Little Etobicoke Creek Flood Remediation

Councillor Update Meeting

November 3rd, 2025

MISSISSAUGA

Aquafor Beech Limited

Presentation Outline

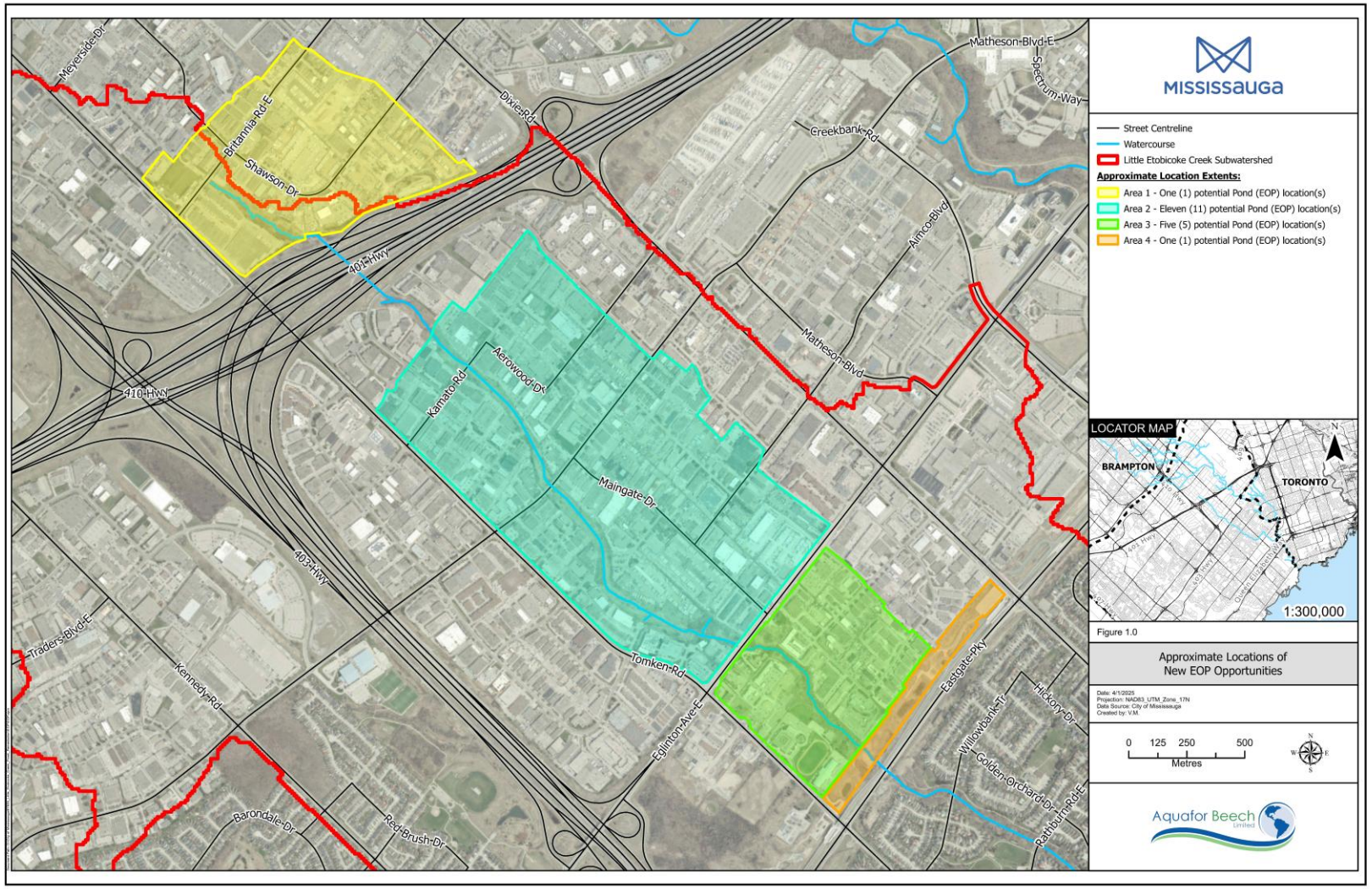
1. Overview of Progress to Date
2. Transitway Pond Feasibility Results
3. EOP Flood Control Opportunities
4. Flow Reduction Preliminary Results
5. Historical Alignment Comparison & Permanent Flood Remediation Alternatives
6. Data Discrepancy Resolution
7. Schedule

