Welcome

Lower Simcoe Underpass Flood Protection Study

Municipal Class Environmental Assessment (Schedule B)

Online Public Consultation Event
December 10, 2020

City of Toronto - Land Acknowledgement

We acknowledge the land we are meeting on is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples and is now home to many diverse First Nations, Inuit and Métis peoples.

We also acknowledge that Toronto is covered by Treaty 13 with the Mississaugas of the Credit.

Outline

1. Purpose of the Public Consultation Event (PCE)
2. Study Purpose, Objectives & Timeline
3. The Municipal Class EA Process
4. Study Area
5. Background Information
6. The Problem & Opportunity
7. Alternatives and Evaluation of Alternatives
8. Screening of Potential Alternative Solutions
9. Detailed Evaluation
10. Next Steps

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Purpose of the PCE

- To present the alternative solutions for the Lower Simcoe Underpass Flood Protection Study.
- To show alternative solutions and the recommended alternative.
- To provide an opportunity for public to know the causes of flooding, review the solution and provide input and comments.

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Study Purpose

To reduce flooding at the Lower Simcoe Street Underpass (the Underpass) caused due to storm sewer and combined sewer surcharging and to improve the stormwater drainage system in the Study Area.

Study Objectives

Objectives:

- To provide protection for a 25-year storm for the Underpass as per the City design criteria;
- To find a solution to mitigate flooding that has the least impact on social, environmental, technical and economic conditions;
- To improve public health and safety in the area;
- To address stormwater servicing constraints specific to the Underpass; and,
- To build resilience to extreme weather events in the future.

Study Timeline

Project Timeline:

2018

WSP completed a report for the “Feasibility Study for the Relocation of an existing CSO siphon and Underpass Flood Protection in the Lower Simcoe Street and Lakeshore Boulevard West.”

In February 2019, WSP was retained by the City of Toronto (the City) for the completion of a Municipal Class EA (Schedule B).

2019

In May 2019, a Notice of Study Commencement was issued. One-on-one stakeholder meetings were held with businesses, City staff, agencies, and interested parties.

2020

The City completed consultation of key Stakeholders.

Individual invitations for a meeting were made to Indigenous Community Leaders.

Public Consultation Event (PCE).

On-going Stakeholder Consultation

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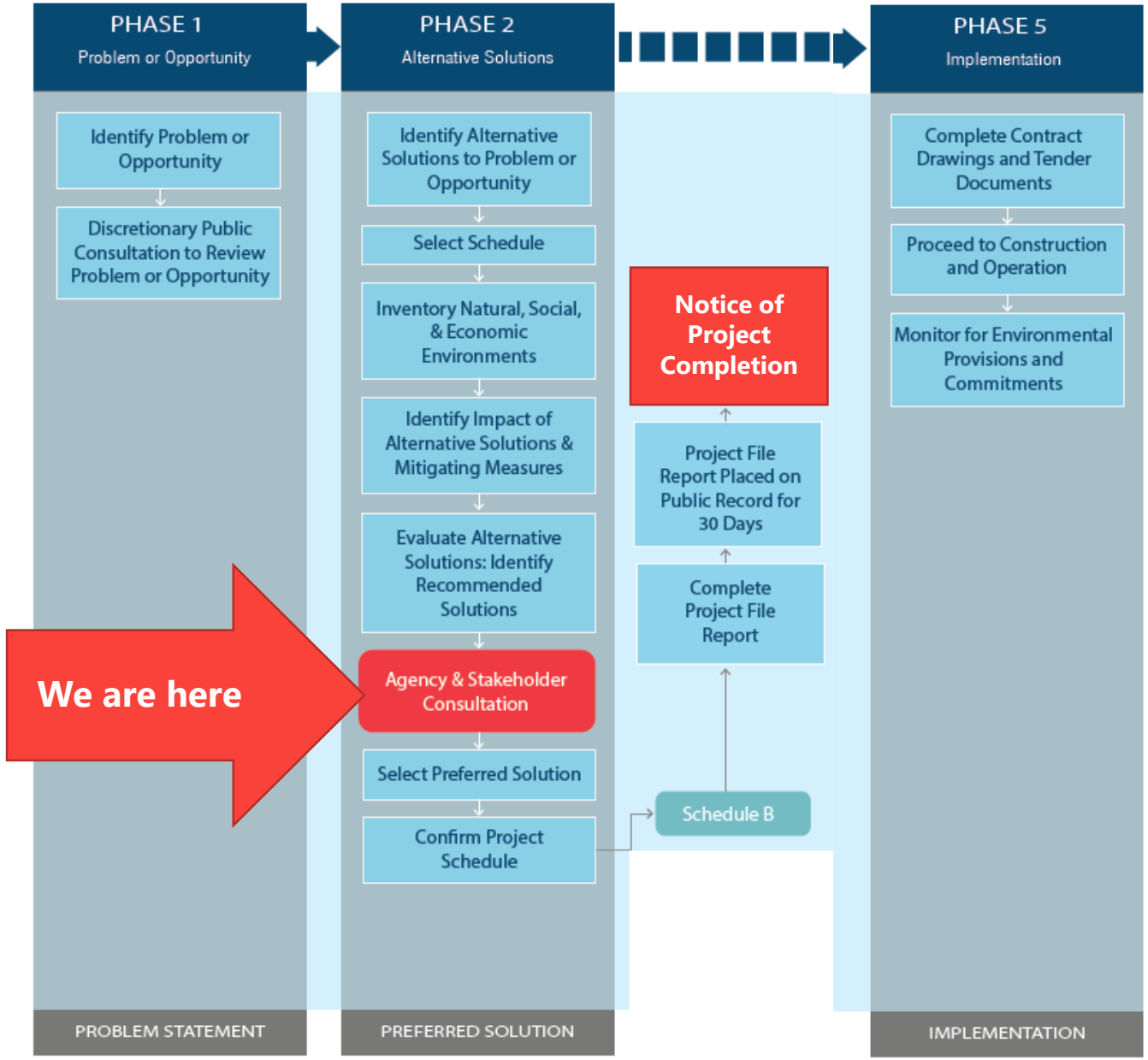
The Municipal Class EA Process



