Reimagining Climate Resilience: Transforming Harris Park with Innovation and Natural Design

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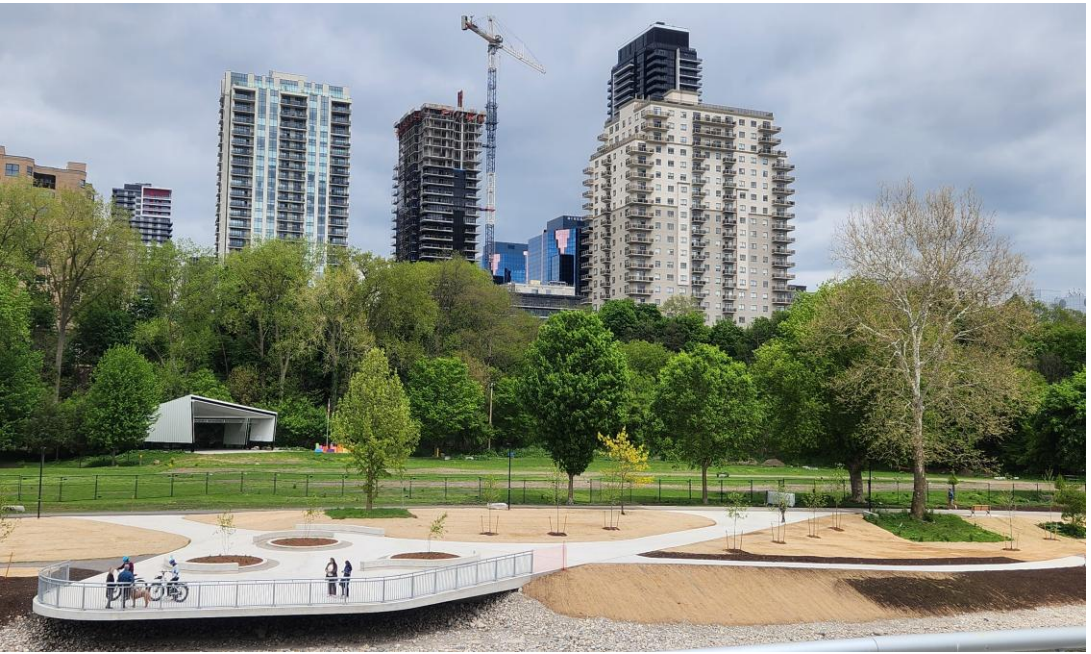
Friday, November 14, 2025

Outline



- Introduction/ Background
- Project Context
- Engineering Design
- Park Design Considerations
- Construction Challenges
- Finished Product
- Other City Projects
- Questions

London's Stormwater Engineering Division

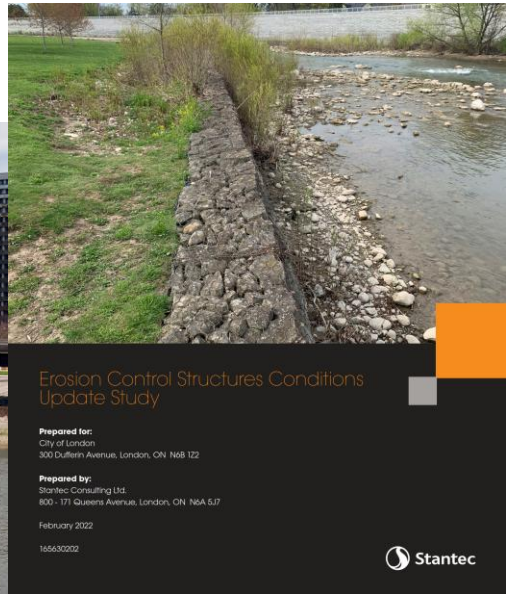
- Team of 20!
  - Engineers, EIT, technologists, hydrogeologist and ecologist
- More frequent and more intense rain events
  - February 2018
  - January 2019
  - April 2024
  - July 2024
- Partnership with UTRCA to manage the City's flood and erosion control structures (MOU)

