

Our Orillia Official Plan Review

Two-Zone Floodplain - Virtual Public Information Centre

July 16, 2026



Introductions



City of Orillia

- Jill Lewis, Senior Planner
- Patrick MacDonald, Project Engineer - Stormwater



WSP Canada

- Will Lamond, Senior Planner
- Eeshan Kumar, Project Manager - Engineering

Agenda

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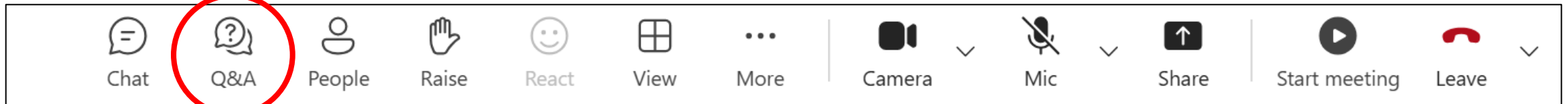


Housekeeping

- This session is being recorded for City internal records.
- Presentation materials will be available following the session
- All participants are muted to minimize background noise
- If you experience technical issues, try reconnecting or post in the chat and our staff will provide support, where possible

How to Ask Questions

- You may submit questions at any time using the Q&A function
- We will respond to questions at the end of the presentation
- Please keep comments respectful and relevant to the topic



Purpose of the Presentation



Provide an overview of how the floodplain mapping and policy updates are being incorporated into the **Official Plan Review**



Explain flood hazards and why planning for them is important, including **regulatory requirements** under the Provincial Planning Statement, 2024



Present the technical work completed to date, including **floodplain mapping and 2D modelling**, and introduce the **proposed two-zone floodplain approach**



Provide an opportunity for the public to **ask questions and provide feedback**

Official Plan Review Background



City of Orillia Official Plan Review (OPR)

- The Official Plan is a **land use planning document** that guides the City's economic, cultural, environmental, and physical development over the next 25 years.
- The City is required to review its Official Plan to **ensure conformity and consistency** with Provincial plans and policies.
- As part of the OPR, the City is **updating floodplain mapping** for Mill Creek and Ben's Ditch.
 - The Mill Creek floodplain was last mapped in 1991.
 - Floodplain mapping identifies areas at risk of flooding during severe storm events and will be incorporated into the policies and mapping of the new Official Plan.

Official Plan Review

Overarching Themes

Inclusion	Resilience	Reconciliation	Collaboration
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Made-in-Orillia Guiding Principles

Complete Community	Land Use, Parks, Retail, Community Services, Infill & Intensification, Mixed-Use, Urban Design, Public Realm
Sustainability & Stewardship	Climate Action, Natural Heritage System, Natural Hazards, Waterfront, Green Development, Energy
Integrated Mobility & Infrastructure	Active Transportation, Trails, Transit, Complete & Safe Streets, Emerging Mobility Technologies, Infrastructure
Safe & Affordable Housing	Affordable Housing, Attainable Housing, Supportive Housing & Homelessness, Age-Friendly Housing, Student Housing
Strong & Diverse Economy	Economic Development & Diversification, Education & Training
Wellness & Creativity	Arts & Culture, Heritage, Diversity, Equity, Inclusion

Project Timeline



Stage 1

Vision & Planning
Principles

Stage 2

Issues and Options
Policy Directions

Stage 3

Draft Official Plan

Stage 4

Finalizing the
Official Plan



CITY MOVES

WE ARE HERE
Anticipated
Completion:
2026

Why Plan for Flood Hazards?

- The first step to reduce the cost of flood damage within a community is to have mapping that accurately shows the flood hazard.
- Floodplain mapping helps to identify areas at risk of flooding during severe and infrequent storm events.
- Updated flood hazard mapping will inform the City's new Official Plan, which will in turn inform Zoning By-law provisions for development and floodproofing to prevent or mitigate negative impacts caused by flooding and guide future development.
- These maps help people prepare for and respond to potential flooding.

Provincial Direction

The Provincial Planning Statement (2024) **Policy 5.1.1** provides direction from the Province to direct development away from areas impacted by natural hazards, including flooding, where there is risk to public health, safety, or property damage.

Policy 5.2.1 requires municipalities to identify these hazardous lands and to manage development in these areas.



Queen Street East / Front Street South, Orillia, July 2023

Source: OrilliaMatters

Why Plan for Flood Hazards?

What is a “Regulatory Flood Event”?

A severe storm event (such as a 100-year or Regional storm) used to map where flooding may occur and guide development decisions.

Risk Factors



Water Elevation (Height): How high floodwaters may rise during a storm event

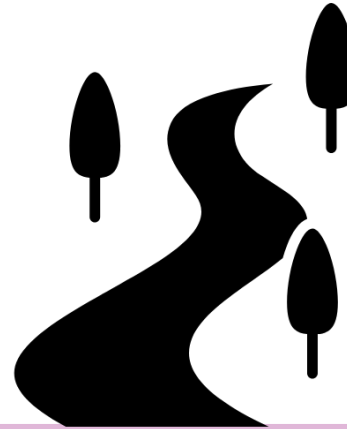


Flood Depth: How deep water becomes above ground level



Velocity (Speed): How fast water is moving, where higher speeds increase danger and damage

Together, these factors determine how hazardous an area is and how it should be managed.



River & Stream Flooding

Rivers or creeks overflow during big storms, causing water to spread into nearby areas that can flood.



Lake-Based / Large Waterbody Flooding

Water levels in lakes rise and storms push water onto the shoreline, affecting nearby low-lying areas.

