

Upper Welland River Tributaries Floodplain Mapping

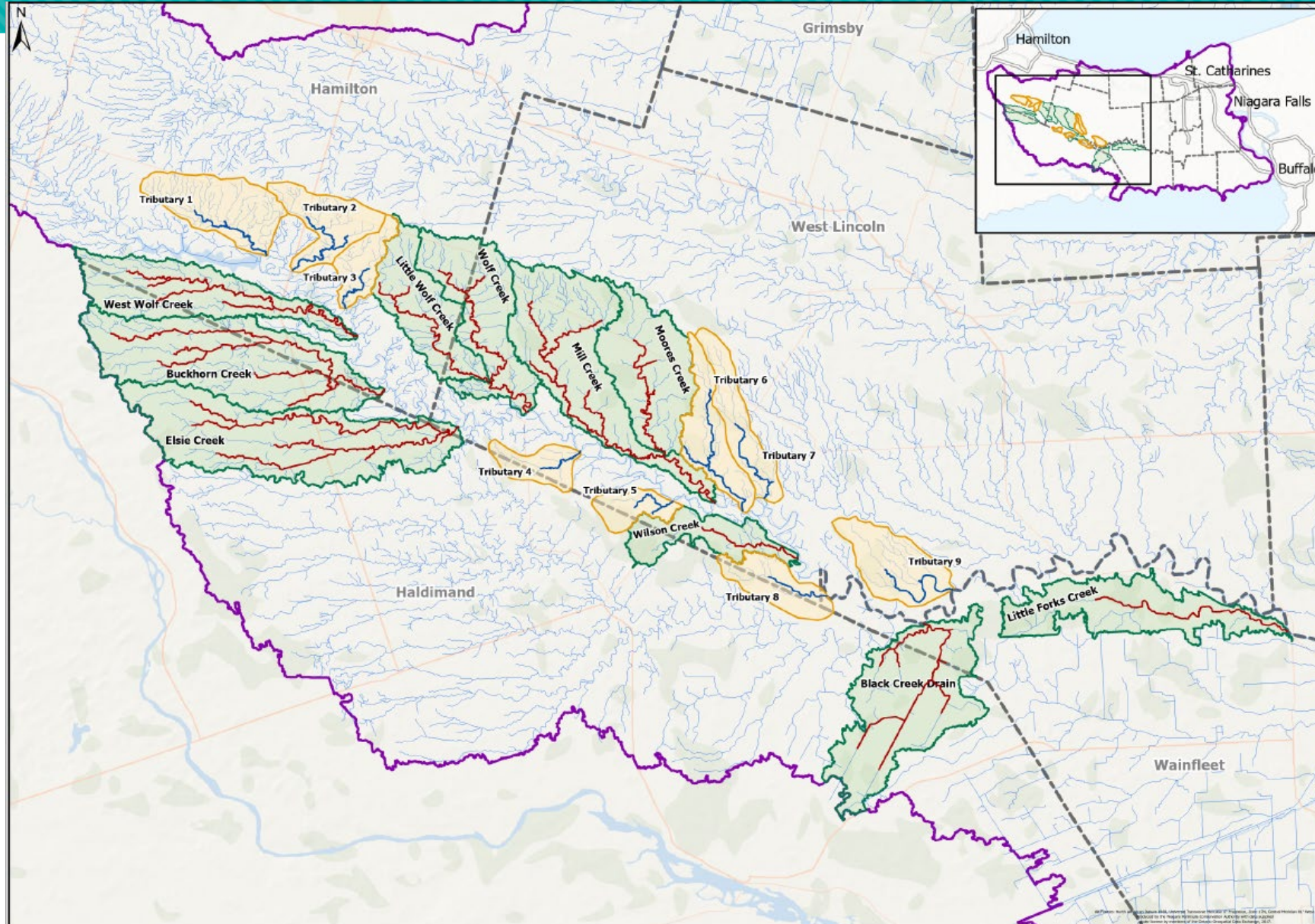
Virtual Open House #1

November 10, 2025

Speakers

- **Brendan Buggeln**, Project Manager, NPCA
- **Rob Amos**, Project Manager, Aquafor Beech Ltd.
- **David Deluce**, Director, Planning & Development, NPCA