Forks of the Thames

- Hydrology – confluence of the north and south branch
- Thames Valley Parkway
- Labatt Park
- Harris Park
- Canada Life Place
- Floodplain
  - 1900 structures
  - Flow controlled by Fanshawe Dam

Background Studies

- 2019 One River Environmental Assessment and River Management Study
  - Priority location for improved river access
- 2021 Erosion Control Structure Assessment Report
  - 12 ECSs around the Thames River
  - Priority location due to failure



Harris Park Erosion Control Structure

- Located between Blackfriars Bridge and Queens Street Bridge
- 480m ESC (~25 years old)
- Gabion baskets (2-3 tier), armourstone caps, rip-rap toe protection
  - Corrosion of wire on lower tier
  - Slumping at top of gabions
  - Erosion along gabion and park interface
- Existing boat launch and fishing platform non-AODA and dated
- Sediment accumulation along the toe of the bank

Detailed Design Goals

1. To transform a deteriorated river edge into a **resilient, inclusive and ecologically vibrant civic space** using **nature-based solutions** and restoration of **riparian habitat**.

2. Integrate landscape, engineering and public use within the active floodplain.

RFP process - July 2022
Project award - September 2022 to Matrix Solutions Inc., now Montrose Environmental

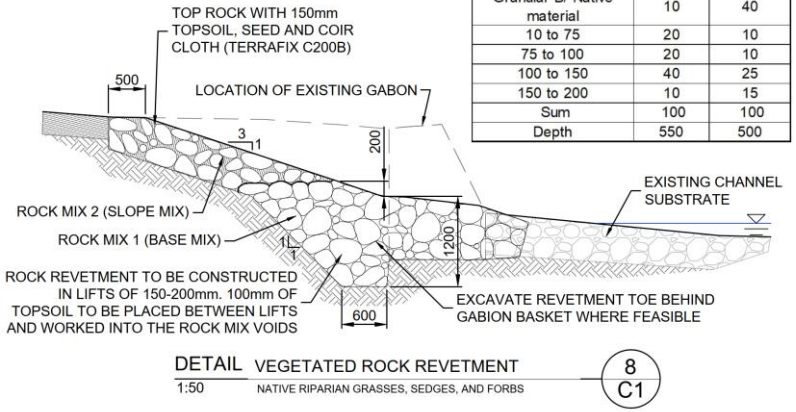
Key Studies and Considerations

- Geotechnical Investigation
  - Determine stable long-term slope
- Hydrogeology Analysis
  - Determine groundwater elevations and quality
- 2D Hydraulic Modelling & Fluvial Geomorphology Assessment
  - Determine future scour potential
  - Assess shear stresses to support nature-based solutions
- Archaeological Assessment (1-2)
- Scoped EIS
- Limit in-water works
- Identify opportunities for safe river access

Proposed ECS Design

- Sloped vegetated stone revetment
  - Low shear stresses allow for softer, nature-based solution
  - Stable slope of 3H:1V can be achieved and safe for public access
  - Revetment and parkland planted with native riparian seed mix for added erosion protection
  - Sloped revetment allows for widening of channel to reduce tractive forces
- Armourstone reinforcement along boat launch

