Coyle Creek and Drapers Creek Floodplain Mapping

Public Engagement Meeting #4

August 28, 2025

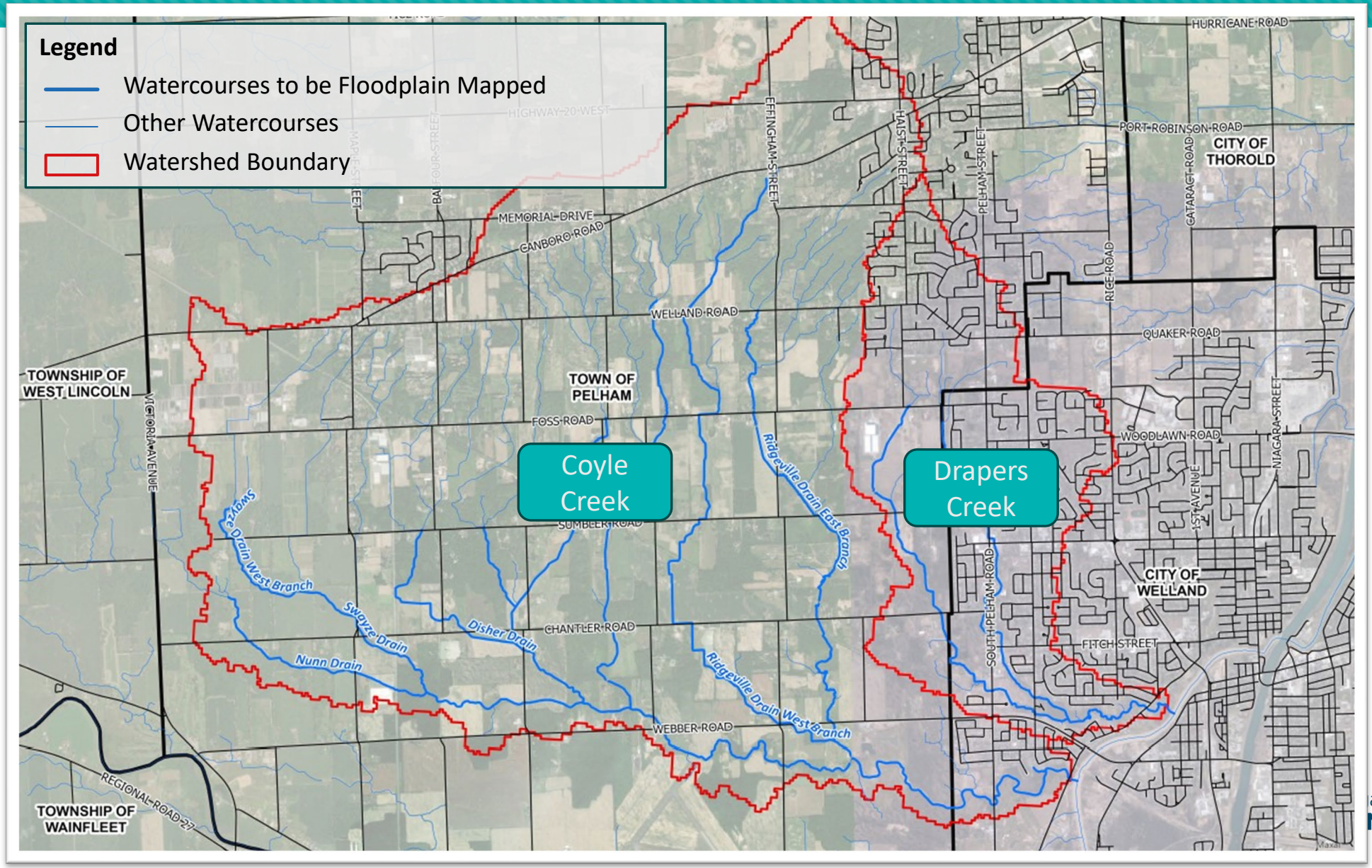
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Speakers

- **Natalie Green**, Director, Watershed Strategies & Climate Change, NPCA
- **Brendan Buggeln**, Project Manager, NPCA
- **Tim Koen**, Senior Water Resources Engineer, Aquafor Beech Ltd.
- **David Deluce**, Director, Planning & Development, NPCA

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Coyle Creek and Drapers Creek Study Area



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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

