary that bags remain durable for a longer time, the addition of cement can increase effective life.



Sandbags are used to provide low-flow protection (up to two feet) and protection from high flow requires a permanent type of structure.



Be Prepared!

Flood Reduction and Prevention Guide

*Brought to you by the Town of Cobourg's
Emergency Planner.*



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DISCLAIMER

Homeowners are reminded that it is their responsibility to protect their property and homes from flooding. This guide is not intended to replace the need for homeowners to consult with licensed professionals to develop a comprehensive individual flood threat reduction strategy to protect their property.