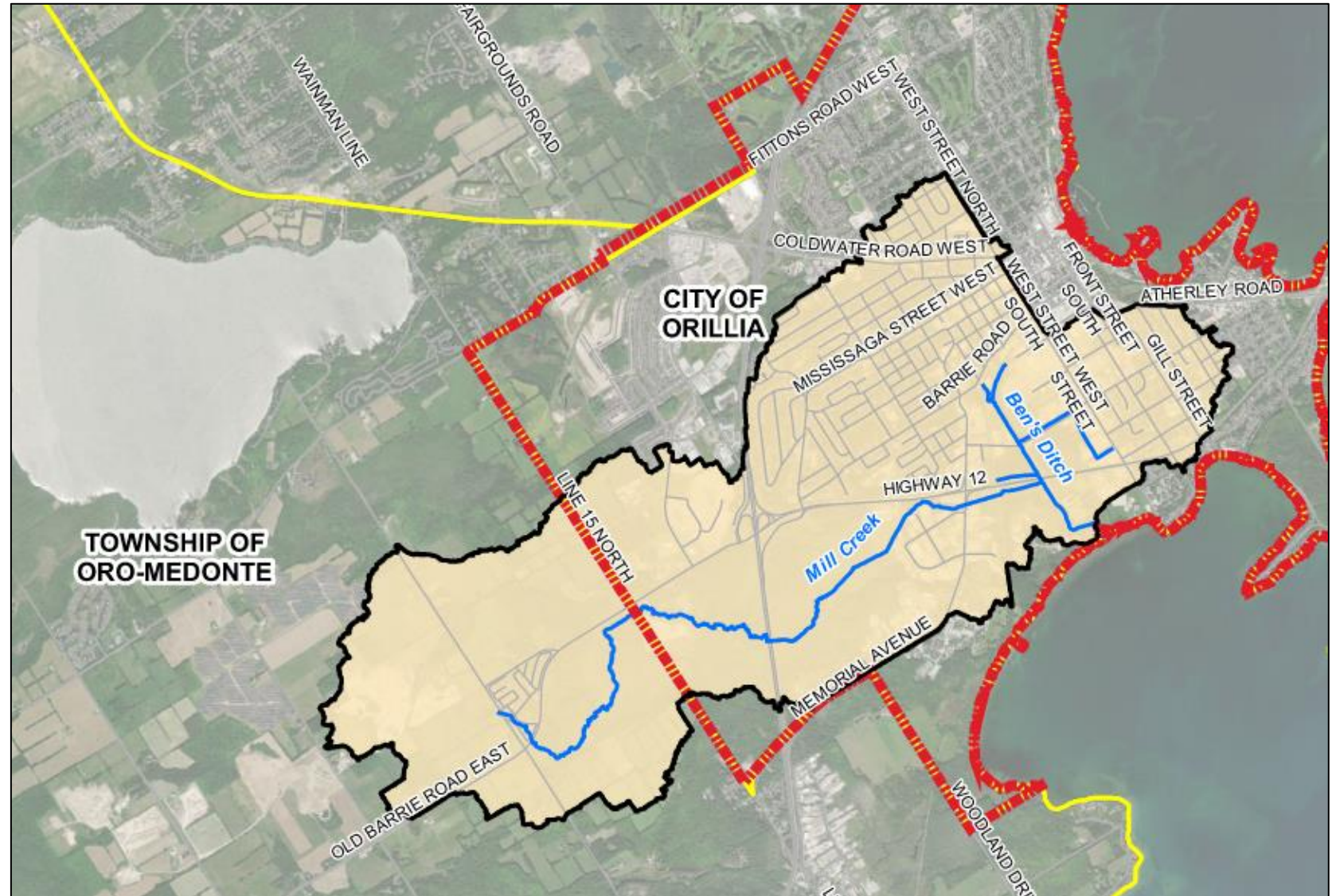
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Work Completed To-Date



Study Area

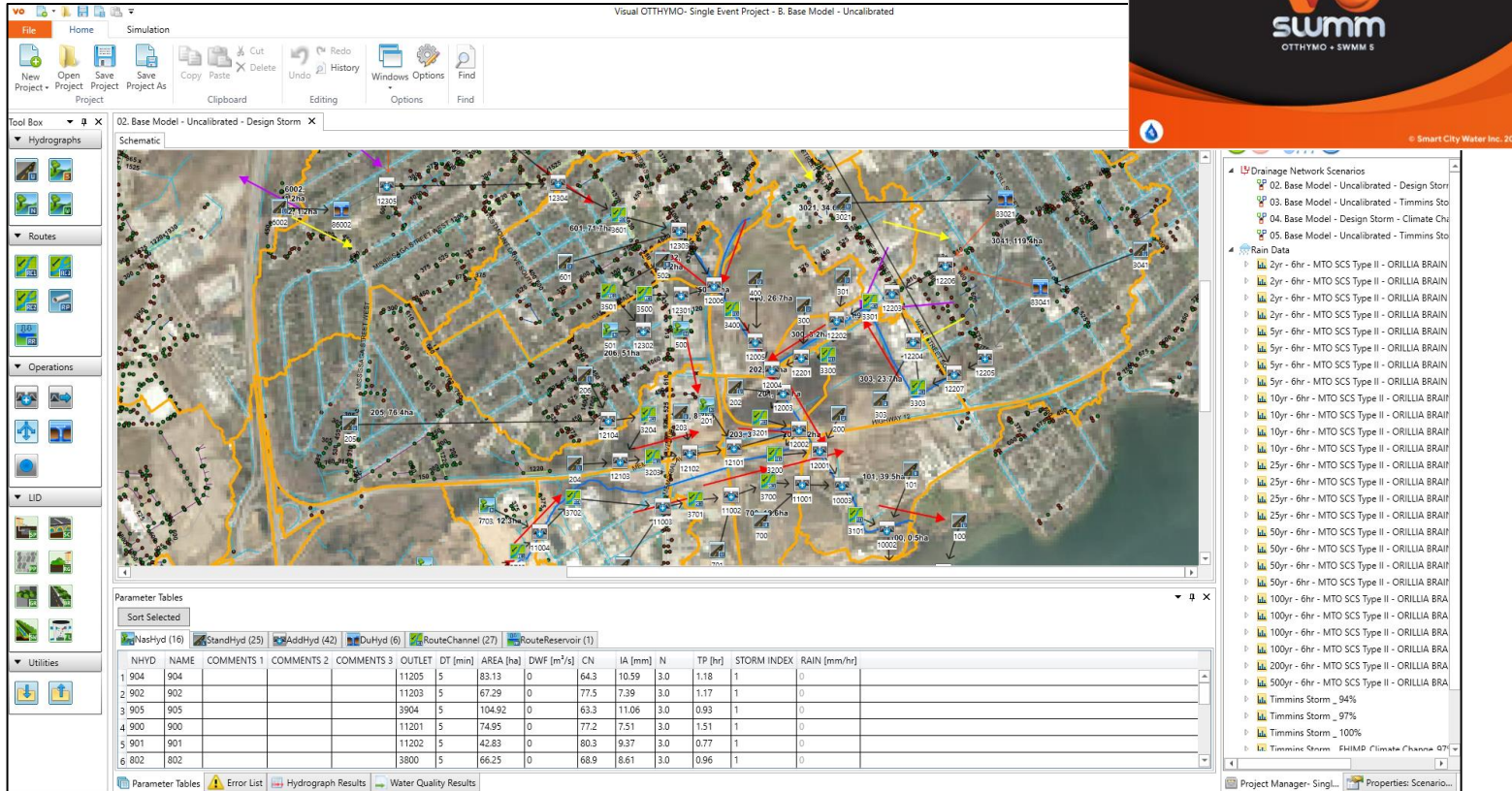
- Mill Creek and Ben's Ditch have **contributing drainage areas** of approximately 11.5 km² and 5.8 km² respectively.
- The current study (2024) was completed by using industry standard modelling practices based on the latest background information (e.g., land use, soil, weather data, topographic data, etc.)