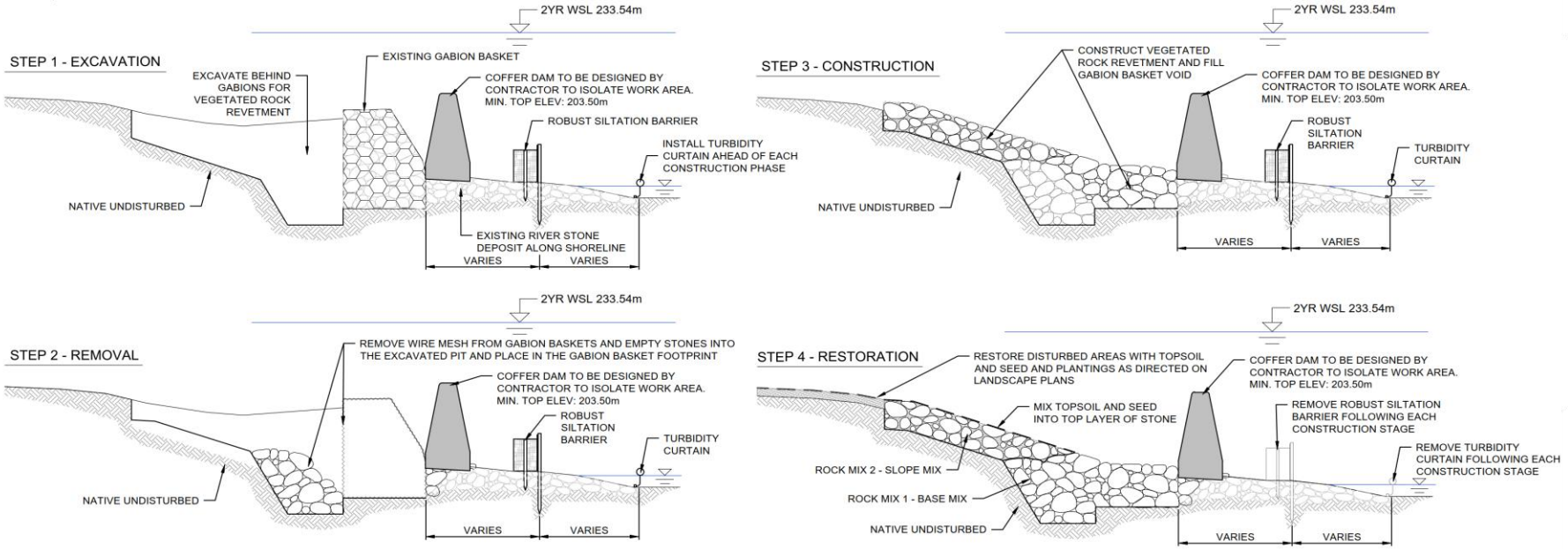
Recommended B-Axis Size of Substrate (mm)	Mix 1 Base Mix Portion by Volume (%)	Mix 2 Slope Mix Portion by Volume (%)
Granular B/ Native material	10	40
10 to 75	20	10
75 to 100	20	10
100 to 150	40	25
150 to 200	10	15
Sum	100	100
Depth	550	500



Rock revetment → 150mm topsoil → erosion control blanket → riparian vegetation

Construction Plan – Reinforced Vegetated Revetment

- Reuse of existing stones within gabion baskets
- Material reuse to reduce GHG emissions

