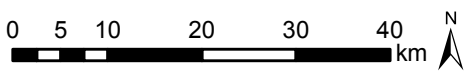
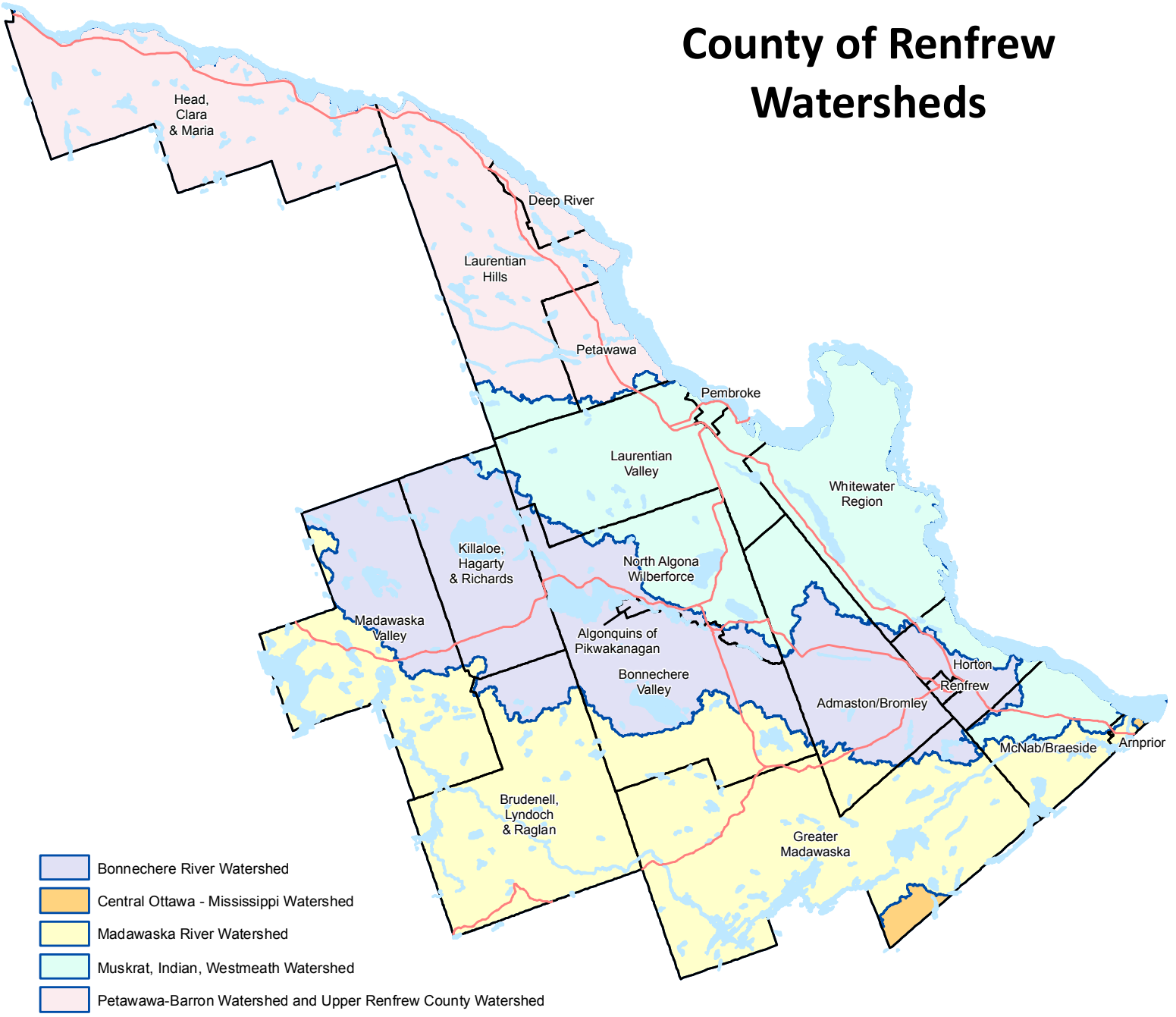


County of Renfrew Flood Preparation and Recovery



Emergency Services

County of Renfrew Watersheds



Produced by:
County of Renfrew Development and Property Department
9 International Drive
Pembroke, Ontario K8A 6W5

Sources:
Base Data: With Data supplied under Licence by Members of the
Ontario Geospatial Data Exchange & County of Renfrew
Projection: UTM NAD83 Zone 18

This map is illustrative only. Do not rely on it as being a
precise indicator of routes, locations of features, nor as
a guide to navigation.

March 21, 2019

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SECTION ONE BEFORE THE FLOOD

1.1 Make a Plan

In an emergency, your family may not be together, or you may be asked to evacuate your home. Thinking about what you would do in different situations and preparing a plan with every member of your family is the first step to being prepared.

WHAT YOUR PLAN SHOULD INCLUDE

A Family Communications Plan

During an emergency, it may be easier to reach someone using text messaging or social media or to make a long-distance call than to call someone locally (due to network damage or a jammed system). Discuss with your family which way(s) you will try to get in touch with each other. Identify one or two out-of-town contacts you and your loved ones can call or text message to connect and share information. Be sure they live far enough away so they will not likely be affected by the same emergency.

- **Contact 1:**
- **Contact 2:**

Make sure everyone in your family, as well as your two key contacts, knows how to use text messaging. During emergencies, these messages may often get through even when phone calls may not. Always keep your communications devices fully charged.

Evacuation Plan

In case you are asked to evacuate your home, or even your area, select two safe locations you could go to. One should be nearby, such as a local library or community centre. The other one should be farther away, outside your neighbourhood, in case the emergency affects a large area.

- **Safe meeting place 1 (near home):**
- **Safe meeting place 2 (outside my neighbourhood):**

You should also plan how you would travel to a safe location if evacuation was advised. Have an [emergency survival kit](#) ready to take with you (that's Step 2). And if you have pets, think of someone who can take your pet(s) if you have to leave your home. Often, only service animals are allowed at reception centres.

- **My evacuation route:**
- **Location of my emergency survival kit:**
- **Location and contact information for pet assistance:**

Review of Safety in Your Home

Evacuation Route

Make sure everyone in your family knows how to safely exit your home—by a main exit and an alternate one. Be sure to consider your living situation. For instance, if you live in a high-rise and have special needs, talk to your building manager or neighbours to make special arrangements, if necessary.

- **Review of safe exits from home**

Emergency Numbers

Keep a listing of emergency numbers at the ready and make sure all members of your family know where they are. Teach children when and how to dial 9-1-1 and other key numbers they may need to call. Here are some numbers you should consider having on this list:

- Family Doctor
- Telehealth
- Poison control
- Family & friends who can lend support in a crisis
- Insurance contact
- Utility companies

Fire and Other Safety

Follow general household safety rules for smoke alarms, carbon monoxide detectors and fire extinguishers. More information on how many to have, where to place them, how often to check and replace them can be obtained from your local fire department.

- **Review of household fire rules and other safety plans**

Utility Shut-off Procedure

Every adult in your family, as well as older children, should also know how to turn off main utilities—water, electricity, gas. In certain emergencies, authorities will ask that these be turned off for safety reasons. Write out instructions, if needed, and post somewhere visible. Everyone should also know where the floor drain is located and ensure that it is not obstructed, in case of flooding.

- **Review of directions to turn-off utilities—water valve, electrical panel, gas valve**

Important Documents

Make copies of important documents (insurance, main identification documents like driver's licence and passport, birth and marriage certificates, wills). Keep with your plan in a safe place. Consider sharing copies with out-of-town family members or keep a set in a safety deposit box.

- **Packet of important documents**

Emergency Planning and Safety Beyond Your Home

Inquire at your workplace, and your child's school or daycare about their emergency plans. Find out about their evacuation plans and how they will contact family in an emergency. Make sure that you keep all relevant contact information up to date at work and at your child's school or daycare, and make sure any people designated to pick up your child are familiar with your emergency plan.

