

A Guide to Flood Prevention and Recovery

THE DISTRICT MUNICIPALITY OF MUSKOKA

About This Guide

This guide was developed to increase awareness about flooding including how to prepare yourself and your property for a flood. In this guide, you will find information on how to reduce your impact to flooding, and what to do before, during and after a flood event, including measures to protect your health.

Flood Facts

- Floods are the most costly natural disasters in Canada in terms of property damage.
- A heavy rainfall can result in flooding, particularly when the ground is still frozen or already saturated from previous storms.
- Floods are typically caused by seasonal melting snow, ice jams, heavy spring rains and summer thunderstorms.
- Violent rain storms can cause flash flooding, which usually occurs with little or no warning.
- All creeks experience flooding. The potential for flood damage is high for houses and businesses constructed on low-lying, flood-prone lands.
- Over the past 60 years, average temperatures and average rainfalls in Canada have increased. Together these have led to more extreme weather, such severe storms and floods.
- Flooding can happen at any time of the year:

  Winter: Ice jams can occur behind crossings and at bends in rivers, causing water levels to back up behind the jammed ice.

  Spring: Creeks and rivers can experience high flows in the spring as rainfall and melting snow add flows to the river.

  Summer: Creeks can flood when intense, localized downpours occur with summer thunderstorms.

  Fall: Large wet weather systems, including tropical storms such as hurricane remnants can last for several days. On top of already saturated soils, prolonged and heavy precipitation can cause rivers to rise.

The information presented in this guide is for informational purposes only and is not to be considered as legal advice. For legal advice please contact a legal professional.

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Who issues Flood Forecasts and Warnings?

The Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF) issues Flood Forecasts and Warnings in Muskoka.

What do I do if a Flood Warning is issued?

Flood warnings will come with instructions. The MNDMNRF, District of Muskoka, and area municipal websites and social media channels will also provide more information.

Who manages water levels in Muskoka?

Water levels are managed by the MNDMNRF through the Muskoka River Water Management Plan.

Are dams in the Muskoka River Watershed meant to be flood control structures?

No. The dams in the Muskoka River Watershed are intended to provide for recreational water use, transportation, and protection of aquatic habitat and fish spawning areas. For more information about dams contact the MNDMNRF.

Emergency Contact Information

Ontario Provincial Police

There are two OPP detachments in Muskoka:

Bracebridge OPP Detachment
705-645-2211
690 Cedar Lane, Bracebridge, Ontario P1L 0H2

Huntsville OPP Detachment
705-789-5551
289 Ravenscliffe Road, Huntsville, Ontario P1H 1L6

Fire Services

Town of Bracebridge 705-645-5264
Town of Gravenhurst 705-687-3414 Ext. 255
Town of Huntsville 705-789-5201
Township of Georgian Bay 705-538-2337 x248
Township of Lake of Bays 705-635-2272
Township of Muskoka Lakes 705-765-3156

Hospitals and Health Care

Simcoe Muskoka District Health Unit
Gravenhurst Branch: 705-721-7520
Huntsville Branch: 705-789-8813

Huntsville District Memorial Hospital
100 Frank Miller Drive, Huntsville, ON P1H 1H7
705-789-2311

South Muskoka Memorial Hospital
75 Ann Street, Bracebridge, ON P1L 2E4
705-646-4404

#AlertMuskoka

By downloading the FREE Voyent Alert! app and registering, Muskoka residents and visitors can choose to receive notifications from a wide variety of communication channels including mobile apps, text/SMS alerting, email or voice calling.

VOYENTALERT!

