

Flood Management

Board of Directors

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Lake Simcoe Region
conservation authority



Member of Conservation Ontario

Flood Management Program

- What: River-based, Shoreline, and *Urban* Flooding
- Where: Floodplain Mapping (River and Shoreline)
- When: Flood Forecasting and Warning Program
- How: Prevention through Development and Infrastructure Review

The Conservation Authority's role in flood protection is prevention



Flood Management Program



Flood Management Program



Flood Management Program



Floods – a Little Background

- Water where we don't want water!
- The most frequent natural hazard in Canada, they happen any time (Government of Canada).
- There are many common causes of floods.



Flood Management: A Core Mandate

- A core mandate of the Conservation Authority is to undertake watershed-based programs to **protect people and property from flooding.**
- The Conservation Authority is governed by the Conservation Authorities Act, which is administered by the Ministry of Natural Resources and Forestry (MNRF). Conservation Authorities carry out programs that serve provincial and municipal interest, including **Flood Forecasting and Warning.**



Flood Management Program

- The overall Flood Management Program applies a wholistic and adaptive management process that incorporates:
 - Engineering Principles
 - Monitoring
 - Warning
 - Regulation of Development

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Flood Management Program

- What:?
- Where:?
- When:?
- How:?

River-based/Riverine Flooding



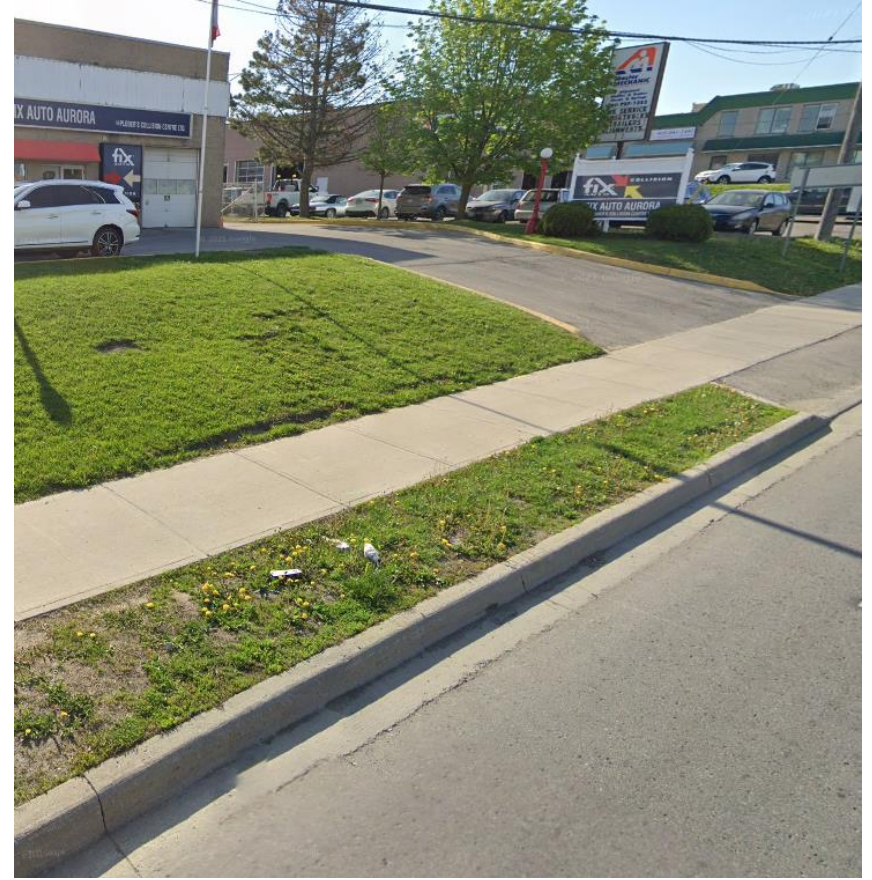
River-based/Riverine Flooding



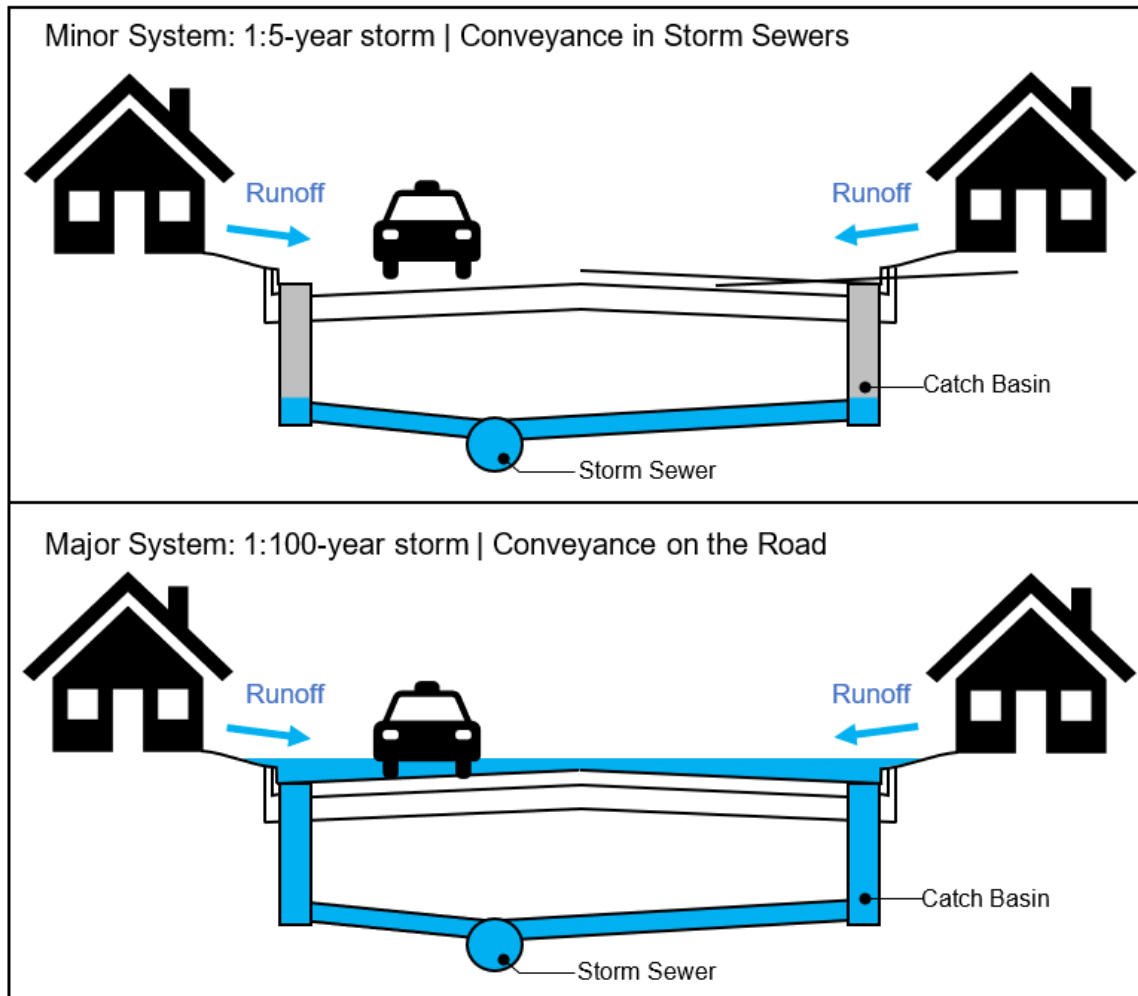
Shoreline Flooding



Urban Flooding



Urban Flooding – Dual Drainage



Types of Flooding

The Conservation Authority Leads:

- Riverine Flooding:
- Shoreline Flooding:

Municipalities Lead:

- Urban Flooding:



Flood Management Program

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- Where:?
- When:?
- How:?



Floodplain Mapping

What is the Conservation Authority's Role?

To delineate the floodplain.



Floodplain Mapping

Riverine:

- Flow associated with a river, stream or natural watercourse that exceeds/spills/crests the banks or containment ability of the watercourse and goes where we don't want it to.

Shoreline/Lake Based:

- Can be due to a higher than usual static (still) lake level, wind, seiche, waves, and/or a combination of the above factors to create flooding along/adjacent to the shoreline.