Think of your neighbours. Identify anyone who may need assistance during an emergency and discuss a plan with them and other neighbours. For instance, help them prepare an emergency plan and survival kit, and arrange to check in on that person during an emergency, like a power outage.

Planning for Special Needs

If you or anyone in your family has special needs, be sure your plan reflects them. For instance, for someone with special medical needs or a medical condition, you may want to include in your plan a medical history, copies of prescriptions, information for key health-care contacts. Your emergency kit should also contain extra medications and supplies. You may not have access to conveniences, such as pharmacies, immediately after an emergency has occurred. It is also a good idea to teach others about any special needs, such as how to use medical equipment or administer medicine.

To learn more about emergency planning for disability and special needs, consult our [guide for people with disabilities/special needs](#).

When Your Plan Is Ready

- Discuss your plan with other family and friends so they know what you would do in an emergency.
- Keep your plan in an easy to reach location. A good place is with your emergency kit. Make sure everyone in your family knows where to find it.
- Once a year, review your plan with the entire family. Update it to reflect any changes you want to make.
- Refresh your survival kit at the same time, with new food, water and other supplies.

1.2 Flood Preparation Instructions

Floods are unpredictable and destructive, and they can happen in regions that have never seen rain. They can cause death and injuries, isolate communities, damage major infrastructure, cut essential services, destroy property and livelihoods.

In Canada, flooding could happen anywhere, at any time and from a variety of water sources including freshet on lakes, rivers and creeks or overflowing catchments and due to heavy rainfall caused by storms.

Apart from the physical damage to property, experiencing a flood can be an extremely emotional time. If you are not prepared for the possibility of a flood, recovery can be slow, stressful and costly.

A few hours spent making your home secure, preparing an emergency kit and flood plan can help you to survive the affect of a flood.

You need to:

- Understand the flood risk to your area
- Prepare your home and property
- Respond when water comes
- Recover after a flood

You can prepare for flooding in several ways:

- Check with your local municipality about local flood plans or records which detail problem areas
- Ask authorities about relocation routes and reception centres
- If your area is flood prone consider alternatives to carpets
- Prepare an emergency kit
- Prepare a household flood plan
- Keep a list of emergency telephone numbers on display
- Check your insurance policy to see if you are covered for flood damage

If flooding is imminent make your safety a priority and if you have time, try to prepare your property:

- Secure hazardous items
- Roll up rugs, move furniture, electrical items and valuables to a higher level
- Place important personal documents, valuables and vital medical supplies into a waterproof case in an accessible location
- If you are relocating, take your pets with you if it is safe to do so. If not, provide adequate food and water and move them to a safe place
- Monitor Environment Canada forecasts and warnings online and listen to your local radio station

Relocating to safer ground:

- If rising waters threaten your home and you decide to move to a safer location, tell your Municipality and/or your neighbours of your plans to move
- Monitor your local radio for warnings and advice
- Pack warm clothing, essential medication, valuables and personal papers in waterproof bags along with your emergency kit
- Raise furniture, clothing and valuables onto beds, tables and into roof space place electrical items in the highest place
- Empty freezers and refrigerators, leaving doors open to avoid damage or loss if they float.
- Turn off power, water and gas

- take your mobile phone
- Whether you leave or stay, put sand bags in the toilet bowl and over all laundry/bathroom drain holes to prevent sewage backflow
- Lock your home and take recommended relocation routes for your area
- Do not drive into water of unknown depth and current

If it's too late to leave:

- Let your municipal office know you plan to stay and shelter in place
- Monitor your local radio for warnings and advice
- Get to higher ground
- Switch off electricity and gas supplies to your home
- Prepare to move vehicles, outdoor equipment, garbage, chemical and poisons to higher locations
- Prepare for the well being of pets
- Raise furniture above likely flood levels
- Check your emergency kit
- Do not allow children to play in or near floodwaters
- Avoid entering floodwaters, if you must do so, wear solid shoes and safety equipment; check depth and current with a stick
- Stay away from drains, culverts and water over knee deep
- Do not use gas or electrical appliances that have been in floodwater until checked for safety
- Do not eat food that has been in floodwaters
- Boil tap water until supplies have been declared safe or drink bottled water

1.3 Building an Emergency Kit

Essentials

- Food (non-perishable and easy-to-prepare items, enough for 3 days) and a manual can opener
- Bottled water (4 litres per person for each day)
- Medication(s)
- Flashlight
- Radio (crank or battery-run)
- Extra batteries
- First-aid kit
- Candles and matches/lighter
- Hand sanitizer or moist towelettes
- Important papers (identification, contact lists, copies of prescriptions, etc.)
- Extra car keys and cash
- Whistle (to attract attention, if needed)
- Zip-lock bag (to keep things dry)
- Garbage bags

Special Considerations

- Items for babies and small children—diapers, formula, bottles, baby food, comfort items
- Prescription medication
- Medical supplies and equipment
- Pet food and supplies
- Any other items specific to your family's needs

Extra Supplies for Evacuation

- Clothes, shoes
- Sleeping bags or blankets
- Personal items (soap, toothpaste, shampoo, other toiletries)
- Playing cards, travel games, other activities for children

OTHER TIPS

- Pack the contents of your kit in an easy-to-carry bag(s) or a case on wheels.
- Store your kit in a place that is easy to reach and ensure that everyone in your family knows where it is.
- Your kit does not have to be built overnight. Spread your shopping over a few weeks. Purchase a few items every time you go to the store.
- Your water supply is meant to cover what you would drink as well as what you might need for food preparation, hygiene and dishwashing.
- Check and refresh your kit twice a year—when the clocks shift to/from daylight savings time is a good time.
- Check all expiry dates and replace food and water with a fresh supply. Check batteries and replace as needed.
- Keep your cell phone or mobile device fully charged and have a spare charger handy.

https://www.emergencymanagementontario.ca/english/beprepared/Step2BuildAKit/Step2_build_a_kit.html

1.4 How to Sandbag...

If you come upon a flowing current where water is above your ankles, stop, turn around and go the other way - six inches of swiftly moving water can sweep you off your feet.

Never underestimate the swiftness of the water - flooded rivers and streams are unpredictable. Even though the surface water may be smooth, the water may be moving very fast. If you must walk in water, wherever possible, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you. Always wear a lifejacket when working near the waters edge.

Never attempt to drive or walk in flood water. A mere six inches of fast-moving water can knock over an adult. Two feet of rushing water can carry away most vehicles, including SUVs and pick-up trucks.

Sandbagging

To minimize flood water damage, sandbagging is one of the most versatile flood fighting tools. It is a simple, effective way to prevent or reduce flood water damage. Homeowners who are preparing homemade sandbags need to be aware of the proper steps to take:

- Two people should be part of the sandbagging process. It will take about one hour to fill and place 100 sandbags, giving you a 1-x-20-foot wall.
- Make sure you have enough sand, burlap or plastic bags, shovels and time to properly prepare.
- Contact your local municipality for information on obtaining sandbags.

Fill materials:

Sand is by far the easiest material for filling and shaping sandbags and becomes heavier when saturated from rain or moisture.

- In emergencies, other materials such as silt, clay, gravel or a mixture of these may be used, but none work as well as sand.
- When vehicle access is cut off to the flood site, and you have no other choice, use the back side of the levee or an adjacent field to find whatever material is available to fill sandbags.

Proper filling procedure:

- Always use gloves and avoid touching your eyes and mouth.
- Filling sandbags is normally a two- to three-person task.
- One member while crouching with feet apart and arms extended places the bottom of the empty bag on the ground.
- The opening of the bag is folded outward about 1 to 1.5 inches to form a collar and held open to allow the second team member to only fill with material approximately one-half or two-thirds full, and then fold them over and tie them at the top. This allows the bags to conform to each other and make the wall watertight.
- Don't hurry, haste can result in undue spillage and additional work.
- The third team member stockpiles or stacks the open sacks.