Overview of Progress to Date

- The floodwall protection is enabling us to delve deeply into the possibilities for longer-term safeguarding.
- We are working to review potential flood storage opportunities, channel improvements and upsizing of crossings
- We are using the findings Phase 1 (proposed pond locations based on catchment area), for modeling results to see what sort of impacts the pond locations will have on the water levels, how many would be needed, where the best locations for them are, etc

EOP Flood Control Opportunities

- **Identified Opportunities from Phase 1 Study Upstream of the Community Area**

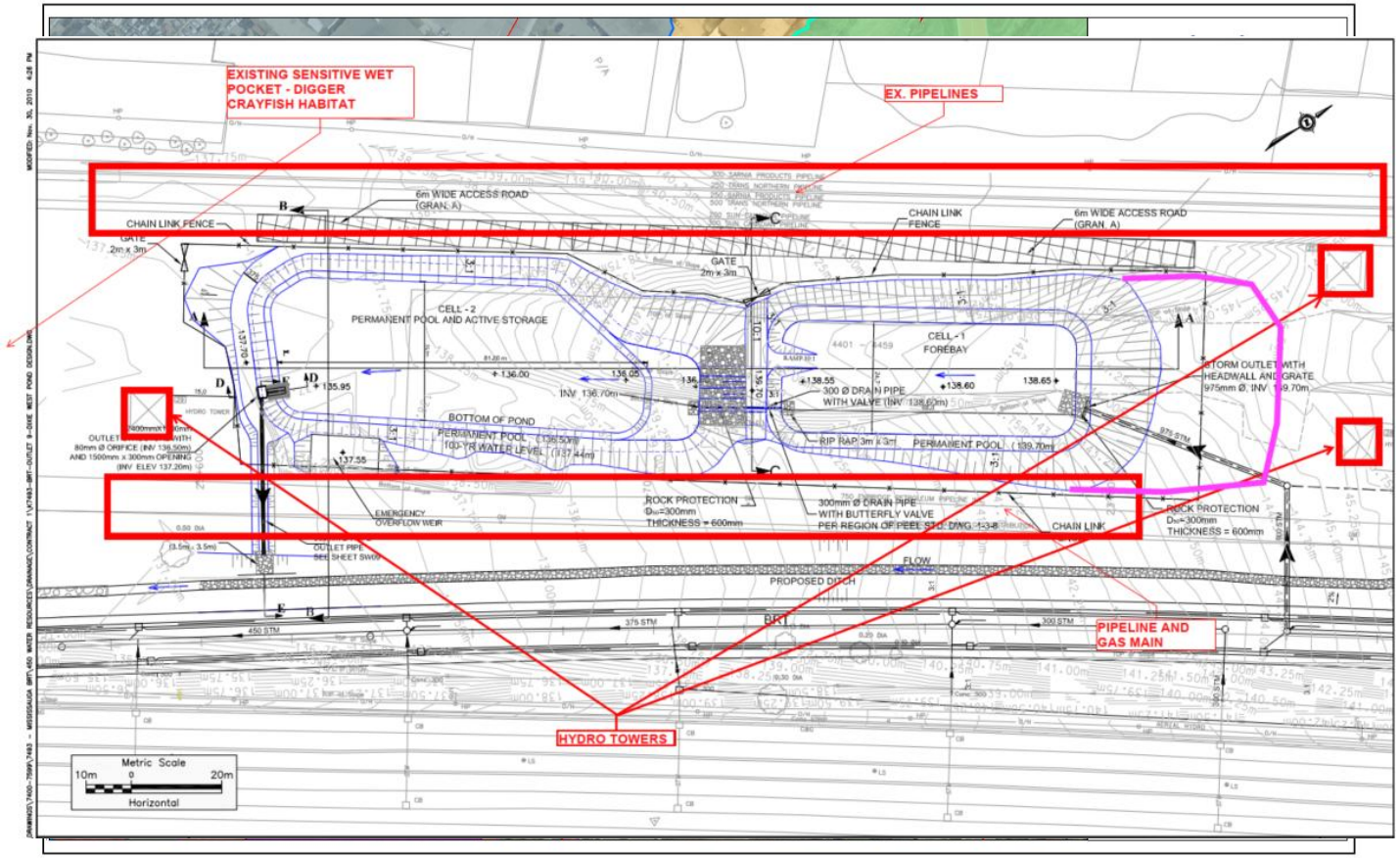


- **17** New EOP Opportunities
- **1** Retrofit/Expansion Option

EOP Flood Control Opportunities

- **Opportunity for expansion of the Transitway Pond – Considered Non-Feasible**

- Expansion of the existing Transitway Pond was determined to be non-feasible due to the following factors:
  - Hydro towers located on either side of the existing pond
  - Pipelines located to the north and south of the facility that limit the immediate expansion
  - The pink area, the inlet forebay to the east, is where direct expansion is possible However, Expanding the forebay would not provide significant additional storage because the main cell is lower, and water would spill over
- Expand the existing facility by creating a separate cell to the West was also considered, However, it was marked as a sensitive area by TRCA due to Digger Crayfish habitat



Existing Transitway Pond with Site Constraints Shown

EOP Flood Control Opportunities

- **17 Feasible Sites Identified from Phase 1**

  A detailed Field Reconnaissance and Photo Log Development was completed, including:

  - Building Type;
  - Building Storey;
  - Number of Units;
  - Surrounding Environment;
  - Site Constraints, including utilities