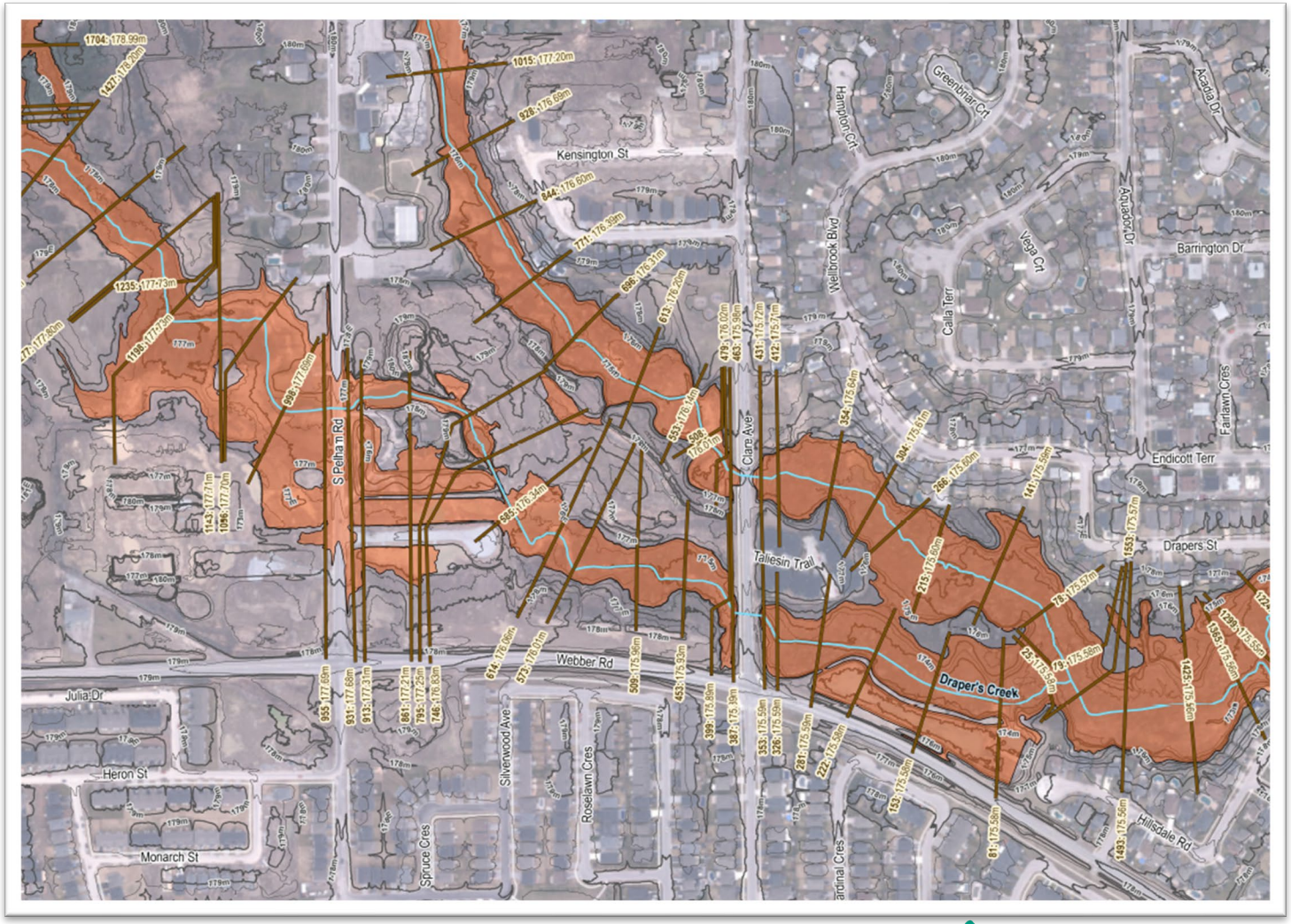




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Floodplain Mapping

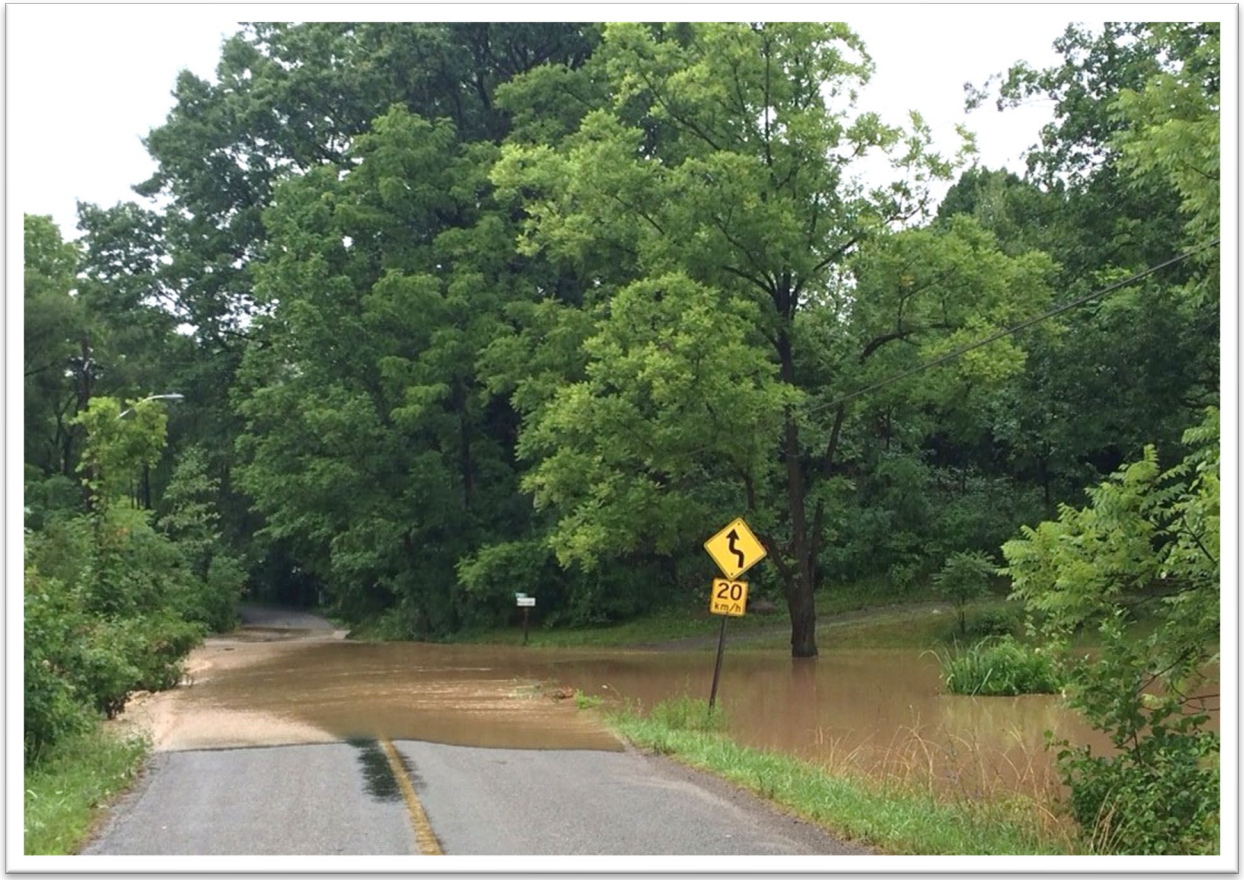
- Identifies areas that are at risk of flooding
- Help people to prepare for and respond to potential flooding
- The first step to reduce cost and improve safety in the event of a flood



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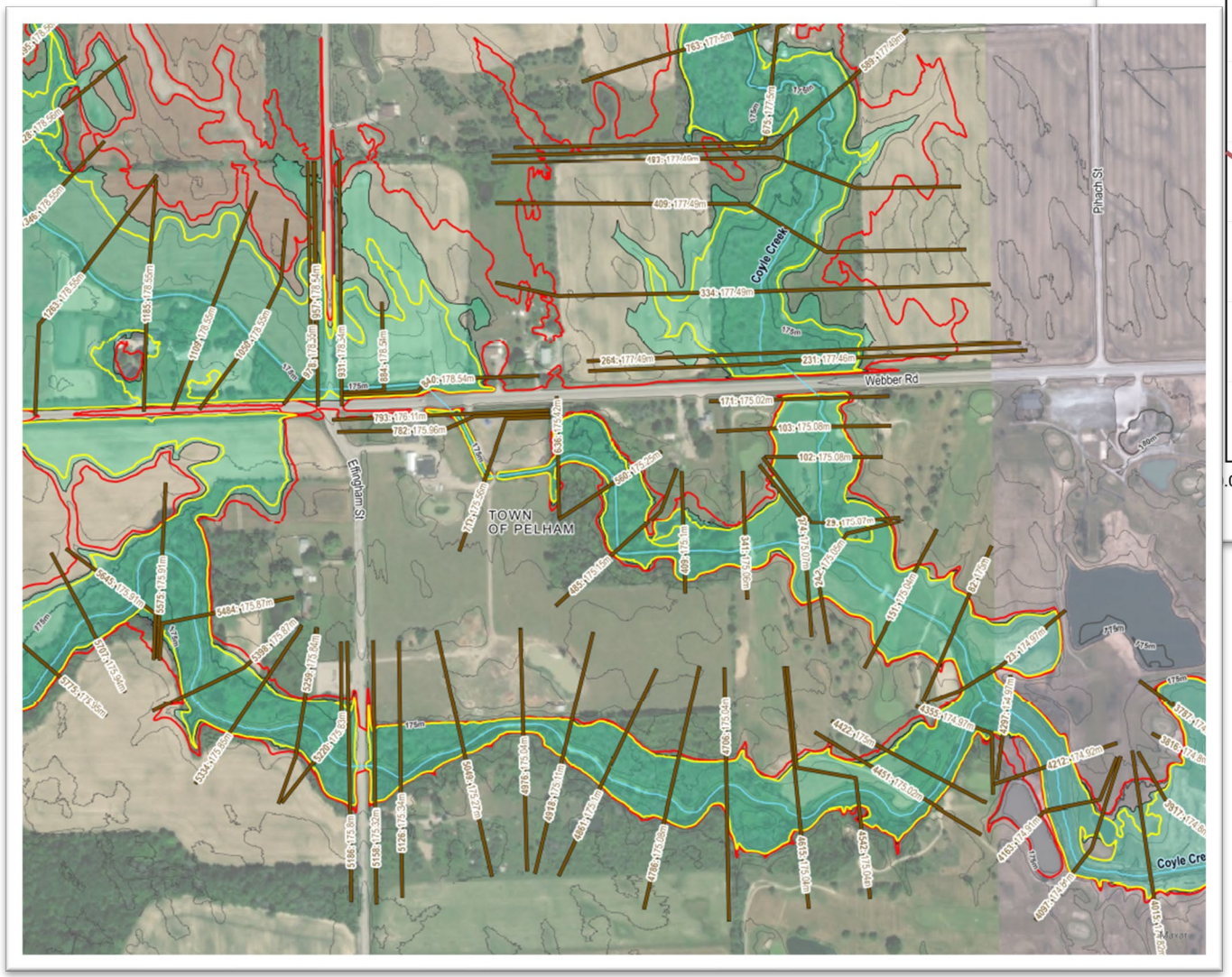
How Big of a Flood?