Upper Welland River Tributaries Study Area



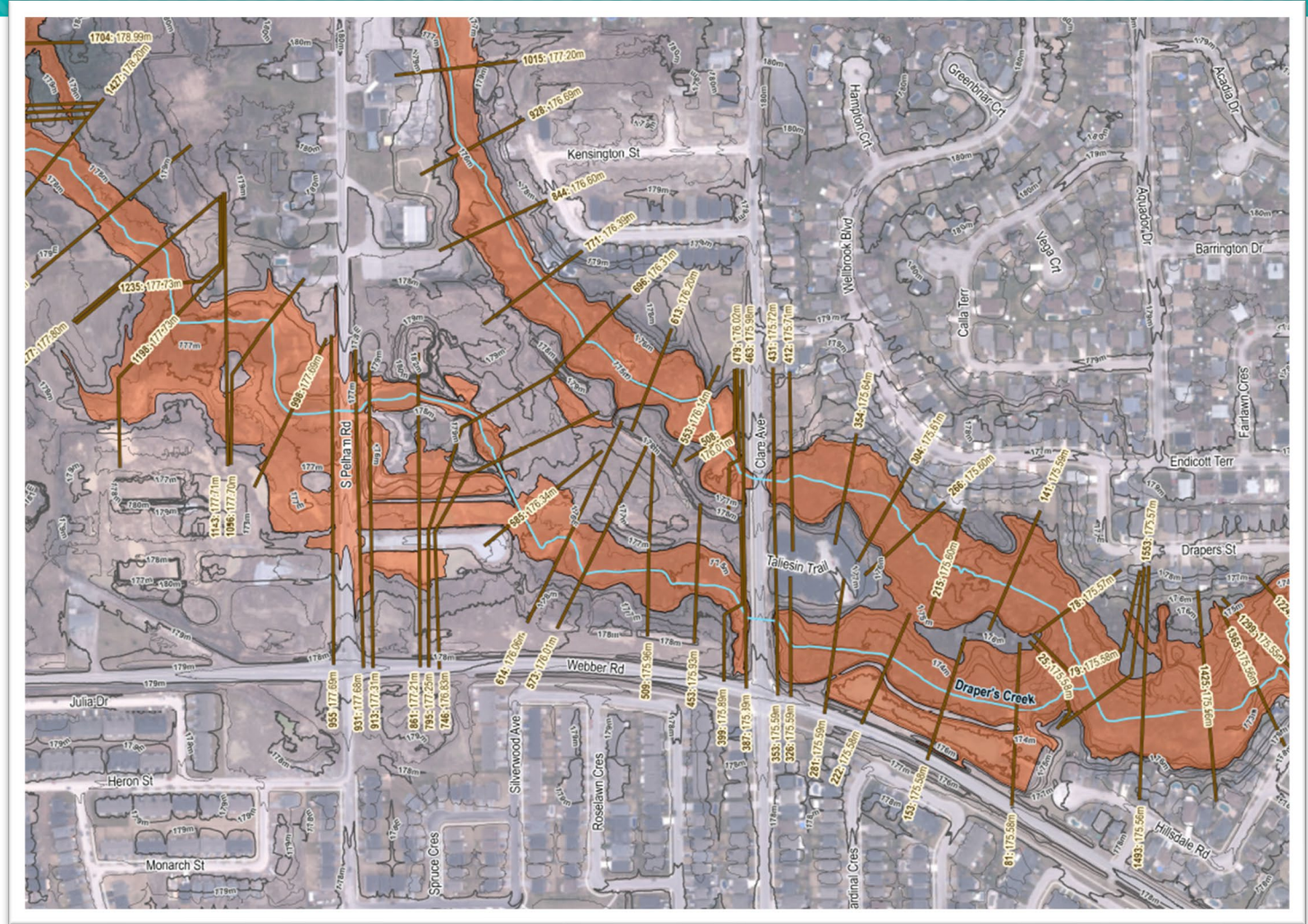
Reducing Risk

- NPCA regulates development activities within hazardous areas including **floodplains** (O. Reg 41/24)
- Reduces **flooding risk** to health and safety and property damage