- Phase 2 marks the completion of the Schedule B, Environmental Assessment Study.
- The City of Toronto release a Notice of Project Completion before proceeding with any construction (Phase 5).
- The Provincial Emergency COVID-19 Act has resulted in modifications to Phase 2 of the EA process which has been reflected in this diagram.
- The City of Toronto has maintained ongoing consultation with indigenous communities throughout all stages of the study.

Adapted from Municipal Engineers Association (MEA), Municipal Class 15))00 (as amended in 2007, 2011 and 2015)

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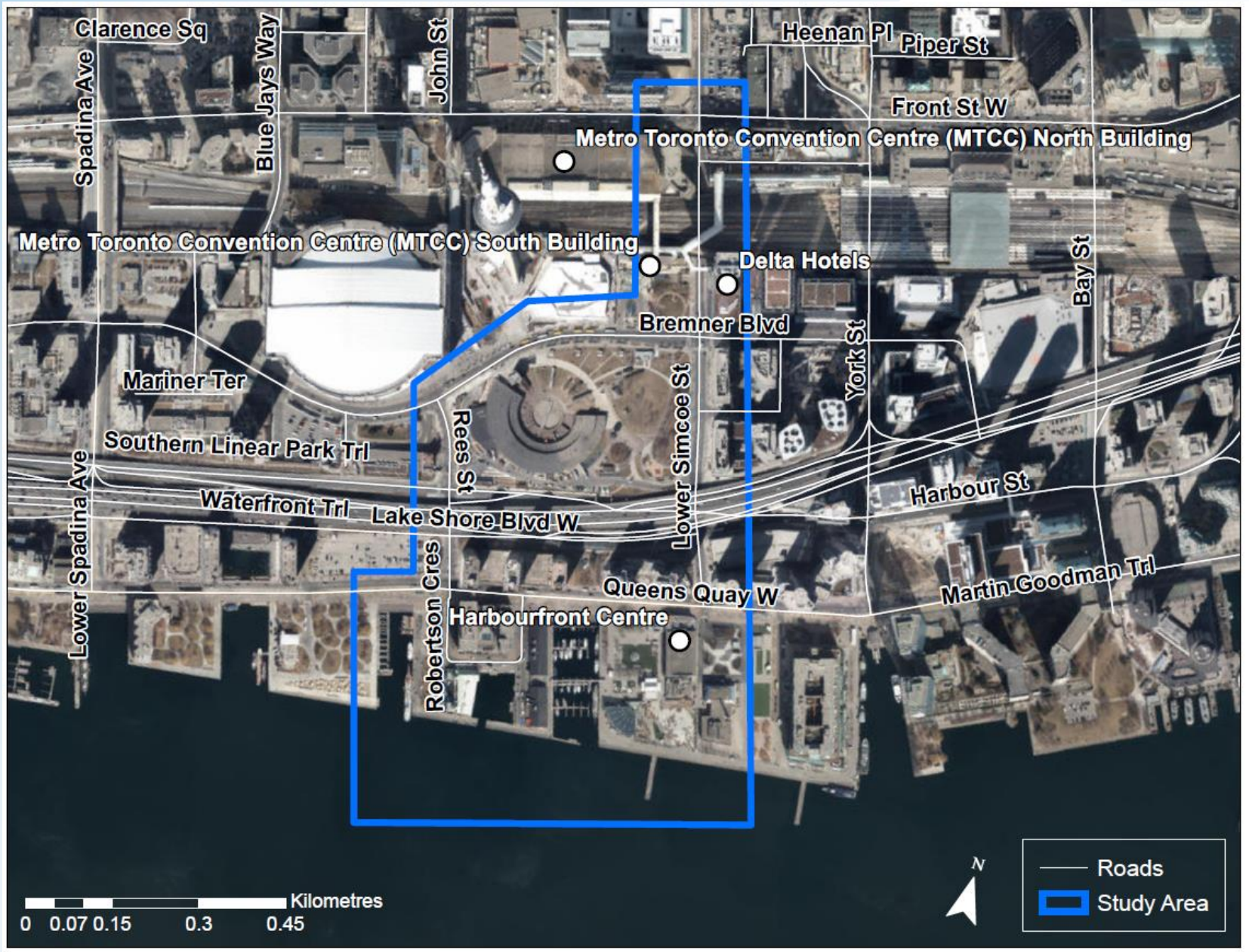
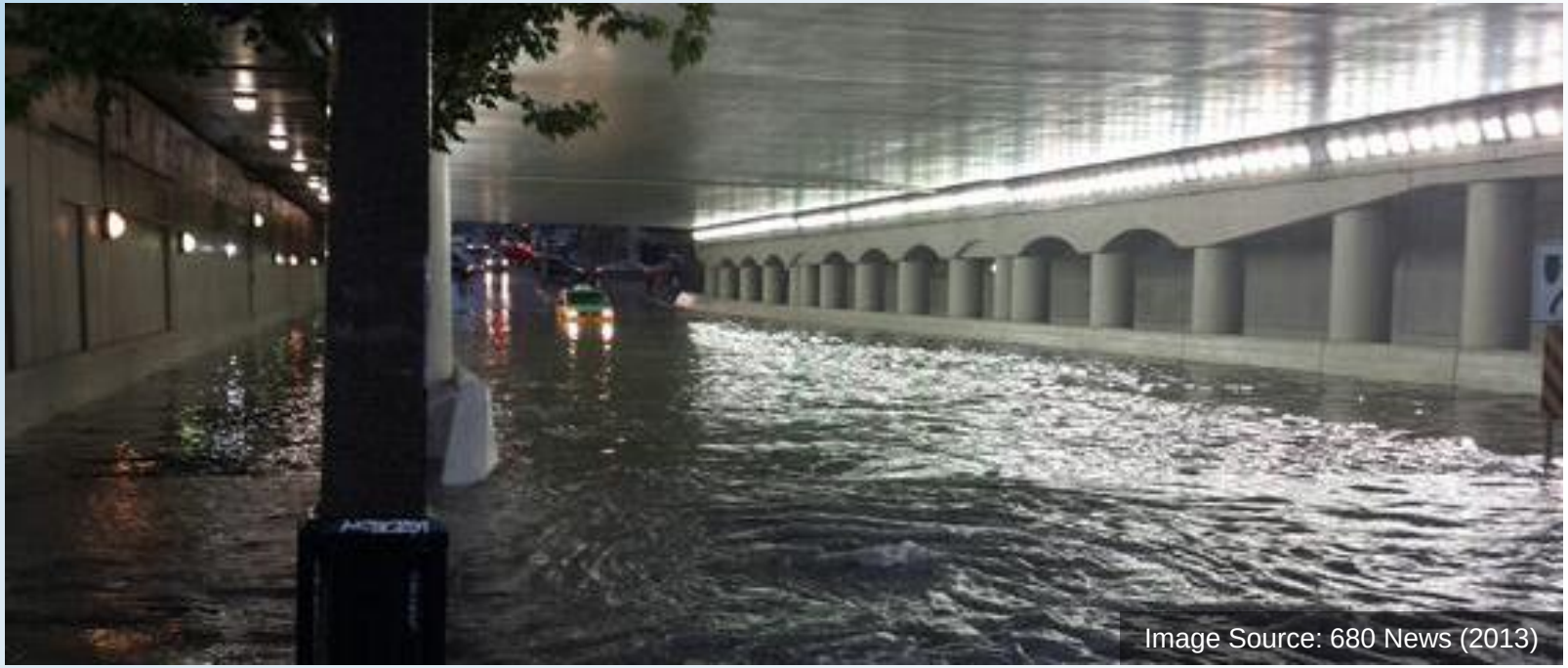
Study Area



Note that this Study Area is within the Basement Flooding Protection Program (Area 62) and Don River and Central Waterfront Wet Weather Flow System Area.