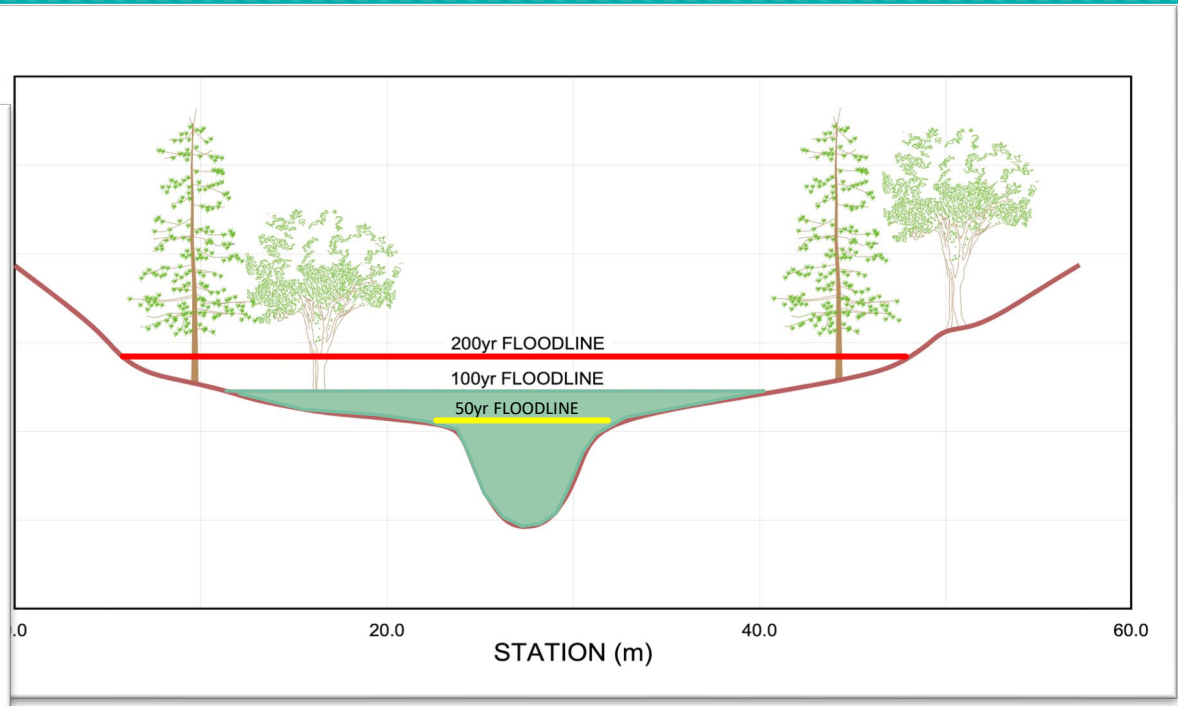
- The Province requires the regulatory flood to be mapped and the lands in the floodplain to be regulated
  - 1 in 100-year flood
  - 1% chance of occurring every year
- Also mapped 1 in 200-year floodplain
  - 0.5% chance of occurring every year
  - Used to estimate more severe flooding due to climate change



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Floodplain Map: 1:50 year, 1:100 year; 1:200 year