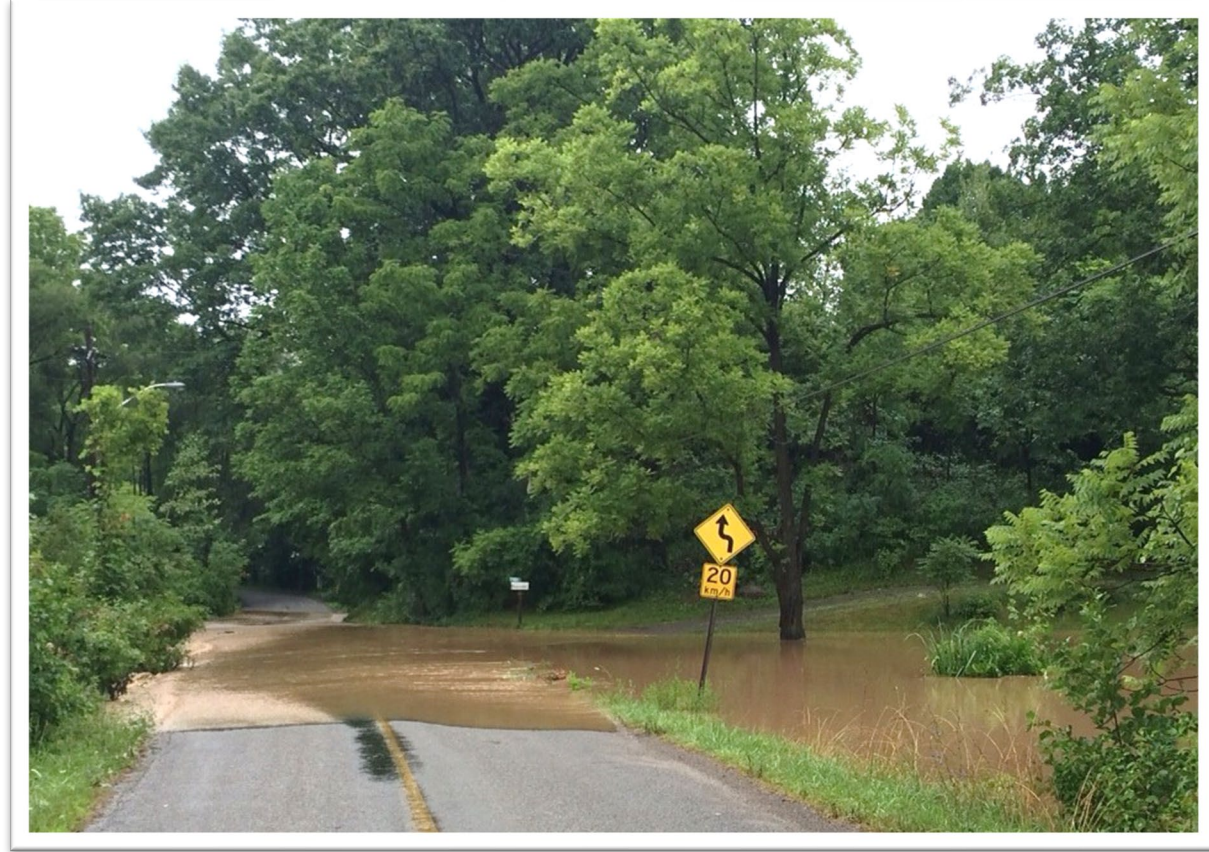
Floodplain Mapping

- Identifies areas that are at **risk of flooding**
- The first step to **reduce cost** and **improve safety** in the event of a flood