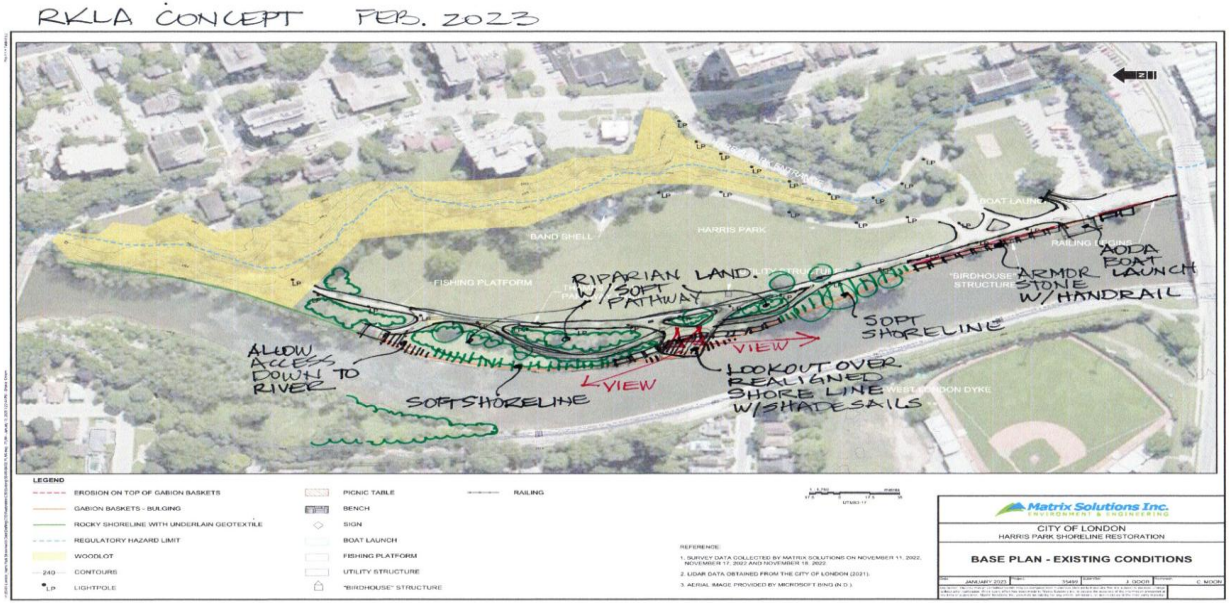


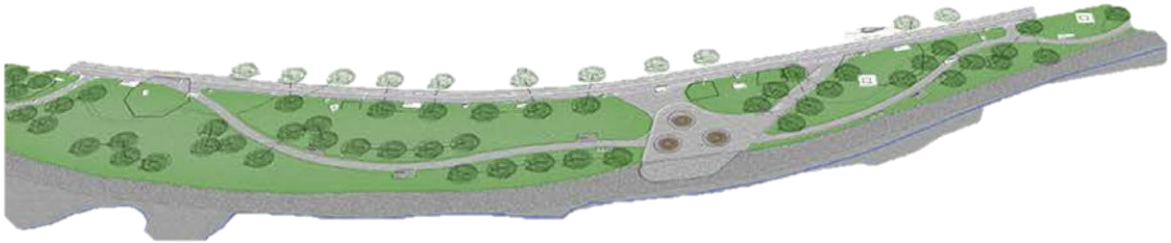
DETAIL TYPICAL VEGETATED ROCK REVETMENT CONSTRUCTION STEPS
1:50

6
G2

Park Upgrade Integrations

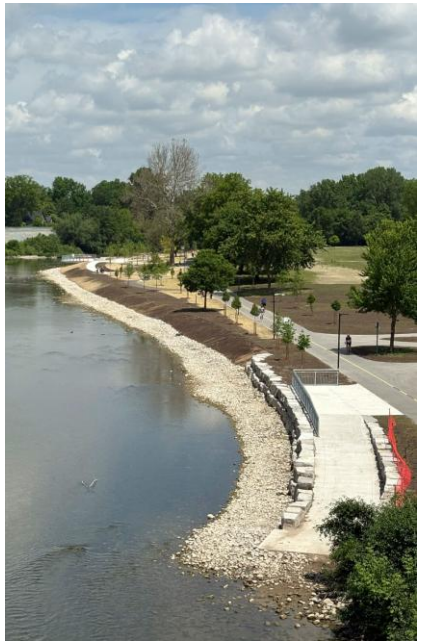
- AODA boat launch
- Accessible fishing dock
- Restoration of the shoreline with riparian vegetation
- Cantilevered concrete lookout
- Pathways down to the river
- Benches, planters, signage





