Welcome to the Thurstonia Drainage Study Public Information Centre #1

Thursday, September 24, 2026
5:30-7:30 p.m. | Presentation at 6:00 p.m.

Dunsford Community Centre

Tonight, you can:

- Review the study and technical work underway
- Speak with the project team
- Add local knowledge about drainage concerns

Why Are We Studying Drainage in Thurstonia?

The Hamlet of Thurstonia is a community where much of the drainage system predates modern engineering standards.

The City of Kawartha Lakes has received reports of flooding on both public and private property, prompting the City to initiate this Drainage Study to better understand existing conditions and identify potential improvements.

As part of the Municipal Class Environmental Assessment process, the project team is completing technical background studies and public engagement to better understand drainage conditions throughout the community.

Work completed to date has confirmed concerns related to flooding and winter road icing and is documenting the existing conditions needed to develop and evaluate potential drainage solutions.





Winter road icing

Understand where snow melt conditions contribute to ponding, ice formation and seasonal access concerns.

Long-term improvements

Identify practical drainage measures and compare potential drainage improvement alternatives through the study process.

Overland flooding

Understand where drainage negatively affects properties, roads and infrastructure.

Study Area and Local Drainage Concerns

Where have you experienced drainage issues?

Feel free to identify locations on the map using a sticker!





25 Hazel Street

Common Concerns

- Flooding or ponding, e.g. March 2021
- Winter ice formation
- Drainage exceeded system capacity
- Lack of drainage systems
- Driveway / property access
- Other drainage-related concerns



How This Study Is Being Completed

The Study is being completed under the Municipal Class Environmental Assessment Master Plan.

1 Phase 1

Identify the problem or opportunity.

2 Phase 2

Identify and evaluate alternative solutions.

3 Preferred alternative

Select a preferred approach later in the study.

4 Future work

Design, approvals and implementation, if approved.

Current Focus

Currently the project team is in between Phase 1 and 2, confirming existing conditions, gather community information, complete technical investigations, and prepare for alternatives development and assessment.



Existing Drainage Conditions Assessment

Drainage in Thurstonia occurs through a connected system of roads, ditches, culverts, overland-flow routes, and outlets to the lake.

Localized storm sewer systems with inlets capture drainage for certain sections of roads, while most roads use ditches to convey drainage to culverts that outlet to the lake.

Technical Basis

- Site visit to observe drainage infrastructure
- Information from the City and the public
- Computer model used to assess drainage system performance

EXISTING DRAINAGE MODEL



Existing Drainage Conditions Assessment

The project team is bringing together field observations, survey information, aerial and LiDAR mapping, existing drainage infrastructure information and computer modelling to better understand how water moves through the area.

This work is helping identify how the drainage system is performing across both public and private lands, including where drainage may be of concern.

Field Observations

Site review, observed flooding information from residents and the City

Survey + Topography

Ground elevations and local drainage features

LiDAR + Infrastructure

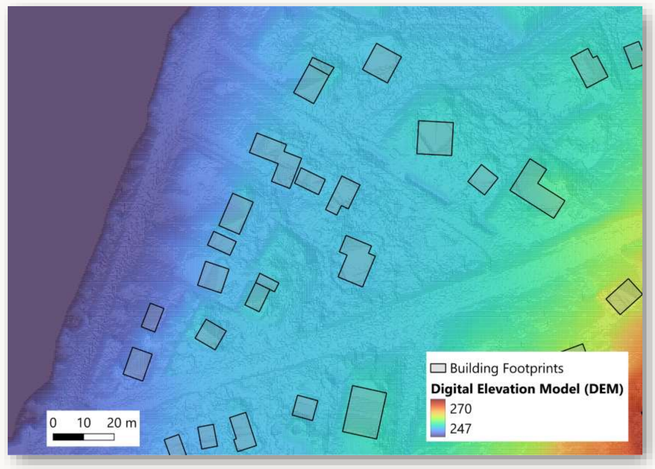
Terrain mapping, ditches, culverts, sewers, and other drainage assets