Proper placement:

- Remove any debris from the areas where bags are to be placed.
- Place the bags lengthwise and parallel to the direction of flow if water is moving swiftly.
- If water is slow moving or from a body of water place bag with the sealed end towards the water.
- Fill the low spots first before placing bags the full length of the area to be raised.
- Start at approximately one foot landward from the river or levee's edge.
- For moving water, fold the open end of the bag under the filled portion. The folded end of bag should face upstream.
- Place succeeding bags with the bottom of the bag tightly and partially overlapping the previous bag.
- Offset adjacent rows or layers by one-half bag length to avoid continuous joints.

See the following diagrams for quick reference on estimating quantities needed and site design to ensure safety in large operations.

Lesson - Sandbags



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Summary

- Safety (working in/around flooded areas)
- Sandbags (general, correct filling, different kinds of sandbags)
- Logistics (materials, personnel, area, quantities per hour)
- Correct usage of sandbags

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2

Safety



gloves



life vest/PFD



rubber boots



waders

Sandbag types

- Different sizes



Sandbag types

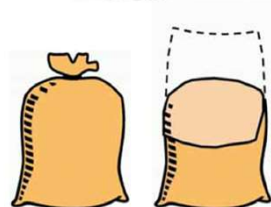
- Different materials



Filling sandbags



Correct filling (max. 20 kg or 2/3)



Filling methods



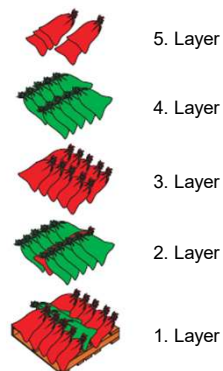
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Logistics



Packing-Example with 50 sandbags
on each pallet



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Logistics

Transport

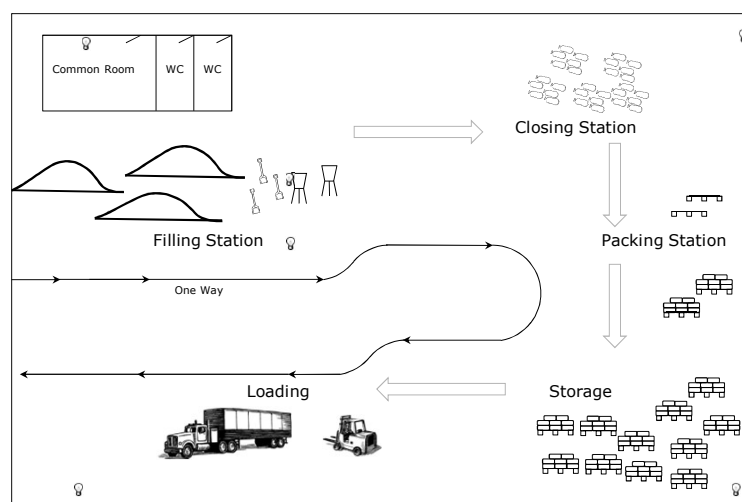


by truck



by hand

Example of a Sandbag Filling Area



Logistics

Filling area



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Logistics

- Purchasing the material
- Demand of time, personnel and material

The calculations apply only to a sandbags with the dimensions of 70cm x 30 cm with a 2/3 filling.
The determined number of sandbags applies, when the sandbags are laid with the Bottom facing water.
A transverse laying increases the sandbags requirement by the factor of 1,56.

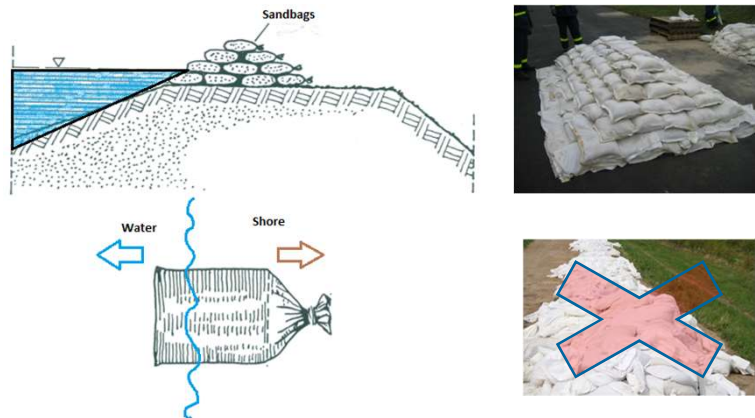
		Protection height	Number of Sandbags at a Length of		
			10 meters	50 meters	100 meters
	1 Line	10 cm	21	107	214
	2 Lines	20 cm	64	321	643
	3 Lines	30 cm	129	643	1286
	4 Lines	40 cm	214	1071	2143
	5 Lines	50 cm	321	1607	3214
	6 Lines	60 cm	450	2250	4500
	7 Lines	70 cm	600	3000	6000
	8 Lines	80 cm	771	3857	7714
	9 Lines	90 cm	964	4821	9643
	10 Lines	100 cm	1179	5893	11786

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How to use a sandbag

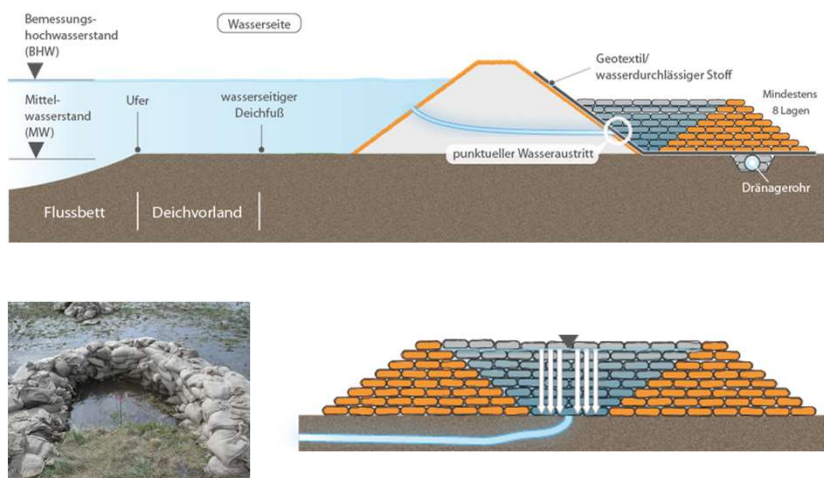
- How to build a sandbag wall



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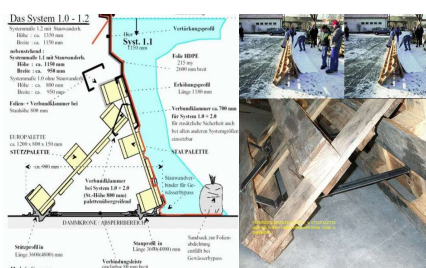
How to use a sandbag



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Forecast / Alternates



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SECTION TWO Co-ordination & Communication

The objective of this document is to support our communities and provide essential information for preparation and to flood victims. Communication is essential to coordinating all aspects of a successful flood preparation, clean-up and recovery process. It is important for community members, emergency services, municipal leadership and staff to work together to develop community support hubs and build trust in leadership, response and flood mitigation moving forward. In the early stages of the flood, there are changing needs that shift from being in a state of emergency to repairing and restoring homes, properties and belongings affected by the flood waters. When the water recedes needs will focus on safety, health, restoring basic necessities, entering and repairing flooded homes safely, and also include understanding and coping with the emotional and financial impacts from the flood.