Park Upgrades

Cantilevered Lookout

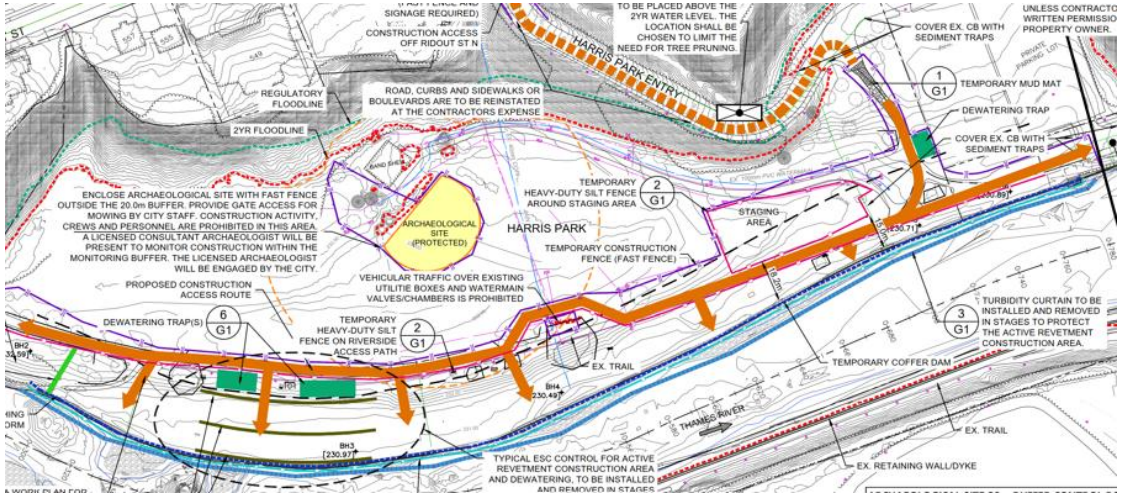


AODA Boat Launch

Fishing Dock

Permits and Construction Windows

- Permits
  - UTRCA – Section 28
  - DFO – Request for Review/ Letter of Advice
- Construction
  - Warm water in-water works: July 15 – March 31
  - Breeding bird window: April 1 – August 31
  - Began: July 2024
  - Completed: June 2025*



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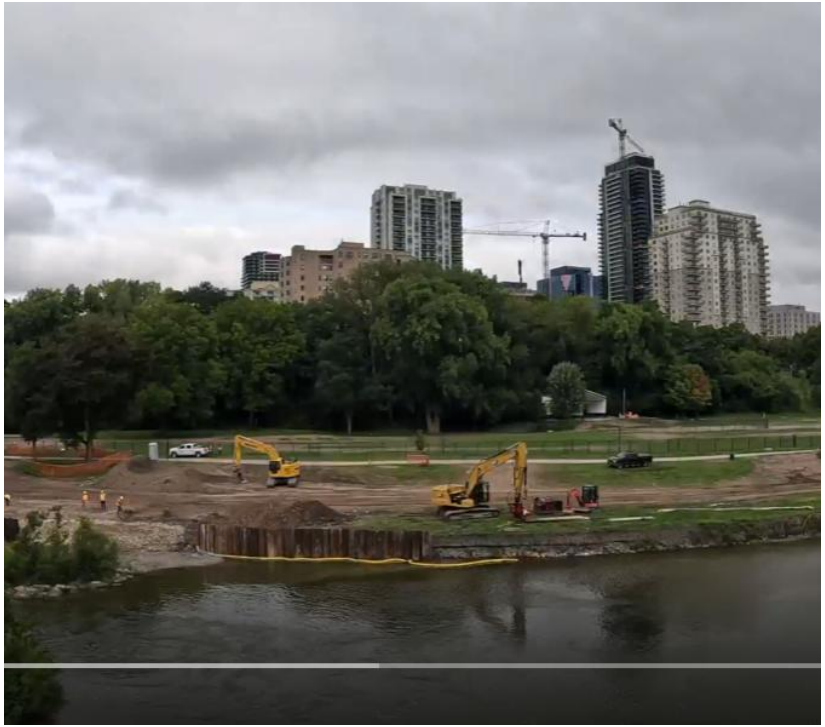
Project Timelapse