For emergency assistance, DIAL 911

Non-emergency calls for service
24 hour toll free, anywhere in Ontario
1-888-310-1122
1-888-310-1133 (TTY)

Community Support

Canadian Red Cross
705-721-3313

Salvation Army Community Church
Bracebridge: 705-645-2602
Gravenhurst: 705-687-2131

United Way Simcoe Muskoka
705-726-2301 x2021

Utilities

Hydro One
Emergency 1-800-434-1235
General Inquiries 1-800-664-9376

Lakeland Power Distribution Ltd. (mainly Bracebridge and Huntsville residents)
Report an Outage 888-282-7711
General Inquiries 705-789-5442

Veridian Connections (mainly Gravenhurst residents)
Outage Hotline 1-866-579-6819
General Inquiries 1-888-445-2881

Enbridge Gas
Emergency 1-866-763-5427
General Inquiries 1-877-362-7434

Water and Wastewater
Emergency 705-645-6764
General Inquiries 705-645-2100

Flooding in Muskoka

While spring brings the promise of warmer weather and longer days, it also brings a variety of conditions, including heavy rain, severe weather and rapid snow melt that can increase the risk of flooding in flood-prone areas.

Spring Freshet: When the season changes from winter to spring, the snowpack starts to melt and runs into lake and river systems. This melting snow and ice combined with spring's rainy conditions and a still frozen ground can cause flooding. The spring freshet can last from March to May.



What is the District of Muskoka doing about flooding?

While the spring freshet is a natural process, due to flooding in Muskoka in the last decade, the District undertook the first phase of the multi-year Flood Plain Mapping Project (FPMP) to better identify areas at risk of seasonal flooding. The goal is to have more information to assist with emergency management plans and help inform land-use planning policies. The FPMP can also be used to determine high-risk areas.

Flood plain mapping is also essential for land-use planning to ensure future development is not permitted in flood zones. Development in these areas can result in property damage properties if flooding or erosion occurs and, in extreme cases, could result in loss of life.

The District of Muskoka has also initiated a suite of projects relating to flooding under the Integrated Watershed Management Initiative, which includes mapping more flood plains.

Is your home or business in a floodplain? Check the Muskoka GeoHub to find out! The Muskoka GeoHub also allows you to interact with **Floodine** and **LiDAR** mapping, view real time water levels in Muskoka, and view historically flooded roadways.

The MNDMNRF issues Flood Forecasts and Warnings in Muskoka. Here are definitions to be aware of:

Water Safety Statement
High flows, unsafe banks, melting ice or other factors could be dangerous for recreational users such as anglers, canoeists, hikers, children, pets, etc. Flooding is not expected.



Flood Outlook Statement
Early notice of the potential for flooding based on weather forecasts calling for heavy rain, snow melt, high wind or other conditions that could lead to high runoff, cause ice jams, lakeshore flooding or erosion.



Flood Watch
Flooding is possible in specific watercourses or municipalities. Municipalities, emergency services and individual landowners in flood-prone areas should prepare.



Flood Warning
Flooding is imminent or already occurring in specific watercourses or municipalities. Municipalities and individuals should take action to deal with flood conditions. This may include road closures and evacuations.



Flood Prevention Tips

- Improve lot grading, making sure that the ground slopes away from your exterior walls.
- Maintain all original property swales to divert water away from your home.
- Divert water at least 2 meters away from your home using a downspout to a vegetated, safe discharge point away from adjacent property lines, sidewalks, or building foundations.
- Have a drainage contractor visit your home to inspect your stormwater and wastewater laterals.
- Consider a sanitary wastewater backflow preventer valve to reduce the risk of sewage backup into your basement.
- During flooding events, avoid stepping in ponding water (in your basement or on roads), if you can.
- During flooding events, do NOT open manhole covers if you notice water ponding on the street.
- Regularly inspect and maintain your home's flood prevention devices (i.e., backwater valves, sump pumps, floor drains).
- Check for and reduce leaks in walls, floors and windows or foundation, and ensure windows and doors at ground level are weather protected and in good working order.
- Ensure that gardens next to your basement walls do not retain water next to the house.
- Clean leaves and other debris from eavestroughs and downspouts to ensure proper drainage.
- In winter, shovel ice and snow at least 2 meters away from basement walls
- Plan ahead for snow storage areas. Don't pile snow near your home to prevent the meltwater from draining into your foundation.
- Ensure downspouts, sump pumps, window well drains and driveway drains are disconnected from the wastewater system.
- If your weeping tile and downspouts are connected to the wastewater system (mostly for homes built in the mid-1970s), consider disconnecting it and installing an automatic sump pump. You will need an inspection from your Town or Township to ensure the overflow is discharging to an appropriate area.