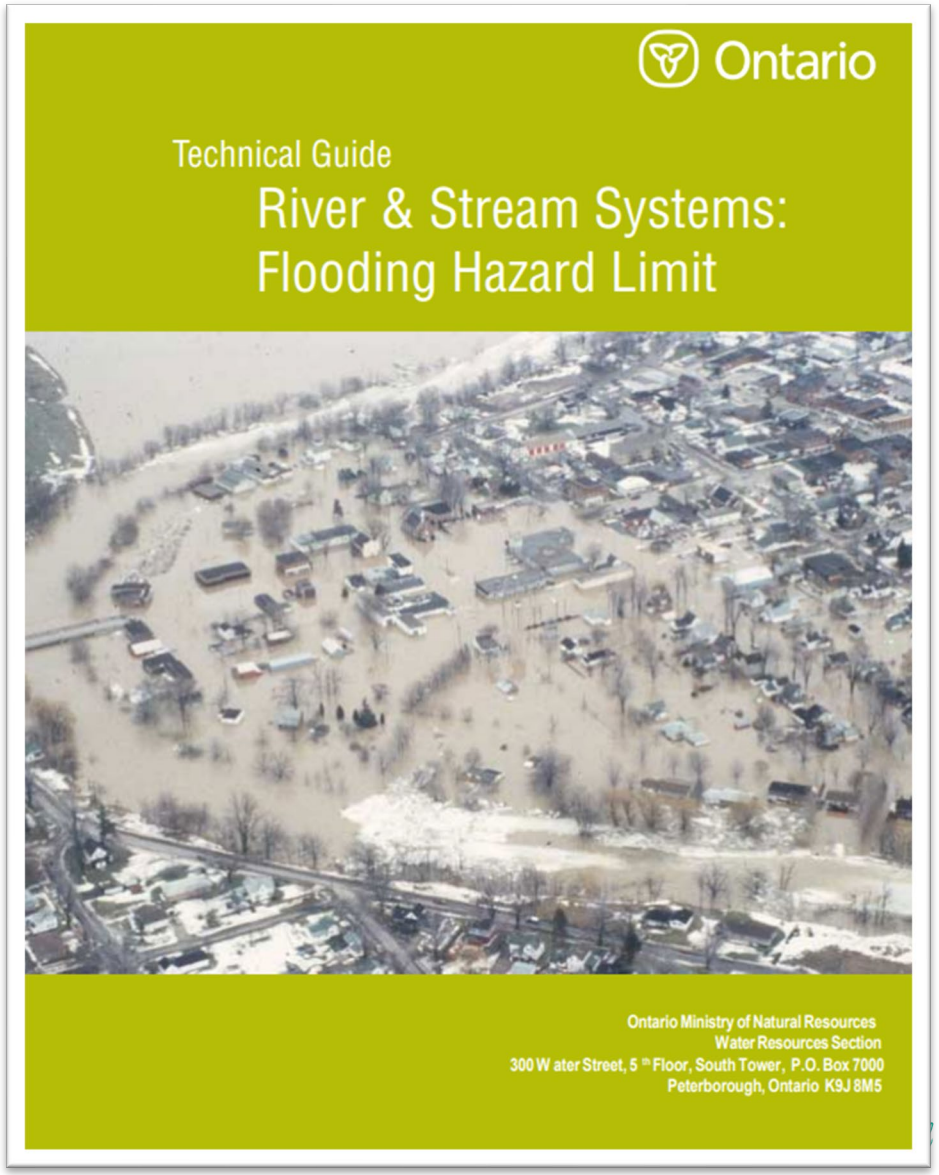


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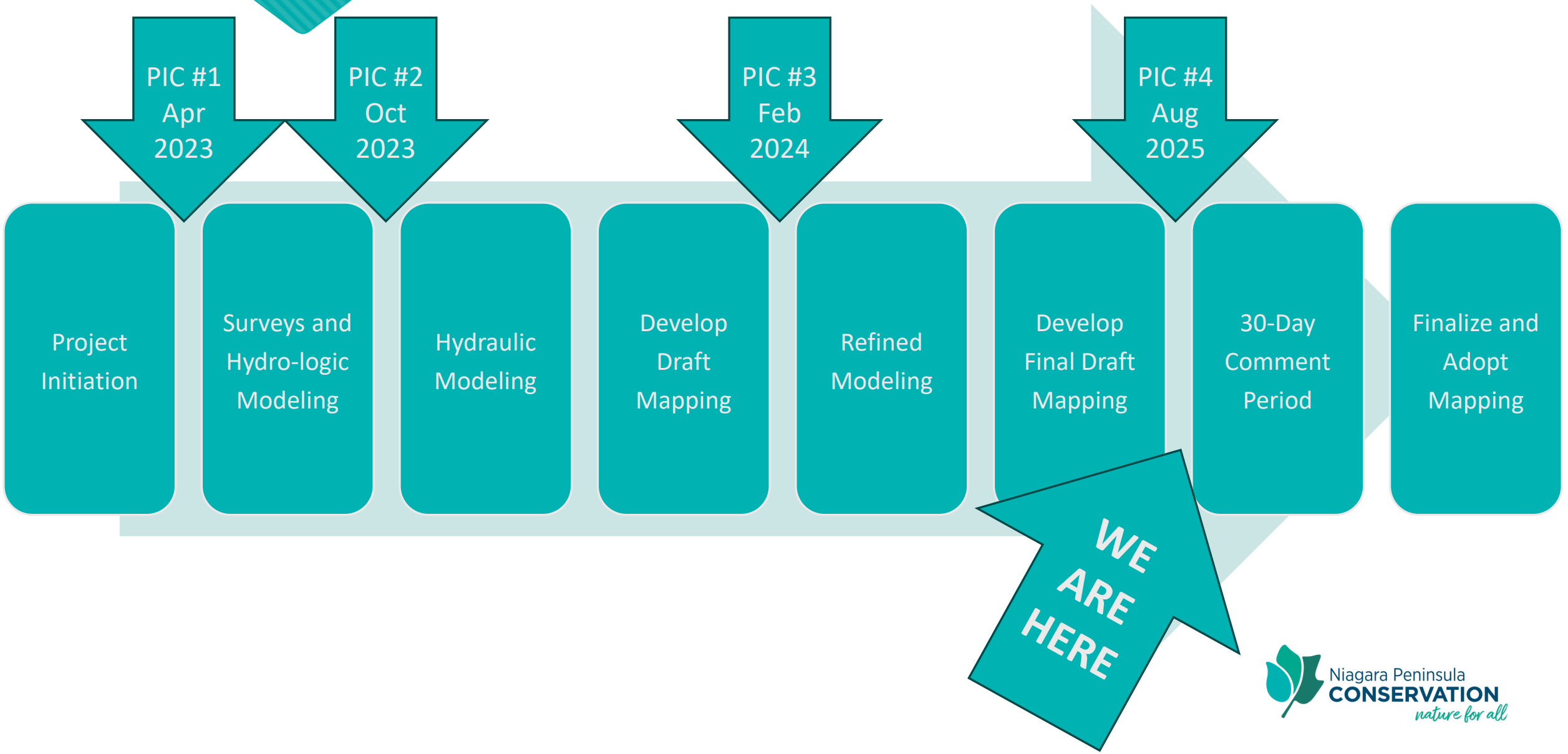
Guidelines for Creating Floodplain Maps

- 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.



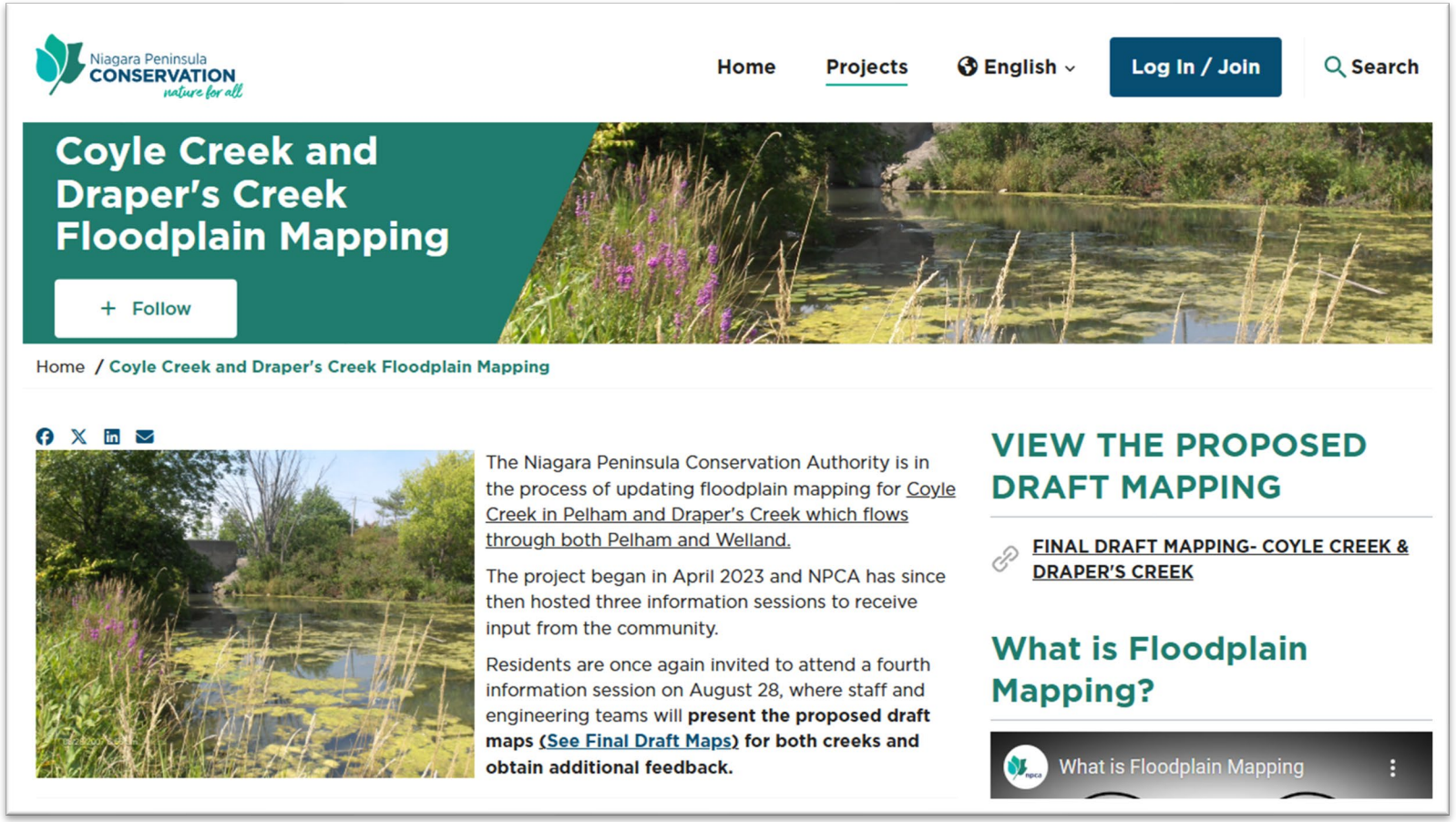
Project Milestones



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Stay Informed and Have Your Say