Information and Needs:

Community Health & Safety Needs

- Continued access to washroom/shower facilities
- Reliable telephone/internet access and cell charging stations
- First Aid and hand washing stations or access to alcohol-based sanitizers
- Reconnecting utilities and services to affected areas.
- Contaminated and hazardous waste removal
- Domestic and wild animal management

Additional Information and Support Services Needs

- Access to medications and Emergency Services staff for vulnerable and at-risk populations
- Emergency Response Services (Police & Paramedic)
- Community Defibrillator Locations
- First Aid Stations
- Transportation and mobility
- Community support services
- Grief, distress and counselling support services

Home & Property Needs

- Temporary food and housing support
- Entering and cleaning buildings and property
- Well and septic care
- Building and property structures
- Salvaging/replacing important personal documents
- Charging stations for small hand tools
- Lending library for small tools and equipment (Fans and Humidifiers)

SECTION THREE Returning to Home and Property

3.1 Safety and Health

At the beginning of the flood clean up and recovery process is the continuous need to monitor and respond to everyone's safety and health concerns in the affected and surrounding flood areas. High priority safety and health issues include the possibility of landslides, lake and river property erosion, hazardous debris, electrical and gas hazards, contaminated materials and other environmental toxins. The following provides comprehensive information that has been compiled to effectively support community efforts to prevent and mitigate further safety and health issues.

Avoid Electrocuting & Shock

Increased risk of electrocution and shock are high in flood affected homes and areas. All efforts need to be made to ensure electrical services, pumps and appliances are properly dried and in proper working order for safe post-flood use. Utility companies need be contacted immediately for downed power lines, particularly those in water.

Landslide Safety

Avoid sloped areas and inclines that may have been compromised by heavy rains and increased water flow along riverbanks and areas experiencing receding flood waters.

Chainsaws

The potential risk for injury from chainsaw use commonly increases after natural disasters. In the clean up phase it may be necessary to use gas powered chainsaws to remove fallen or partially fallen trees, branches and deadheads. Only operate chainsaws and other equipment if you are experienced and trained to do so. Bystanders should stay a safe distance from cutting activities, and the chain saw operator should wear proper protective equipment and follow safety guidelines.

Exposure to Contaminants & Hazardous Material

Flood and standing water contain bacteria and contaminants like sewage that are harmful and hazardous to humans and domestic animals. It is important to wash hands often, use alcohol-based sanitizers and limit exposure by dealing with contaminated items quickly and properly. Children, pregnant women and individuals with respiratory problems should not handle contaminated water or materials. Contaminated and hazardous material may need to be discarded as per local regulations.

Food & Beverages

Do not consume any food or beverages that may be contaminated from floodwater or lack of refrigeration. (See page 6 for more about flood contaminated food)

Hand Washing

Regular hand washing is important to avoid contaminating food or becoming sick after handling flood affected items and materials. In affected areas, hand-wash with bottled, treated and boiled water only.

Medications & Cosmetics (see also Food and Beverage section above)

Similar to flood affected food, prescription and over-the-counter medication, lotions, and cosmetics with certain lids should be considered unsafe including vacuum-sealed packaging such as plastic bubble packs with foiled backs. The exception is for drugs and medication in affected containers, but the contents appear unaffected (dry and not discoloured) AND if they are life saving and cannot be easily replaced. Medications that require refrigeration may stay cold for approximately four hours in an unopened fridge. For further information, contact your doctor or pharmacist for advice.

Mould

It is important to take immediate action to avoid the growth of mould in homes and on furnishings. Household bleach is an effective way to clean mould from walls and disinfect areas, and commercial products can be purchased to control mould growth during the drying phase. Homes should not be heated to more than 4 degrees Celsius until all water is removed and moisture levels lowered. Mould can lead to serious health problems. When mould is present, facemasks and disposable gloves should be worn. Do not paint over mouldy areas as this will not stop the growth in the affected area. It is possible that areas and furniture will need to be cleaned several times until the moisture levels are reduced.

Natural Gas & Propane

Flooding can reduce the effectiveness of safety devices installed on natural gas appliances and equipment. Natural gas and propane appliances that have come into contact with water are not safe to use and owners should contact a qualified technician to have units properly inspected. Gasoline, kerosene or propane pumps or heaters should only be used with proper ventilation and a carbon monoxide sensor. Leave the building immediately if the smell natural gas or propane is present. Immediately call the gas distribution company for support and service.

Power Generators

Generators must have automatic-interrupt devices to be legally connected to a home's electrical circuits. Failure to do so could cause fire or endanger line workers helping to restore power in flood area. It is advisable to have certified electricians check all equipment and appliances to ensure they are safe to use. Gas-powered equipment and generators should never be used indoors.

Standing Water

Standing waters caused by flooding pose risks for injury from submerged debris and exposure to shock, diseases and other hazards. Take extreme safety precautions while standing on the site or travelling in boats. Avoid wading in standing water where obstacles, glass and other hazards may not be visible. Wear rubber boots in an area flooded with more than 5 cm (2 in.) of standing water. (See Centre for Disease Control in Resource Section)

3.2 Interior Clean Up

Do not wait for government assistance to begin the necessary clean up and recovery process after a flood. Quick action will help with salvage and restoration efforts and reduce the likeliness of mould, air quality hazards and further damage to the structure and personal belongings. It is important to avoid entering flooded rooms before the water has been drained and should be reminded that drying times for structures, rooms and furniture will vary depending on the types of materials and objects affected.

Resident can move home when:

- Water has been inspected and declared safe
- All affected rooms have been cleaned and disinfected
- All contaminated dishes and utensils have been properly washed and disinfected
- The property has adequate toilet facilities available

Information, needs and support locating available community resources:

- Community Showers and hand washing locations
- Laundry Services
- Food and Bottled Water or Potable water locations

Many private wells and septic systems may not be operational until flood and standing waters recede or dry up. Displaced and affected community residents may still be dependant on emergency support and resources to meet their water and personal hygiene needs.

Entering the Home

Before entering an affected building, it must be structurally safe, free of dangerous debris such as broken glass and cleared for entry by local authorities. Entering affected buildings should be done cautiously and during the day when visibility is easier to assess hazards and damages.

Information, needs and support:

- Dressing for clean-up (See Appendix)
- Tools for documenting and record damage (Recommended Tip Sheet)
- Recommended equipment and cleaning supplies (See Appendix)
- Salvaging and decontaminating household items
- Pumping and removing water from basement

Re-entry after a flood can be an extremely overwhelming and emotional experience, making the cleaning and sorting of damaged belongings difficult for many. Cleaning one room at a time is advised and it may take several weeks to dry out each area. To help with drying, remove waterlogged items immediately from the area, open closets, drawers and cabinets and open windows and/or doors. The additional use of wet vacs, industrial fans and dehumidifiers will further help reduce the likeliness of musty odours, mould, bacteria which can result in further damage to the home and salvaged content.

Appliances & White Goods (large electrical domestic items)

It is important to not use flooded appliances such as furnaces or kitchen items, electrical outlets, switch boxes or fuse-breaker panels until they have been checked and deemed safe by the local utility company or qualified electrician. Depending on the types of appliance or equipment, the depth of the floodwaters and the duration of submersion, is likely that most electrical appliances will not be salvageable. In the event that appliance will need to be replaced, residents should be reminded to document the lost items using cameras and follow the waste removal guidelines for appliances & white goods set out by the local municipality.

Basements & Foundations

It is important to remove standing water slowly and in stages from flooded buildings and basements (about a third of the volume daily). Removing water too quickly can cause walls and floors to buckle and warp and compromise the foundation and integrity of the home's structure. Enter basements and crawl spaces only after electricity is powered off and while wearing proper protective clothing, such as a facemask, hard hats and rubber footwear.

Food & Beverages

Do not consume any food or beverages that may be contaminated from flood water or due to lack of refrigeration. Flood water affected items with screw-caps, home canned snap-lids, crimped caps or twist caps on soda and beer bottles, flip tops (like those found on ketchup) and corked item are not considered to be safe. All perishable food items, medications and vacuum-packed food should be discarded if exposed to flood waters or left unrefrigerated for more than 24 hours. Commercially canned affected goods that are undamaged, identifiable by labels and showing no signs of leaks, swelling or rusting can be washed with soap/disinfectant, dried and relabelled using a permanent marker if necessary. Contaminated food should be bagged and sealed along with other related disaster debris

Furnishings and Household Items

Sort and identify the home furnishings to be kept and thrown away. Items of sentimental value will be very difficult to discard. However, water-soaked items can develop mould and contain harmful bacteria. Belongings and household contents that are wet and cannot be completely cleaned, disinfected and dried within 24 to 48 hours should be discarded. Seek out professional advice and guidance for damaged heirloom furniture and precious items. Household items contaminated by floodwaters should be sorted into a pile for construction and demolition debris.

