Little Etobicoke Creek Flood Remediation Study

Resident Update Meeting

April 7th, 2025

MISSISSAUGA

Aquafor Beech Limited

Presentation Outline

1. Roles and Introduction
2. Study Overview and Components
3. Review of Background Data
4. Ecological Conditions Review
5. Flow Diversion Assessment
6. End of Pipe Control Opportunity Analysis
7. Temporary Floodwall Analysis
8. City of Mississauga Updates
9. Next Steps

Roles and Introductions

Aquafor Beech Limited

Chris Denich, P. Eng. – Consultant Project Manager
Chad Cota, BASc. – Project Coordinator / Engineering Support
Jie (Jane) Jian, M. Eng. – Engineering Support

City of Mississauga – Project Team

Evelyn Krolicka, B. Eng. – City Project Manager
Muneef Ahmad, P. Eng. – Sr. Project Advisor

City of Mississauga – Councillor's Office

Chris Fonseca – Ward 3 Councillor
Nabeel Ranmall – Administrative Assistant to Councillor Fonseca

Study Overview

- Mississauga recently experienced extreme rainfall events on July 16th, 2024 and August 17th and 18th, 2024, causing flooding in the areas surrounding Little Etobicoke Creek within Ward 3
- The City has retained Aquafor to complete the Little Etobicoke Creek Riverine Flooding Remediation Feasibility Review, to investigate potential flood mitigation opportunities with the study area

Study Components

- This study consisted of five key components including:
    1. Background Data Review
    2. Ecological Conditions Review
    3. Flow Diversion Assessment
    4. New End of Pipe Opportunities
    5. Temporary Floodwall Analysis

1

Background Data Review

Background Data Review

- Review of all available relevant information, including:
  - Little Etobicoke Creek flood evaluation study master plan
  - Little Etobicoke Creek hydrologic and hydraulic models
  - Stormwater management facility mapping within study area
  - Pertinent spatial mapping information
  - Onsite conditions through field reconnaissance
  - City and provincial ecological records
  - Records of residential flooding complaints

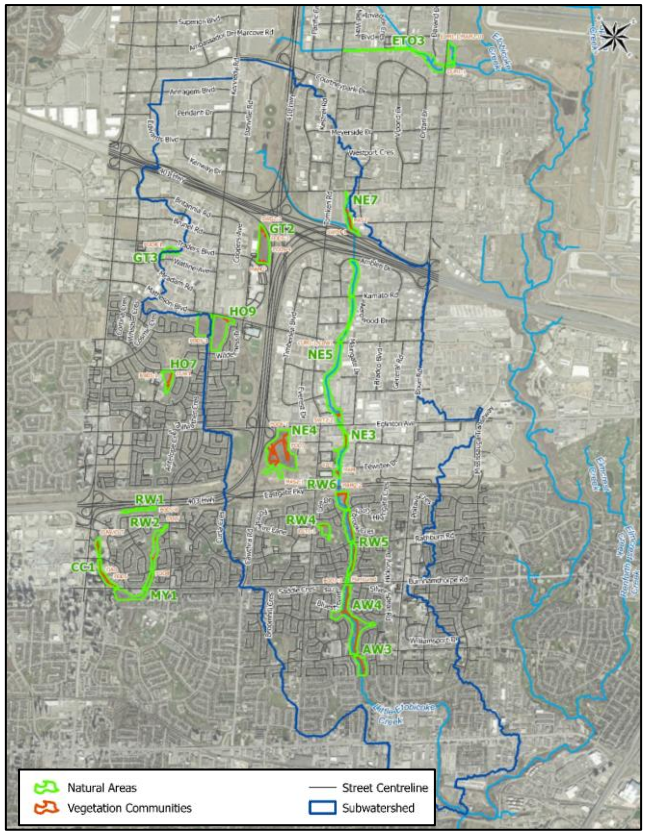
Map of Flooding Complaints Received in July 2024