Background Information



- Since 2009, the Underpass area has experienced recurring flooding issues.
- Severe rainfall events on July 8, 2013 and August 7, 2018.
- Negative impacts to traffic, pedestrians and surrounding area.

Background Information

Current Flooding

Problem: The Underpass is a low point relatively to the surrounding areas and because of the three mechanisms listed below the excess **surface water ponding** has no way to escape the Underpass.

There are three (3) ongoing events that contribute to flooding in the Underpass.

1. Low elevation of the Underpass + high Lake Ontario water levels lead to **surcharge** of storm sewers in the underpass.
2. When storm sewers surge, **backflow** of stormwater from the sewer enters the Underpass via the sewer manhole lids.
3. Catch basins do not have the ability to drain surface runoff when the sewer is at capacity. This results in **surface water ponding**.

Background Information

The City's Efforts to Date

- City installed check valves at catch basins in Underpass.
- Sealed combined sewer maintenance holes to prevent over flow.
- Operational adjustments.

Permanent and more effective solutions are required and are investigated in the EA Study.

Background Information

Related City of Toronto Initiatives

Current studies, investigations and implementation projects in this area that will work in conjunction with the Lower Simcoe initiatives:

- Basement Flooding Remediation and Water Quality Improvement Study – Area 62 (Waterfront) (2019 – ongoing).
- Scott Street Pumping Station Inflow and Infiltration Investigation (2018 – ongoing).
- Waterfront Sanitary Servicing Master Plan and Update (2018).
- Don River and Central Waterfront connected projects.

The Problem Opportunity Statement

“The purpose of the Environmental Assessment is to identify a preferred solution for mitigating the flooding in the Lower Simcoe Underpass, while managing Combined Sewer Overflows and improving the stormwater infrastructure in the area.”

Evaluation of Alternative Solutions

Screen the Alternatives

Screen alternatives for feasibility and ability to meet requirements of Problem Opportunity Statement. Eliminate infeasible or non-compliant alternatives.

Compare & Evaluate

Compare and evaluate alternative solutions using criteria which include technical considerations, as well as our natural, social, cultural and economic environment.

Public Review Process

Identify Preliminary Preferred Alternative / Solution for public and stakeholder review.

Completion of the EA Process

Identify Preferred Alternative / Solution and record the decision making process in a Project File Report for 30-day review period.

Screening of Potential Alternative Solutions

Preliminary Alternative Solutions	Meets Screening Criteria
1. Retrofit the existing Simcoe Street Sanitary Sewage Pumping Station (SSPS) with two new pumps.	✗
2. Build a new dedicated stormwater pumping station	✓
3. Build a new gravity sewer	✗
4. Low Impact Development (LID)	✗
5. Underground storage tank	✗
6. Relocation of the CSO Siphon	✓
7. Do nothing	✗

Baseline Criteria used for Screening:

1. Feasibly reduce / mitigate flooding up to the 25-year storm event?
2. Regulatory constraints?
3. Can the alternative be feasibly constructed?

Short-List of Potential Alternative Solutions

After screening, we know that:

1) A new stormwater pumping station is required.
2) Further consideration should be given to the impact of the CSO siphon relocation.

Overview of Alternative Solutions

- Six alternatives were developed from the selected preliminary solution.
- Alternatives A - F were variations of: construction a new stormwater pumping station, relocation of the CSO siphon, or replacing the CSO.
- Through hydraulic analysis, the Project Team identified two alternatives (C and E) that could solve the problem.