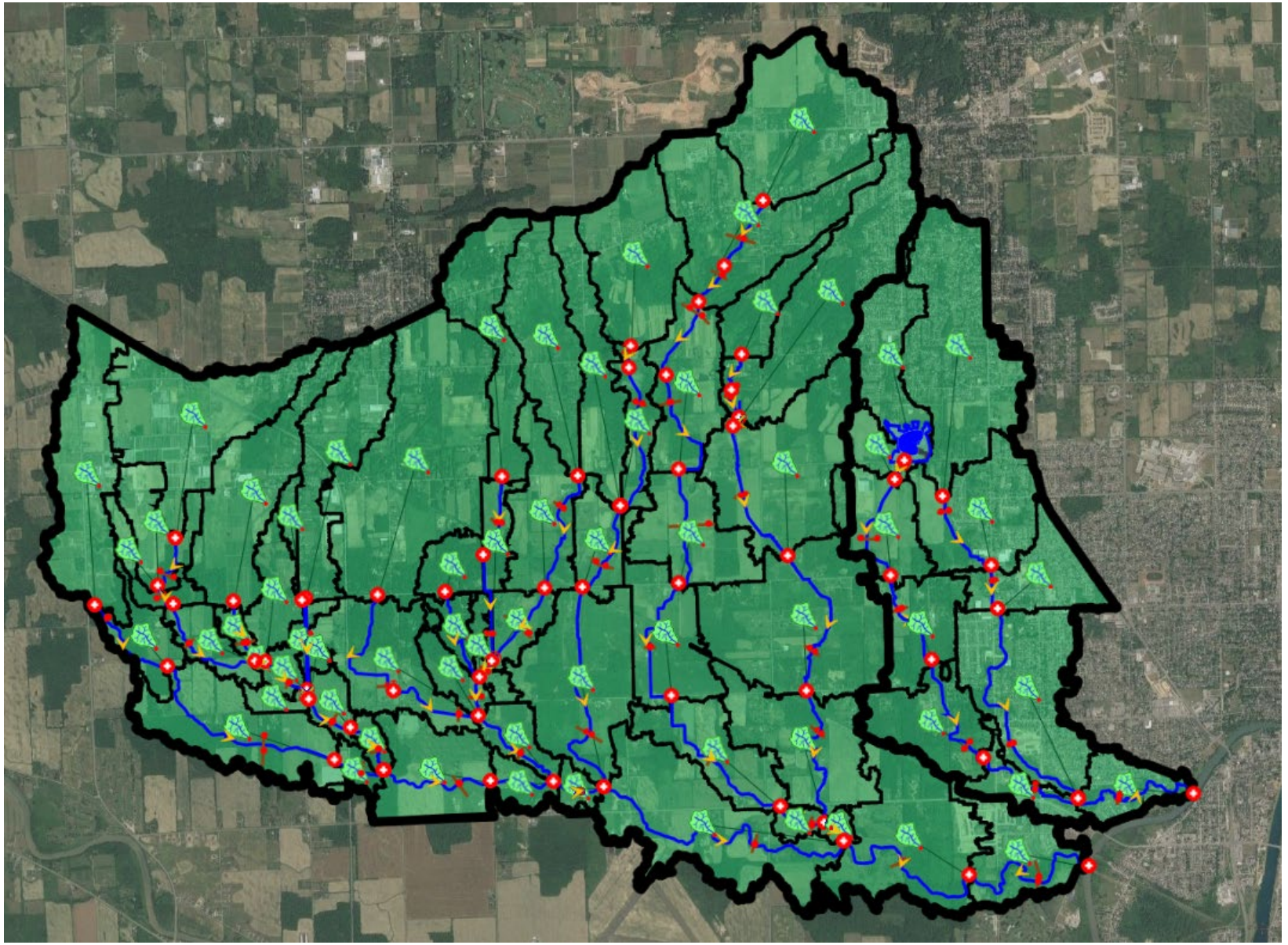
https://getinvolved.npca.ca/coyle-creek-drapers-creek-floodplain



SCAN ME

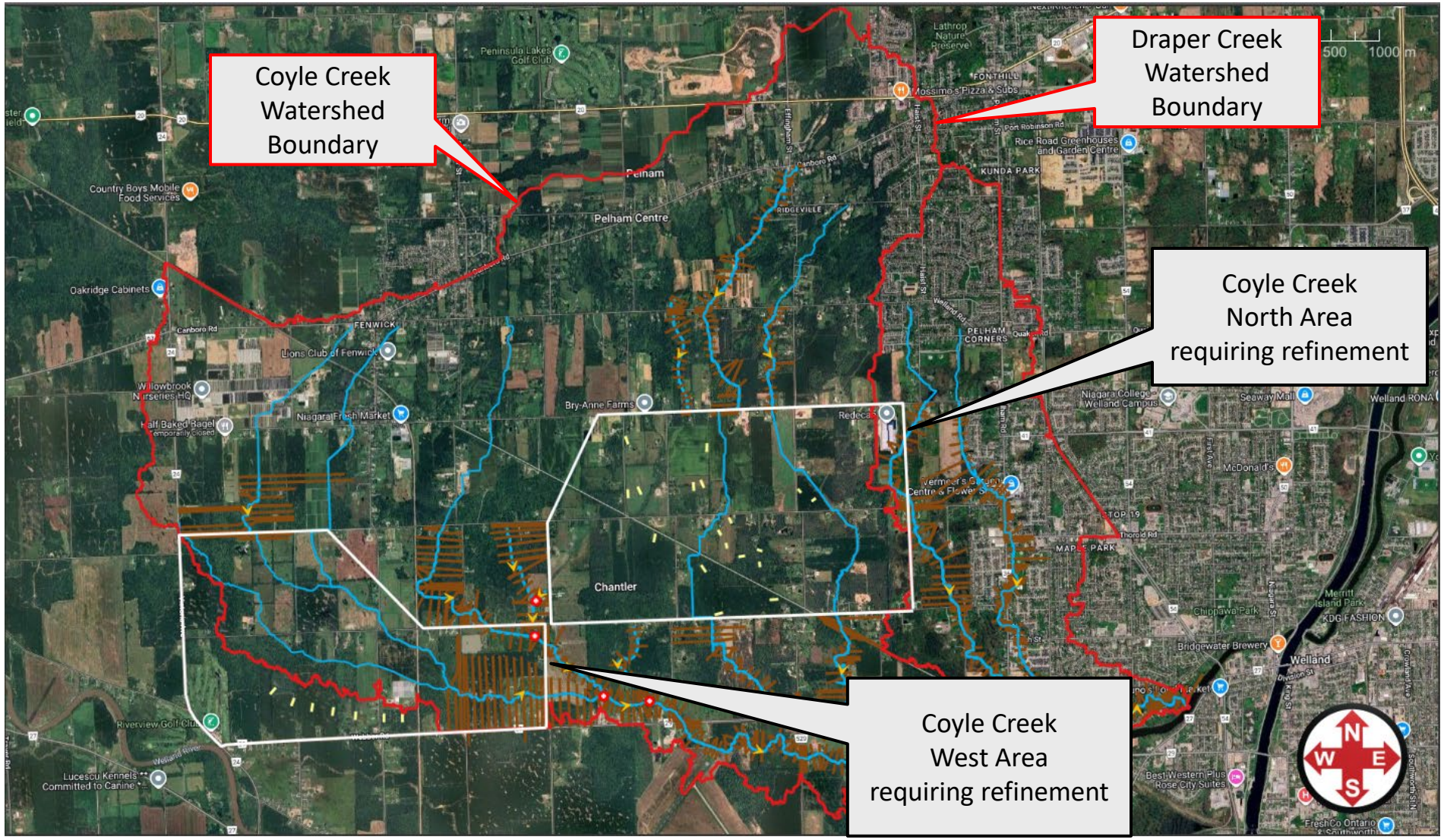
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HEC-HMS Hydrologic Model Setup



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HEC-RAS Hydraulic Model Development



