

RENFREW COUNTY

FLOOD IMPACT & RECOVERY



Severe Weather Situational Awareness

May 12, 2017

**389 Residential
Homes
Affected**

**436 Seasonal
Homes
Affected**

**30 Community
Members
Evacuated**

**71 Road
Closures**

**200,000+
Sandbags**

**1,000+
Volunteers**

*Numbers reflect estimations based on the most accurate information available and compiled by the County of Renfrew Emergency Services Department

LEGEND



ACTIVE FLOODING



BOIL WATER ADVISORY



EMERGENCY DECLARATION



FIELD STAFF DEPLOYMENT



MMAH DRAO ACTIVATED



PUMPS DELIVERED



SANDBAGS DELIVERED



SEVERE IMPACT



MODERATE IMPACT



LOW IMPACT

EMERGENCY DECLARATIONS

TYENDINAGA F.N.11 May 2017
PRINCE EDWARD COUNTY....09 May 2017
CLARINGTON.....08 May 2017
CHAMPLAIN.....07 May 2017
MINDEN HILLS.....05 May 2017
CLARENCE ROCKLAND.....04 May 2017

MUNICIPALITY KEY



v1.3 20170513

PETERBOROUGH Upper Tier / District
TAY VALLEY Lower Tier
KINGSTON Single Tier
DODIE First Nations

Produced by the Office of the Fire Marshal and Emergency Management
This map has been prepared from multiple external sources to display the status of municipalities resulting from the severe weather event of May, 2017. While every effort has been made to ensure the accuracy of the information displayed herein, no liability is assumed for errors, omissions, accuracy and/or content depicted.

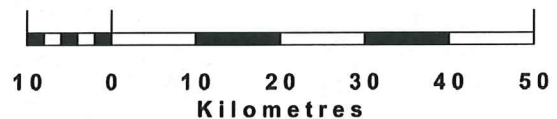
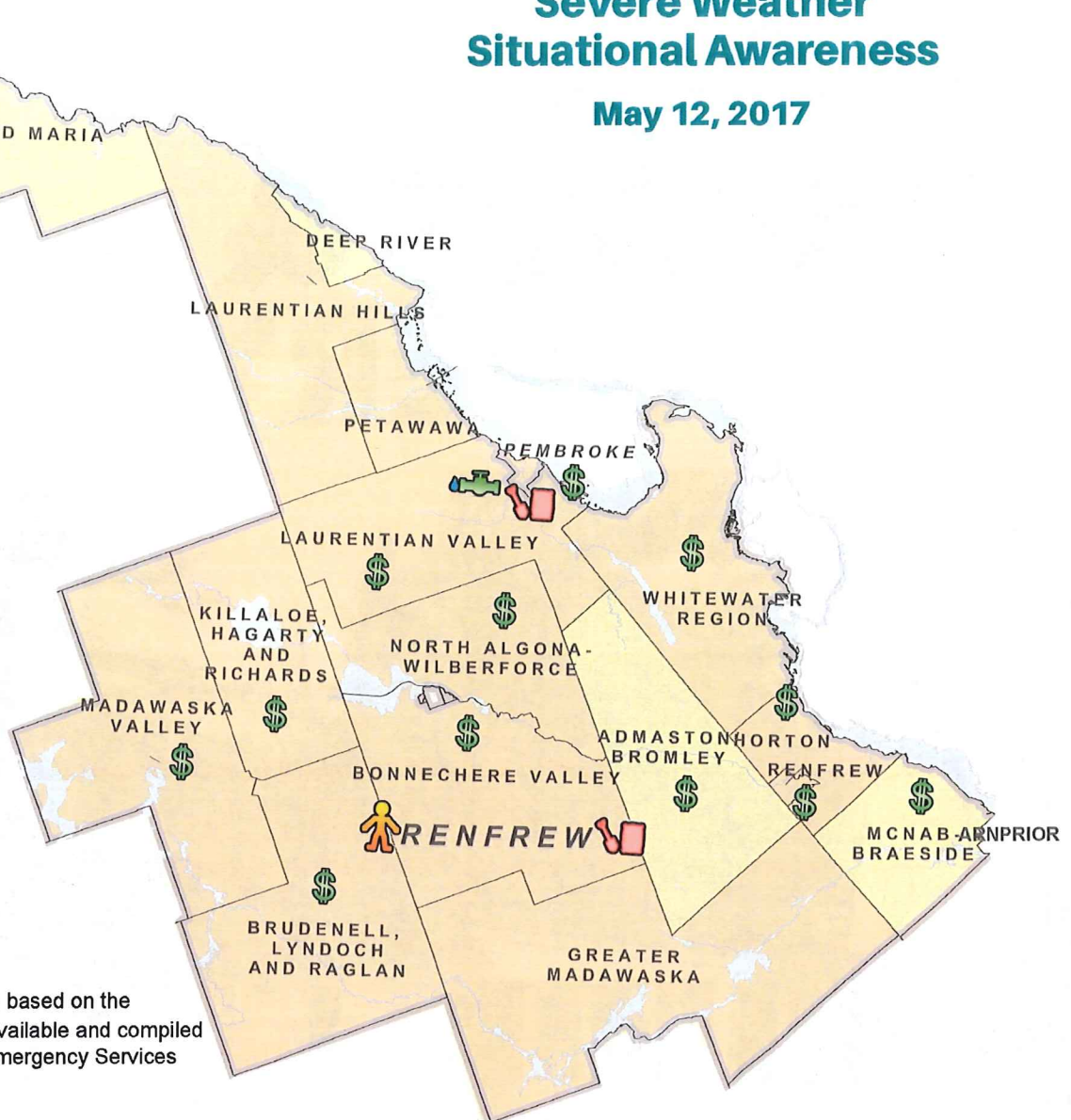