Alternative A

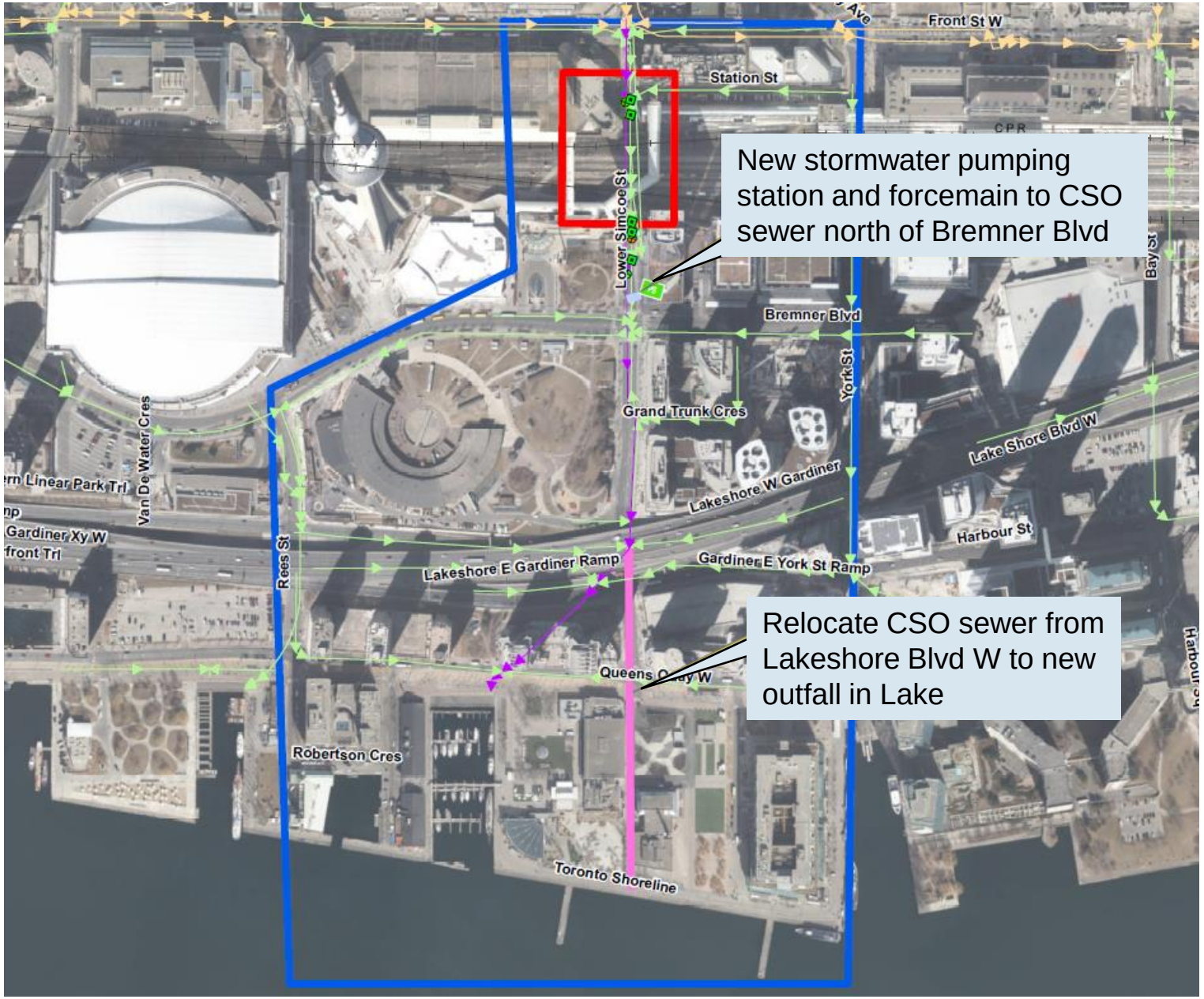
Alternative B

→ **Alternative C**

Alternative D

→ **Alternative E**

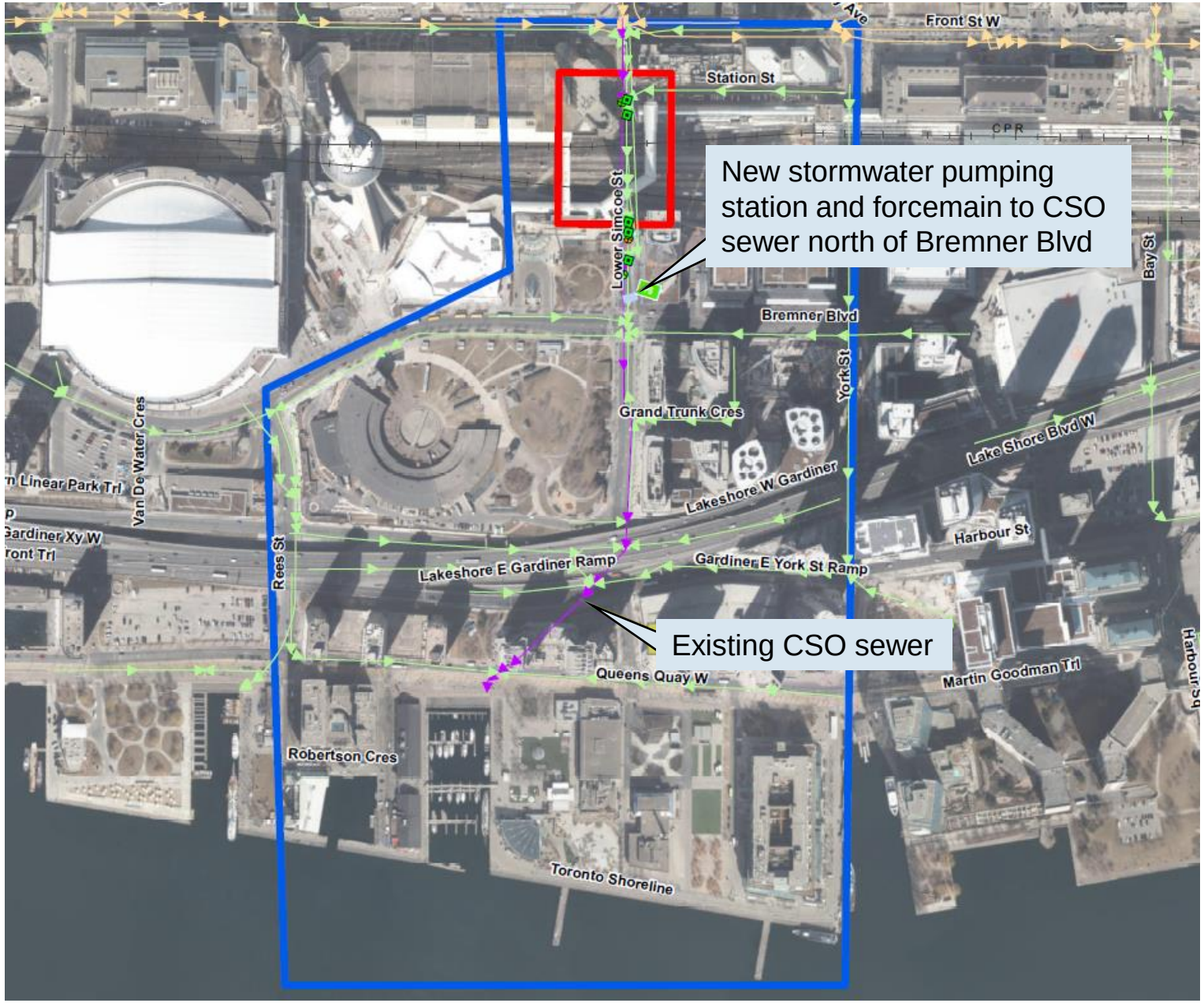
Alternative F



Alternative C:

- New stormwater pumping station with a forcemain connected to CSO Sewer.
- Relocate CSO sewer from Lakeshore Blvd W to a new outfall in Lake to improve its capacity and hydraulic performance.

Overview of Alternative Solutions: Alternative C



Alternative E:

- New stormwater pumping station with a forcemain connected to CSO sewer.
- No improvements to the CSO capacity. Future Inner Harbour West Tunnel will intercept some CSO flow, thus reducing the flow in the CSO. This will help improve the CSO hydraulic performance.

Overview of Alternative Solutions: Alternative E

Detailed Evaluation

Criteria

Technical

- Hydraulic Performance
- Hydraulic Impact Outside Study Area
- Constructability
- Impact to Existing Utilities
- Energy Efficiency (Climate Change)

Social & Cultural

- Impact to Cultural Heritage and Archaeological Resources
- Land Use and Regulatory Compliance
- Noise from the proposed Storm Pumping Station (SPS)
- Construction Impacts
- Local Businesses

Natural Environment

- Potential Impact to Fish Habitat
- Increased Storm Conditions (Climate Change)
- Impact to Species at Risk
- Tree Removal

Economic

- Land Acquisition Cost
- Capital Costs
- Life Cycle (Maintenance) Cost

Detailed Evaluation

Alternative C & Alternative E

Evaluation Criteria	Alternative C	Alternative E
Natural Environment Considerations		
Potential Impact to Fish Habitat		
Increased Storm Conditions (Climate Change)		
Impact to Species at Risk		
Tree Removal		
Social and Cultural Considerations		
Impact to Cultural Heritage Resources		
Impact to Archaeological Resources		
Land Use and Regulatory Compliance		
Noise from Proposed Storm Pumping Station		
Construction (Traffic / Noise / Dust)		
Local Businesses		
Impact to Recreation (Terrestrial or Aquatic)		
Economic Considerations		
Land Acquisition Cost		
Capital Cost		
Life Cycle (Maintenance) Costs		
Technical Considerations		
Hydraulic Performance		
Hydraulic Impact Outside Study Area		
Constructability		
Impact to Existing Utilities		
Energy Efficiency (Climate Change)		
RANKING		**Preferred**

