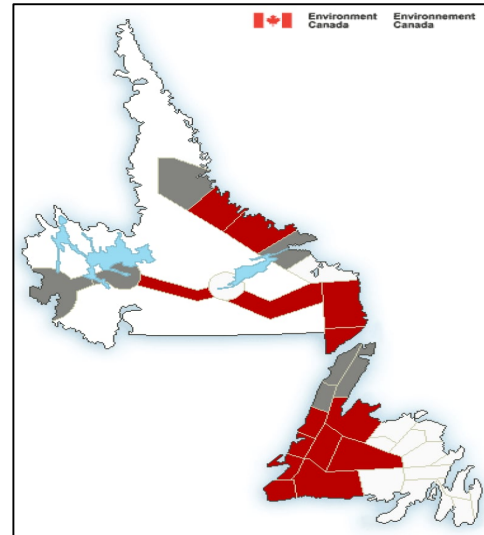




# Storm Preparedness – Public Drinking Water and Wastewater Systems

## General

- Identify essential personnel and ensure they are trained to perform critical duties in an emergency, including the shut down and start up of the system.
- Maintain a list emergency contacts:
  - Critical equipment and chemical suppliers
  - Service providers (e.g., electrician, local contractors)
  - Government officials, first responders, media, NL Power, neighbouring communities
- Complete a vulnerability assessment of system infrastructure to identify infrastructure at risk of failure and the associated consequences.
- Ensure there are drawings of critical system infrastructure readily accessible.
- Identify key infrastructure (e.g., pumphouse) that may become inundated.
- Take appropriate flood-proofing steps at key infrastructure sites (e.g., sandbags).
- Ensure any water-sensitive equipment, SCADA computers, records, chemicals, fuel, or tools are either removed or measures are taken to prevent damage (e.g., elevate in-place).
- Test backup generators and ensure there is sufficient fuel to operate them for 72 hours. Purchase or rent a backup generator as needed.
- Ensure all work vehicles are full of fuel.
- Ensure all required worker PPE and an emergency repair kit is available.
- Ensure all communication devices are in working order.



- Ensure access roads/trails to critical infrastructure are clear from obstructions.
- Conduct safety briefings and establish a control perimeter around any flooded areas.

## Drinking Water Systems- Source

- If the drinking water source is contaminated from flooding, contact Digital Government and Service NL for direction on if a Boil Water Advisory or Non-Consumption Advisory is needed.
- A water conservation order may need to be issued by the community if there are water shortages in the system.
- An emergency alternate source of drinking water should be identified (i.e., a nearby community source, bottled water, bulk water, Red Cross, etc.).
- Identify potential sites for emergency water distribution and consider the need for parking and traffic control.
- Ensure temporary water supply equipment including pumps and hoses are clean and are NSF 61 certified for use with drinking water.

**☑ Document equipment condition before and after the storm event for insurance and quick repair purposes.**



### Drinking Water- Water Supply Dams

- If the surface water supply has a dam:
  - Inspect dam before and after major precipitation and/or runoff events.
  - Follow operating procedures for flood operations such as removing stop logs from the spillway.
  - Remove any debris blocking the spillway.
- If water levels rise above the crest of an embankment dam, the dam may fail. The following actions may need to be taken:
  - If there is a population at risk downstream of the dam, initiate the town emergency plan and notify those in the dam break flood area.
  - Pump water out of the reservoir to lower the water level.
  - Initiate a controlled breach of the dam.

### Drinking Water- Treatment

- Ensure a 30-day supply of all chemicals is available.

### Drinking Water- Distribution

- Fill storage tanks to meet demand during outages.
- Chlorine residual monitoring frequency may need to be increased.
- Shut down exposed pipes at river crossings (water and sewer).
- Disconnect power at buildings that may flood.

### Drinking Water- Groundwater Wells

- Proper well construction will help protect source wells against contamination from flooding:
  - Extend casing at least 0.60 m above ground level.
  - Grouting of well casing/sealing of annular space.
  - Sloping around well.
  - Proper well cap (in areas prone to flooding installation of a flood-proof cap with an extended vent).
  - Locate well away from sources of contamination.
  - Seal any nearby abandoned wells.
- If well is flooded follow these guidelines:
 

<https://www.gov.nl.ca/eccm/files/waterres-quality-drinkingwater-pdf-floodingandwater.pdf>

### Wastewater Systems

- Inspect lift stations and manholes to ensure they are clear of debris.
- Ensure lift stations are fully operational including pumps and warning devices.
- Ensure sewage overflow lines are not blocked.
- Where applicable, install backflow valves on overflow lines with the potential for reverse flow under flooding conditions.
- Ensure homeowners have a back water valve on their sewer service line.
- Identify wastewater treatment plant bypass capabilities and procedures to protect it from flood damage.

### Post-Storm

- After the storm event, inspect systems for damage and prioritize repairs and maintenance activities.
- Restore power to facilities when safe.
- If public drinking water system is flooded follow these guidelines:
 

<https://www.gov.nl.ca/eccm/files/waterres-quality-drinkingwater-pdf-mae-flooding-and-drinking-water.pdf>

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