- Help people **prepare** for and **respond** to potential flooding

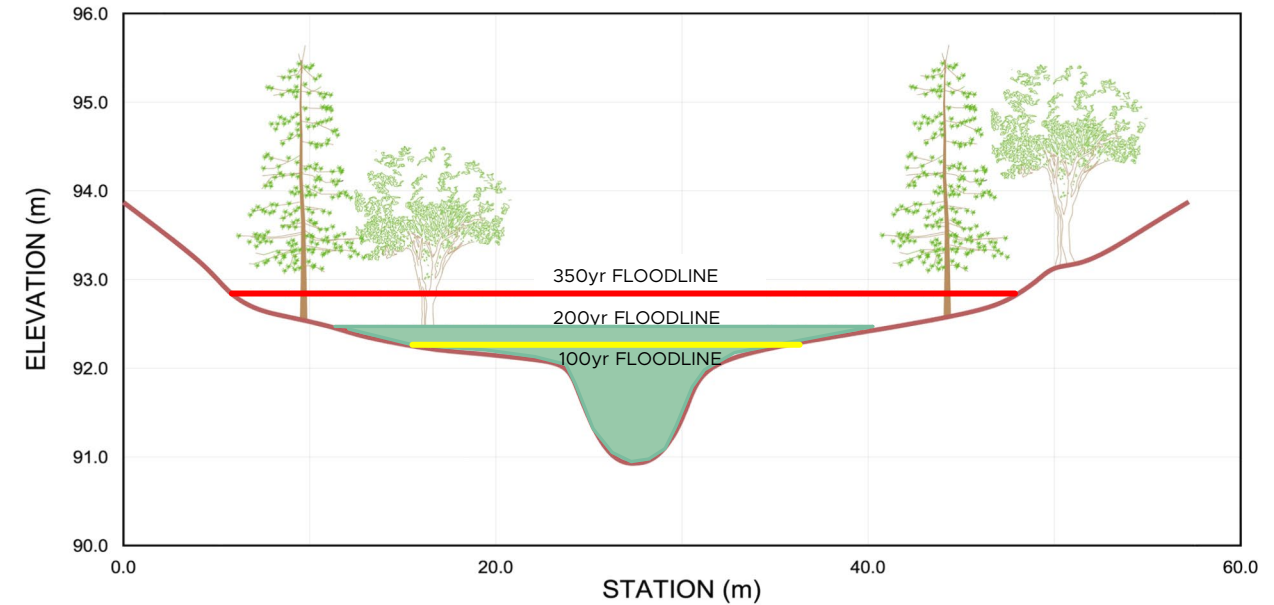
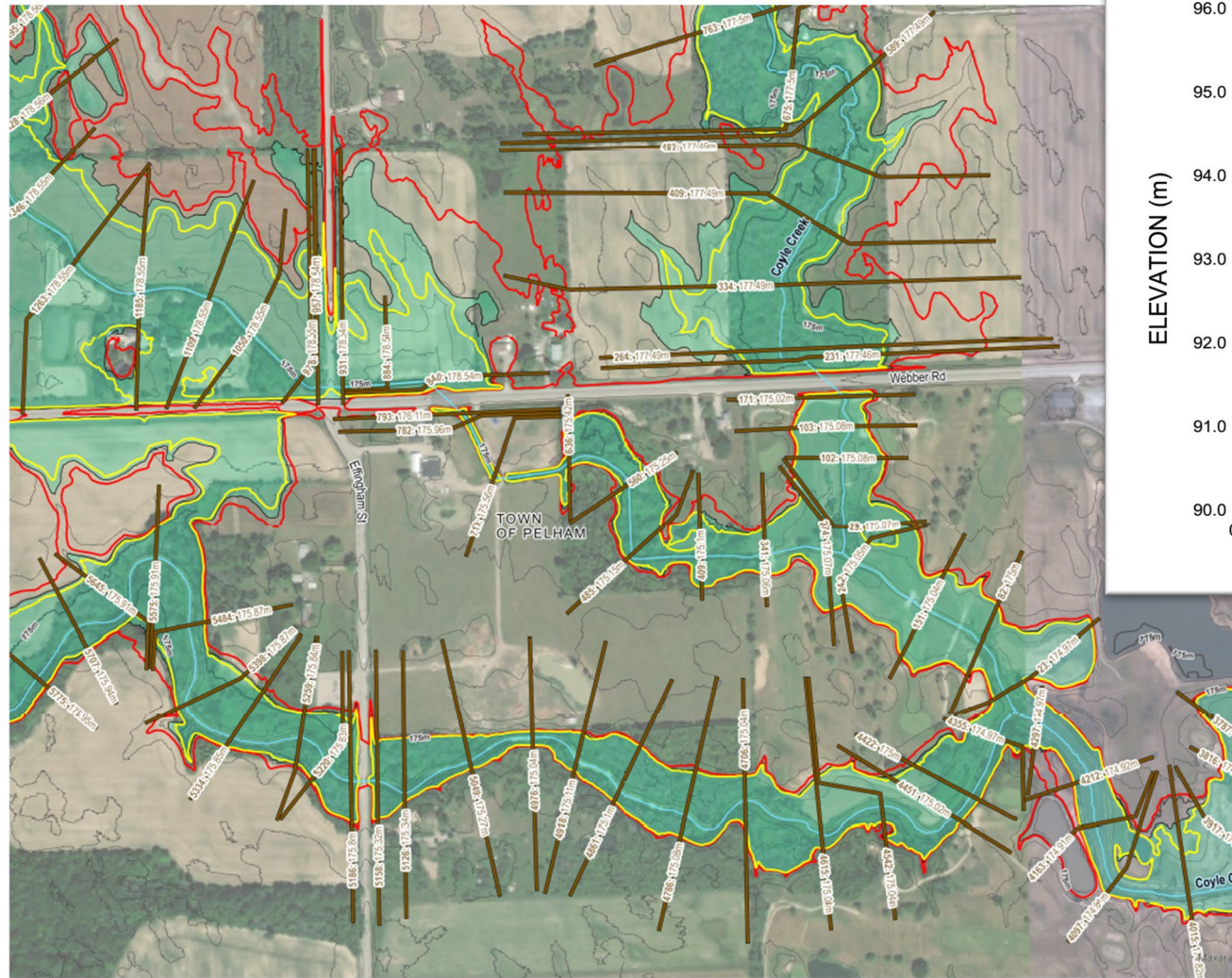