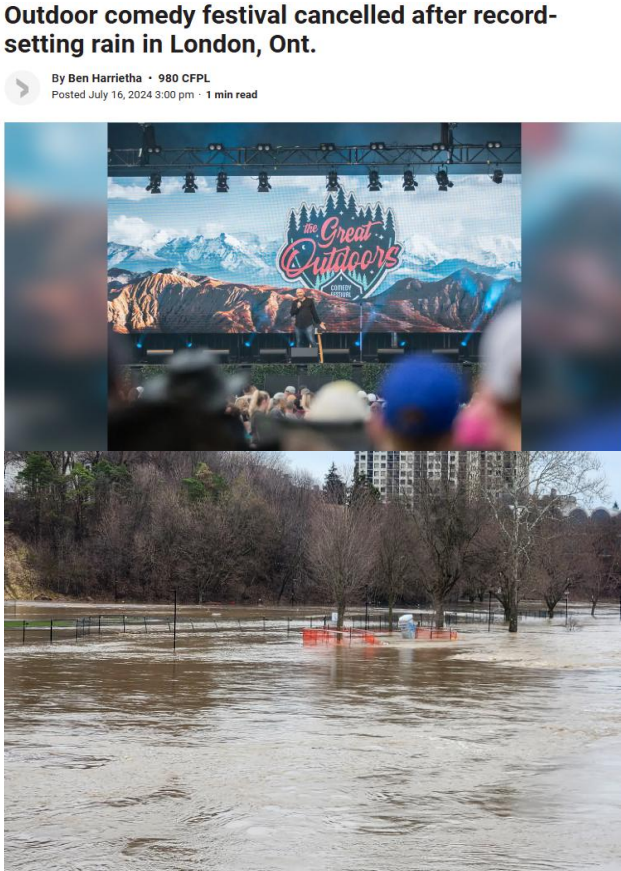
- Project Videography – 1080p
  - Live Video Stream
  - Time-Lapse Video
  - Drone Video Footage
- Entire duration of the project
  - Compiled and submitted monthly
- 3 locations along West London Dyke
- Contractor privacy concerns

Construction Award:

Ro-Buck Contracting Ltd. $3.6M

Construction Challenges

- Parkland Disruption
  - Rock the Park
  - Great Canadian Outdoor Comedy Festival
  - City-wide races
- TVP disruption
  - 5000 users per day
- Trees
  - Large, unhealthy, non-native
  - Adjust TVP alignment
- Floodplain! Experienced a 100-year flood event during construction
- Public misconceptions of ECSs
- Geese + People ≠ Grass