Potential for Greater Impact

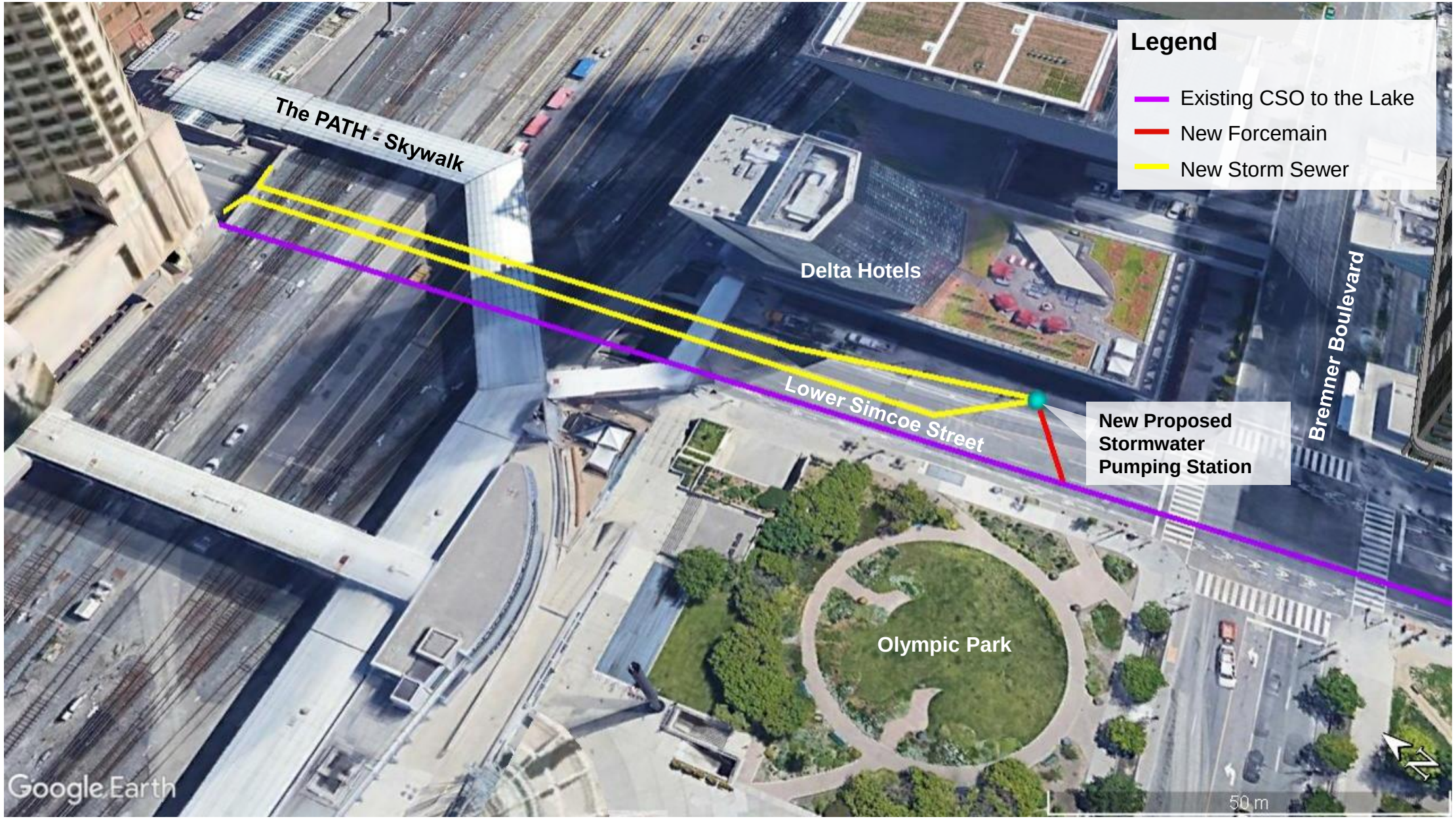
Less Potential Impact

Recommended Solution

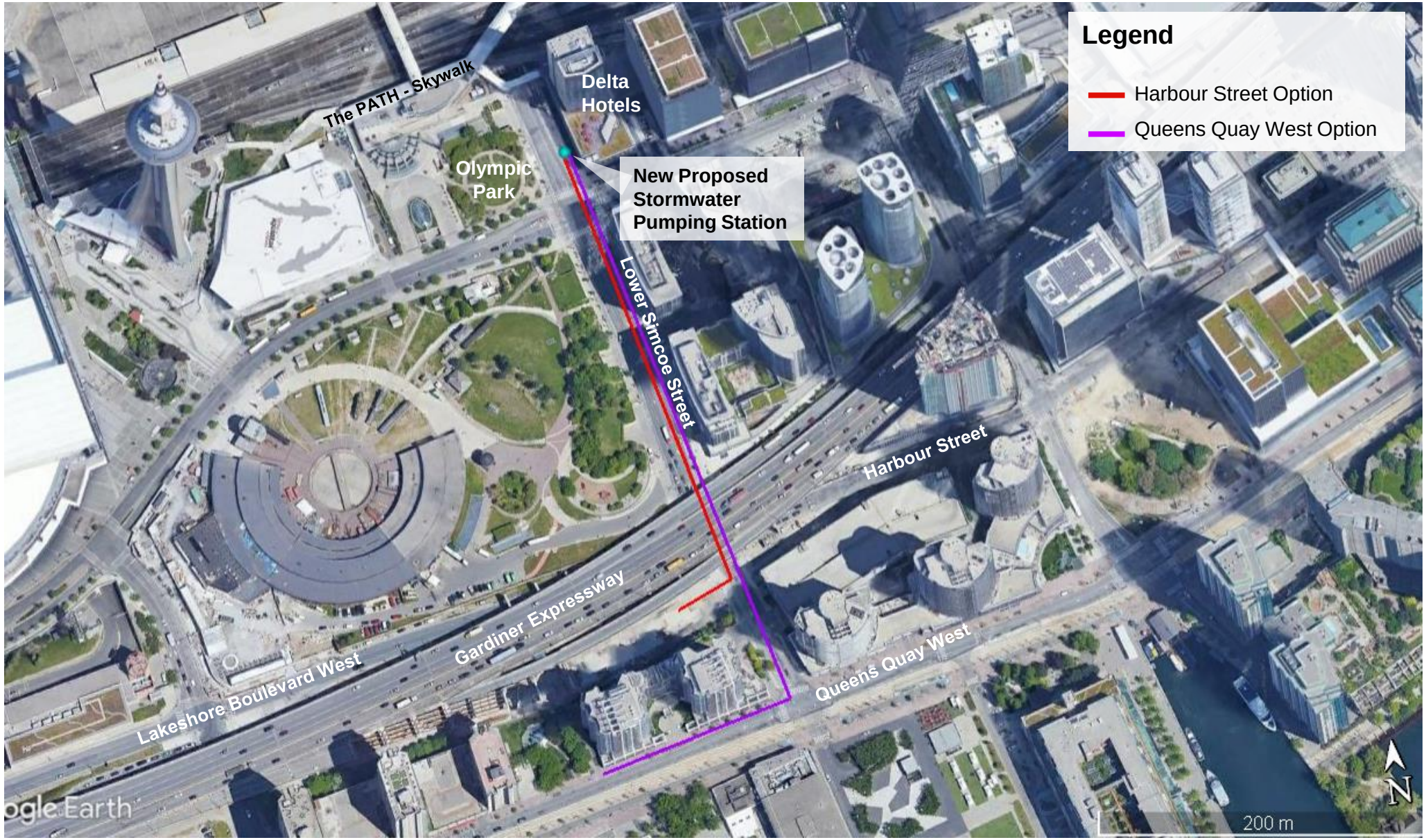
Alternative E – Recommended Solution

- **Alternative E** is identified as being the **preferred alternative solution**.
- Construction of a new stormwater pumping station with a firm capacity of 450 L/s.
- New drainage system in the Underpass to convey surface runoff to the Storm PS.
- New Storm Forcemain from the Storm PS is directed to the Combined Sewer Overflow (CSO) on Lower Simcoe Street just north of Bremner Boulevard.

Example of Pre-Packaged Pumping Station
Image Source: Barski Industries Ltd.



Proposed Preferred Alternative E – Drainage Concept Plan



Proposed Preferred Alternative E – Forcemain Discharge Location Alternatives for Further Investigation (Detail Design Phase)

Next Steps

- Collection and review of public input / feedback on the PCE preferred alternative.
- **Winter / Spring 2021:** Issuance of Notice of Completion and Project File Report (submit for 30-day comment period).

Contact Information

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