1Dimesion/2Dimenstion Modelling

Estimate magnitude of drainage and drainage depth and velocities

2D DUAL-DRAINAGE MODEL IMAGERY

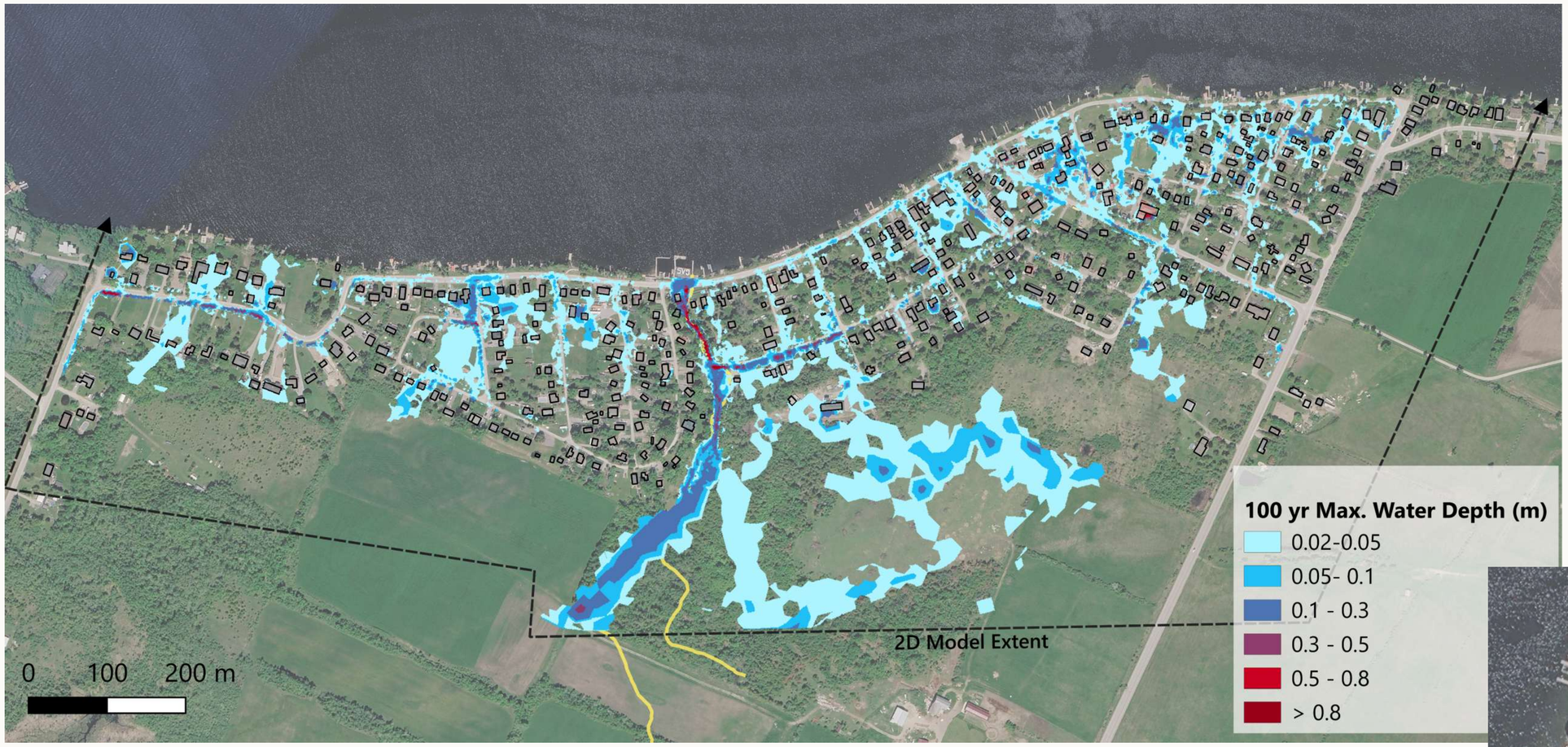


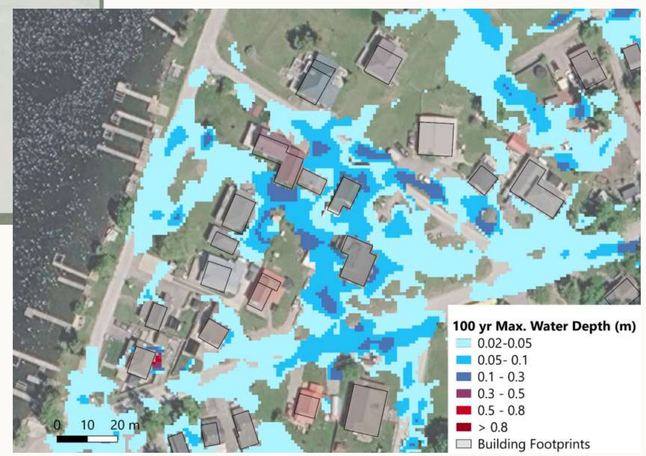




Understanding Existing Drainage-System Performance

Existing drainage conditions assessment and modelling are being used to identify drainage-system performance and identify drainage system concerns