Floodplain Mapping Study for Mill Creek and Ben's Ditch

Part 1: Hydrologic Analysis

The study evaluated and characterized the contributing drainage area to estimate the peak flow rates contributing to the watercourses for selected design storms using a hydrologic model.

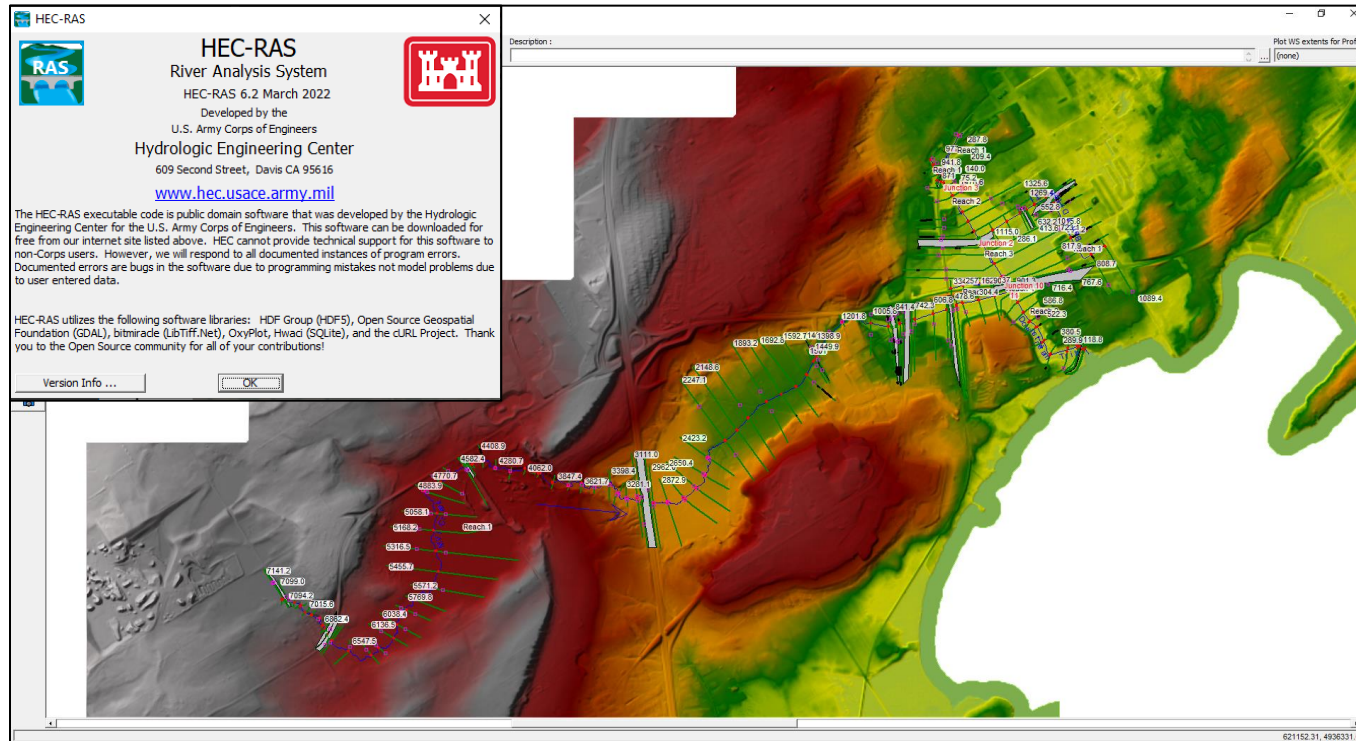


- A Visual OTTHYMO (VO) hydrologic model was developed for the Mill Creek and Ben's Ditch watersheds.
- The model was simulated with the 2-, 5-, 10-, 25-, 50-, 100-year, and Regional (Timmins Storm) design events at 27 locations to generate peak flow rates.
- An Extreme Event scenario was also developed to account for climate change. The Extreme Event exceeds the Regulatory flow, defined as the greater of the Regional and 100-year flows.
- This was required as per Natural Resources Canada (NRCan)'s Flood Hazard Identification and Mapping Program (FHIMP) criteria.

