



## After a flood – Recovery

Flooding is hard enough to deal with without being sick. Make sure to always wash your hands with soap and clean water before preparing or eating food, after using the toilet, after participating in flood cleanup activities, and handling articles contaminated with floodwater. If soap and water are not available, and hands are not visibly soiled, use an alcohol-based hand rub (ABHR) that contains at least 60% alcohol. If hands are visibly soiled and running water is not immediately available:

- Remove visible soil using moistened towelettes
- Once the visible soil is removed, clean hands with alcohol based hand rub (ABHR) containing at least 60% alcohol
- Wash hands with soap and water as soon as it becomes available

### Prevent Injury and Illness when cleaning up

Once it is safe to return to your home, be sure to take precautions to protect you and your families' health and safety. Floods may involve cleanup efforts that are costly and require the involvement of professional expertise and equipment (e.g. generators, water pumps, drying fans and cleaning solutions).

Water damaged materials and contents need to be assessed, sorted, cleaned and dried as soon as possible to prevent the growth of mould and further damage to your home and impacts on your health.

### Safe food handling

After a flood, there are foods that need to be discarded and other food that you can keep as long as you disinfect them.

- Discard all food items that have been exposed to flood water including food and beverage containers with screw caps, snap lids, crimped caps (soda bottles), twist caps, flip tops, corks, and home canned foods. These containers cannot be disinfected.
- The only safe flood-exposed foods are those that are sealed in metal cans and that have not been damaged. Thoroughly clean and disinfect with bleach and water all undamaged cans before opening. Follow the chart below.
- Wear waterproof gloves and wash hands with soap and clean water after removing gloves.
- Ensure good ventilation when handling full-strength bleach and guard against splashing.

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## Recommendations for Cleaning and Sanitizing Food Cans and Surfaces

		Amount of bleach and water to mix		
Area or item to be cleaned	Bleach amount	Water amount		Cleaning steps
<p>Food surfaces that may have touched flood water. Examples: Countertops, plates. <b>Note:</b> Throw away wooden cutting boards, baby bottle nipples, and pacifiers.</p>	1 cup (240 mL)	5 gallons (18.9L)		<ol style="list-style-type: none"> <li>1. Wash with soap and hot, clean water.</li> <li>2. Rinse with clean water.</li> <li>3. Sanitize in a solution of 1 cup (240 milliliters) of household chlorine bleach in 5 gallons (18.9 L) of clean water.</li> <li>4. Allow to air dry.</li> </ol>
<p>Food cans that are not bulging, open, or damaged</p>	1 cup (240 mL)	5 gallons (18.9 L)		<ol style="list-style-type: none"> <li>1. Remove can labels.</li> <li>2. Wash cans with soap and warm, clean water.</li> <li>3. Dip cans in mixture of 1 cup (240 milliliters) of household chlorine bleach in 5 gallons (18.9 L) of clean water.</li> <li>4. Allow to air dry.</li> <li>5. Re-label cans with a permanent marker</li> </ol>

## Safe Drinking Water – Private well owners

### When to test well water

Test your well water once the flood water levels have receded and the well is no longer affected by floodwater. There should be no floodwater immediately surrounding the well. The ground around the well may have eroded during flooding, possibly creating unsafe conditions or a pathway for surface water and contaminants to enter the well. In other cases, the electrical wires attached to the pump in a well may be damaged risking electrocution. Therefore, well owners should exercise extreme caution approaching their wells, especially older, large diameter dug wells after a flood

Before testing your well water, it is important to

- Disinfect your well with a chlorine solution and flush out this disinfectant.
- Wait two days but continue to use your water for household tasks, with the exception of drinking and cooking purposes.
- Test your well water to confirm it is safe to drink.

To learn more about disinfecting your well, sampling your well, and your sample results mean visit Ottawa Public Health's well water information page: <http://www.ottawapublichealth.ca/en/public-health-topics/Flooding.aspx>

If you need help interpreting the test results, please contact Ottawa Public Health at 613-580-6744 and speak with a Public Health Inspector.