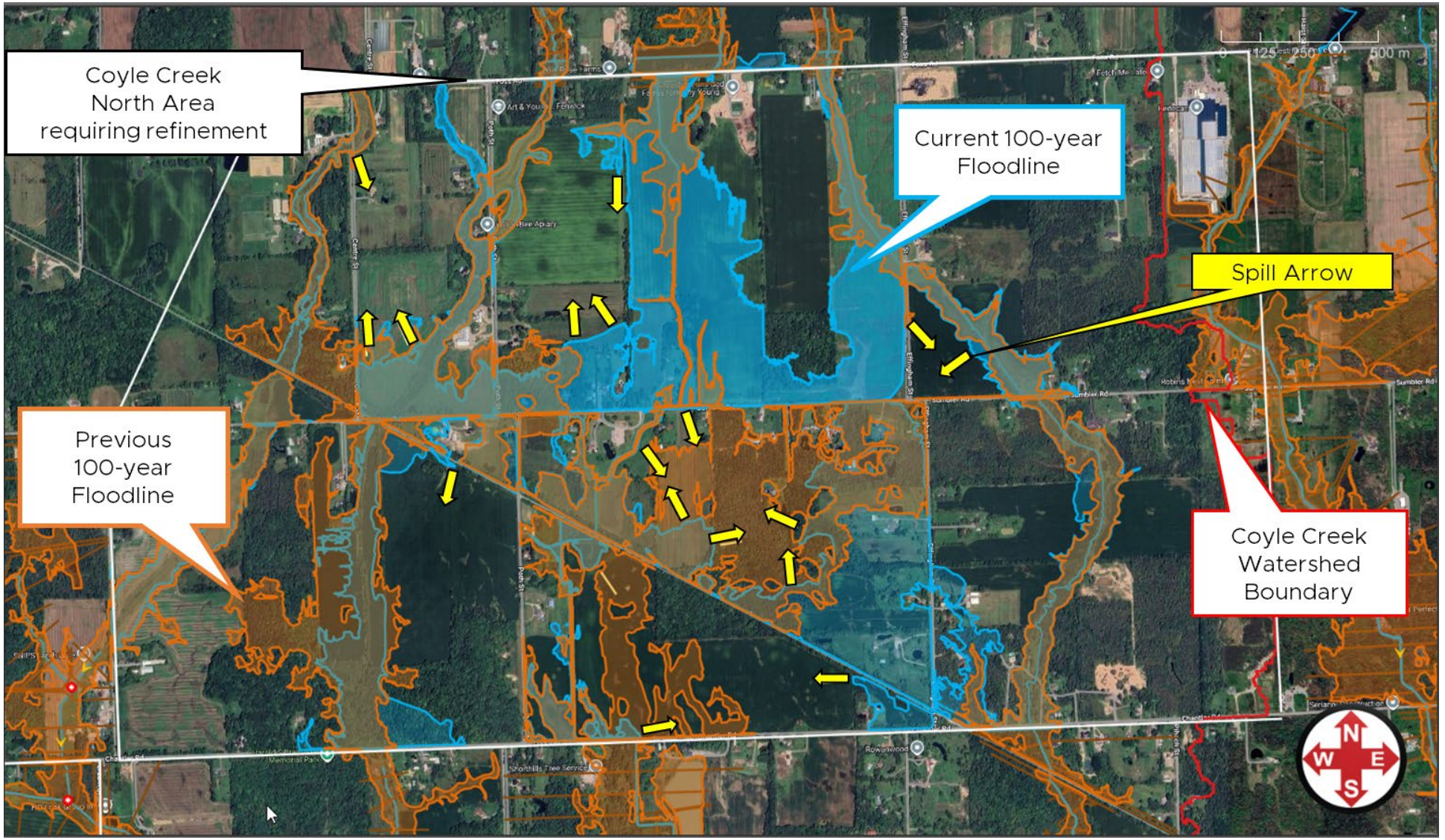
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HEC-RAS Hydraulic Model Development

- **1D Hydraulic Modelling**
  - 1D hydraulic modelling is widely accepted for most floodplain applications with defined riverine corridors;
  - 1D modelling can be less accurate within wide and flat floodplains;
- **2D Hydraulic Modelling**
  - 2D Modelling is generally more complex and reserved for un-defined riverine corridors or projects requiring enhanced level of hydraulic detail;
  - 2D HEC-RAS hydraulic modelling has been utilized for selected areas of un-defined riverine corridors within the Coyle Draper FPM project;

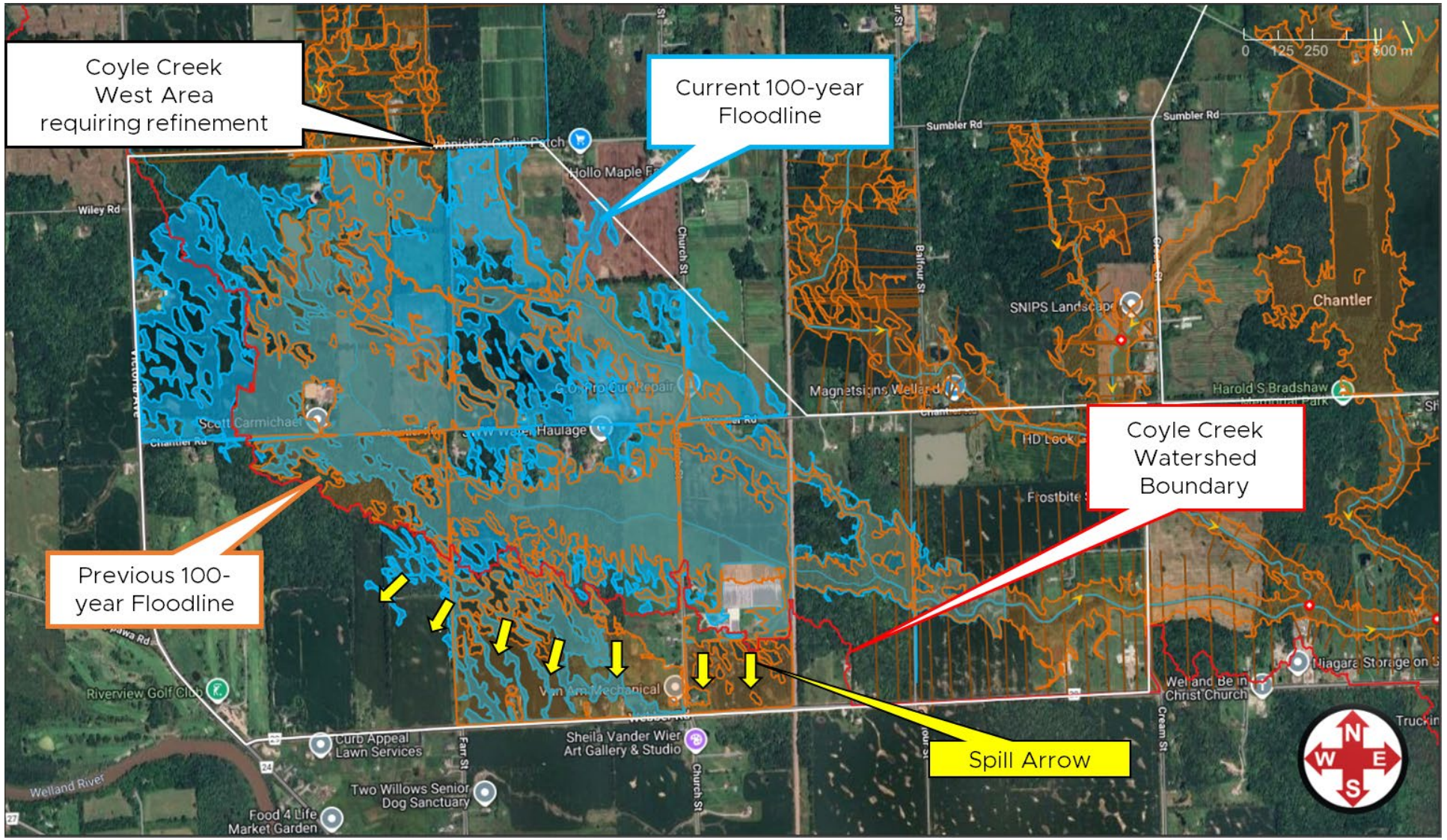
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Coyle North - Previous vs Current Floodline Estimates – 100 Year Return