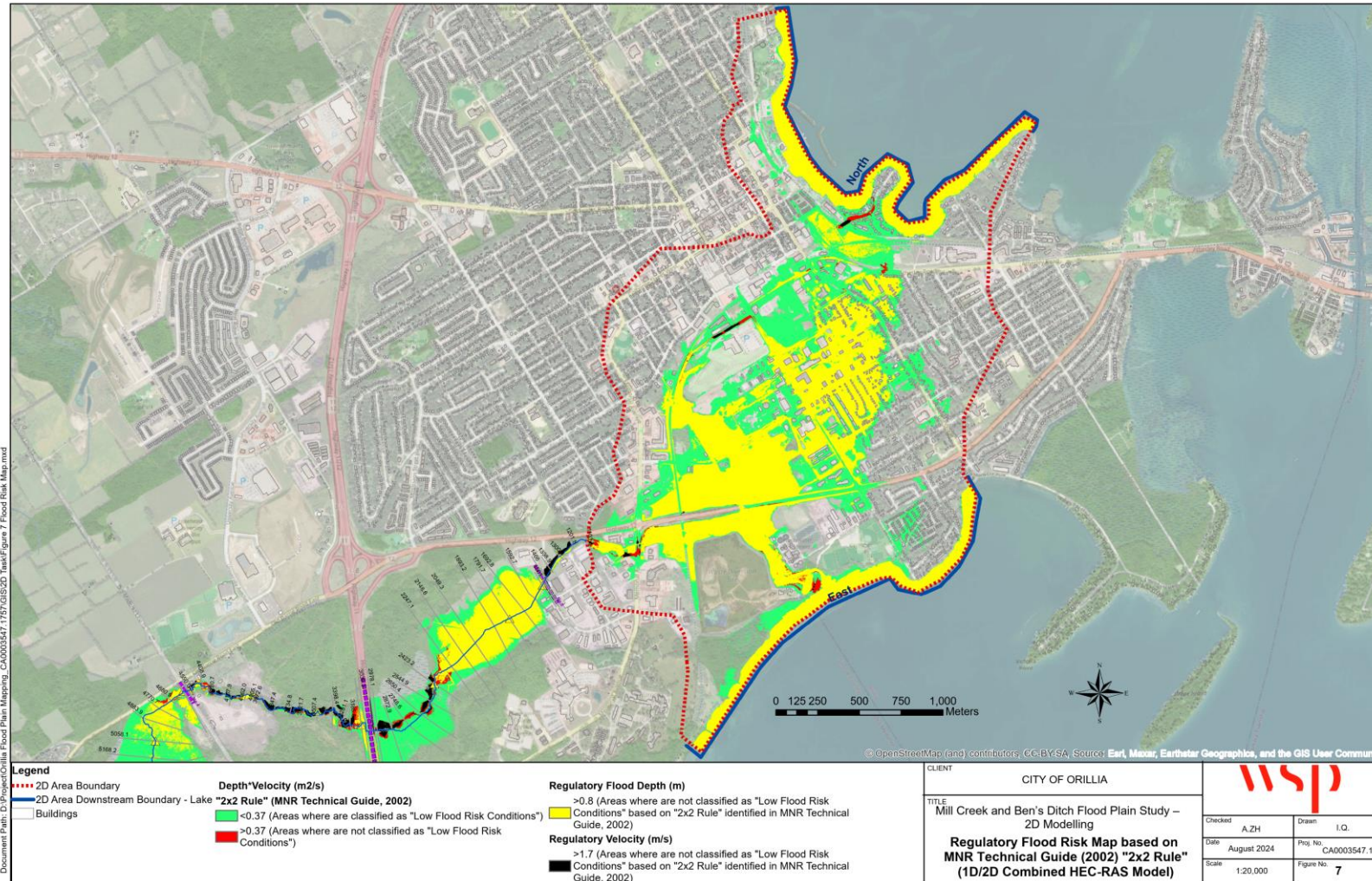
Floodplain Mapping Study for Mill Creek and Ben's Ditch

Part 2: Hydraulic Analysis

- The study evaluated the flow conditions within the watercourses to determine water surface elevations.
 - The flow rates generated from the hydrologic model for the selected design storm events were input into a hydraulic model.
- A HEC-RAS one-dimensional (1D) hydraulic model was developed, incorporating 10.3 km of watercourses, 154 cross sections, and 15 bridges and culverts.
 - The model simulated the following design storm events: 2-, 5-, 10-, 25-, 50-, and 100-year events, Regional (Timmins Storm), Regulatory (greater of Regional and 100-year), and Extreme (Climate Change) events.
 - The water surface elevations along Mill Creek and Ben's Ditch were simulated for each storm event.



2D Modelling - Subsequent Study of Floodplain Mapping Study



- Spill condition identified during major storm events (e.g., 100-year and Regional).
- 2D flood modelling completed to assess spill impacts.
- The 2D modelling delineated the extent of the impacted area.
- Four (4) flow scenarios were applied to the 2D model: the 100-year event, Regional (Timmins Storm), Regulatory (greater of Regional and 100-year), and Extreme (Climate Change) event.

Proposed Flood Hazard Policies



Two-Zone Approach

- The City is proposing a two-zone floodplain approach for the lands affected by Ben's Ditch
- Uses a tiered policy response based on **flood risk and hazard severity**.
- Intent is not to create new development permissions in hazardous lands, but to distinguish areas where development **must** be avoided from areas where development **may be considered under strict property standards**.
- Must be consistent with the Provincial Planning Statement

What are the key elements for effective flood hazard policy?

- Defensible technical mapping and modelling
- Clear Official Plan definitions and policy tests
- Enforceable development standards
- Integration with zoning, site plan control, and approvals processes
- Emphasis on life safety, especially safe access and egress

PPS Policy 5.2.7

"Where the two zone concept for floodplains is applied, development and site alteration may be permitted in the flood fringe, subject to appropriate floodproofing to the flooding hazard elevation or another flooding hazard standard approved by the Minister of Natural Resources and Forestry".

Two-Zone Approach

- Identifies two-zones: a **'floodway'** and a **'flood fringe'**.
- **Floodplain** = Area that may be flooded during a major (regulatory) storm event. This is the overall hazard area and includes both the floodway and flood fringe.