### Sewer backups and basement flooding

While the City regularly cleans, inspects and repairs the sanitary and storm sewer systems, unanticipated problems can occasionally occur, causing increased water levels in the sewer (or surcharging). [Learn more about sewer backups and basement flooding.](#)

### Septic Systems

The following recommendations are applicable to homes where septic systems are covered with floodwaters.

- Do not use the septic system (e.g., no flushing toilets or draining water from sinks, bathtubs, showers or dishwashers) until the water level around the house is lower than the in the septic drainage field and enough time has been given for the soil to adequately drain. The soil requires additional time to drain in order to allow sewage to be absorbed. This may take several weeks after flood waters recede depending on the length of time the system was under water and the soil conditions.
- Your septic system may need to be inspected by a certified private sewage installer before restarting. The inspection of your septic system should take place after floodwater has receded.
- Do not drive vehicles and equipment over the septic system during cleanup or restoration activities. Do not set dumpsters or building materials over the septic system. Fence or mark out the system to protect it while restoration activities take place. Soil is easily compacted or

displaced when wet. If the soil is compacted or displaced in the area of the septic system it may require extensive repairs.

- Do not pump out your septic tank while the soil is still wet or under water. The septic tank could shift or float out of the ground, which could cause damage to the tank or the inlet/outlet pipes.
- Be aware that the fill soil around the septic tank may be wet and cause concrete tanks to float even though the soil further away from the tank may not appear wet.

## **Flooding Related Questions Applicable to All Types of Septic Systems**

### **What steps should I take if my septic system is flooded?**

- It is strongly recommended that the system should not be used while the septic drain field or tanks are covered with water. The sewage system should not be used until the water in the septic drain field is below the distribution pipes.
- If the system must be used, conserve water as much as possible while the system attempts to restore itself as the ground water table falls.
- Flood water may be contaminated with sewage. Protect yourself by wearing protective equipment such as gloves, protective eyewear, a face mask and rubber boots. Be sure to wash your hands frequently with soap and water.
- Do not pump your septic tank. Pumping out a septic tank that is sitting in saturated soil may cause it to “pop out” of the ground. Newer systems are more likely to pop out than older systems because the soil may not have completely settled and compacted around the septic tank.
- Try to avoid using any heavy machinery near the septic drain field or tanks in a saturated state, as they are especially vulnerable to damage under flooded conditions.
- If sewage has backed up into a basement, clean the area and disinfect the floor. Use a chlorine solution of a half cup of chlorine bleach to a gallon of water when mopping the floor.
- If you have a ground water well, do not drink the water until water testing proves it to be safe for consumption.

### **What steps should I take if I have a pumped system?**

- Do not operate the pump until floodwaters have receded and the groundwater table is below the pump chamber bottom/floor. Operating the pump to empty the chamber during high water events may cause the pump chamber to “pop out” of the ground due to buoyancy forces.
- Avoid contact with any electric pump or equipment that may have been submerged during the flood. Have a licensed electrician inspect all electrical equipment before they are returned to normal operation.

### **What steps should I take if I have an Advanced Treatment Unit (for example: Ecoflo, Waterloo Biofilter, Puraflo, etc.)?**

- If you have an Advanced Treatment Unit, the system should not be used until the maintenance provider or licensed septic installer has verified proper system operation.
- Do not pump treatment tanks until floodwaters have receded and the groundwater table is below the bottom/floor of the treatment tank. Pumping the tank during high water events may cause the pump chamber to “pop out” of the ground due to buoyancy forces.