Hydro Poles

Mature Trees

Key Roadway Infrastructure

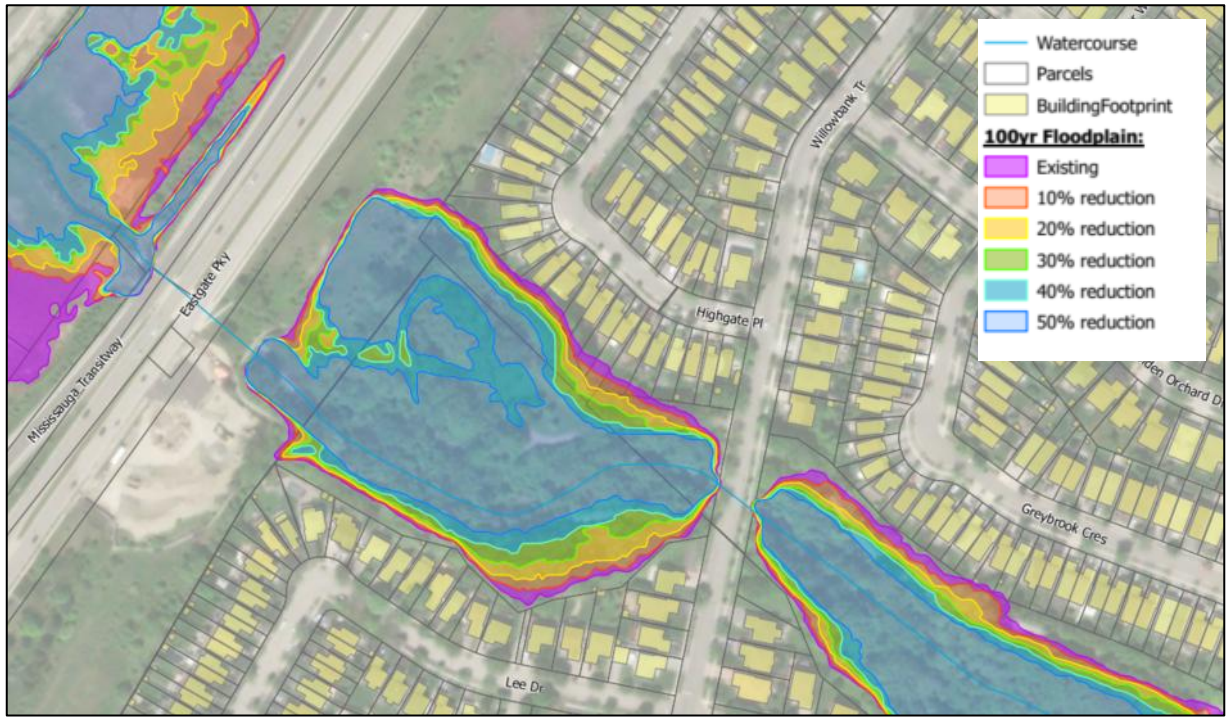
EOP Flood Control Opportunities

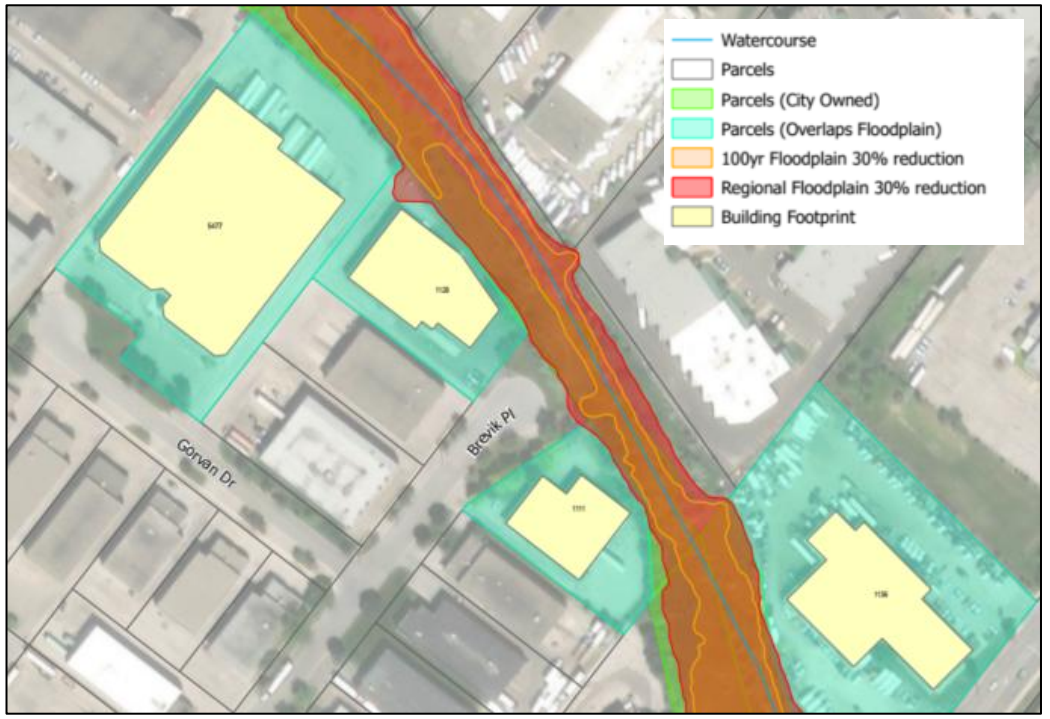
- Sizing and Stage-Storage Discharge of all Identified End-of-pipe (EOP) Flood Control Opportunities