Highest
Risk Area

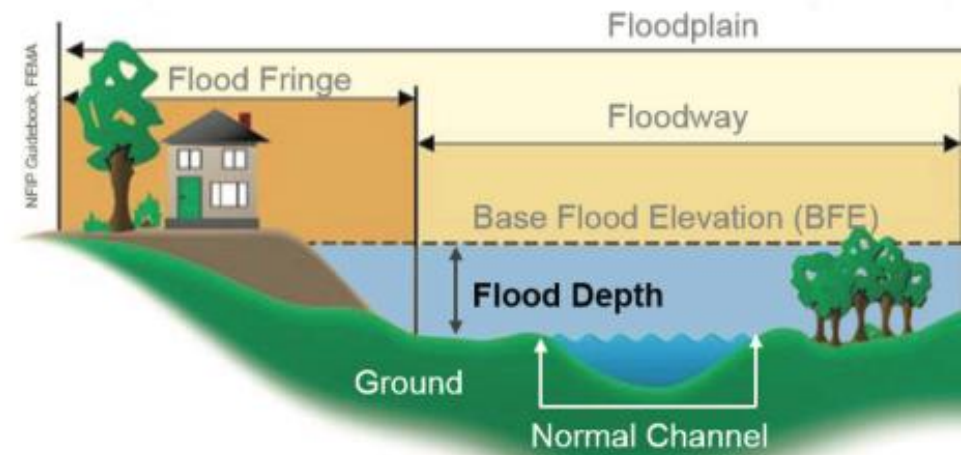
- **Floodway** = The highest-risk part of the floodplain, where water is typically deepest and fastest. New development is prohibited on these lands to protect life and property.

Lower Risk
Area

- **Flood Fringe** = The lower-risk portion of the floodplain outside the floodway. Flooding can still occur, but development may be considered if risks are properly managed and addressed.

Additional
Risks

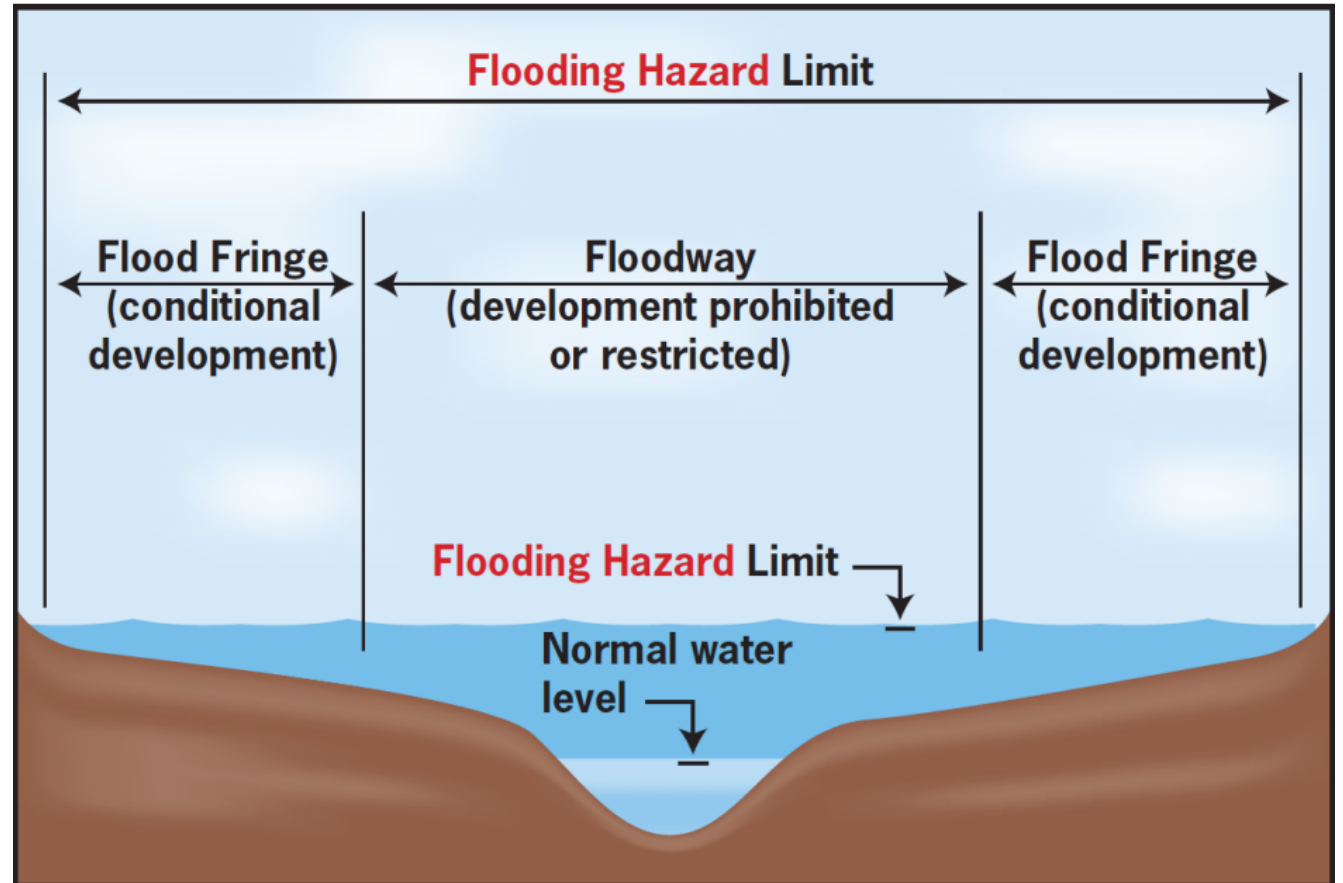
- **Spill and spill hazard areas** are places where water overflows and moves across land outside the main river (or other water source). This can make it harder to get in or out during a flood and introduce additional risks.