### **What should I do if I'm having septic problems after the floodwaters recede?**

- Do not pump out your septic tank until water levels recede below the bottom/floor of the tank. At best, pumping the tank is only a temporary solution. Under worst conditions, pumping it out could cause the tank to “pop out” of the ground due to buoyancy forces and may damage the inlet and outlet pipes.
- Have your septic tank professionally inspected by a licensed septic installer or licensed sewage hauler if you suspect damage. Signs of damage include visible settling of the ground above the tank or an inability of the system to accept additional water. Most septic systems are not damaged by flooding since they are below ground and completely covered. However, septic tanks and pump chambers can fill with silt and soil and must then be cleaned. If the soil absorption field is clogged with silt, a new system may have to be installed as there is no effective way to clean out the buried lines in an absorption field.
- Have your tanks cleaned and/or repaired by a licensed septic installer or licensed sewage hauler as the tanks may contain dangerous gases and pathogens.

### **What should I do with my outhouse?**

Ensure that the outhouse is still positioned over the pit. If the outhouse has been washed away, or collapsed, cover the open pit with sturdy boards to prevent accidents and the spread of disease. If water is in the pit, add two litres (two quarts) of unscented liquid chlorine bleach every three to four days until the water disappears.

### **When do you contact the Ottawa Septic System Office (OSSO) or other Septic Regulator?**

You must contact the OSSO or your local septic system Approval Agency for any repair or replacement of your sewage system. No permit is required for replacing electrical components such as pumps, control panels, etc.

For more information on septic systems, visit the Rideau Valley Conservation Authority website <https://www.rvca.ca/flood-warning-program/after-the-flood-resources>

## **Cleaning up your home**

Flooding is hard enough to deal with without being sick. Make sure to always wash your hands with soap and clean water before preparing or eating food, after using the toilet, after participating in flood cleanup activities, and handling articles contaminated with floodwater. If soap and water are not available, and hands are not visibly soiled, use an alcohol-based hand rub (ABHR) that contains at least 60% alcohol. If hands are visibly soiled and running water is not immediately available:

- Remove visible soil using moistened towelettes
- Once the visible soil is removed, clean hands with alcohol based hand rub (ABHR) containing at least 60% alcohol
- Wash hands with soap and water as soon as it becomes available

### **Is it safe to enter my flood damaged home?**

- Ensure that a licensed electrician has determined that it is safe to turn on your power. Wear rubber boots as a precaution to reduce the risk of electrocution.
- Use caution when entering your home as:

- appliances, heating, sewage systems and electrical components pose a risk of shock or fire; and
- chemicals such as gasoline and pesticides may have spilled and pose risks to skin and lungs.
- Ensure that the building is structurally safe and that soil erosion, broken glass, holes in flooring, buckled walls, or deep water will not put you at risk of injury. Building Code Services (<https://ottawa.ca/en/residents/building-and-renovating>) can answer questions you may have about rebuilding or repairing flood damage in your home. Please contact City of Ottawa's Building Code Services if:
  - Your home or any other structure on your property has experienced structural damage.
  - You want to arrange for a Building Inspector to visit your property.
  - You are unsure whether you need a Building Permit.
  - You have any questions at all about rebuilding, or need clarification on any of these points.
- Building Code Services can be reached by email: [buildingpermit@ottawa.ca](mailto:buildingpermit@ottawa.ca) or phone 613-580-2424 ext. 29312.
- Make a plan for the recovery phase:
  - Should a professional flood recovery service be hired?
  - What does your home insurance policy cover?
  - How will discarded material be handled and disposed of?
  - What kind of support will your family need in the recovery phase?
    - Examples of support may include a caregiver for children or people with disabilities, pet sitter, assistance with meals, emotional support, and physical support to move items and clean up.

## **7 Steps to cleaning up your home and yard after a flood**

### **Step 1: Gather cleaning supplies.**

Here are items you may need for the cleanup:

- Brooms, mops, rags, scrub brushes and sponges
- Buckets, hoses and clean water
- Trash bags
- Cleaning detergents/soap and disinfectants (for your own safety, do not mix cleaning chemicals - especially bleach and ammonia).