If you experience a flood, take note of:

- **Where the water comes from (toilets, wall, window well, etc.)**
- **What color is the water (clear, greyish)**
- **If it smells (has odour, no odour)**

This information can help determine the type and cause of flooding. As a result, you can take necessary actions to reduce your risk of experiencing the same type of flood in the future.

Be Prepared for a Flood

When it comes to emergency management, everyone has a role to play! Be aware, know your risks, make a plan, practice your plan, make a kit!

1 Be Aware

Take time to learn about floods. Flooding has become the most frequent and costly natural disaster in Canada. Stay informed by downloading the Muskoka Voyant Alert! App.

2 Know Your Risk

No one knows your property better than you. Have you experienced flooding in the past? Have you checked the Muskoka GeoHub to see if your property is in the floodplain? Does your insurance policy include flood coverage? Do you know how to make a flood claim to your insurance company?

3 Minimize Your Risk

After assessing your flood risk, minimize the risk by taking proactive measures. A full list of tips are on page 4 of this guide.

4 Make A Plan

Emergencies rarely happen when everyone is home. An emergency plan will prepare your family for what to do, how to find each other, and how to communicate. Make sure to practice and update the plan as necessary. **Review the Government of Canada's Emergency Preparedness Guide.**

5 Prepare an Emergency Kit

Can you keep yourself and your family safe for 72 hours after an emergency? Have an emergency kit ready with items so that you and your family will remain safe and taken care of for at least 3 days after an emergency.

72-hour Emergency Kit Checklist

- Flashlight
- Battery-operated or crank radio
- Spare batteries (for flashlight and/or radio)
- First-aid kit
- Candles and matches/lighter
- Extra car keys and cash
- Important papers (copies of identification, insurance policies)
- Non-perishable food and bottled water (as much as your family can manage to carry)
- Items needed to open food (such as a manual can opener)
- Clothing and footwear
- Blankets or sleeping bags
- Toilet paper and other personal hygiene items
- Medication (especially prescription—72 hours worth at least)
- Eyewear (glasses/contacts)
- Whistle (to attract attention, if needed)
- Playing cards (or other quiet games/toys)
- Paper/pencils/pens
- Map of your community (for locating shelters)
- Phone charger
- Don't forget about your pets! Include pet food, water bowls, ID tags, copies of vaccinations, familiar bedding, toys, and more. Find a full list at **OntarioSPCA.ca** for more information.

Before a Flood

Reduce your risk of flood damage. Prior to the beginning of the snowmelt, consider the following if you believe your property or buildings may be subject to flooding:

- Relocate items of value above the flood level. This may mean items in your basement, garage, shed, yard, boathouse or other structures.
- Check your sump pump to ensure that it is working. Do you need an auxiliary pump to accommodate high water flows? If your sump pump has a battery backup, ensure the batteries are fresh and replace the batteries as required.
- Do you have an adequate supply of sand bags and sand to build a dyke around your house? Do you know material suppliers? Have you considered portable or reusable water-inflated dams?
- Securely tie off your dock to the land.
- Listen to the radio and television in addition to monitoring social media outlets for emergency information. The District of Muskoka will share the MNDMNRF's high water safety bulletins, flood advisories, flood warnings and emergency statements. Follow directions for your safety.
- If you live on a major lake in Muskoka, check for live water levels on the Muskoka GeoHub.
- Locate alternative accommodation in the event that you are forced to leave, such as with friends or family.
- Is your electrical panel above the flood elevation? Know where to shut off main electrical feed to the building to avoid an electrical shock or electrocution. Do not attempt to shut off electricity if any water is present. Water and live electrical wires can be lethal.
- Every fall, ensure you service or clear your gutters.
- Make sure basement windows are closed.
- Ensure that generators, hoses and portable pumps are maintained and accessible should they be required.
- Always operate gas powered equipment in a well ventilated outdoor area.
- Remove lawnmower, snowmobiles, ATVs, boats, lawn furniture, etc. from flood prone areas.