How Big of a Flood?

- The Province requires the **regulatory flood** to be mapped and the lands in the floodplain to be regulated
 - 1 in 100-year flood
 - 1% chance of occurring **every year**
- We will also map larger floods to understand the resiliency of the watershed
 - 1 in 200-year or **0.5%** chance of occurring every year
 - 1 in 350-year or about **0.3%** chance of occurring every year

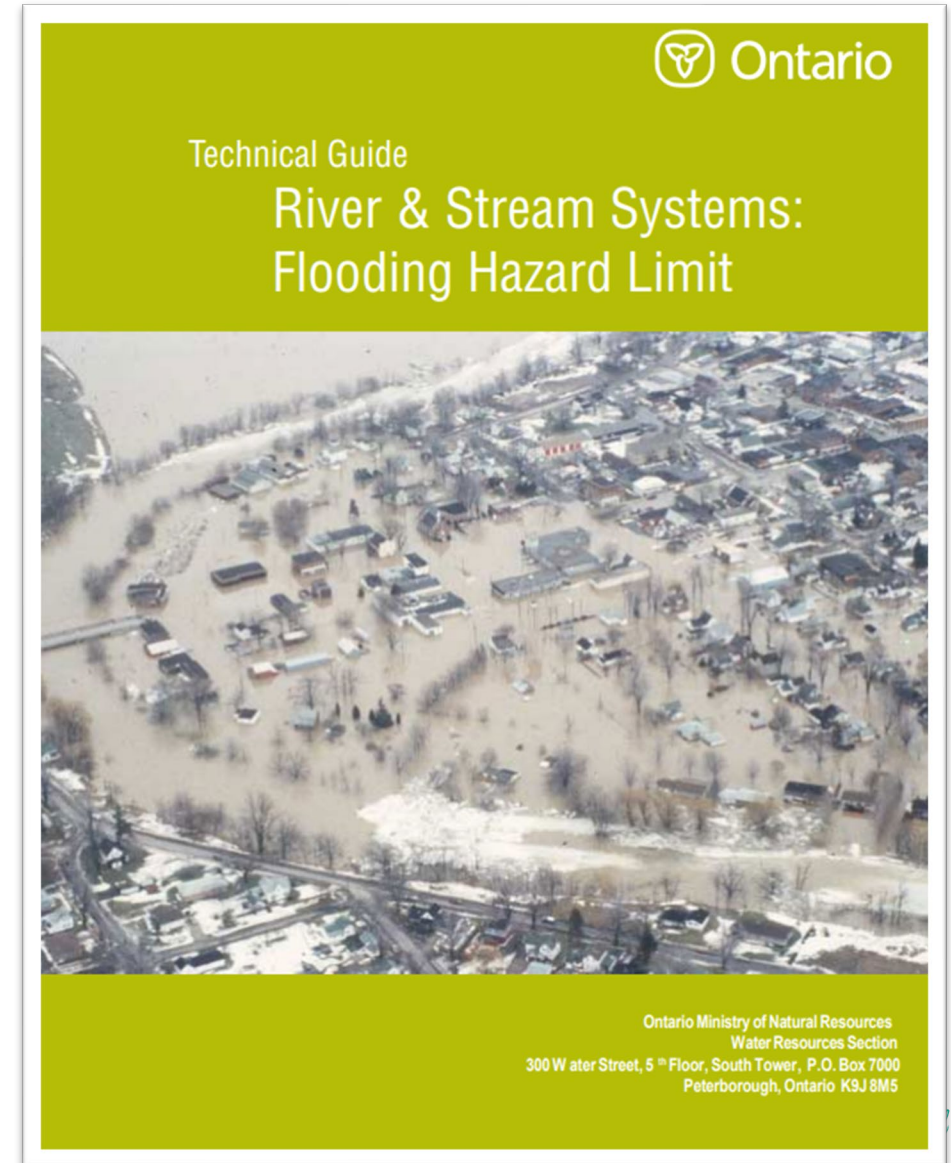


1:100 year; 1:200 year; 1:350 year

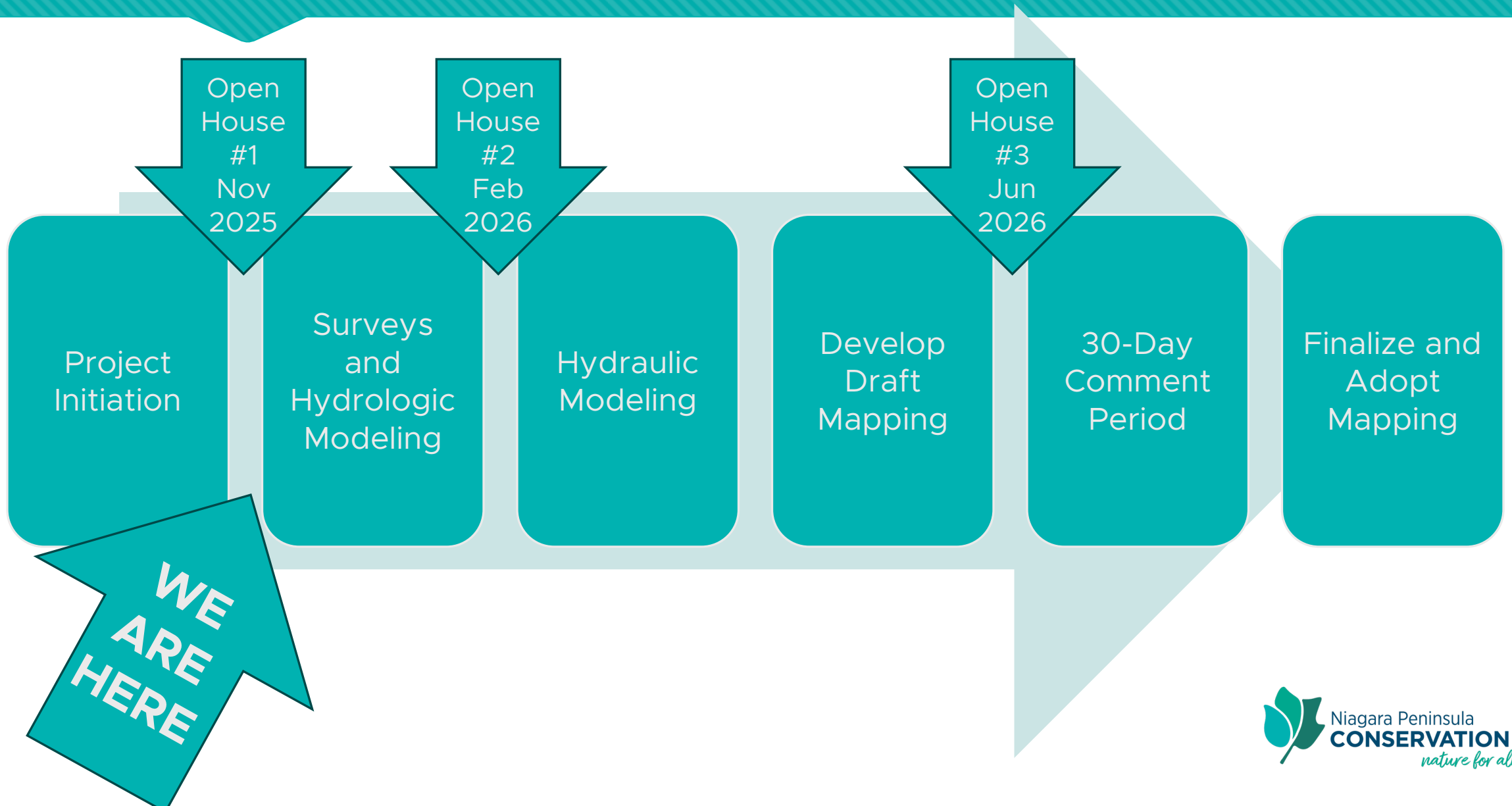


Guidelines for Floodplain Mapping

- Floodplain mapping must be undertaken in a manner consistent with the [Provincial Technical Guide for River and Stream Systems](#).
- This guide is used by [all Conservation Authorities](#) undertaking floodplain mapping projects.