2

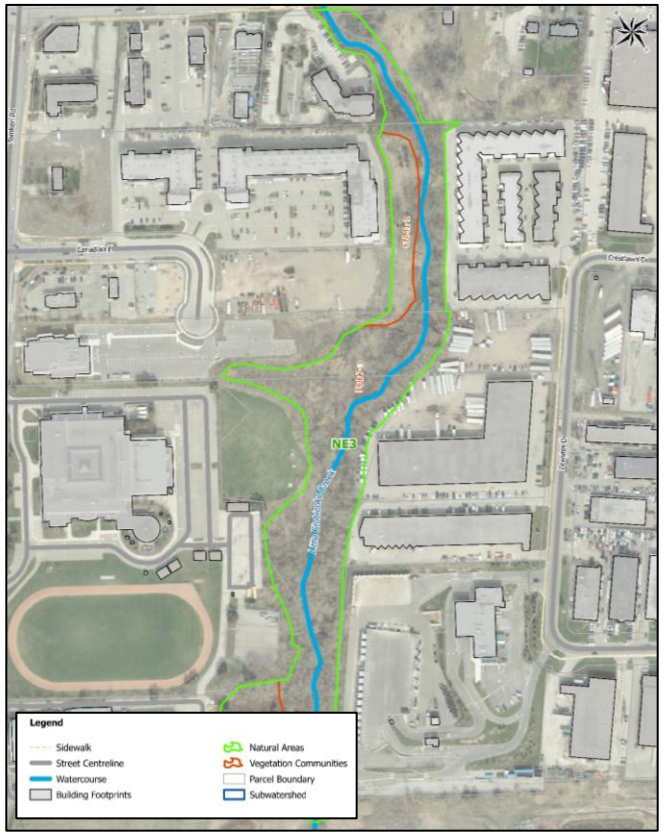
Ecological Conditions Review

Ecological Conditions Review

- Aquafor has reviewed the ecological conditions within Little Etobicoke Creek Watershed



Map of Natural Areas within Little Etobicoke Creek Watershed



Focused Mapping for Natural Area NE3

3

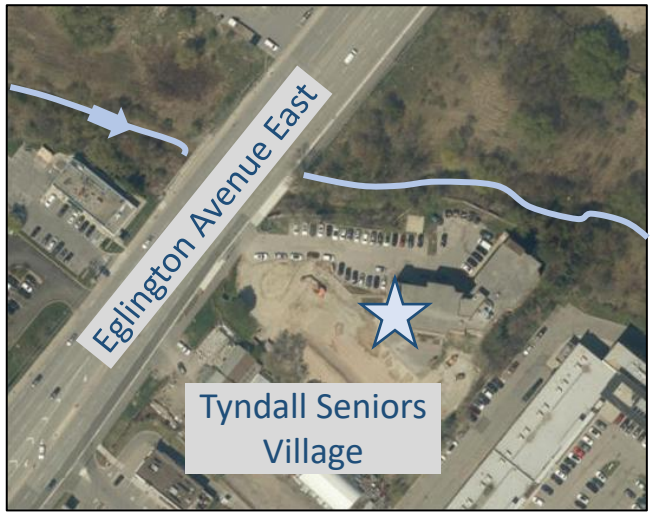
Flow Diversion Assessment

Flow Diversion Assessment Overview

- Potential Creek Diversion Alternatives were considered, including:
  - Alternative 1 – Flow Diversion to East (~2.5 kms to Etobicoke Creek)
  - Alternative 2 – Flow Diversion to West (~2.2 kms to Cooksville Creek)
  - Alternative 3 – Localized Flow Diversion in Key Areas (i.e., Tyndall Seniors Village)