Damaged Documents and Replacement

Important documents and papers should be stored in a container in a freezer until they can be properly thawed and air-dried. Check with Service Ontario for replacement of other key government issued papers and documents.

Kitchen Area

Wear protective clothing such as gloves and glasses to avoid skin contact with disinfectants and bacteria that can cause infection during the kitchen and eating area clean up. When cleaning and disinfecting kitchen utensils and dishes, discard wooden utensils, cutting boards or dishes as well as plastic utensils,

baby bottle nipples and pacifiers that have come into contact with flood water. These items cannot be safely cleaned.

Counters and surfaces of wood materials should be discarded if exposed to flood waters and non non-wood surfaces and countertops thoroughly cleaned using with hot soapy water. Continue to clean all surfaces by rinsing and then sanitize using a bleach solution and allow surfaces to air dry. Be especially careful to clean cracks and crevices, cupboard door handles and hinges in all affected areas and allow to dry. Metal items and cooking items like pots, fry pans and cooking utensils should be washed with hot soapy water, rinsed and sanitized. To sanitize items, boil in clean water or immerse them for 15 minutes in a solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water.

Normal Household Trash & Waste

Keep normal household waste and debris separate from contaminated flood debris. Regular garbage pick-up will resume to normal and in the event service trucks are unable to access flood areas, alternative disposal arrangements will be made for residents.

Water Recovery

Information about safe water and interior water recovery:

- Safe Water Boiled Water Advisory and household bleach (See Appendix)
- What to do in case of a *Do Not Drink Water Advisory* (see Centre for Disease Control document in Resource Section)
- Bathing & cleaning in affected areas

Safe Well Water

The recovery of safe drinking and cleaning water is a priority step to help transition back to a familiar pre-flood state. Until safe water is restored, each person requires a recommended 4 litres of water each day for drinking, washing and safe food handling. Increase those amounts when small children, pregnant women and people with illnesses or pets are present in the affected area. **ONLY** drink, cook or clean with well water that has been officially tested and screened and cleared for harmful bacteria and contaminants.

A boil water advisory may be necessary in areas when bottled water is not available. Boiling water vigorously for a minimum of one-minute kills disease-causing organisms such as viruses, bacteria, and parasites. When bottled water or boiling is not an option, unscented household bleach can be used to disinfect small quantities of filtered water, but this method is less effective in controlling parasites like *Cryptosporidium* and *Giardia* (also known as Beaver Fever). Sterilize drinking water by heating water to boiling point (100-degree celsius) and allowing the water to vigorously bubble for a minimum of one minute.

For additional information regarding safe drinking water contact the Renfrew County and District Health Unit offices in Pembroke 1-800-267-1097 or in Renfrew 1-800-465-5000.

Septic Systems and Water

Flooded or saturated drain fields may require that residents drastically reduce water use in the home

to avoid damaging the system. For more about septic systems see section 2.3 Exterior Clean Up.

3.3 Exterior Clean up

Once standing and flood waters recede on the property, energy will be focused on the interior of affected buildings, which will require the restoration of exterior well and septic systems. For private property owners, it is important that every precaution is taken to ensure the well water and pumps are safe and operating normally (as one system) before it is clear to return home permanently.

Well and Septic System Recovery

Information and Needs:

- Well and septic system recovery
- Removing contaminated and hazardous materials from site
- Household waste removal
- Well water treatment after the flood (See Appendix)
- Well pump safety and maintenance
- The distribution and location of well water testing bottles including local pick-up and sample drop-off locations

Aside from bacteria and contaminants, be aware of the potential for electrical shock and be advised to seek qualified well contractors and pump technicians before restarting these systems. In addition, be sure that septic systems are stable and able to handle the addition of more water. Well water should be tested only once the floodwaters have receded from the well and septic areas.

Do not drink or use water from an untested well, especially if floodwater was or is:

- Completely covering the wellhead
- Surrounding the well
- Entered the basement of the affected home or if,
- The well's cap is missing or the steel casing appears to be damage

Refer to the Resource Section for more information on the four steps to Restoring and Testing Your Private Well After a Flood

Septic System Recovery

Information and needs:

- System damage or failure
- Sewage backups
- Contaminated wells

Have septic tanks professionally inspected and serviced as soon as floodwaters recede; especially if damage or failure is suspected. Examine all electrical connections for damage before restoring electricity. As soon as possible, repair any erosion damage caused by the flooding and receding water. To prevent sewage backups on stressed systems, limit the amount of household water and sewage

entering the system. After flooding, property wells should always be tested for sewage related contaminants.

3.4 Contaminated & Hazardous Material

Contaminated and hazardous items will need to be sorted and disposed of differently than the regular household waste usually handled by the municipality. Sort debris and items using the six waste disposal categories identified below. To ensure safe handling of all flood related debris, take precautions to properly sort and dispose of all waste to reduce further contamination and risk to area residents.

Information and needs:

- Flood Debris and Materials
- Medication disposal
- Sandbags

Medications

As per the Ontario Medications Return Program (OMRP) and Ontario Sharps Collection Program, all prescription drugs, over-the-counter and natural health products in oral dosage form can be returned to participating pharmacies. For flood contaminated medications and drugs do not remove drugs from plastic packaging or bottles and place everything into a plastic bag, seal tightly and label *Return for Disposal - Contaminated Medications*. Never dispose of medication using regular household waste or left where small children or youth may have access to the contents.

Sandbags

Used Sandbags are extremely heavy and likely to contain trapped bacteria and sewage matter. Wear gloves and boots when lifting or moving the bags and protect open wounds/scrapes, face and eyes from contact. Bags should not be cut open or used for sandboxes, playgrounds, or other areas where direct contact with humans or animals may occur. Truck beds used to transport contaminate bags should be properly washed and disinfected. Every precaution should be taken by the property owners to properly dispose of the used sandbags still on their property. To reduce the likelihood of further risk and local contamination, affected municipalities will coordinate the proper removal and disposal of the bags as part of the contaminated and hazardous material removal plan.

Any leftover filled sandbags can be saved and used for up to six months when stored or the sand used for construction, road work and preparing bases for concrete work. The sand should not be disposed of in a wetland, waterway, floodplain, or other environmentally sensitive or protected area.

Waste and Debris Should be sorted into the following categories:

- Normal Household Trash
- Vegetable Debris
- Construction and Demolition
- Appliances and White Goods
- Electronics
- Household Hazardous Waste

Separating Your Debris

Debris should be placed curbside, without blocking the roadway or storm drains.

NO PICKUP ZONE
Any debris placed from the sidewalk toward your property will not be picked up.



Normal Household Trash
Normal household trash and bagged debris of any kind will not be picked up with disaster debris. You should continue to follow your normal garbage removal schedule.



VEGETATIVE DEBRIS

- Leaves (do not put in bags)
- Logs
- Plants
- Tree branches



CONSTRUCTION & DEMOLITION DEBRIS

- Building materials
- Carpet
- Drywall
- Furniture
- Lumber
- Mattresses
- Plumbing



APPLIANCES & WHITE GOODS

- Air conditioners
- Dishwashers
- Freezers
- Refrigerators
- Stoves
- Washers, dryers
- Water heaters



ELECTRONICS

- Computers
- Radios
- Stereos
- Televisions
- Other devices with a cord



HOUSEHOLD HAZARDOUS WASTE

- Cleaning supplies
- Batteries
- Lawn chemicals
- Oils
- Oil-based paints and stains
- Pesticides

DEBRIS SEPARATION

Separate debris into the six categories shown below.

