FLOODING FROM RIVERS

CAN HAPPEN AT ANY TIME OF YEAR

SEASONAL FACTSHEET

WINTER

ICE ACCUMULATION

Changes in water levels during warmer temperatures or rainfall events in the winter can cause river ice to melt and break apart into large chunks. River ice can become jammed at bridges and other river crossings as it moves downstream and can form an ice jam that may cause flooding.

- Ice jams are difficult to predict and can develop very rapidly given the number of factors that contribute to ice jam formation including weather conditions, flow conditions, the shape of river channels and direction.
- On Friday, March 15, 2019, an ice jam forced the Humber River to spill its banks into the surrounding floodplain, sending water into the streets and flooding homes in downtown Bolton. Upward of 250 residents were evacuated from approximately 80 homes after the water began to flow into the streets east of the downtown core.

SPRING

SEASONAL THAW

When temperatures rise, snow melts and turns to runoff[1]. Ice jams in rivers also start to move with the melt. When this process combines with rainfall events and frozen ground, the spring thaw can result in a serious flood.

- Seasonal rise in water levels occur in the spring on Lake Ontario due to the runoff from all the river systems that drain into it. The greatest risk occurs when elevated water levels together with wave action from high winds. Impacts can include shortened beaches, flooding of low-lying areas adjacent to the lake, erosion to trails and other public spaces.

- In 2017 and 2019, Lake Ontario experienced periods of higher than average water levels. The peak water level is heavily influenced by rainfall over the course of the spring months as well as the unregulated inflow from Lake Erie and the regulated outflow of Lake Ontario into the St. Lawrence River.

[1] Surface runoff (also known as overland flow) is the flow of water occurring on the ground surface when excess rainwater, stormwater, meltwater, or other sources, can no longer sufficiently rapidly infiltrate in the soil.

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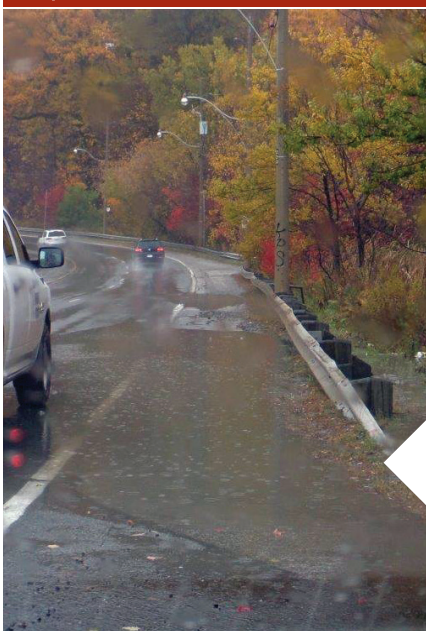
SUMMER

THUNDERSTORMS

Within a short period of time, sometimes only minutes, localized downpours from thunderstorms can produce flash flooding.

- Additionally, large scale weather systems with short or long periods of rainfall could also occur. These large weather systems can last several days.
- A severe thunderstorm produced widespread flooding in parts of the GTA including the City of Toronto, Mississauga and Brampton on July 8, 2013. Toronto experienced severe flash flooding caused by roughly 126mm of rain falling on the City (more than a whole month's average for July). The storm flooded roads, basements and left train passengers stranded for hours.

FALL



SEASONAL WEATHER SYSTEMS

Heavy and widely distributed rainfall systems combined with damp conditions could cause rivers and streams to overflow and cause flooding.

- Areas of the GTA typically experience the "remnant activities" of a hurricane, mainly the wind and rain from the outside edges of the storm. In most cases, hurricanes have weakened and been downgraded by the time they reach the GTA, however due to the large volume of moisture these remnants still carry, areas may still experience significant rainfall which could lead to major flooding.
- A fall storm driven by the remnants of Hurricane Patricia, coming from the west caused flooding of the Bayview Ave extension, the Metrolinx rail and other parts of Toronto on October 28, 2015.

SAFETY TIPS

- The rivers in TRCA are 'flashy' which means that small amounts of precipitation or warm weather causing snowmelt can cause the water levels to rise very quickly with little warning. Stay away from river banks and avoid recreational activities in watercourses during storm events.
- During the spring, riverbanks thaw and may collapse when someone walks on them. As a general rule, do not walk along riverbanks in the winter and spring.
- If you are ever instructed by emergency officials to evacuate, do so immediately.
- Don't risk serious injury if your basement floods. Avoid storing valuables in the basement and never go into the basement during a flood.
- Do not drive through, stand, or walk in any moving water! Avoid low-lying areas such as road underpasses and walkways.

Environment Canada Weather Messages

- Special Weather Statements are issued to let people know that conditions are unusual and could cause concern.
- Weather Watches caution about weather conditions that are favourable for a storm or severe weather, which could cause safety concerns.
- Weather Warnings are urgent alerts that severe weather is either already happening or will occur soon.
- WeatherCan - Receive **weather alert notifications** in your area on any device. The app is available for free in the Google Play and Apple stores.

TRCA FLOOD MESSAGES

1. WATERSHED CONDITIONS STATEMENTS

Water Safety: High flows, unsafe banks, melting ice or other factors that could be dangerous for recreation. Flooding is not expected.

Flood Outlook: Early notice of the potential for flooding based on weather forecasts calling for conditions that could lead to high runoff, cause ice jams, lakeshore flooding or erosion.

2. FLOOD WATCH

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

3. FLOOD WARNING

Flooding is imminent or already occurring in specific watercourses or municipalities.

Lake Ontario Shoreline Flood Messages:

- Lake Ontario Shoreline Conditions Statement (Yellow)
- Lake Ontario Shoreline Flood Watch (Orange)
- Lake Ontario Shoreline Flood Warning (Red)

Lake Ontario Shoreline messages are similar in category to riverine flood messages but are only applicable to the Lake Ontario shoreline areas within TRCA's jurisdiction (Toronto, Pickering and Ajax). They are issued when critical high water levels and waves are forecasted, imminent or occurring on Lake Ontario, which could result in shoreline flooding and/or erosion.

LEARN MORE

- Visit TRCA's Real-Time **Flood Monitoring** Website
- For preparedness tips, visit **TRCA.ca/Flood**
- Sign up for TRCA's flood messages at **TRCA.ca/get-flood-messages**

Toronto and Region Conservation Authority