Project Milestones



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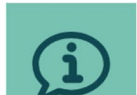
Upper Welland River Tributaries Floodplain Mapping

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Welcome, we're so glad you're here!

This is your space to connect, learn, and share as we work together on the Upper Welland River Tributaries Flood Study.

More than just a one-time stop, this hub is here for you throughout the process—a place to follow updates, ask questions, and add your voice to the conversation.

[View The Study Area.](#)

Background Info

The Niagara Peninsula Conservation Authority is beginning work on floodplain mapping for nineteen creeks in the Upper Welland River watershed. These watercourses are located in Haldimand County, City of Hamilton, Township of West

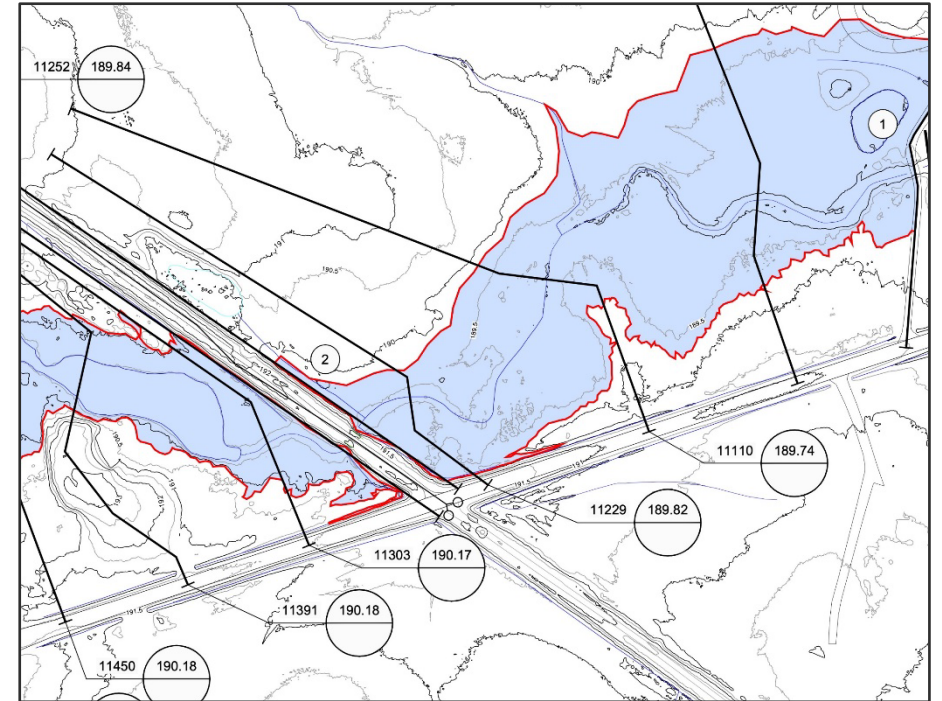
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NOV****Open House****Scan Me**