Rank	100-year Inflows (m^3/s)	75% Max Storage (m^3)	Pond Discharge (m^3/s)	Peak Flow Reduction (m^3/s)	Provided Attenuation	Storage Required (m^3)	Flow Reduction/1000m3
1	0.56	1161	0.02	0.54	96%	598	0.90
2	6.66	8651	2.11	4.54	68%	7837	0.58
3	9.05	8758	4.80	4.24	47%	7964	0.53
4	5.75	6232	2.81	2.94	51%	5533	0.53
5	0.74	1260	0.23	0.51	69%	1040	0.49
6	5.44	10636	1.26	4.18	77%	9653	0.43
7	9.80	20301	2.15	7.65	78%	18766	0.41
8	6.39	16234*	0.60	5.79	91%	14250	0.41
9	2.66	2429	1.86	0.80	30%	2089	0.39
10	0.95	2753	0.05	0.90	94%	2329	0.38
11	6.39	32488*	0.25	6.14	96%	16343	0.38
12	11.56	43494	0.81	10.75	93%	28875	0.37
13	17.36	42556*	2.89	14.47	83%	40362	0.36
14	5.75	19045	0.30	5.45	95%	15759	0.35
14	11.56	33265	0.64	10.92	94%	31344	0.35
16	17.36	85112*	0.97	16.39	94%	50800	0.32
17	2.27	8495	0.24	2.03	89%	6944	0.29
18	3.83	13298	0.77	3.07	80%	12030	0.26
19	7.98	27967	3.25	4.73	59%	25473	0.19

Flow Reduction Preliminary Results

- Aquafor has modelled flow reduction scenarios in HEC-RAS, and created updated floodlines for each flow reduction scenario
- Based on these modelled floodlines, key metrics were measured under the 100-year and Regional flood events, including: Total Buildings Impacted & Total Private Property Parcel Area Affected