Alternative 1 – Flow Diversion to East

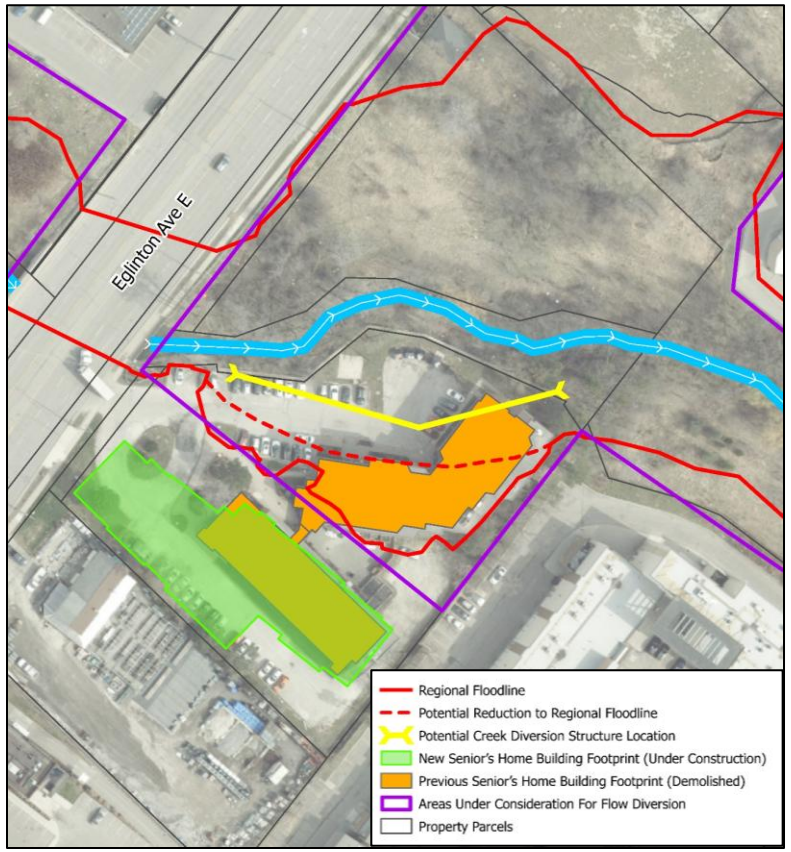
Alternative 2 – Flow Diversion to West



Alternative 3 – Localized Flow Diversion in Key Areas

Flow Diversion Assessment Feasibility

- Ultimately, Alternatives 1 & 2 (flow diversions to nearby watercourses) were not advanced further, due to feasibility restrictions, including:
  - Capacity of accepting watercourses during high-flow events
  - Elevation constraints
  - Regulatory restrictions
  - Property ownership and existing infrastructure restrictions
  - Economic considerations
- Alternative 3 (localized flow diversions) was further explored, but ultimately was found to only provided highly localized minor improvements to flooding



Localized Flow Diversion at Tyndall Senior's Facility

4

End of Pipe Control Opportunity Analysis

End of Pipe Control Opportunity Analysis

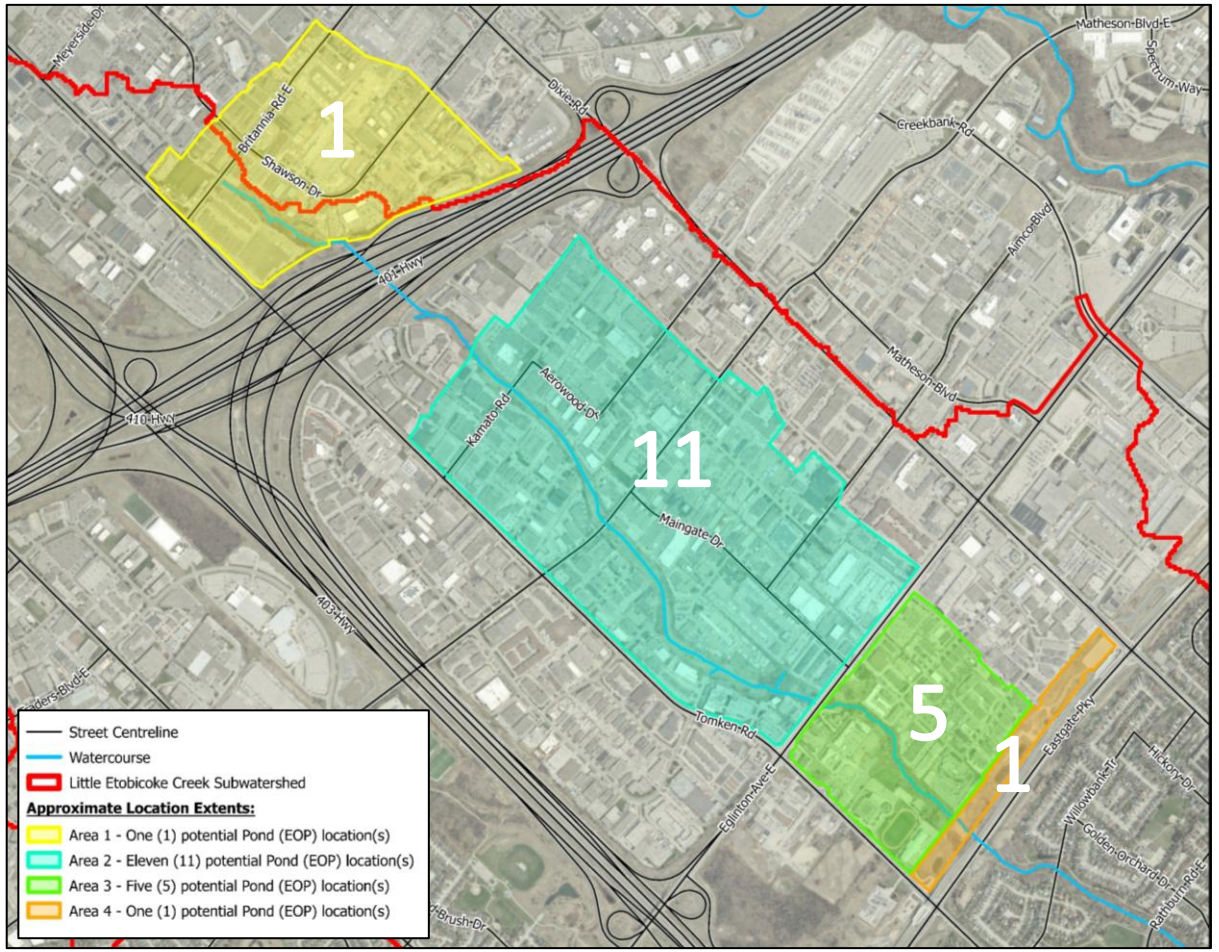
- Potential locations for new End of Pipe stormwater management facilities were identified, using a three phased approach
    1. Seven screening level assessment
    2. Ranking and prioritization
    3. Cost estimation
- All feasible stormwater management facility locations require the purchase of private property
- The results of the study indicated:
    - **387** potential locations identified within the watershed
    - **35** locations carried forward to further assessment
    - **17** locations considered feasible