### **Step 2: Wear protective clothing and equipment.**

Wear personal protective equipment appropriate to the type of work you are doing:

- The first step is to assess the area you will be working in (including electrical safety), the type of work you will be doing, and the type of equipment you will be using. Always ensure the work area is well ventilated and never use gas-powered equipment indoors.
- Consider if you will need:

- Protective footwear to avoid puncture or crushing hazards
- Protective eyewear to avoid injury when hammering or using power equipment
- Hearing protection if using noisy equipment
- Gloves to prevent injuries from sharp objects as well as to avoid contamination
- Respiratory protection against dust, mould spores. Use a properly fitted N95 mask.

### **Step 3: Drain water and dry out flood-impacted areas.**

If you can clean and dry building materials within 48 hours, it is unlikely mould will develop. Many materials, however, absorb water and are unlikely to dry completely in a short time period (see Step 4).

- Use pumps, pails and shop vacs (that can vacuum up water) to remove excess water from your home.
- Use fans, dehumidifiers and open your windows to eliminate moisture.

### **Step 4: Assess and sort damaged items to be cleaned, dried, repaired or discarded.**

Identify and dispose of household items that have been exposed to floodwater and cannot be cleaned and dried within 48 hours. For information on how to prevent mould growth, refer to the our mould webpage.

- Remove and discard porous, wet building materials such as dry wall, insulation and ceiling tiles.

Other household items that are usually discarded because they cannot be properly cleaned and dried include:

- Mattresses, pillows and duvets
- Books, cardboard and papers
- Rugs, carpets and under-padding
- Leather, upholstered and particle board furniture
- Soft toys
- Medical supplies and medications
- Cosmetics
- Leather goods
- **Food items** that have been exposed to flood water

Some of the above-mentioned items may be salvageable; however, the process may require professional assistance.

Take special care for opened containers of **Hazardous Waste**. If it's corrosive, flammable or poisonous it's hazardous waste. These types of products contaminate water and landfills and should never be poured down the drain or put out with your regular garbage. To help you dispose of these products safely, the City of Ottawa operates several one-day Household Hazardous Waste depots for City of Ottawa residents only. More detailed information is available on **[hazardous waste disposal at Ottawa.ca](#)** or by calling 3-1-1. Flood impacted areas may have special pickup instructions

### **Step 5: Clean and disinfect**

Clean and disinfect all surfaces affected by floodwater to ensure bacteria, viruses, and potentially dangerous chemicals are removed. You may need to clean and dry hard surfaces several times.

**How to clean hard surfaces:**

- Wear protective equipment – see Step 2
- Remove visible debris
- Clean hard surfaces with soap and water – see Step 1
- Rinse with clean water
- Keep things dry and the humidity low to control mould growth.

**How to disinfect hard surfaces:**

- Disinfect cleaned surfaces with a diluted mixture of household bleach and water. Protect your skin and eyes when mixing.
- Dilution rates for disinfecting hard surfaces:

<b>Recommendations for cleaning and sanitizing household surfaces and items</b>			
	Amount of bleach and water to mix		
Area or item to be cleaned	Bleach amount	Water amount	Cleaning steps
Surfaces that do not soak up water and that may have touched floodwater. Examples: Floors, stoves, sinks, certain toys, countertops, flatware, plates, and tools	1 cup (240 mL)	5 gallons (18.9L)	<ol style="list-style-type: none"> <li>1. Clean surface with soap and warm, clean water</li> <li>2. Rinse with clean water.</li> <li>3. Sanitize using a mixture of 1 cup (240 milliliters) of household chlorine bleach in 5 gallons of clean water.</li> </ol>

Source: [CDC - Cleaning and Sanitizing with bleach after an emergency](#)

**Cleaning up flood-associated mould**

Homeowners may clean small patches of mould up easily (3 square meters or less – equivalent to the surface area of a queen-sized bed) areas of mould contamination bigger than this may need professional attention. Remember, moisture control is the most important step for preventing mould from growing again: ensure that the material or object has completely dried out, that the source of moisture has been removed, and that the humidity in the air is kept low.