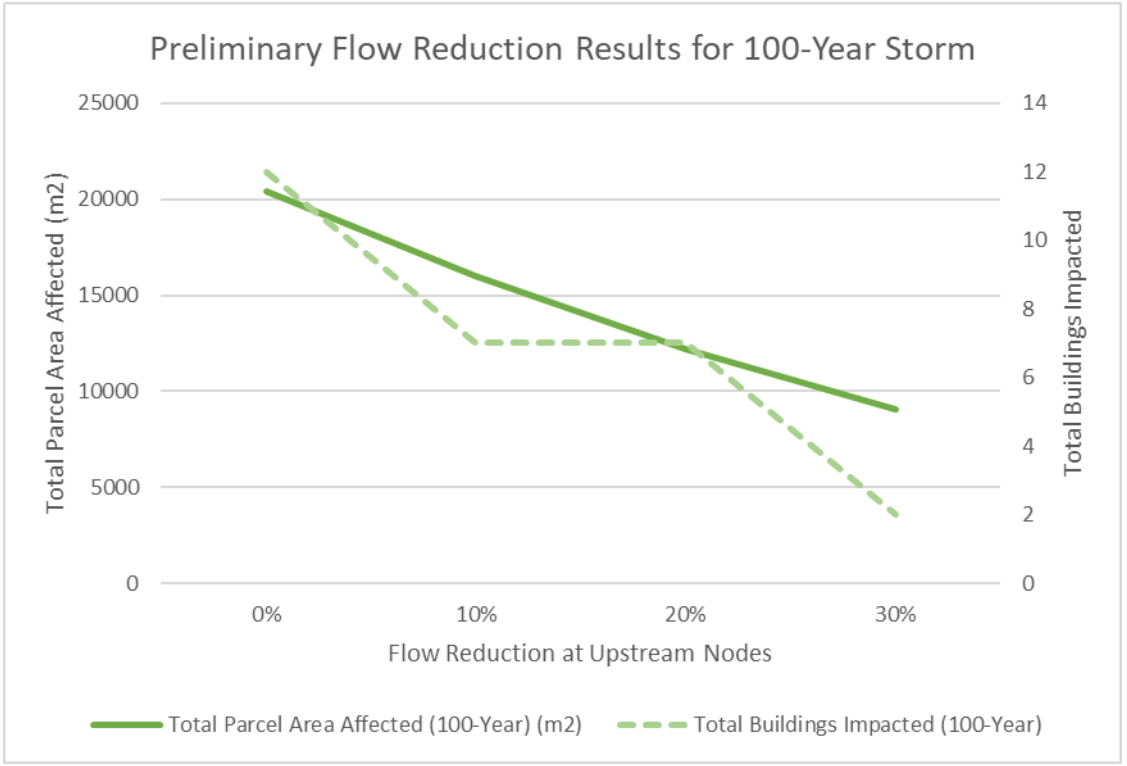




Flow Reduction Preliminary Results – 100-Year

- Analysis of the 10%, 20% and 30% flow reduction scenarios for the 100-year return period yielded the following results

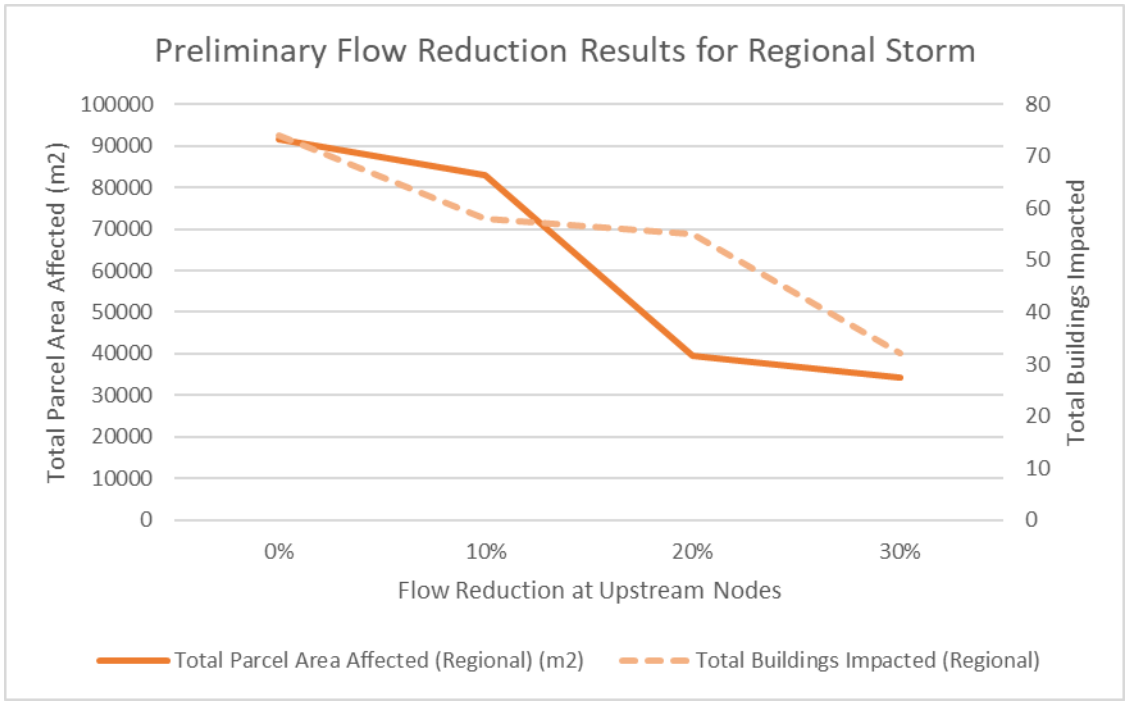
Metric	Existing Flows (100-Year)	10% Flow Reduction (100-Year)	20% Flow Reduction (100-Year)	30% Flow Reduction (100-Year)
Total Buildings Impacted	12	7	7	2
% Reduction in Impacted Buildings	0%	42%	42%	83%
Total Parcel Area Affected (m^2)	20380	16013	12217	9066
% Reduction in Impacted Parcel Area	0%	21%	40%	56%