Two-Zone Approach - Flood Fringe Criteria

Provincial MNR Guidelines define the **flood fringe** as:

- Depth < 0.8 m
- Velocity < 1.7 m/s
- Depth-Velocity Product < 0.37 m²/s



Proposed Policies – Two-Zone Approach

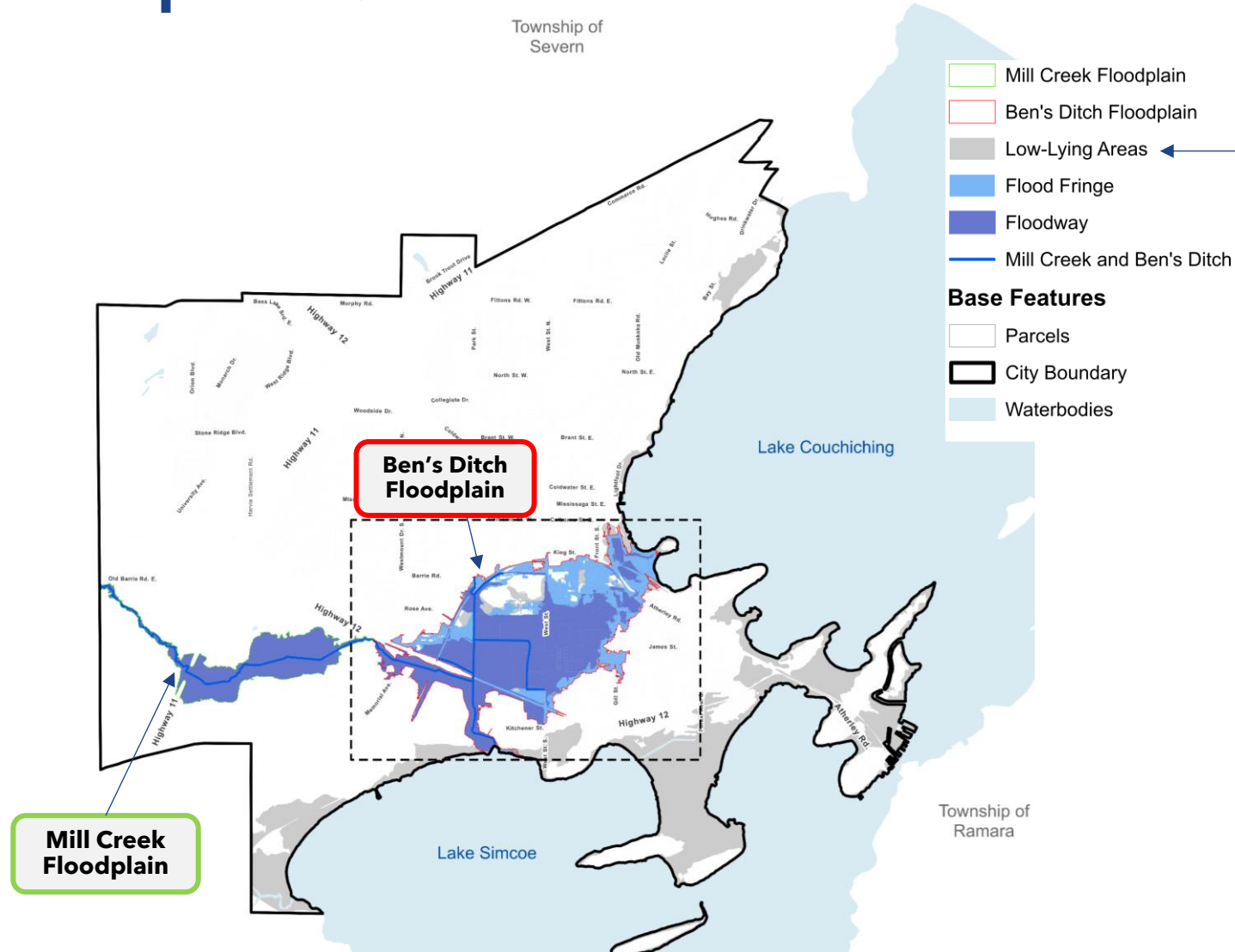
The two-zone approach will be implemented through Official Plan policies and the Zoning By-law.

Permitted Uses		
Uses	Flood Fringe	Floodway
• Existing buildings and structures, including reconstruction, renovation or restoration ○ Accessory structures ○ Decks, porches and fences ○ Swimming pools ○ Private sewage disposal systems • Flood or erosion control measures • Conservation uses	Permitted	Accessory structures cannot contain habitable space
• New development, buildings, and structures, incl. Residential, Commercial, and Industrial uses ○ Site alteration ○ New or expanded parking areas	Subject to conditions	Prohibited
• Public service facilities, Institutional uses, or emergency services • Use of hazardous substances • Basements • Underground parking	Prohibited	

General Conditions

- ✓ No feasible alternative location outside the floodplain
- ✓ No adverse impact on flood flows
- ✓ No residential uses below existing floor levels
- ✓ Floodproofing implemented per Building Code, to the extent practical
- ✓ Safe access and exit during a regulatory flood event