<https://getinvolved.npca.ca/upper-welland-tributaries>

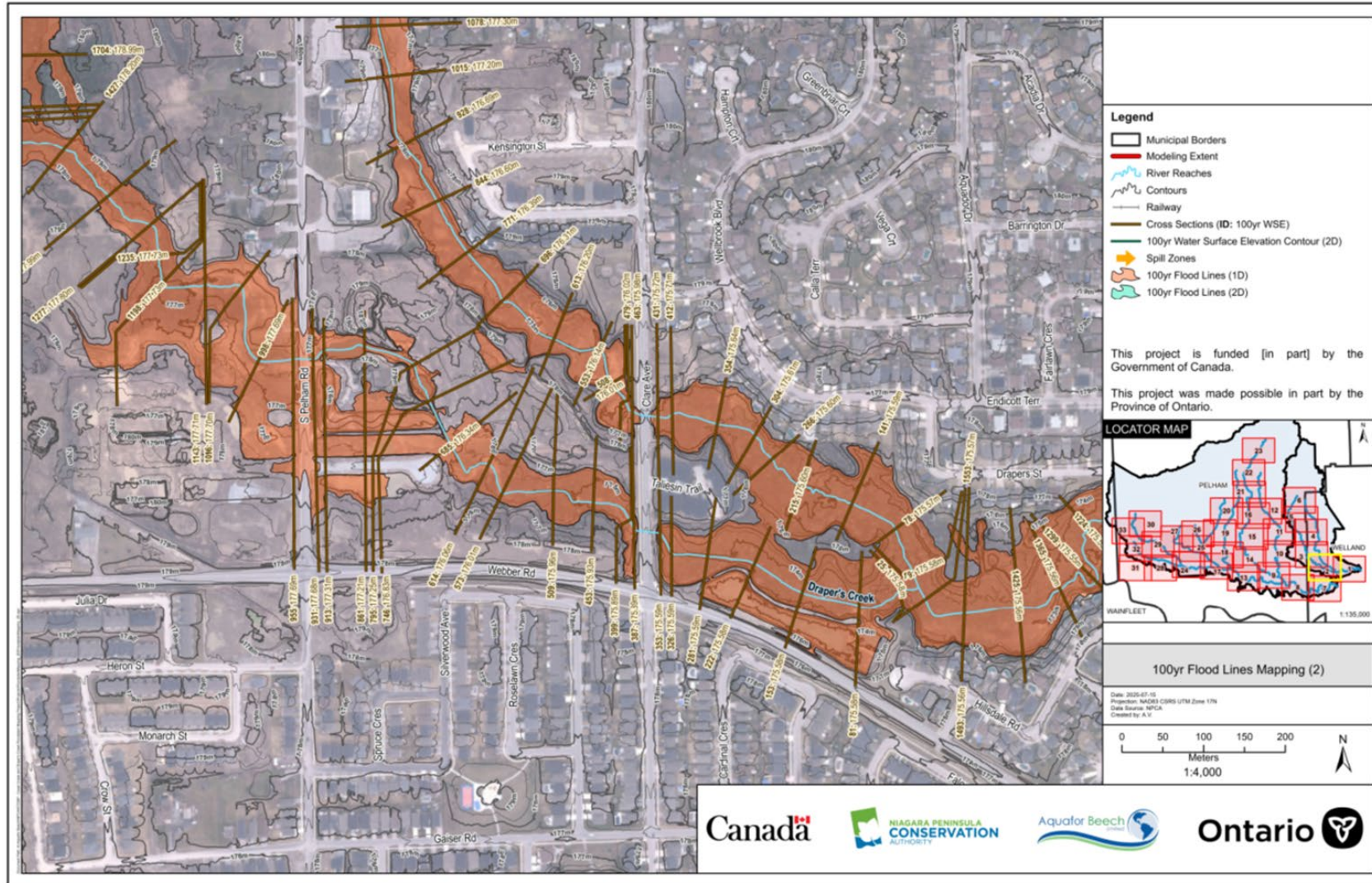


Key Steps

- Base Mapping
- Survey bridges and culverts
- Calculate the 1:100 year flow rate
- Develop a computer model that combines all of the above to estimate flood elevations
- Prepare the floodplain maps



Sample Floodplain Map



NPCA's Coyle and Draper Floodplain Mapping Study

Completed by Aquafor in 2025

Aquafor Beech Limited

- **Aquafor Beech Limited** (Aquafor) is a Canadian company, incorporated in 1990, providing engineering and environmental services to a broad range of public (e.g., municipalities, conservation authorities) and private sector clients.
- Specific Area of Expertise:
 - Hydrologic & hydraulic modelling for flood hazard delineation & Regulatory Floodplain mapping
 - Development of Stormwater Management Master Plans
 - Watershed planning
 - Natural channel and hydraulic structure design



NPCA Floodplain Policies



David Deluce, MCIP, RPP
Director, Planning & Development

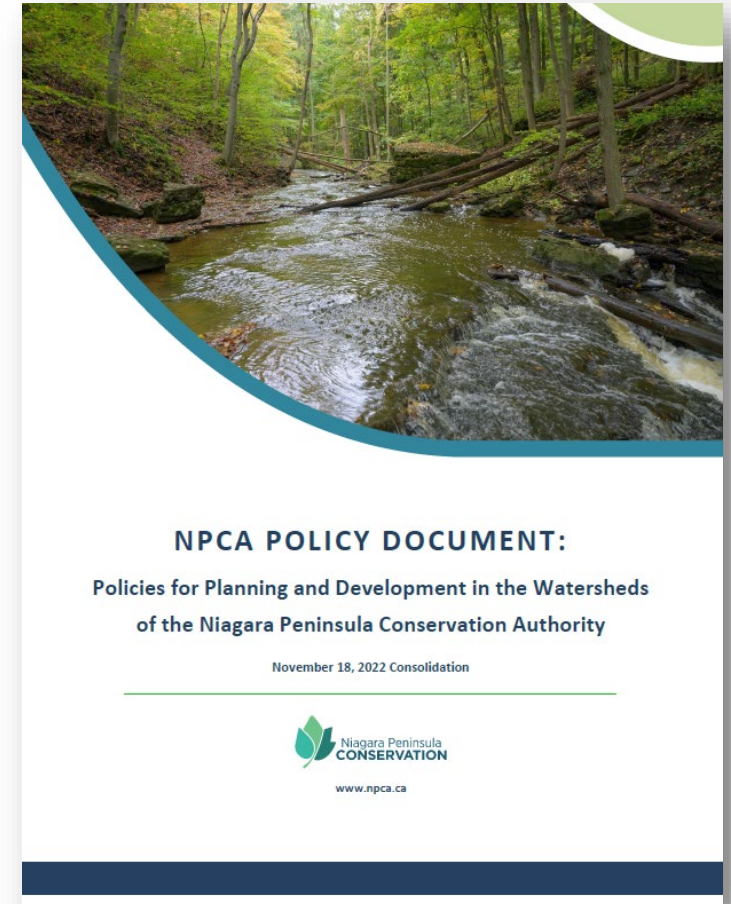
Legislative Context

- Conservation Authorities Act – Section 28 (as updated April 2024)
- New Regulation: Ontario Regulation 41/24
 - Applies to all conservation authorities
 - Came into effect April 1, 2024
- Planning Act
 - Section 3 – Provincial Planning Statement



NPCA Policies

- Current policies approved November 2022 and updated April 2024
- Policies guide NPCA decision making



What is Allowed?