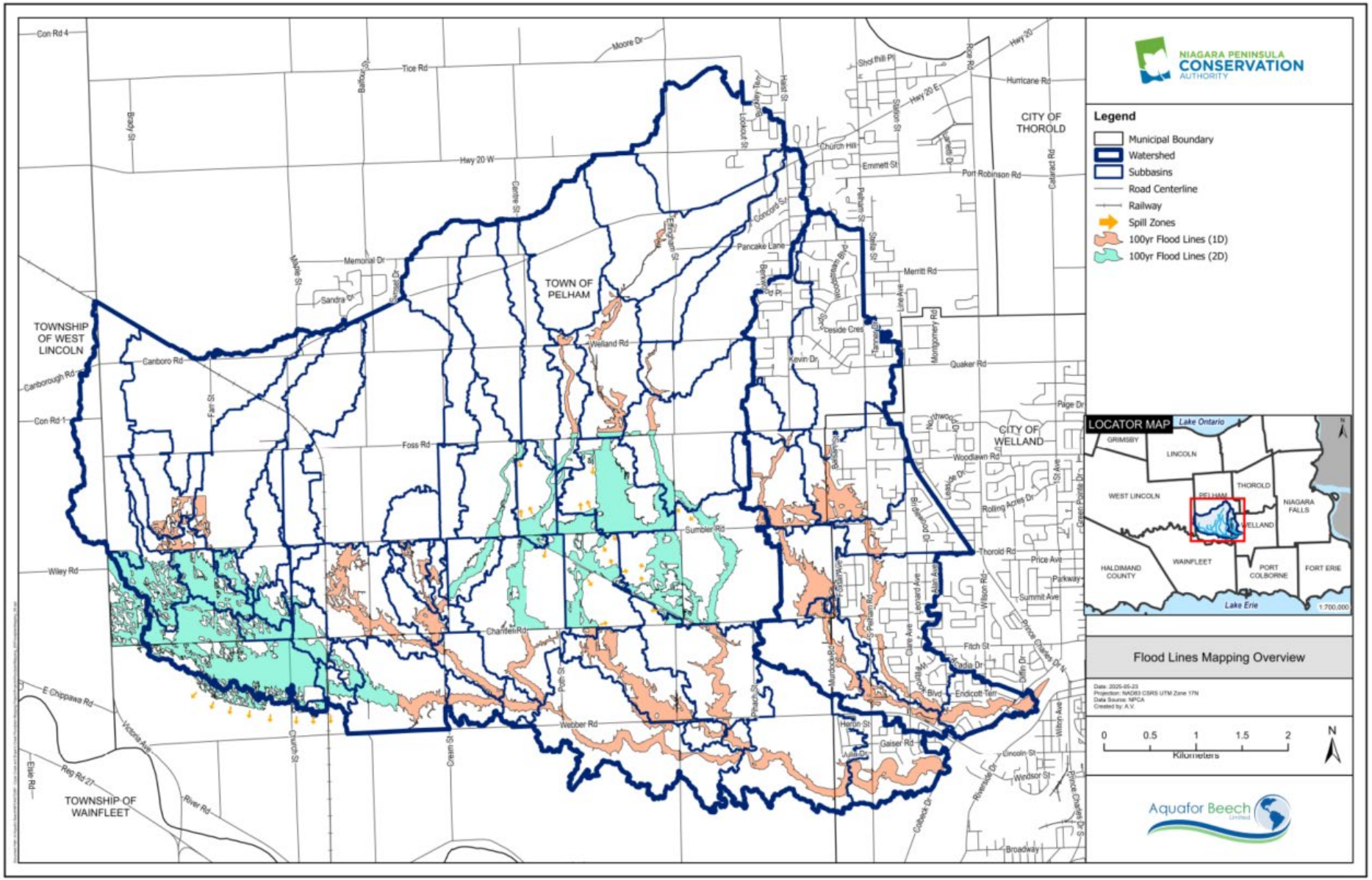
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Coyle West - Previous vs Current Floodline Estimates – 100 Year Return