Insurance considerations: According to the Insurance Bureau of Canada (IBC), increasingly severe weather means that basement flooding and water damage are becoming more common. IBC offers the following tips when considering your coverage.

- Sudden and accidental bursting of plumbing pipes and appliances is covered by all home insurance policies. However, damage may not be covered when freezing causes the escape of water.
- Historically in Canada, home insurance policies haven't covered loss or damage caused by overland flooding, which occurs when bodies of fresh water, such as rivers or dams overflow onto dry land. This is no longer the case in Canada. Many insurers now offer residential overland flood coverage for the majority of homes across the country. This coverage is optional and based on risk. Commonly, this coverage is combined with sewer back up coverage, which is also optional. Even if you don't live by a lake or river, your home could still experience flood damage in a variety of different ways. Check with your insurance representative on cost and availability for your home.
- Water damage in a basement due to a sewer backup is only covered if specific sewer backup coverage has been purchased.
- In certain circumstances, homeowners who are unable to return home due to insurable damage are entitled to additional living expenses.

During a Flood

What to do during a flood. Flooding can happen quickly. Keep informed by monitoring your local news for weather updates and special announcements from local officials. You can also check the District of Muskoka's website for news releases and updates on social media. The **Voyant Alert!** App will also keep you informed during an emergency.

If you stay in your home: Take precautions to prevent illness and injury before you enter any area that has been flooded.

- Assume that everything touched by floodwaters is contaminated. Stay clear unless your skin is covered and you are wearing protective clothing such as coveralls, rubber boots, gloves and masks.
- Keep children and pets away from flooded areas and contaminated items.
- Before entering your home, check for foundation and structural damage and make sure all porch roofs and overhangs are supported. If you suspect any damage, leave your home until a professional such as a building inspector has confirmed it is safe to re-enter.
- If you notice any gas odours, evacuate your home and contact the gas company or fire department.
- Only if it is safe to do so, turn off electricity in your home at the main breaker or fuse box. Consider professional assistance if your home has been flooded.

If you are evacuated: Leave your home when asked to do so by Emergency Officials.

- Follow the route specified.
- Do **NOT** try to pass through flooded roads in a vehicle or on foot unless absolutely necessary for life threating conditions.
- Pay attention to weather alerts, social media, local media, and officials going door-to-door.
- Travel only on routes specified by officials—a shortcut could take you to a blocked or dangerous area.
- If you have time and can do so safely, take your 72-hour Emergency Kit, medications, and needed supplies with you in the event of an extended evacuation.
- If it is safe to do so, shut off water, gas and electricity in your home. If not, evacuate your home but do not go back inside until a utility company has confirmed it is safe.
- If you're able to, check to see if your neighbours require assistance.

Be aware of potential hazards during flood conditions. Flooding conditions make for hazardous situations. Here are some potential hazards to be aware of:

- Standing water may be electrically charged by indoor electrical systems and underground or downed power lines. Keep yourself, children and pets away from standing water and downed power lines.
- Floodwaters can move quickly and pose a risk of drowning. Protect your safety and do not drive or walk through floodwaters.
- Building structures can be affected and become unsafe. Leave your home if there are any signs of potential foundation and structural damage.
- Floodwaters often erode roads and walkways. Roads may have weakened and could collapse under the weight of a car. Don’t drive or walk through flood waters.
- Flood waters can contain sewage, chemicals and debris like broken glass. Keep yourself, family and pets away from flood waters.
- Do not enter a flood area unless wearing appropriate personal protective equipment and clothing.

After a Flood: Initial Safety Precautions

Restore your home to good order as soon as possible to protect your health and prevent further damage to the house and its contents. But first, it's important to keep in mind initial safety precautions.