Example 1: *Stormwater Management Facility – City of Mississauga Saigon Park*

Example 2: *Stormwater Management Facility – City of Barrie SWMF SP03*

End of Pipe Control Opportunity Analysis

- The 17 new end of pipe opportunities included the following approximate locations:
  - North of Hwy 401
  - South of Hwy 401, North of Eglington
  - South of Eglington, North of Eastgate Parkway
  - Mississauga Transit Corridor

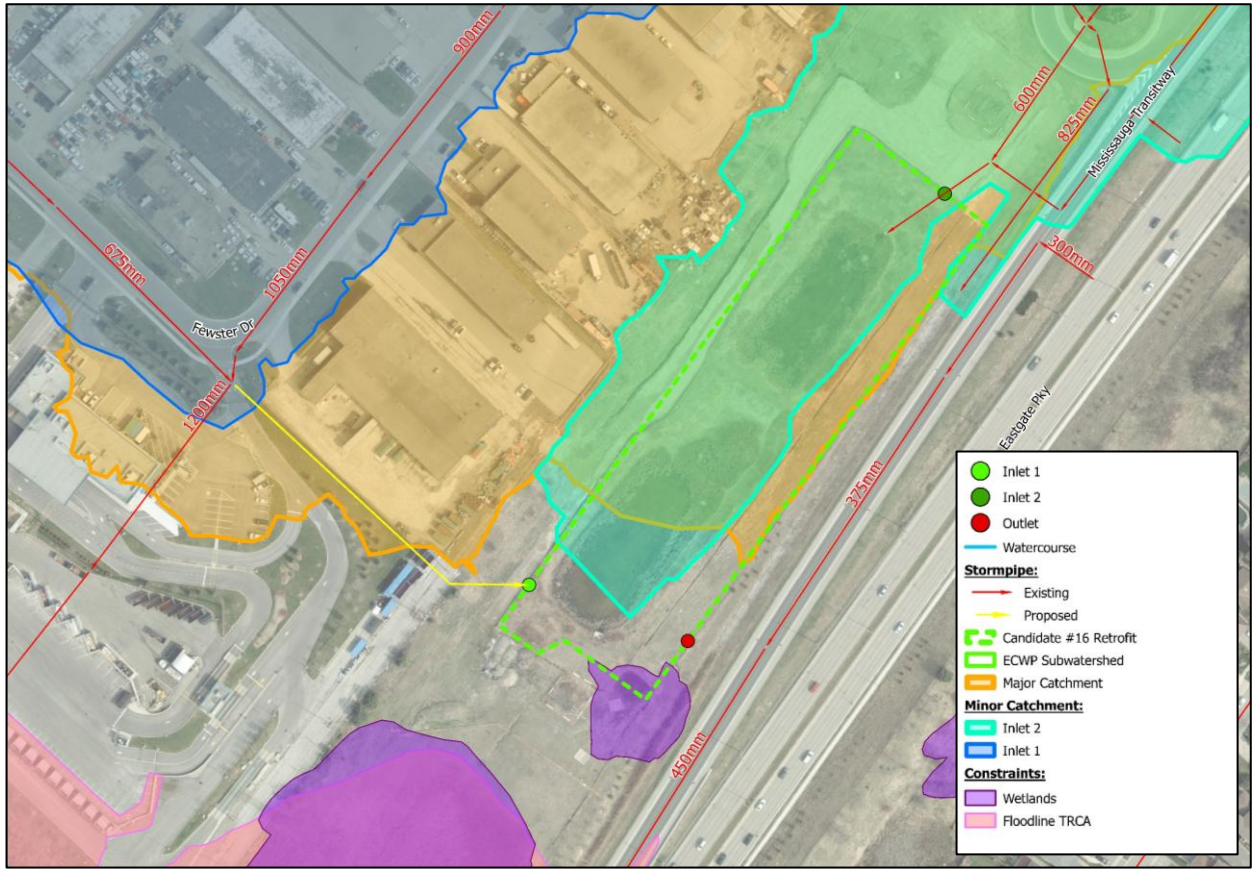


Approximate Locations of New End of Pipe Opportunities

End of Pipe Control Opportunity Analysis

- Consideration given to retrofitting existing stormwater management facilities within the hydro corridor