Before and After Photos

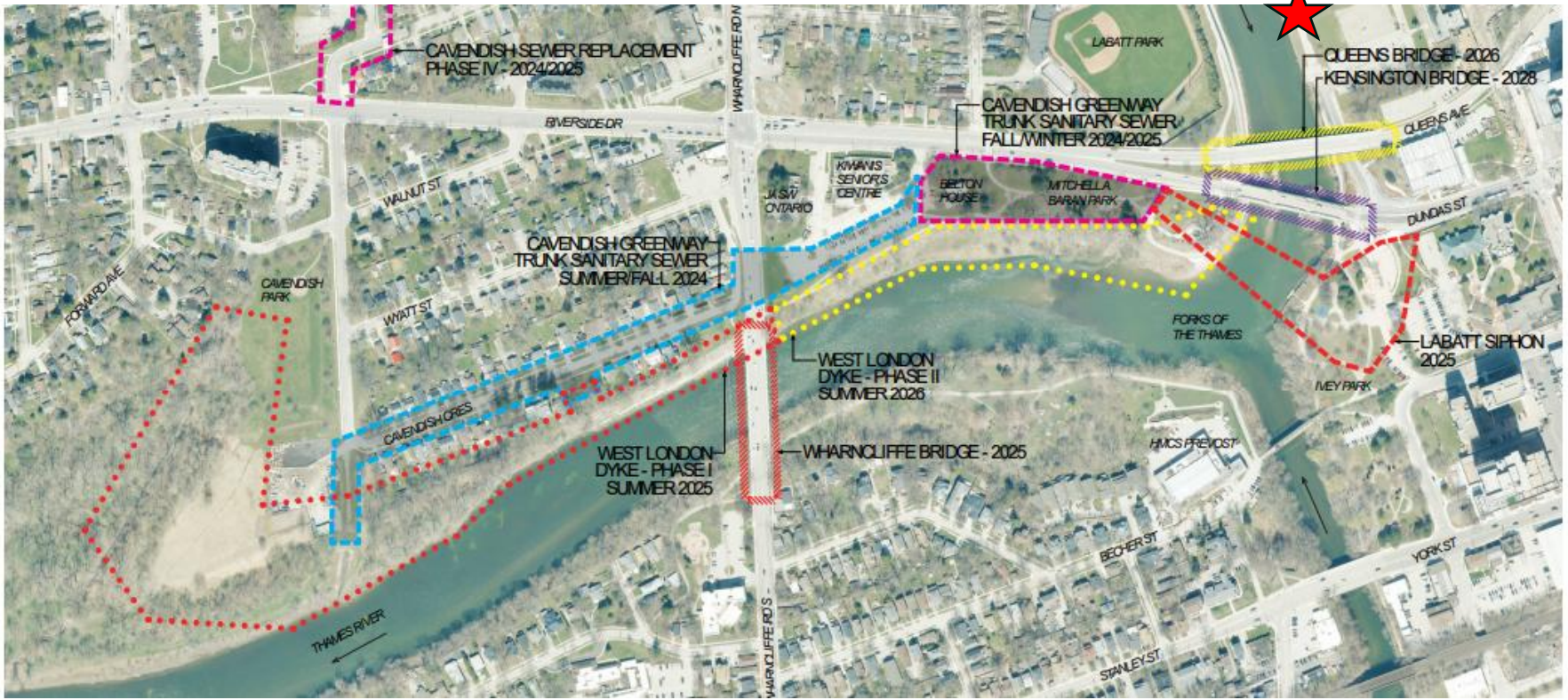
South

BEFORE

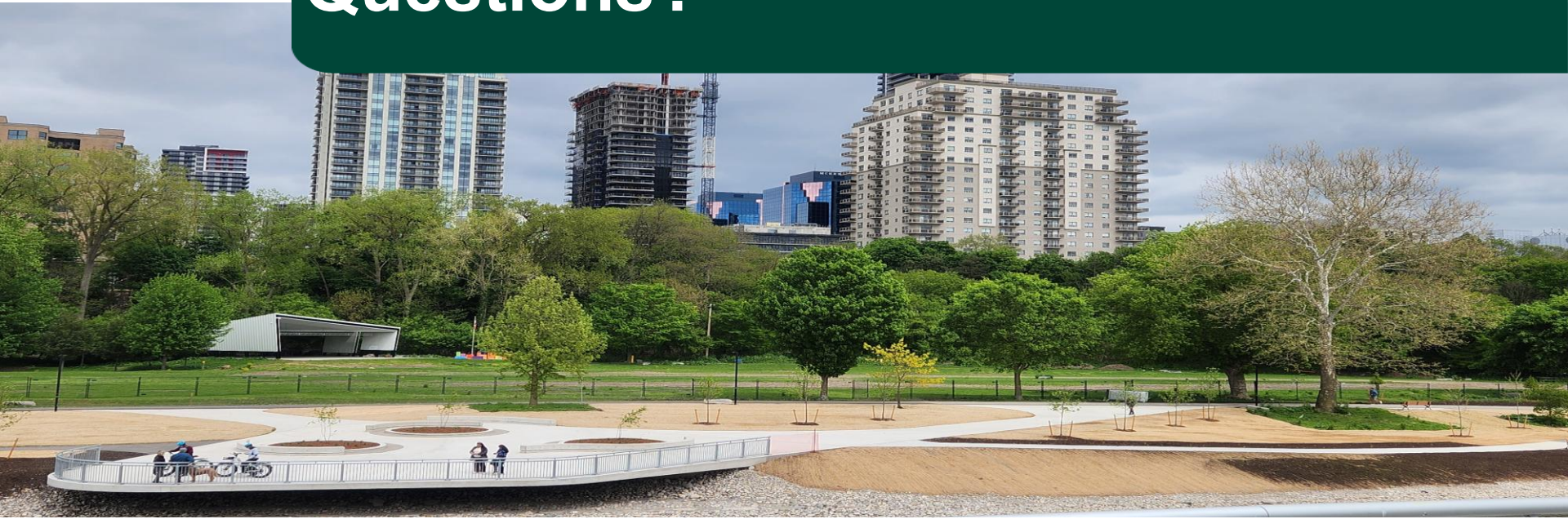
North

AFTER

Other Forks of the Thames Upgrades



Questions?



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Draft Submission Deadlines

- Authors must submit PowerPoint presentations by **Friday, October 3, 2025**.

- Presentations must be uploaded to: https://municipalengineers.sharepoint.com/:f:/s/MEAConferencePresentations/Eoqs0Ge3KLBDhFYYmDLJf4YBP9u48H5c_4MPhmJPo3bM1g