DO NOT STACK OR LEAN

Placing debris near or on trees, poles, or other structures makes removal difficult. This includes fire hydrants and meters.

UNSURE WHERE TO PLACE DEBRIS?

If you don't have a sidewalk, ditch, or utility line in front of your house, place debris at the edge of your property before the curb.

For more information contact your local government.

SECTION FOUR Financial Support

Information and needs about Financial Relief Programs

- Who qualifies and how to apply for Disaster Assistance?
- How to deal with local insurance (overland flooding)?
- What to do when disaster recovery is activated?
- The best way to document property damage
- Accessing financial and food donations?

For individuals

Disaster Recovery Assistance for Ontarians Program

Disaster Recovery Assistance for Ontarians is a special fund activated for specific geographical areas impacted by unexpected Natural disasters. Activated by the Minister of Municipal Affairs and Housing for private property owners affected by natural disasters such as floods, tornadoes, landslides and earthquakes. For a list of disasters not covered please visit the link provided. Financial Assistance may be available to help with the costs of cleaning, repairing and replacing essential belongings. The available assistance is subject to caps and deductibles. Individuals, small owner-operated businesses, farmers and not-for-profit organizations can apply. For additional criteria and information visit: <http://www.mah.gov.on.ca/Page13744.aspx>

For municipalities

Municipal Disaster Recovery Assistance Program

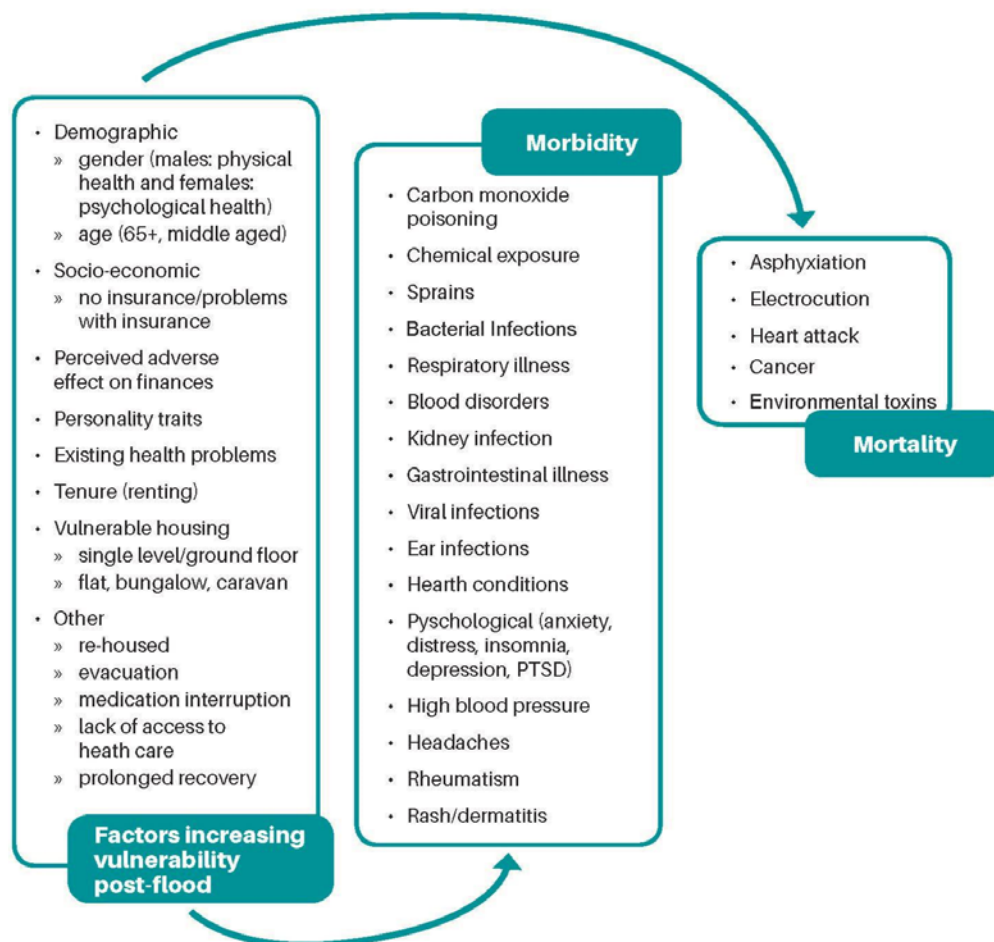
This program provides municipal disaster relief assistance for municipalities to recover from natural disasters. It is a claims-based program that, when activated by the province, offers financial assistance to qualifying municipalities that have sustained significant extraordinary costs as a result of a natural disaster, such as a tornado or severe flooding. The province has activated this program in the County of Renfrew.

For additional information and guidelines: <http://www.mah.gov.on.ca/Page13746.aspx>

SECTION FIVE Safety and Health for Vulnerable and At-Risk Populations

Flood impact can affect females and young people, at greater risk of psychological and physical health effects of floods, and males at greater risk of mortality, primarily due to risk taking behaviour. It is important to be aware of previous experience of flood, low education or socio-economic status, current medications (to avoid medicine interruption) existing psychological, chronic gastrointestinal or cardiovascular illnesses in order to avoid worsening symptoms.

Factors increasing vulnerability to health effects post-flood events:



SECTION SIX Local Information

Renfrew County District Health Unit

Emergency Preparedness <http://rcdhu.com/healthy-living/emergency-preparedness/>

Flood Warning <http://rcdhu.com/wp-content/uploads/2017/05/2017-05-11-PembrokeDistrict-FloodWarning.pdf>

Pembroke (613)-732-3629 or 1-800-267-1097

Renfrew (613)-432-5853 or 1-800-465-5000

Ministry of Natural Resources & Forestry

Key information website <https://www.ontario.ca/page/ministry-natural-resources-and-forestry>

Local number (613) 732-5536

Toll free 1-800-667-1940

Environment Canada

Weather warnings http://www.weather.gc.ca/warnings/index_e.html

Flood Forecasting and Warning Program

<https://www.ontario.ca/law-and-safety/flood-forecasting-and-warning-program>

Municipal Road Closures

www.Municipal511.ca

Ontario Public Alerts

<https://www.ontario.ca/page/emergency-information>

Ottawa River Regulation Planning Board

<http://www.ottawariver.ca>

24hr toll free number 1-800-778-1246

Ontario Power Generation

<http://www.opg.com>

Renfrew Power Generation

<http://www.renfrewpg.ca>

Propane Safety

Superior Propane <https://www.superiorpropane.com/customer-service/flood-safety-precautions/>

Emergency Management Ontario Source

<http://www.emergencymanagementontario.ca/english/home.html>

<http://www.ontario.ca/emo>

Community Services Database

<https://renfrewcountyconnections.cioc.ca/>

211 connects callers to community, social, government and health service information in Renfrew County and Ottawa 24 hours a day, seven days a week. The service is free, confidential and multilingual.

Canadian Red Cross

<http://www.redcross.ca/in-your-community/ontario>

Community Mental Health Resources

The Distress Centre answers 24 hrs a day, 7 days a week, with crisis line specialists providing confidential support 613-238-3311

<http://www.dcottawa.on.ca/>

The Mental Health Crisis Line answers calls for people ages 16 or older 24 hrs a day, 7 days a week. 613-722-6914

<http://www.crisisline.ca/about.htm>

The Kids Help Phone provides confidential 24/7 phone and web counselling for children ages 20 and under.