- Passive open space uses
- Accessory structures (subject to criteria)
- Additions to existing buildings (up to 46.5 square metres)
- New agricultural buildings (subject to criteria)
- Up to 50 cubic metres of clean fill
- Balanced cut and fill
- Other uses not likely to incur damage from floodwaters
- Exemptions under Section 5 of Regulation 41/24



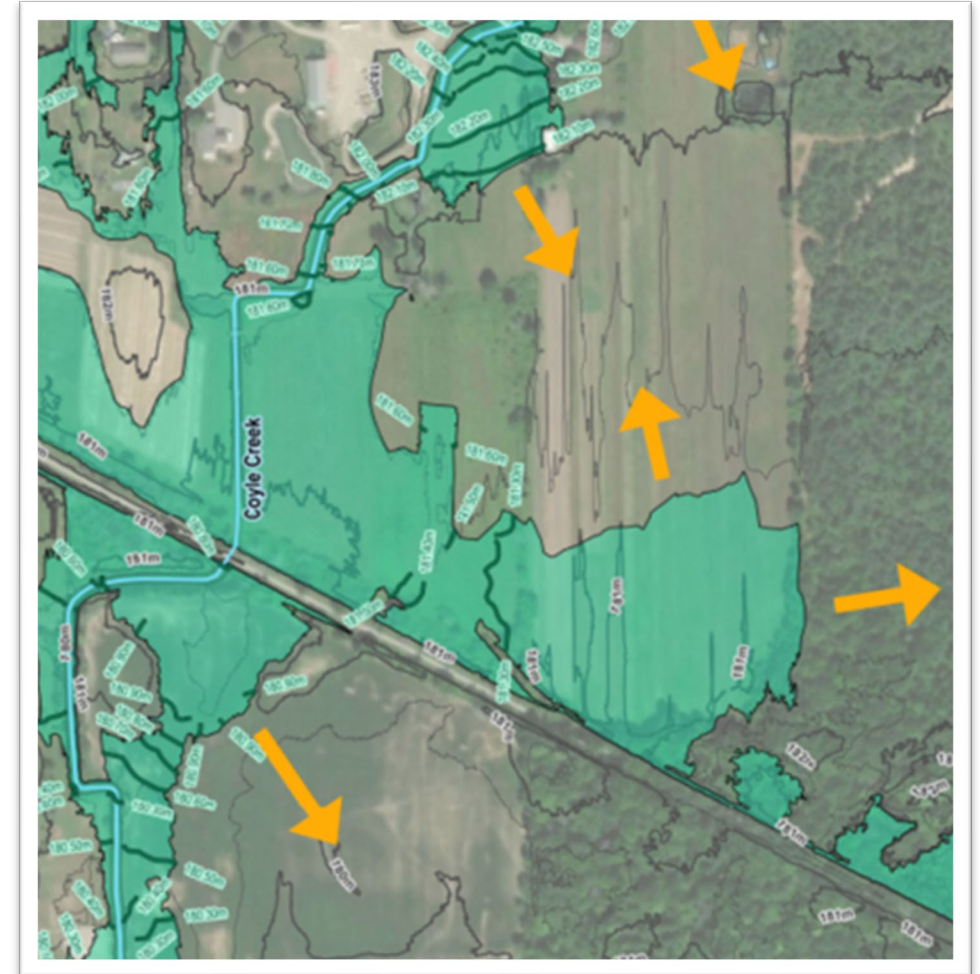
What is NOT allowed?

- Sensitive uses, such as hospitals, nursing homes, day-cares/pre-schools and schools
- Emergency services facilities
- Uses associated with the disposal, treatment, manufacturing/processing or storage of hazardous substances
- Uses or development activities that do not fit within a permitted use and deemed to be inappropriate based on the objectives stated in 6.2.1.



Spill Areas

- Spill areas are a type of flood hazard but not part of the 1:100 year floodplain
- They are considered *hazardous land*
- Looking to ensure there is safe access and appropriate flood proofing is implemented



Role in Planning Applications

- Conservation Authorities required by Province to review applications for:
 - Consistency with Natural Hazards Policies of the Provincial Planning Statement
 - Conformity with Natural Hazards Policies of any applicable Provincial Plan
- NPCA seeks to avoid situations where a Planning approval is given but an NPCA Permit cannot be supported





THANK YOU

Brendan Buggeln, Project Manager (NPCA)

David Deluce, Director, Planning & Development (NPCA)

Rob Amos, Project Manager, Senior Resources Engineer (Aquafor Beech Ltd.)