Drainage System Concerns:

- Lack of or inadequate roadside ditches
- Lack of or inadequate driveway culverts
- Poor private grading
- Limited right-of-way capacity
- Lack of stormwater controls
- Drainage system blockages due to debris, snow and ice

Understanding Existing Drainage-System Performance



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Natural Heritage

Natural heritage assessments have been completed to identify natural features and sensitive areas – including vegetation, wildlife habitat, wetlands, watercourses, and shoreline features around Sturgeon Lake, including terrestrial conditions – so future alternatives can avoid or minimize effects and incorporate mitigation where needed.

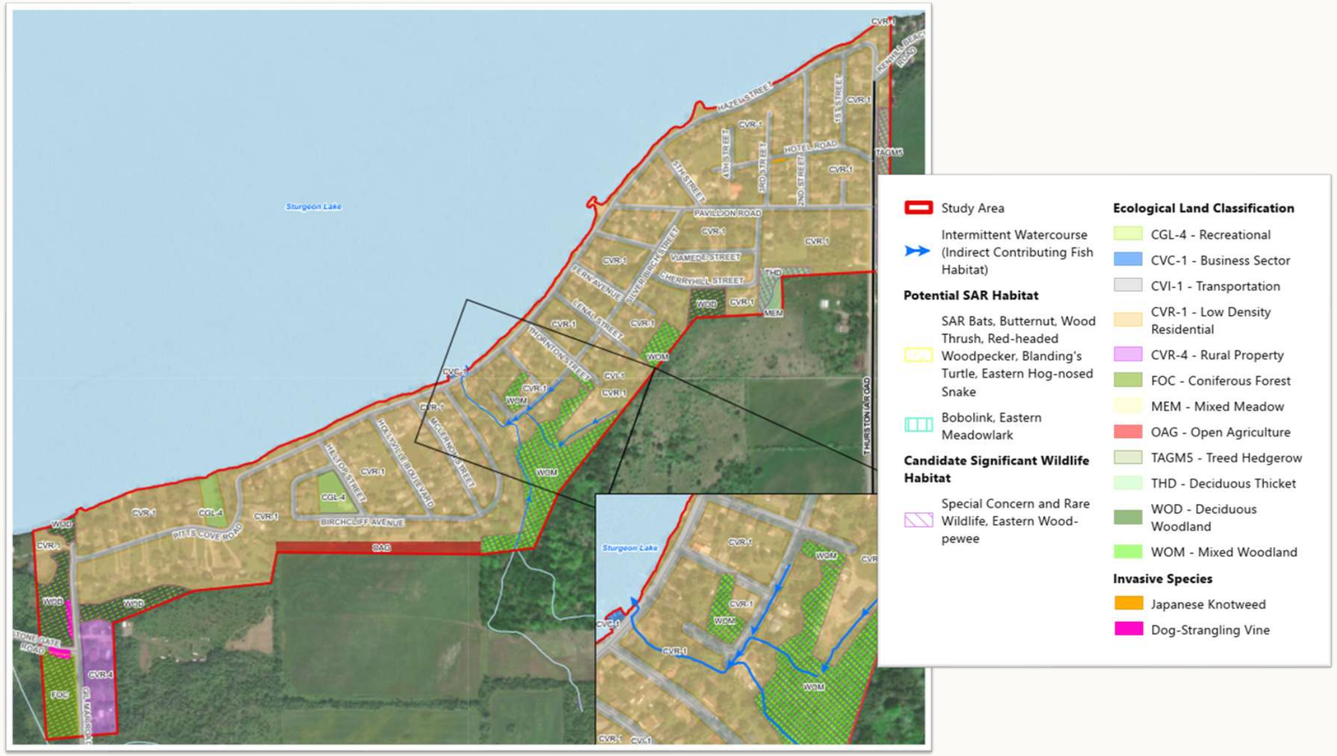
Why This Matters

- Understand environmental constraints and sensitive features
- Helps develop alternatives that avoid or minimize environmental effects, where possible
- Identify potential mitigation and restoration requirements



Key Findings

- Potential impacts to fish habitat in Sturgeon Lake and watercourses is the main environmental constraint.
- Species at Risk were not observed, but potential habitats are present.



Are there seasonal natural features or local environmental conditions the team should know about?