1-800-668-6868

<http://www.kidshelpphone.ca/Teens/Home.aspx>

North Renfrew Family Services walk in clinic at Deep River and District Hospital 613-584-3358

If you are still in need of sandbags:

Sandbag Replacement - sosipenko@countyofrenfrew.on.ca 613 585 0041

Sandbagging Techniques <https://m.youtube.com/watch?feature=youtu.be&v=Zha8ypMvYRc>

County of Renfrew Municipalities Contact Information

County of Renfrew	9 International Drive, Pembroke	613 735-7288/ 800-273-0183
Town of Arnprior	105 Elgin Street W. Arnprior	613 623-4231
Town of Deep River	100 Deep River Rd. Deep River	613 584-2000
Town of Laurentian Hills	34465 Hwy. 17, Deep River	613 584-3114
Town of Petawawa	1111 Victoria St, Petawawa	613 687-5536
Town of Renfrew	127 Raglan St. S., Renfrew	613 432-4848
Township of Admaston/Bromley	477 Stone Rd, Renfrew	613 432-2885
Township of Bonnechere Valley	49 Bonnechere St. E. Eganville	613 628-3101

Township of Brudenell, Lyndoch & Raglan	42 Burnt Bridge Rd., Palmer Rapids	613 758-2061
Township of Greater Madawaska	19 Parnell St., Calabogie	613 752-2222
Township of Head, Clara & Maria	15 Township Hall Rd., Stonecliffe	613 586-2761
Township of Horton	2253 Johnston Road, Renfrew	613 432-6271
Township of Killaloe, Hagarty & Richards	1 John St., Killaloe	613 757-2300
Township of Laurentian Valley	460 Witt Rd., Pembroke	613 735-6291
Township of Madawaska Valley	85 Bay Street, Barry's Bay	613 756-2747
Township of McNab/Braeside	2508 Russet Dr., Arnprior	613 623-5756
North Algona Wilberforce Township	1091 Shaw Woods Rd., Eganville	613 628-2080
Township of Whitewater Region	44 Main St., Cobden	613 646-2282

SECTION SEVEN Resources and References

Red Cross Flood Recovery Guide

<http://www.redcross.ca/crc/documents/3-1-2-4-Flood-Recovery-Guide.pdf>

New Brunswick Document

http://www2.gnb.ca/content/dam/gnb/Departments/pa-ap/pdf/Report_Damages/FloodRecovery-e.pdf

Section 2.1 Resources:

Medications

<http://www.mayoclinic.org/healthy-lifestyle/consumer-health/expert-answers/after-a-flood/faq-20058421>

Mould

<https://www.cmhc-schl.gc.ca/en/first-nation/care-for-your-home/mould/upload/flood-cleanup-first-nation.pdf>

Natural Gas and Propane

<https://www.enbridgegas.com/gas-safety/safety-tips/flooding-natural-gas-safety.aspx>

Power Generators

<https://www.cdc.gov/disasters/floods/after.html>

Section 2.2 and 2.3 Resources:

City of Calgary

<http://www.calgary.ca/UEP/Water/Pages/Flood-Info/After-flooding/Cleaning-up-after-a-flood.aspx>

Centre for Disease Control

[Cleaning and Sanitizing with Bleach after an Emergency](#)

Government of Canada

<https://www.getprepared.gc.ca/cnt/hzd/flds-ftr-en.aspx>

Well Water & Standing Water

Centre for Disease Control

<https://www.cdc.gov/disasters/bleach.html>

<https://www.cdc.gov/healthywater/emergency/drinking/making-water-safe.html>

<https://emergency.cdc.gov/preparedness/kit/water/>

<http://wellowner.org/water-quality/flood/>

Food

http://www2.gnb.ca/content/dam/gnb/Departments/pa-ap/pdf/Report_Damages/FloodRecovery-e.pdf

Clean Up – Furnishing

<https://cypresshealth.ca/wp-content/uploads/2015/03/Cleaning-Up-After-A-Flood.pdf>

<https://www.cdc.gov/healthywater/emergency/extreme-weather/floods-standingwater.html>

Restoring and Testing Your Private Well After a Flood

<https://www.health.ny.gov/publications/6562/index.htm> (Private Wells)

CDC Water Advisory Toolbox Resource

<https://www.cdc.gov/healthywater/emergency/pdf/dwact-2016.pdf>

Septic System

<https://www.epa.gov/ground-water-and-drinking-water/septic-systems-what-do-after-flood>

Food Safety After a Flood

<http://www.eatright.org/resource/homefoodsafety/safety-tips/food-poisoning/food-safety-in-the-home-after-a-hurricane-and-flooding>

Chainsaw Safety

<https://www.cdc.gov/disasters/chainsaws.html>

Medication disposal

<http://www.healthsteward.ca/collection/ontario>

After a Flood Federal Document

<https://www.getprepared.gc.ca/cnt/hzd/flds-ftr-en.aspx>

Workplace Safety and Insurance Act

See section 71 for deemed employer responsibilities for emergency workers, search and rescue operations and declaration of emergencies.

<https://www.ontario.ca/laws/statute/97w16#BK91>

SECTION EIGHT Appendices

- 8.1 Renfrew County and District Health Unit – Flooded Septic Systems
- 8.2 Renfrew County and District Health Unit - Private Well Disinfection Instructions
- 8.3 Renfrew County and District Health Unit - Caring for your water well during and after a flood
- 8.4 Public Health After a Flood
- 8.5 Insurance Bureau of Canada letter to member companies
- 8.6 Clean up supplies table
- 8.7 Sandbag Site Set up and Estimation chart



Renfrew County and District Health Unit

What You Should Know About Flooded Septic Systems

A well-maintained and constructed septic system will better withstand the stresses of heavy rains or flooding. Regular inspection is necessary to ensure proper functioning.

During heavy rains and floods, the ground can become saturated, preventing proper operation of the system. For example, a septic tank can collapse or float out of position. Signs that a septic system is not working properly include the following:

- Sinks drain slowly
- Toilets drain slowly
- Floor drains overflow
- Sewage becomes visible outside the home especially over the top of the septic system

Before a Flood:

To prepare your septic system before an emergency such as a flood, hurricane, or earthquake:

- Seal the access holes and/or inspection ports to keep excess water out of the septic tank
- Be sure your septic tank is at least half full to prevent it from collapsing or floating
- If your septic system requires electricity:
 - Turn off the pump at the circuit box before the area floods
 - Waterproof all electrical connections to avoid electrical shock or damage to wiring, pumps, and the electrical system

During a Flood:

During an emergency such as a flood, reduce the amount of water used by limiting toilet flushing, dishwashing, washing clothes, and showering.

Severe flooding can put drinking water wells at increased risk for contamination from flood water that may contain sewage. If your water well is submerged by flood water or you detect a noticeable change in the water's taste and appearance, then the well water should be boiled for at least one minute before using.



1. Store enough clean water to meet household needs for a minimum of 12 hours.
2. Bypass or disconnect any carbon filters, water softeners or other water treatment devices or else any pipes located past these filters will not be disinfected. Replace the filters once chlorination is completed. Highly chlorinated water can damage treatment units. It is important to follow the manufacturer's recommendations to ensure treatment systems are properly disinfected and not damaged. Be sure that the hot water tank's heat source is shut off.
3. Estimate the chlorine necessary to disinfect the water in the buildings plumbing including the hot water tank, and the chlorine necessary to disinfect the water in the well water column. Add them together.

- **Drilled well:** 1 cup of normal household bleach for every 25 feet of water in the well.
- **Dug well:** 1 liter of normal household bleach per every 5 feet of water.