What To Do First:

- Take pictures.
- Call your insurance company as soon as possible. Report any damage caused by the flooding. They will also advise you on how to proceed.
- Call in professionals such as a damage restoration company to have the area cleaned properly.
- Where possible, take measures to dry your home quickly to prevent further damage and mould growth. Use fans and dehumidifiers.

Before Re-Entering Your Home:

- If the main power switch was not turned off prior to flooding, do not re-enter your home until a qualified electrician has determined it is safe to do so.
- Appliances that may have been flooded pose a risk of shock or fire when turned on. Do not use any appliances, heating, pressure, or sewage system until electrical components have been thoroughly cleaned, dried, and inspected by a qualified electrician.
- The main electrical panel must be cleaned, dried, and tested by a qualified electrician to ensure that it is safe.
- Depending on where you live, your municipal or the provincial inspection authority is responsible for the permitting process required before your electric utility can reconnect power to your home.

Flooding can affect your safety and your health. **Take precautions to prevent illness and injury.**

- If you had to evacuate your home, stay tuned to your local radio or television station or call your local municipality to find out when it is safe to return home. You can also visit your municipality's website for updates.
- Don't drive or walk through floodwaters.
- Stay away from downed powerlines.
- Assume that everything touched by floodwaters is contaminated.
- Keep children and pets away from flooded areas and contaminated items.
- When you do return home, go with someone else and carry a cell phone.

Be Water Aware

- Flood water can be heavily contaminated with sewage and other pollutants that can cause sickness and infections.
- You will be notified if the municipal drinking water is unsafe to drink.
- If you are on a well or river/lake water, your well or source could be contaminated. Contact the **Simcoe Muskoka District Health Unit** for information on flushing and disinfecting your well and testing your water.
- If you are on a septic system, and depending on the extent of flooding to your property, you should consider having your septic system inspected by a licensed contractor.

After a Flood: Cleaning Up

Before You Clean Up

When you first arrive home, no part of a flooded room or area can be assumed safe. Ensure that battery powered flashlights or lanterns are used. Using candles, gas lanterns, or torches could be an ignition source.

- Do not enter a flooded room or area where electrical equipment may still be plugged in - there is a high risk of shock. Remember, electricity can travel through water or wet material like carpets.
- Never assume any part of a flooded electrical system is safe, including the main breaker or circuit breaker.
- Do not plug in or attempt to use electrical appliances that have been wet until they have been checked or serviced by an electrician or service agency. Ask your electrician, or contact the manufacturer or dealer for the nearest service location.

For more information on electrical safety, be sure to review the Electrical Safety Authority's Guidelines on what to do in the event of flooding or water damage.

First steps

Take measures to prevent further damage to your home and belongings:

- Remove standing water with pumps or pails, a wet/dry vacuum and rags and/or towels. If you experience severe water levels in your basement, contact a professional damage restoration company to help drain the water slowly to prevent structural damage.
- Make decisions about what to keep and what to throw away. Remove as much as you can out of the rooms that were flooded as quickly as possible to help prevent water damage and mould. Some belongings, especially those that are contaminated with sewage, or those that cannot be quickly dried and effectively cleaned, may not be salvageable.
- Remove soaked and dirty building materials and debris, including wet insulation and drywall.
- Quickly and thoroughly dry and dehumidify your home. Ventilating the area with outdoor air and fans will help. A dehumidifier will work to remove moisture from the home.

Food may have been contaminated by flood waters or spoiled if the power went out. Visit the Simcoe Muskoka District Health Unit's website for information about food safety after a flood.

Flood Clean-Up Checklist:

- Gloves, masks (N95 respirators), goggles, and other protective gear
- Pails, mops, squeegees, plastic garbage bags, and unscented detergent
- Large containers for wet bedding and clothing, and lines to hang them to dry
- You may also need to rent extension cords, submersible pumps, wet/dry shop vacuums, and dehumidifiers or heaters