Flood Management Program

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Flood Forecasting and Warning

- What the Conservation Authority does:
 - Monitor weather 365 days a year
 - Provide notice of potential flooding
 - Document flooding
 - Communicate with municipal partners
 - Open Emergency Operations Centre, if needed



Flood Messages



Normal Conditions:

No flood conditions exist

Flood Messages



Watershed Conditions Statement, Water Safety: High flows, unsafe banks, melting ice or other factors could be dangerous for recreational users such as anglers, canoeists, hikers, children, pets, etc. Flooding is not expected.

Flood Messages



Watershed Conditions Statement, Flood Outlook:

Early notice of the potential for flooding based on weather forecasts calling for heavy rain, snow melt, high wind or other conditions that could lead to high runoff, cause ice jams, lakeshore flooding or erosion.

Flood Messages



Flood Watch:

Flooding is possible to occur in the near future in specific watercourses or municipalities.

Municipalities, emergency services and individual landowners in flood-prone areas should prepare for possible flooding.

Flood Messages



Flood Warning:

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

Municipalities and individuals should take action to deal with flood conditions. This may include road closures and evacuations.



Flood Forecasting and Warning

- What the Conservation Authority does not do:
 - Control the water levels on Lake Simcoe (Lake Simcoe water levels are managed by Parks Canada).
 - Deliver or fill and place sandbags.
 - Predict the weather (we rely on meteorologists to tell us the weather)
 - Remove blockages, physically address flooding issues
 - Respond to emergency situations. For life threatening emergencies, dial 911.



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Development and Infrastructure Review

- Reviews are completed as part of applications for approvals made to the Authority, where the Conservation Authority has jurisdiction per governing legislation.
 - *Planning Act* Applications
 - *Conservation Authorities Act* Applications
- Key objectives examined as part of the engineering technical reviews include:
 - Flooding and Erosion
 - Stormwater Management per 4.8-DP of the LSPP



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Meet the Team

Lake Simcoe Region Conservation Authority Engineering Team



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Questions?