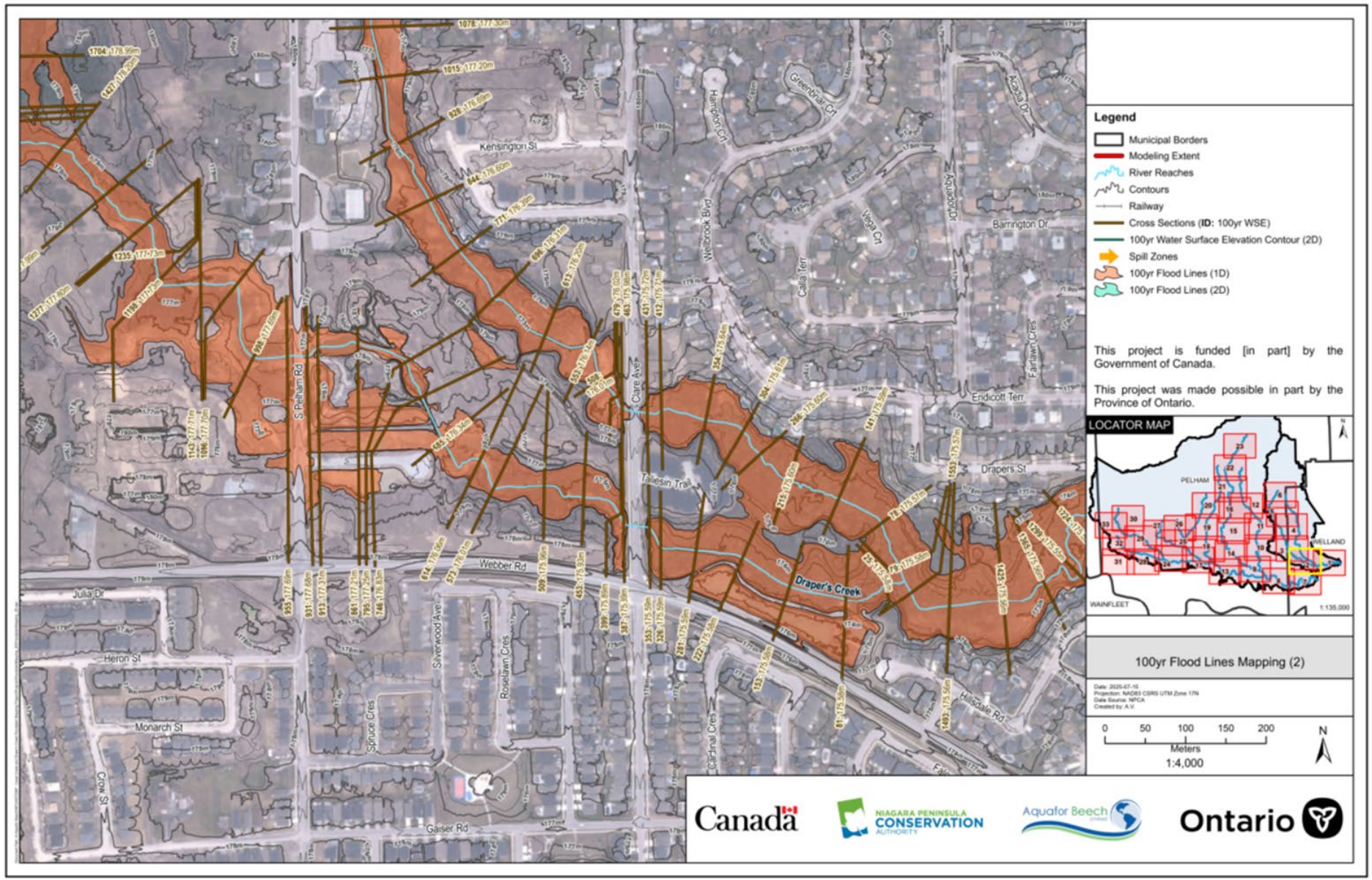


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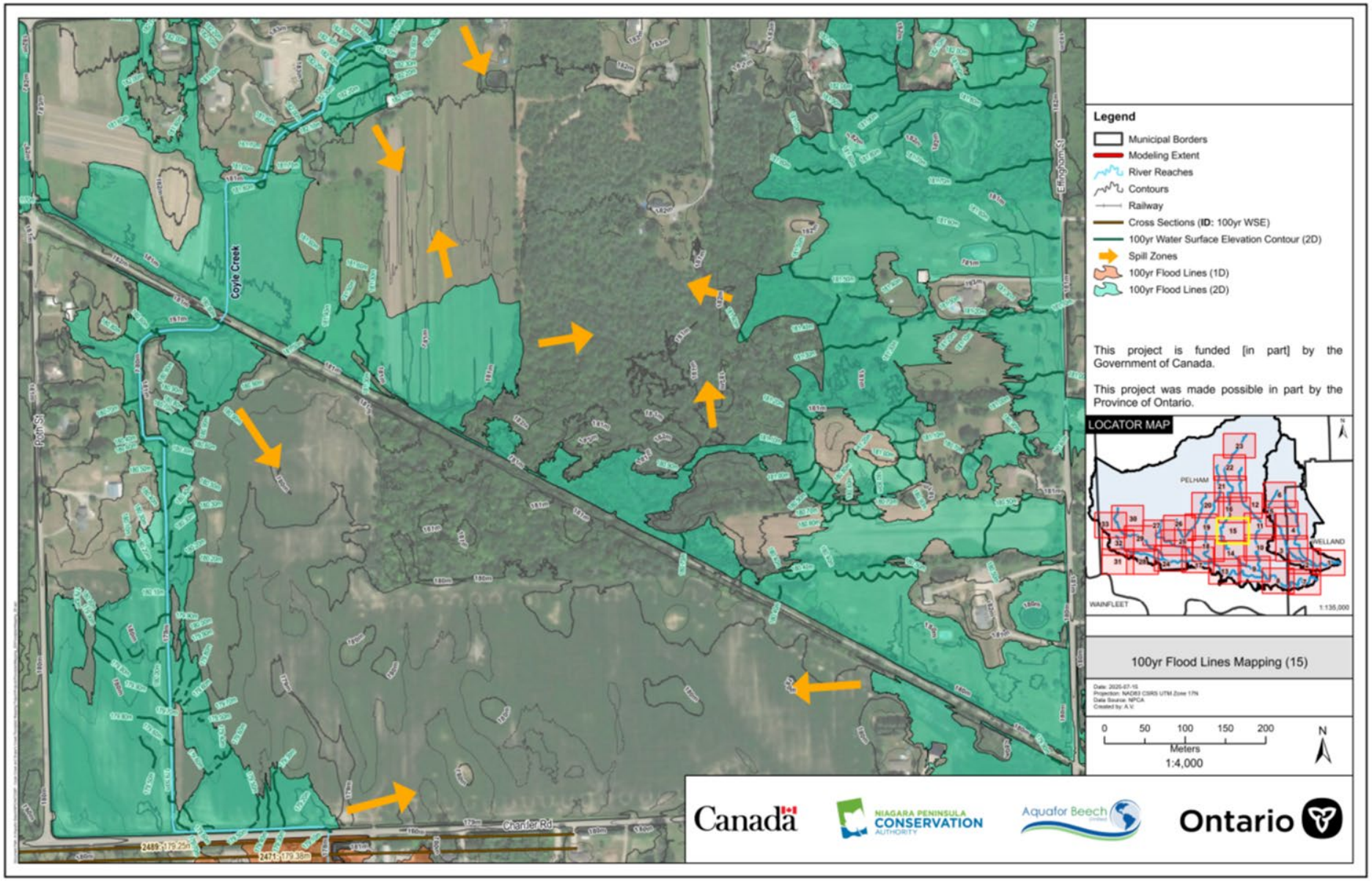
1D/2D Floodline Estimates – 100 Year Return



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NPCA Floodplain Policies

David Deluce, MCIP, RPP
Director, Planning & Development

August 28, 2025

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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 Policy Statement

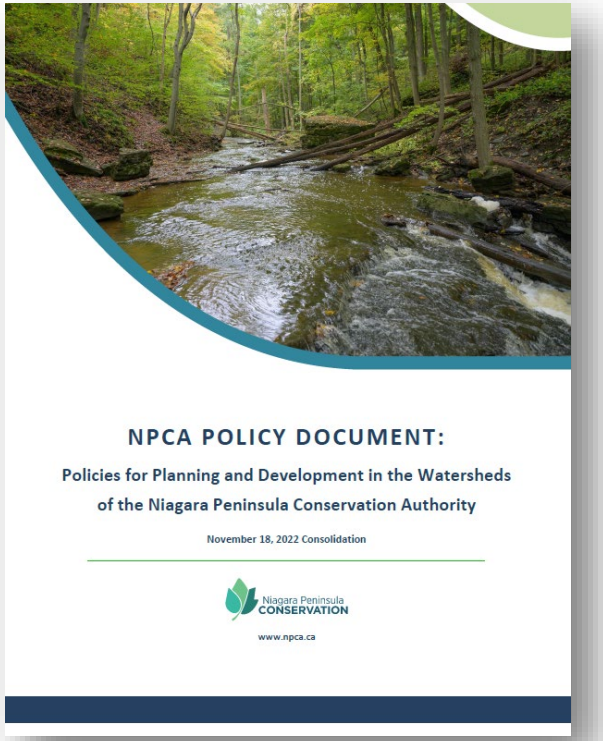


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NPCA Polices

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





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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



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What is Not Allowed?

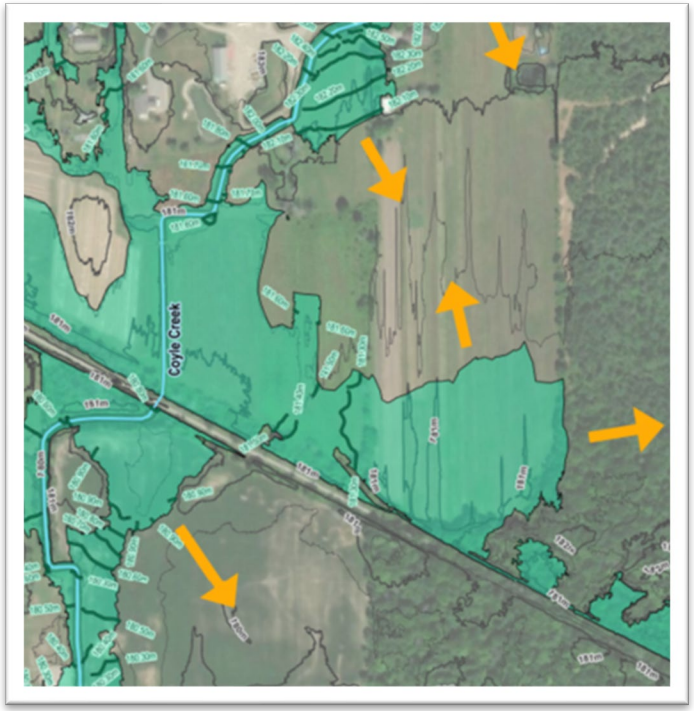
- Sensitive uses, such as hospitals, nursing homes, day-cares/pre-schools and schools
- Emergency services facilities
- Uses associated with the disposal, treatment, manufacturing/processing or storage of hazardous substances
- Uses or development activities that do not fit within a permitted use and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



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Spill Areas

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



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NPCA Role in Planning Applications

- Conservation Authorities required by Province to review applications for:
  - Consistency with Natural Hazards Policies of the Provincial Policy 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



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getinvolved.npca.ca/coyle-creek-drapers-creek-floodplain



THANK YOU

Questions?

Brendan Buggeln, Project Manager (NPCA)

David Deluce, Director, Planning & Development (NPCA)

Natalie Green, Director, Watershed Strategies & Climate Change (NPCA)

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