- Increase the capacity of the existing pond, and divert additional drainage flows for more treatment and control



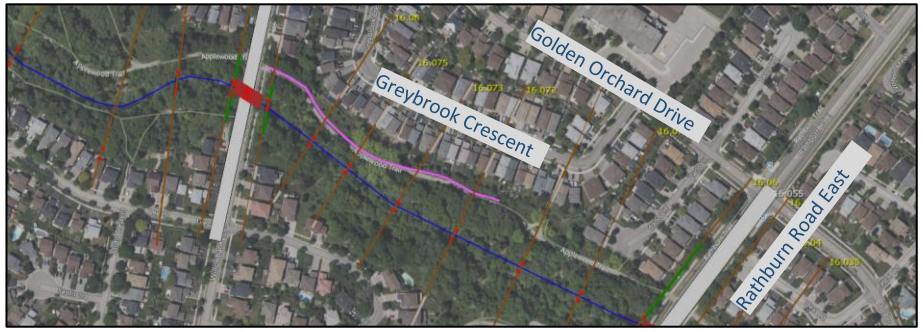
Potential Location for Pond Retrofit Within Hydro Corridor

5

Temporary Floodwall Analysis

Temporary Floodwall Analysis

- Deployment of a temporary floodwall was considered for an interim measure
- Intended to provide localized flood relief to areas most affected by watercourse flooding
- Modelling results show successful exclusion of 100-year floodline outside of private properties along Greybrook Crescent
- No negative flooding impacts to upstream or downstream properties



Approximate Location of Proposed Temporary Floodwall – 250 metres in length

Modelled Floodline Reduction Along Greybrook Crescent

Temporary Floodwall Analysis

- The City of Mississauga has tested temporary floodwall products, with promising results
- Available in a range of heights (0.3 to 1.5 metres)
- Requires frequent inspection and maintenance to ensure working order before rainfall events

Deployment of Temporary Floodwall

Up Close View of Sample Floodwall Configuration

Next Steps

- Overall Flood Remediation Study
  - Completion of additional technical assessments as part of next phase
- Temporary Floodwall Analysis
  - Completion of detailed design
  - Obtain permits and approvals for temporary floodwall implementation
  - Deployment of temporary floodwall - targeted for June 2025

6

City of Mississauga Updates

Updates From Last PIC

- Internal Discussions about Floodwall Implementation
  - Internal processes, temporary vs. permanent, deployment etc.

- Feedback from Last PIC
  - Organized DRAO Help Session for Residents in Activation Area
  - Clearing of woody debris along Applewood Hills Trail
  - Inspection of problem sites reported at last meeting

City Rebates

3 City Rebate Programs Available to Homeowners

- Compassionate Flood Relief Grant
  - $1000 rebate available to homeowners that flooded July/Aug
- Flood Resilience Rebate
  - Rebate helps cover costs of rebuilding with water-resistant materials
- Basement Flood Prevention Rebate
  - Provides rebates to homeowners to install basement flood prevention technologies

Utilizing the Rebates

- Dry flood proofing measures such as flood doors/ window covers

TRCA Flood Messages

Flood Warning
Flooding is imminent or occurring.

Flood Watch
Potential for flooding to occur in near future.

Flood Outlook – Early notice of the potential of flooding and dangerous conditions in waterways

Water Safety - Watercourses flowing at or near bankfull levels, ice conditions in watercourses are unsafe, or stream banks are icy, soft and/or slippery.

Normal - No message issued.

How to sign-up to receive TRCA flood messages through email

1. Go to trca.ca/floodmessages
2. Navigate down the page to the sign-up form
3. Fill in and submit the form

Once the form is submitted, the user has successfully signed up to receive flood messages from TRCA through email.

Question Period

Chris Denich, MSc., P. Eng.
Aquafor Beech Limited
denich.c@aquaforbeech.com

Evelyn Krolicka, B. Eng
City of Mississauga
Infrastructure Planning & Engineering Services
Evelyn.Krolicka@mississauga.ca