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SECTION ONE

Co-ordination & Communication

The objective of this document is to support our communities and provide essential information to flood victims. Communication is essential to coordinating all aspects of a successful flood 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 TWO

Returning to Home and Property

2.1 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 Electrocution & 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)

SECTION TWO

Returning to Home and Property

2.2 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 considered to be **not 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.

SECTION TWO

Returning to Home and Property

2.3 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.

SECTION TWO

Returning to Home and Property

2.4 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.

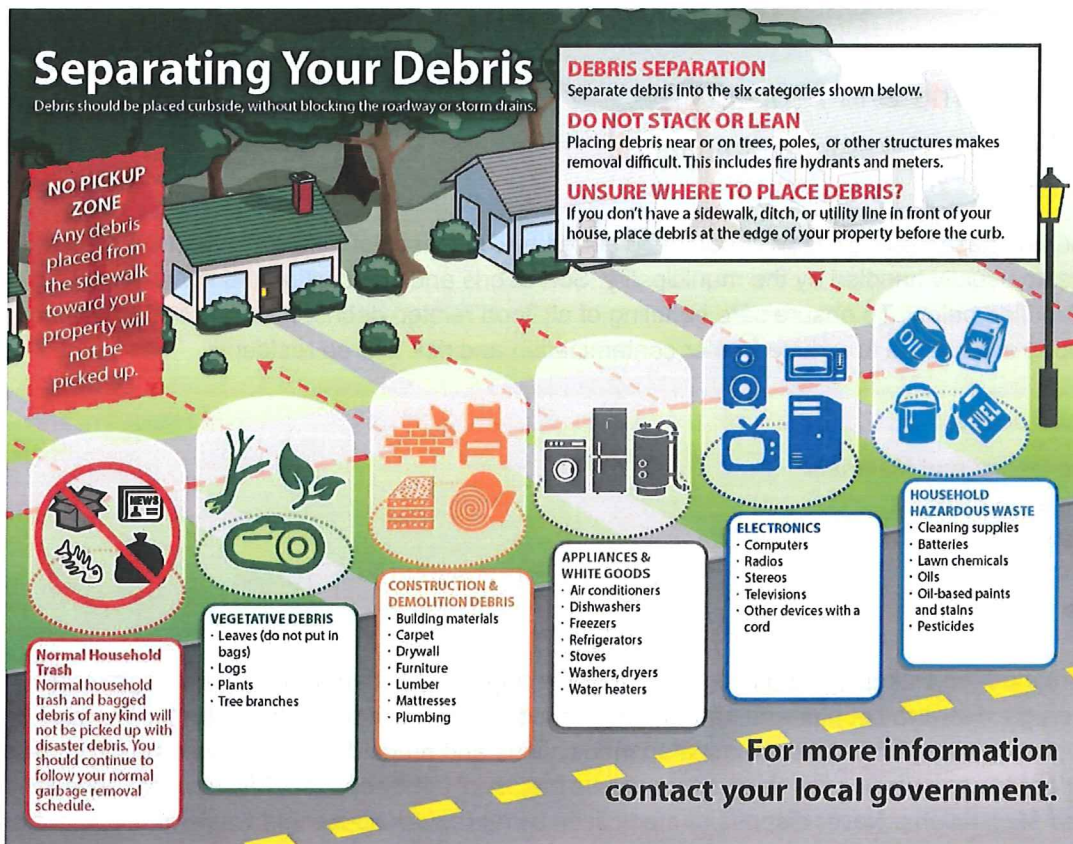
Sandbags

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:

1. Normal Household Trash
2. Vegetable Debris
3. Construction and Demolition
4. Appliances and White Goods
5. Electronics
6. Household Hazardous Waste



SECTION THREE

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.

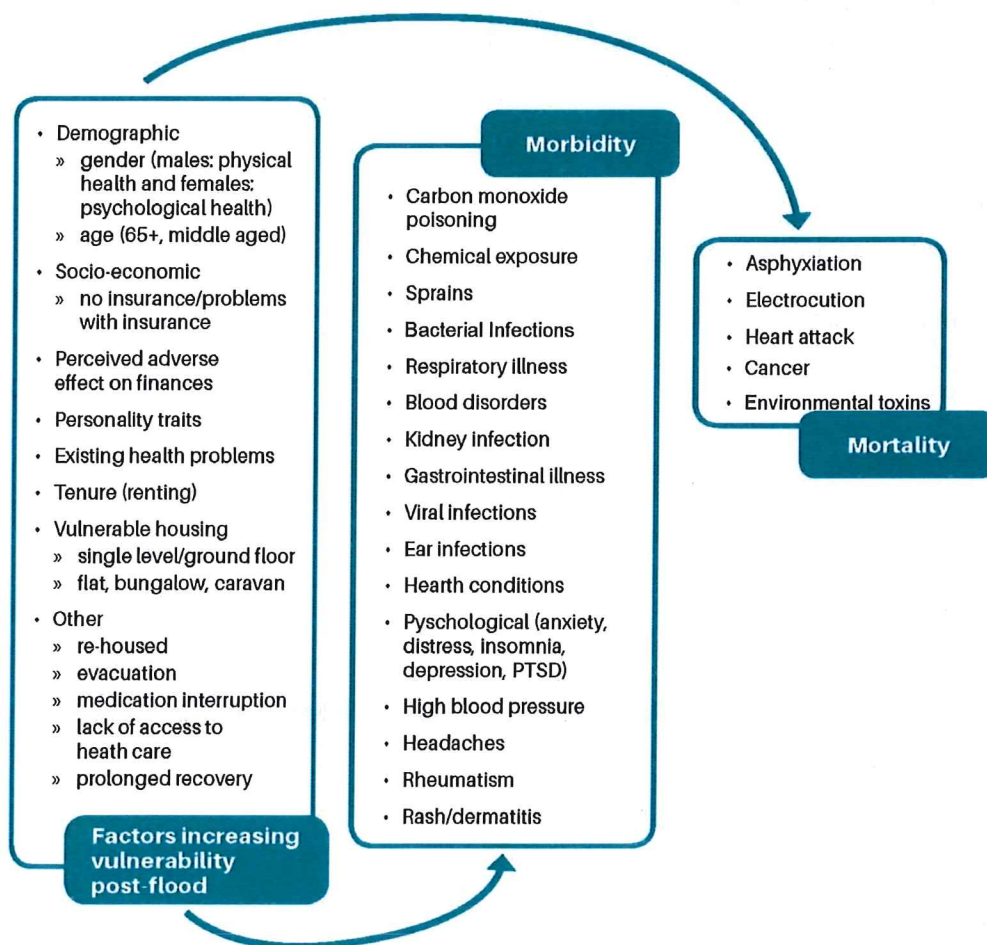
For additional information and guidelines: <http://www.mah.gov.on.ca/Page13746.aspx>

SECTION FOUR

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 FIVE

Local Contact List

Pembroke District of the Ministry of Natural Resources and Forestry is advising residents that a Flood Warning is still in effect for Renfrew County.