Soils and Groundwater

INVESTIGATION LOCATIONS MAP



- In the project study area, the soil conditions are a mixture of clay, sand and gravel, underlain by heavy clay, as a result of glacial tills
- Bedrock is shallow being as close as 1.5m in depth and measured as deep as 4.6m
- Water table is shallow, with observed conditions being 1.3m to 3.1m below the surface, but typically around 1.5 m depth

10
MONITORING WELLS

21
BOREHOLES

Share your observations

Please share seasonal observations or information about private wells, groundwater levels, basement water or sump pumps.

Cultural Heritage, Archaeology and Indigenous Engagement

CULTURAL HERITAGE

The Cultural Heritage Assessment has been conducted to identity cultural heritage resources that could be affected by drainage improvements and to ensure future alternatives consider avoidance, mitigation, and applicable approvals.

Findings include:

- 1 potential cultural landscape
- 13 potential built heritage landscapes

Below Image: One of the original four cottages Maryboro Lodge Museum, 2025



INDIGENOUS ENGAGEMENT

The role of Indigenous engagement is to invite Indigenous communities to share knowledge, interests, and concerns related to cultural heritage, archaeology, water, land use, and the natural environment, which will inform alternatives, mitigation and approvals.

Findings include:

- **The study area is within Treaty 20 and Williams Treaties territory.**
- **Engagement is active and continues through the study.**
- Alderville First Nation and **Curve Lake First Nation have expressed interest in participating throughout the study.**

STAGE 1 ARCHAEOLOGY

The Stage 1 Archaeological Assessment has been undertaken to identify areas with archaeological potential and to ensure future work avoids or appropriately investigates potential archaeological resources before construction.

Findings include:

- **Much of the 49.1-ha study area retains archaeological potential.**

Below Image: “Treaty Rock”. Area by boulder has archaeological potential



What Will Be Considered When Alternatives Are Assessed?

Technical

- Drainage and flood management
- Winter icing and system reliability
- Constructability and maintenance



Natural Environment

- Surface water and natural heritage
- Fish habitat, wetlands and groundwater
- Climate resilience



Community + Cultural

- Property impacts, roads and access
- Seasonal travel and community feedback
- Cultural heritage, archaeology and Indigenous interests



Implementation

- Utilities and regulatory requirements
- Cost and operations
- Long-term maintenance and ability to implement



What Could the Alternatives Include?

The team will evaluate drainage improvements on public lands including road drainage improvements. Potential measures may be combined into integrated alternatives; none have been selected at PIC #1.

Preliminary Long-list of Alternatives

- Do Nothing (Required alternative)
- Road Grading Improvements (includes: Swales, Driveway Culverts, Road Grades)
- Overland Flow Route improvements (could require easements/ land purchase)
- New and/or improved Storm Sewer Systems
- Flow Diversions (piped and overland)
- Stormwater, Storage or Attenuation Measures (public lands)
- Modify Grading on Private Property
- Green infrastructure (Low Impact Development)
- New Drainage System Outlets
- Roof Leader, Sump System Outlet improvements
- Maintenance or Operational Measures
- A Combination of Measures



Above Image: New Storm Sewer



Above Image: Road Grading Improvements



Above Image: Stormwater – Dry Detention Area



Above Image: Overland Flow Route Improvement

What Could the Alternatives Include?

The team will also evaluate drainage improvements on private lands. Potential measures may be combined into integrated alternatives; none has been selected at PIC #1.



Above Image: Driveway Culvert



Above Image: Permeable Laneway



Above Image: Roadside swale



Above Image: Surface Infiltration System



Above Image: infiltration Chamber



Above Image: Winter Operations Improvements

Help Inform the Alternatives

Where do flooding, ponding, ice formation or drainage issues affect roads, driveways, properties, access or travel?

Are there locations the project should know about?

Are there conditions that occur only during particular weather events or times of year?

How does drainage affect your property access and overall mobility in Thurstonia?

Are there operational improvements you think will help improve drainage?

What should the team consider when developing potential solutions?

Feel free to use a sticky note to share your thoughts!

What Happens Next?

Feedback will be combined with technical information to inform the development and assessment of drainage alternatives.

Target Completion Date

Approximately July 2027

Project Website

JumpInkawarthalakes.ca/thurstonia-drainage-study

Learn More

Project Contacts

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Stay Connected!

Visit the Jump In Web Page and our Thurstonia Drainage Study StoryMaps for project information and updates.