After a Flood: Cleaning Up

Surface Cleaning

- Do NOT mix cleaning products and always read and follow the product label.
- Clean and disinfect all surfaces and belongings. Use a disinfectant such as household bleach. Be sure to wear appropriate personal protective equipment and ventilate the area.
- Thoroughly clean and disinfect appliances that can be salvaged.
- Thoroughly clean and then disinfect dishes, eating and cooking utensils and food contact surfaces. Use a disinfectant that is non-toxic and safe for food contact surfaces.
- Discard any eating utensils, cutting boards and other food contact surfaces that cannot be properly cleaned and disinfected

What To Do With Household Items

- Items that have been contaminated by sewage or that have been wet for a long time and cannot be washed and disinfected should be discarded.
- Carpets and upholstered furniture that can be salvaged may need to be professionally cleaned and dried. If these items are sewage-soaked, they should be discarded.
- Wet drywall and insulation should be removed to allow studding to dry.
- Washable clothes can be salvaged

Not sure how to dispose of something? Use the District's Waste Wizard! Available on the App Store or Google Play.

Disposing Items

- Visit **muskokarecycles.ca** for information about waste disposal. Not sure where things go? Download the Muskoka Recycles App or visit the District's online Waste Wizard on how to properly dispose of materials.
- Deliver damaged end-of-life items and and construction/demolition material like flooring, carpets, drywall, and furniture to your nearest waste facility. For large volumes of material that exceed a pick-up truck and utility trailer load - must be delivered to the Rosewarne Landfill in Bracebridge.
- In some cases, a private contracted waste management service (bin delivery) may be the best solution for significant volumes of material.
- Expired or unsafe food can be delivered to any District Transfer Station or can be put in your green bin for curbside collection, where available.
- If flooding happens, stay tuned to your local municipal website and the District of Muskoka website for more information on support programs that may be available.

Mould

Mould can grow on wet surfaces in as little as 48 hours and any growth over time indicates a continuing moisture problem. If you begin to notice mould growth anywhere in your home after the flood, it is important to remove the source of moisture and clean the affected area.

Getting Rid of Mould

The size of the affected area will determine whether you should clean and remediate the area yourself (small areas no more than one square metre) or hire a professional (large areas greater than one square metre).

Post-Flood Health Considerations

Stay safe while addressing a flood in your home. Below is some important health information, along with tips and considerations to keep in mind while you are managing clean up and repairs. First and foremost, wear appropriate personal protective equipment, wash hands frequently with soap and clean water and protect open sores with waterproof coverings.

Potential Health Risks

Contaminated flood waters can pose a risk to your health. Ingestion of disease-causing bacteria, viruses and other germs found in sewage can cause gastrointestinal (GI) illness. Vomiting and diarrhea are common symptoms of GI illness. Skin contact with contaminated flood water can cause skin rashes and infection in open sores.

Indoor Air Quality

During clean up and over time, indoor air quality can be affected, such as:

• Dust created during clean-up activities can become airborne. Close off the flooded areas during clean up and repair to prevent dust spreading to other rooms in the house. Also, keep rooms well ventilated while working.

• Use of cleaners and disinfectants can release vapours. Keep rooms well ventilated. Wear protective clothing such as gloves and masks and keep children away from the area when using these cleaning solutions.

• Mould can grow on wet building materials and belongings. Discard contaminated items and dry remaining items as quickly as possible (i.e. within 48 hours)

Stress and Mental Health

Coping after a crisis. You may experience strong feelings of stress immediately or weeks after a flood or significant weather-related event. Stress can change how you feel and act. Acknowledging how you feel can help you manage stress. It is normal to have feelings of anxiety, grief, sadness, helplessness and anger after a significant event. Everyone has different methods of coping, and it will take time before you start to feel better.

Some tips to help cope:

- Talk about your feelings with loved ones.
- Follow your normal routine as much as possible.
- Eat healthy meals and try to get regular sleep.
- Exercise and stay active.
- Accept help from your community.
- Offer to help in your community.
- Be compassionate with yourself and others.

Visit the Simcoe Muskoka District Health Unit Website for more information on coping with the effects after a disaster, including on how to help children cope.

If you need support, reach out. Muskoka-Parry Sound Community Mental Health Services can be reached 24-7 at 1-800-245-5036.