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
Township of Whitewater Region

1091 Shaw Woods Rd., Eganville
44 Main St., Cobden

613 628-2080
613 646-2282

SECTION SIX

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-fty-en.aspx>

Workplace Safety and Insurance Act

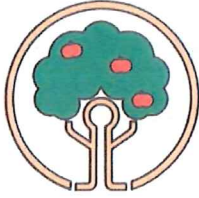
See section 71 for deemed employer responsibilities for emergency workers, search and rescue operations and declaration of emergencies.

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

SECTION SEVEN

Appendices

1. Renfrew County and District Health Unit – Flooded Septic Systems
2. Renfrew County and District Health Unit - Private Well Disinfection Instructions
3. Renfrew County and District Health Unit - Caring For Your Water Well During and After a Flood
4. Public Health After a Flood
5. Insurance Bureau of Canada letter to member companies
6. Clean up supplies table



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:

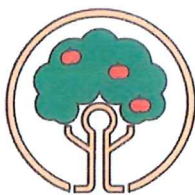
To prepare your septic system before an emergency such as a flood, hurricane, or earthquake:

- 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.

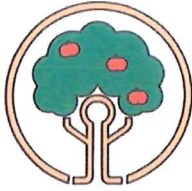


1. Store enough clean water to meet household needs for a minimum of 12 hours.
2. Bypass or disconnect any carbon filters, water softeners or other water treatment devices or else any pipes located past these filters will not be disinfected. Replace the filters once chlorination is completed. Highly 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-smmt/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.

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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 buildings 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

<ul style="list-style-type: none"><input type="checkbox"/> Coveralls<input type="checkbox"/> Eye protection/glasses<input type="checkbox"/> Hardhat<input type="checkbox"/> Headlamps<input type="checkbox"/> Hip waders	<ul style="list-style-type: none"><input type="checkbox"/> N95 face mask<input type="checkbox"/> rubber boots<input type="checkbox"/> Tetanus Vaccines<input type="checkbox"/> Warm socks<input type="checkbox"/> waterproof gloves
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Equipment for entering affected building

<ul style="list-style-type: none"><input type="checkbox"/> Camera for recording damage items<input type="checkbox"/> Chainsaw<input type="checkbox"/> Clear bags for recycling.<input type="checkbox"/> Extension Cords<input type="checkbox"/> Extra Batteries (stored in sealed plastic)<input type="checkbox"/> First Aid Kit<input type="checkbox"/> Flashlights<input type="checkbox"/> Generators<input type="checkbox"/> Hammers/pry bars/pliers<input type="checkbox"/> Hand sanitizer<input type="checkbox"/> Heavy duty bins for hauling waste and items to be cleaned and disinfected	<ul style="list-style-type: none"><input type="checkbox"/> Heavy duty or industrial Garbage bags<input type="checkbox"/> High Capacity Gas pumps<input type="checkbox"/> Hoses to fit pumps (50-100 ft)<input type="checkbox"/> Industrial fans/drying fans<input type="checkbox"/> Laundry Bags or Bins for collecting salvageable clothes and linens<input type="checkbox"/> Moisture Meter<input type="checkbox"/> Notebook and pen for making notes and reminders<input type="checkbox"/> Shop vacs<input type="checkbox"/> Submersible pumps<input type="checkbox"/> Wheelbarrows/shovels
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Cleaning Supplies

<ul style="list-style-type: none"><input type="checkbox"/> 24-inch stiff-bristled Push Broom/brush<input type="checkbox"/> Buckets for holding dirty water and disinfectants<input type="checkbox"/> Cleaning detergents/soap<input type="checkbox"/> Disinfectants such as household bleach	<ul style="list-style-type: none"><input type="checkbox"/> Hose<input type="checkbox"/> Large plastic bins for collecting salvageable items<input type="checkbox"/> Rags<input type="checkbox"/> Sponge Mop for water removal and String Mops for disinfecting.<input type="checkbox"/> Sponges (grouting sponge for cleaning)
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Front Cover Photo Credit: Matt Hamilton