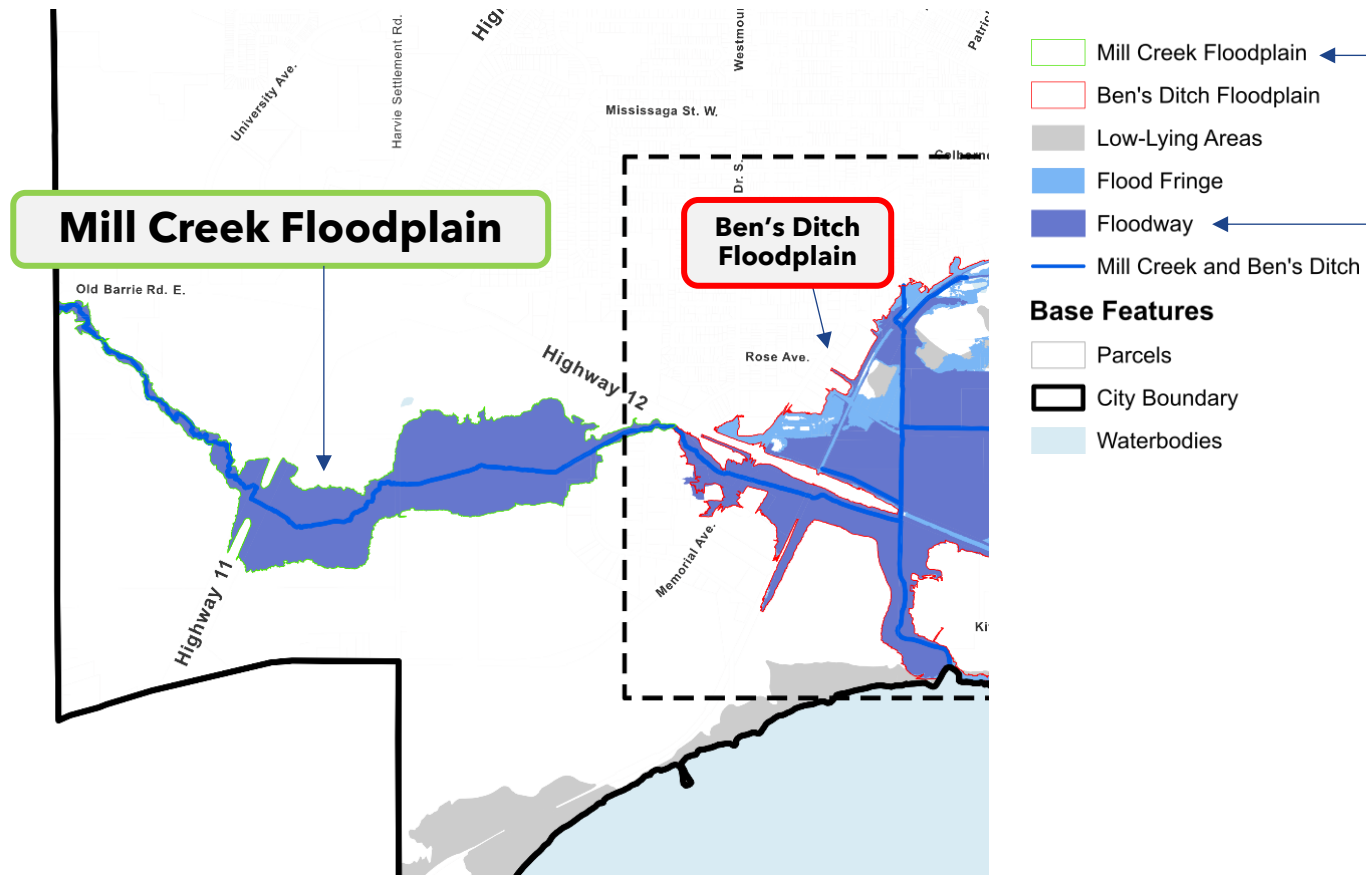
Proposed Schedule D - Flood Hazards



Low-Lying Areas

- Areas below an elevation of 220.5 m where lake-based flooding could occur
- Identified areas are consistent with City's current Zoning Bylaw
- Regulatory floodplain policies and zoning will apply to low-lying areas

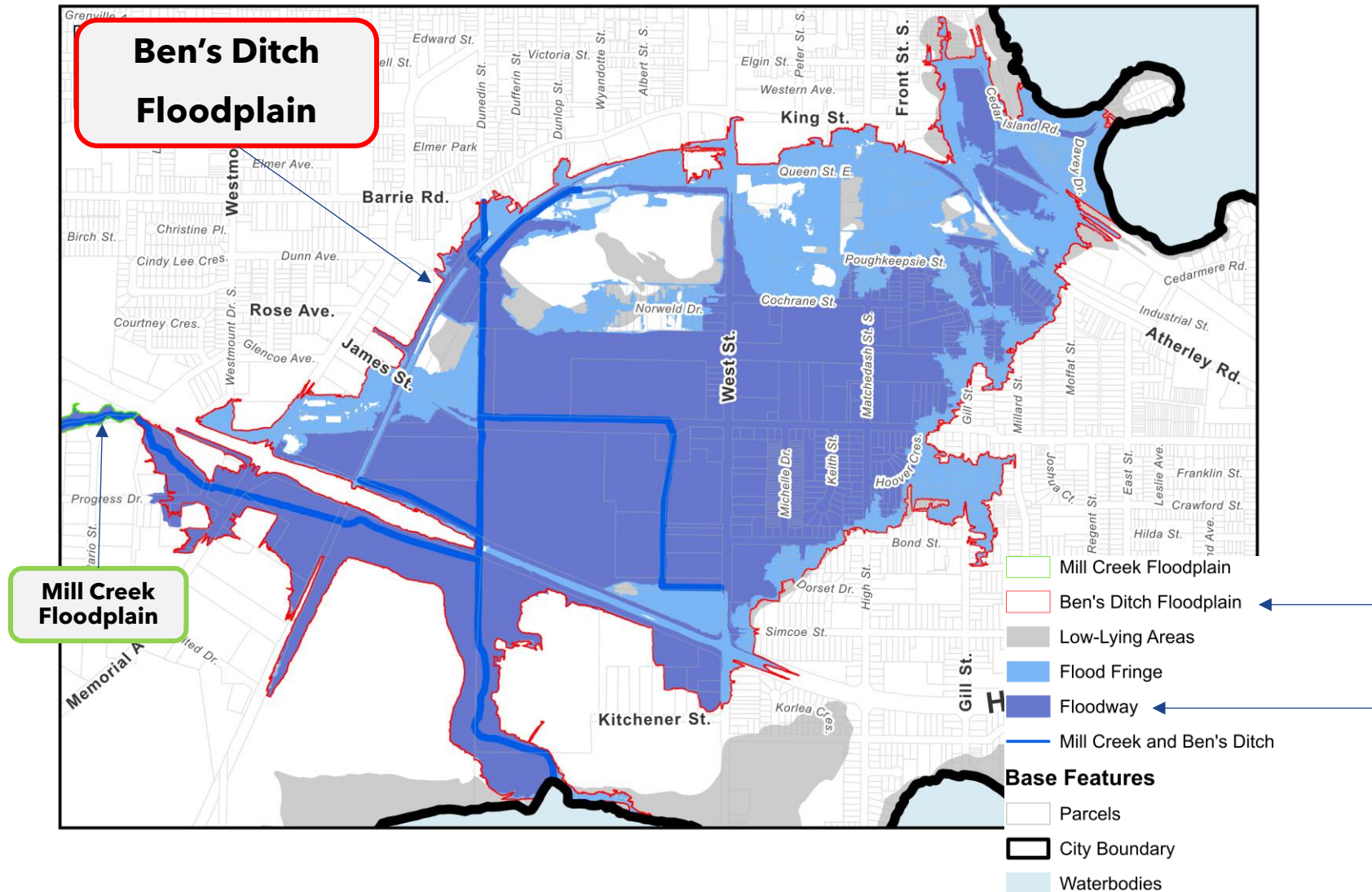
Proposed Schedule D - Flood Hazards



Mill Creek Floodplain

- Updated Mill Creek floodplain is generally consistent with 1991 mapping
- Entirety of floodplain is identified as floodway