Professionals have experience dealing with airborne mould spores. They have the proper protective clothing and equipment to remove and dispose of mouldy materials.

- Think of your personal safety when dealing with mould: Wear protective clothing such as rubber gloves, eye protection and a properly fitted N95 mask and follow this chart:

<b>Recommendations to clean mould growth off hard surfaces</b>			
	Amount of bleach and water to mix		
Area or item to be cleaned	Bleach amount	Water amount	Cleaning steps



<p>Mould growth on hard surfaces.</p> <p>Examples: Floors, stoves, sinks, certain toys, countertops, flatware, plates, and tools</p>	<p>1 cup (240 mL)</p>	<p>1 gallon (3.89L)</p>	<ol style="list-style-type: none"> <li>1. Mix 1 cup (240 ml) of bleach in 1 gallon of water.</li> <li>2. Wash surfaces with the bleach mixture.</li> <li>3. If surfaces are rough, scrub them with a stiff brush.</li> <li>4. Rinse surfaces with clean water.</li> <li>5. Allow to air dry.</li> </ol>
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Source: [CDC - Cleaning and Sanitizing with bleach after an emergency](#)

Keep mould from growing by keeping rooms dry. Use fans, dehumidifiers and open your windows to reduce moisture in your home. Commercial anti-mould sprays are available to control mould growth during the drying phase. This should not replace cleaning and disinfecting.

- Discard absorbent or porous materials that cannot be washed and dried as mould can grow on or fill in the empty spaces and crevices of porous materials.

### **Washing flood damaged fabrics**

A laundromat can be used for washing large quantities of clothes and linens if your well and septic system are not ready for use following a flood.

If they are ready:

- Wash fabrics using clean uncontaminated water.
- Wear rubber gloves and a properly fitted N95 facemask to protect yourself when handling dirty clothes.
- Scrape and shake dirt from fabrics and rinse or wash as soon as possible.
- Wash small loads and a full water level. Do not overload washer.
- Wash with hot water and laundry detergent. Add household bleach according to product label.
- Heavily soiled items may need more than one wash to get clean. If the rinse water is dirty or cloudy, clothes should be washed again until the rinse water is clear.
- Dry on the hottest setting once clothes are clean.

### **Step 6: Dry out your home and lower humidity**

**IMPORTANT** : Do not paint over or cover mould with fabric or wallpaper, as the mould will continue to grow underneath and linger in your home. It may take several weeks to completely dry out a flooded area.

A musty odour may signify growth of mould or bacteria.

Remove waterlogged items from the home as soon as possible.

- Open doors and windows

- Open closets, drawers and cabinet doors
- Use fans and run one or more dehumidifiers as needed.

### **Step 7: Cleaning your yard**

Keep children and pets out of the area until clean-up has been completed.

- Replace sand in sandboxes and clean any play structures that may have been contaminated.
- Turn the soil over in vegetable gardens. Do not consume any already growing produce from vegetable gardens impacted by floodwater.
- Depending on the season, standing water can pose a health risk by providing a place where insects such as [mosquitoes](#) can reproduce. Drain water as soon as possible (e.g., pails, old tires, or other containers with standing water).
- Dispose of debris and garbage from your home as soon as possible to ensure [rats](#), mice, [raccoons](#) and other vermin are not attracted to make their homes on your property. (Do not touch or approach animals you do not know, even if they appear friendly.)

## **Responding to Stressful Events**

The psychological impact of a stressful event can be immediate or delayed, and those affected directly or indirectly can feel a range of emotions and reactions. In the wake of stressful events our reactions can affect us physically or emotionally. It can affect our thinking.

Being resilient helps us recover and work through challenges in a positive way. Sometimes, we need a little help. [\*\*It's OK Not to be OK\*\*](#)