Flow Reduction Preliminary Results – Regional

- Analysis of the 10%, 20% and 30% flow reduction scenarios for the Regional Storm return period yielded the following results

Metric	Existing Flows (Regional)	10% Flow Reduction (Regional)	20% Flow Reduction (Regional)	30% Flow Reduction (Regional)
Total Buildings Impacted	74	58	55	32
% Reduction in Impacted Buildings	0%	22%	26%	57%
Total Parcel Area Affected (m^2)	91666	83087	39457	34401
% Reduction in Impacted Parcel Area	0%	9%	57%	62%



Data Discrepancy Resolution

- When comparing the hydrologic (PC-SWMM) and hydraulic (HEC-RAS) model, we've observered differences in flows
- The existing flow rates between the two models need to be made congruent, before updating the PC-SWM Model with reduced flows from proposed SWM facilities
- Further discussion with TRCA is warranted to ensure acceptance of the modelling approach

	100-year Flow Rate (cms)	
Flow Location	TRCA HEC-RAS model	PCSWMM model
Downstream Hwy 401	15.69	34.96
Downstream Kamato Rd	23.47	41.78
Downstream Matheson Blvd	33.66	56.39
Upstream Eglinton Ave	50.83	92.34
Upstream Eastgate Pkwy	86.87	124.31
Upstream Burnhamthorpe Rd	93.27	133.51
Upstream Bloor St	93.68	131.64

Review of Historic Channel Conditions

- Aquafor reviewed historic imagery of the study area, to understand the past manipulations of the creek
- The channel has been significantly modified, and straightened as shown below

Channel Conditions in 1966

Channel Conditions in 1985

Review of Historic Channel Conditions

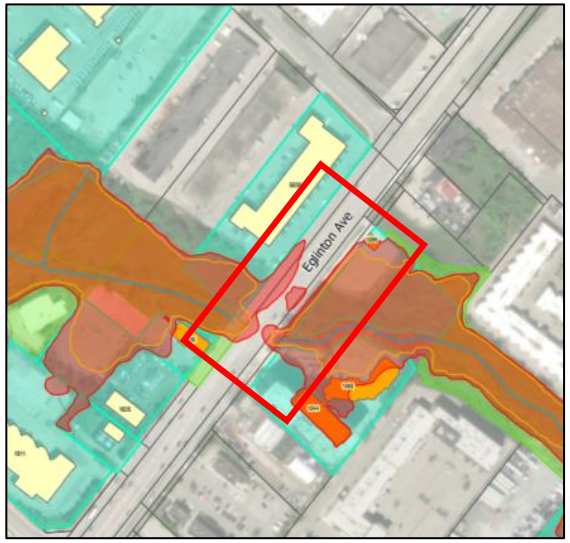
- These manipulations are consistent across the watershed
- The Tyndall seniors home on Eglington Avenue was developed at approximately the same time as surrounding area
- This property is currently under redevelopment

Channel Conditions in 1966

Channel Conditions in 1985

Permanent Flood Remediation Alternatives

- Upon review of the existing flooding extents, the following alterations will be investigated further:
  1. Modifications to the Eglington Avenue Crossing and upstream / downstream channel
  2. Channel widening and floodplain regrading between Eastgate Parkway and Rathburn Road
  3. Modifications to the Burnhamthorpe Road Crossing and upstream / downstream channel



Schedule and Deliverables

- Estimated Duration of Phase 2 is approximately 8-9 months, with targeted completion by the end of March 2026
    1. Temporary Floodwall - Completed
    2. Assessment of Potential New EOP Flood Control Opportunities - Ongoing
    3. Permanent Flood Remediation Alternatives - Ongoing
    4. Hybrid Model Scenarios
    5. Cost Estimates and Cost Benefit Analysis
    6. Conceptual Designs and Property Impact Plans
    7. Phase 2 Reporting
    8. Meetings & Conference Calls – As required
- Any further resident info session would be closer to mid-2026 (but is still pending)

Questions?

- Questions and Comments?