A chlorine calculator is available at:

<https://www.publichealthontario.ca/en/ServicesAndTools/Tools/Pages/Well-Disinfection-Tool.aspx>

4. Pour the required amount of chlorine directly into your well.
5. If possible, mix the water in the well. This can be accomplished by attaching a hose to a tap and running water from the well through the hose and back into the well.
6. Open all water taps one at a time, including outside hose bibs and cold and hot water taps and laundry hook-ups. Allow the water to run until a chlorine smell is detected from each faucet then turn off each tap. Since chlorinated water can damage the action in a septic system, chlorinated water should not be allowed into the building's sewage system.
7. If a strong chlorine odour is **NOT** present, return to step 4 and add half the amount of chlorine used for the initial treatment to the well, then repeat steps 5 and 6.
8. Let the chlorinated water stand in the system for a minimum of 12 hours.
9. Run water through the outside hose away from vegetation until the strong smell of chlorine disappears. Make certain that the water does not enter any watercourse. Finally, open each and every indoor tap until the system is completely flushed. Taps or fixtures discharging to the septic tank systems should be temporarily diverted to an outside discharge point to avoid affecting the septic system.
10. Wait at least a couple of days after shocking or when all the chlorine is out of the well water, and then sample the water using the bottle and instructions provided by the Health Unit. Two consecutive tests that show no bacteria present, performed on samples obtained over a period of one to three weeks, should indicate that the treatment has been effective.
11. If the above steps do not fix the problem, you may want to speak with a public health inspector for assistance at 613-735-8654, extension 555 or visit www.rcdhu.com.



Renfrew County and District Health Unit

Caring For Your Water Well During and After a Flood

Water wells can be contaminated by flooding. While this contamination may be associated with an unpleasant taste, odour, or cloudiness of the well water, some contamination will only become evident after water quality testing.

Under flood conditions surface water may enter directly into the aquifer via the well itself, an old abandoned well, or some other nearby excavation, bypassing the natural filtering process. Testing and rehabilitation efforts should be focused on potential bacterial contamination.

While the majority of water wells are likely unaffected, each homeowner should take certain steps to ensure their well water is safe for human consumption. As a first step, water from all wells in the flooded area should be tested for quality. In order to do this, you should obtain a bacterial sample bottle from your local public health office.

Until the bacterial analysis shows the water to be safe, all water for human consumption should be boiled. Bringing water to a rolling boil for 1 minute will kill most organisms. If you suspect or are informed that the water is contaminated with chemicals, seek another source of water such as bottled water.

If the bacterial analysis indicates that your water well has some level of contamination, then the well should be chlorinated and retested. Chlorination is a procedure used to disinfect a water well contaminated with bacteria. Contact your local Health Unit office for further information regarding the method of disinfecting a well.

If your well was unaffected by flood water, you may still wish to collect a water sample and disinfect your distribution system as a precaution. Experience has shown that not all of the water wells will have flood-related contamination. Some may have had problems prior to flooding and are now detected. Also, it is unlikely that all affected water wells will be satisfactory after a single treatment. Once a well has been chlorinated, it should be tested one or two weeks after treatment.

Further information can be obtained by contacting a public health inspector with the Renfrew County and District Health Unit at 613-735-8654.

After a Flood

This fact sheet provides basic information only. It must not take the place of medical advice, diagnosis or treatment. Always talk to a health care professional about any health concerns you have, and before you make any changes to your diet, lifestyle or treatment.

After a Flood

After a flood, it is important to restore your home as soon as possible to protect your health and prevent further damage to your house and its contents.

Flooding may not only cause damage to the structure of the house, but the flood water can also contain sewage, particularly in rural areas, that may pose a serious health hazard.

Dug or drilled wells can also be contaminated by flood water. It is important that you do not drink the water until you can get your well tested to confirm it is safe to drink. Refer to *Keeping Food and Water Safe after a Flood* fact sheet and Health Canada's fact sheet http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/well-puits_e.html for information on safe drinking water and how to correctly disinfect your well.

Another concern from flooding is the possible growth of mould that could contribute to adverse health effects. Remedial action should be undertaken as soon as possible to reduce or eliminate conditions that support mould growth.

Safety Tips

- ☐ Before entering your house, complete a perimeter check to ensure there is no structural damage. If structural damage is present, contact your local building department for advice.
- ☐ Put your own safety first. Avoid electrical shocks by wearing rubber boots, keeping

extension cords out of the water and shutting the power off to the flooded area at the breaker box. You may wish to contact your electrical utility for help if you need it.

- ☐ If you detect vapours or smell unusual odours such as gasoline, natural gas or propane, leave the property immediately and call your local gas company and fire department.

What you should do before you begin the clean up:

- ☐ It is important to wear protective clothing, including rubber gloves, rubber boots, masks, protective eyewear, etc.
- ☐ Contact your insurance company immediately. Take photographs and keep a record of the damage, including any discarded items.

The Clean Up

A home that has experienced extensive water damage or has been flooded with high levels of sewage contamination may require the assistance of a professional to complete a thorough clean up.

If you have property insurance, you should consult with your adjuster prior to undertaking any clean up.

Removal of Water, Dirt and Debris

- ☐ Remove water from your flooded home slowly. Draining in stages (about one third

May 12, 2017

Dear Members:

I am writing to clarify and emphasize a rule that affects insurance policyholders and their access to provincial assistance after a disaster.

Disaster Recovery Assistance for Ontarians (DRAO) is a program that provides partial financial assistance to help victims cope and recover when their losses exceed their insurance coverage.

The program was introduced March 1, 2016. After a full review, DRAO and the Municipal Disaster Recovery Assistance (MDRA) program replaced the Ontario Disaster Relief Assistance Program (ODRAP). Like the program it replaced, DRAO applies to sudden, unexpected natural disasters with impacts that are costly and widespread.

With this change a new requirement for assistance was introduced that is not widely understood.

Under the DRAO program, when a policyholder makes an application for assistance, a letter from their insurer is now required. This letter must detail the type and cause of damage or loss, the amount that was covered under insurance and the reason any portion of the damage or loss was not covered.

Such a letter is an eligibility requirement for partial financial assistance to repair or replace essential property after a disaster. How and when insurers produce a letter will be a critical factor in customer satisfaction with the services provided by property and casualty (P&C) insurers after a disaster.

DRAO is intended for homeowners, tenants, small-owner-operated businesses, non-profits and farmers.

The program is claims-based and is focused on essentials. It is not intended to replace insurance. Here is a brief guide to some of the features of DRAO:

- ☐ It covers primary residences only.
- ☐ DRAO kicks in only after the province activates it by declaring a natural disaster caused, for example, by a flood or tornado.
- ☐ Financial assistance is limited to 90% of an applicant's total eligible costs.
- ☐ The maximum amount of assistance is \$250,000 subject to a \$500 deductible, which can be waived for low-income households.
- ☐ There are other caps related to emergency expenses, household appliances and furnishings.
- ☐ The application deadline is up to 120 days after a declared natural disaster in an applicant's geographic area.

.../ 2

Clean Up Supplies

Residents will be facing both the physical and emotional loss of property and belongings. Providing them with a list of suggested equipment, cleaning materials and clothing needs before they enter an affected building, will help to prepare them for the physical work ahead. Before entering any flood affected building be sure it is structurally safe and the building utilities (hydro, gas, propane) have been properly disconnected or reconnected after inspection and approval.

Personal Clothing and Equipment Needs

Coveralls Eye protection/glasses Hardhat Headlamps Hip waders	N95 face mask rubber boots Tetanus Vaccines Warm socks waterproof gloves
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Equipment for entering affected building

Camera for recording damage items Chainsaw Clear bags for recycling. Extension Cords Extra Batteries (stored in sealed plastic) First Aid Kit Flashlights Generators Hammers/pry bars/pliers Hand sanitizer Heavy duty bins for hauling waste and items to be cleaned and disinfected	Heavy duty or industrial Garbage bags High Capacity Gas pumps Hoses to fit pumps (50-100 ft) Industrial fans/drying fans Laundry Bags or Bins for collecting salvageable clothes and linens Moisture Meter Notebook and pen for making notes and reminders Shop vacs Submersible pumps Wheelbarrows/shovels
---	--

Cleaning Supplies

24-inch stiff-bristled Push Broom/brush Buckets for holding dirty water and disinfectants Cleaning detergents/soap Disinfectants such as household bleach	Hose Large plastic bins for collecting salvageable items Rags Sponge Mop for water removal and String Mops for disinfecting. Sponges (grouting sponge for cleaning)
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Front Cover Photo Credit: Steve Osipenko