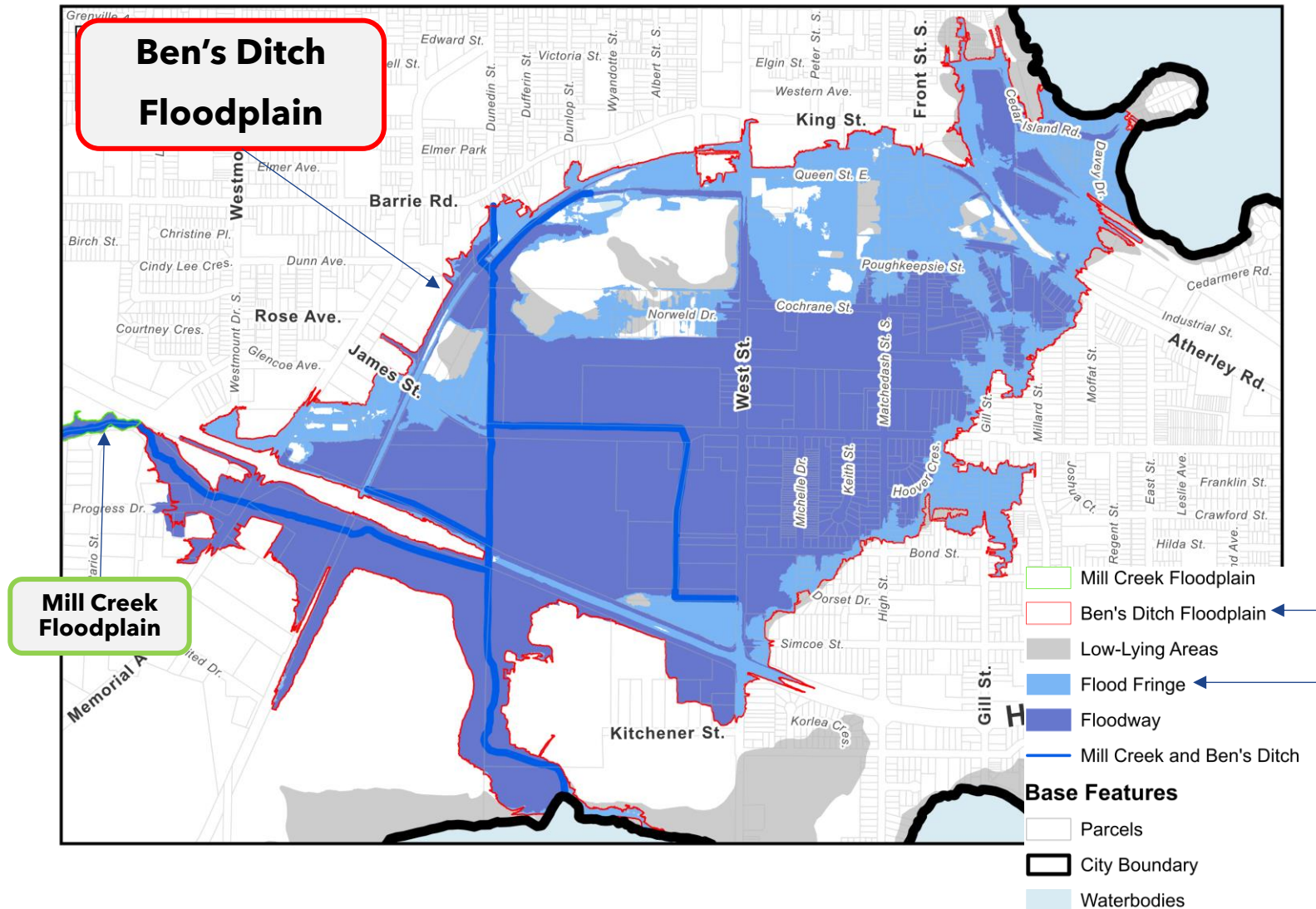
Proposed Schedule D - Flood Hazards



Ben's Ditch (Floodway)

- Two Zone Concept: Floodway
- Depth and/or velocities of flood waters would threaten life and/or property
- Provincial MNR guidelines defines floodway as:
 - Depth > 0.8 m
 - Velocity > 1.7 m/s
 - Depth-Velocity Product > 0.37 m²/s

Proposed Schedule D - Flood Hazards



Ben's Ditch Flood Fringe

- Two Zone Concept: Flood Fringe
- Depth and/or velocities of flood waters typically do not threaten life and/or property
- Provincial MNR guidelines defines flood fringe as:
 - Depth < 0.8 m
 - Velocity < 1.7 m/s
 - Depth-Velocity Product < 0.37 m²/s

Next Steps

- Incorporate Two-Zone Policies and Mapping into Proposed New Official Plan – **Summer 2026**
- Council Consideration of Adoption of Proposed New Official Plan – **Fall 2026**
- Approval of floodplain mapping and policies
Province of Ontario – **Anticipated 2027**

Visit Orillia.ca/PlanningForTheFuture
to learn more and stay updated.



Questions?

How to Ask Questions

- You may submit questions at any time using the Q&A or chat function
- We will respond to questions at the end of the presentation
- Please keep comments respectful and relevant to the topic

Please submit any **written comments** on the proposed Two-Zone policies and mapping by **no later than August 14, 2026** to:

Jill Lewis, Senior Planner, at
jlewis@orillia.ca or 705-418-3232

**Visit [Orillia.ca/PlanningForTheFuture](https://orillia.ca/PlanningForTheFuture)
to learn more and stay updated.**



Thank you!

