



# Kensington Bridge Municipal Class Environmental Assessment



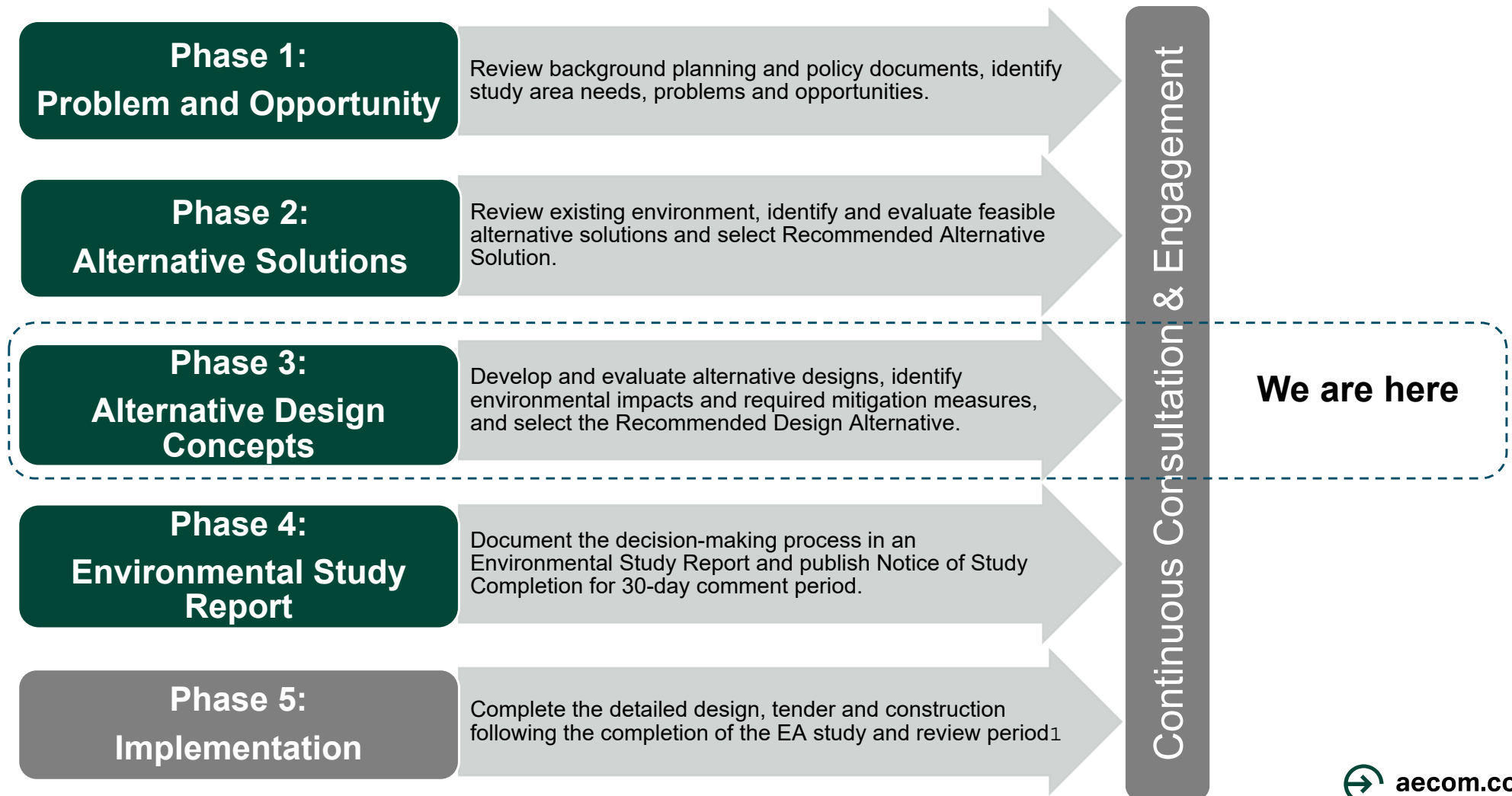
**Community Advisory Committee on Planning**

February 8, 2022, from 5-6 p.m.



# Municipal Class EA Study Process

The Class EA study will be completed in accordance with the **Ontario Environmental Assessment Act** and will fulfill the requirements of the Municipal Class EA process for **Schedule C** projects. At the end of the EA process, an **Environmental Study Report** will be prepared for public review and comment to document the planning process followed.





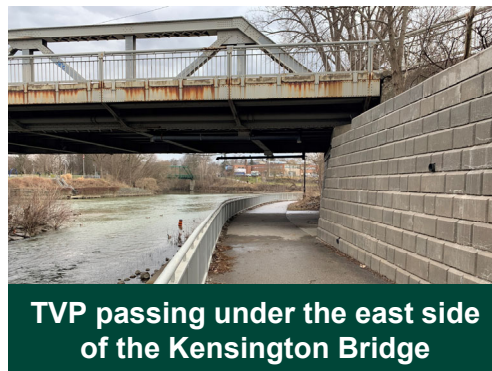
# Study Area Features / Existing Conditions

## Bridge Description

- Kensington Bridge was constructed in 1930 and is 3-span steel modified Warren pony-truss structure.
- The bridge deck currently has two 3.0 m wide eastbound travel lanes.
- The Annual Average Daily Traffic count at the bridge is 9,500 vehicles per day.
- Active transportation accommodations include sidewalks on both sides of the bridge and bidirectional cycle track on the south side of the bridge (2020).
- The Thames Valley Parkway (TVP) passes below the east and west spans adjacent to the Thames River. The daily users on the TVP averages about 1200 users per day with over 2500 users per day during summer periods.



Thames Valley Parkway (TVP)



TVP passing under the east side of the Kensington Bridge



Existing two way cycle track on Kensington Bridge



Existing pedestrian walkway on Kensington Bridge

# Study Area Features / Existing Conditions

## Bridge Condition

- Previous major rehabilitation includes deck replacement (1960), construction of an exposed concrete overlay (1985), and structural steel recoating (1996). Kensington Bridge is 92 years old and has ongoing maintenance issues. Maintenance of the bridge since 2004 has included abutment refacing, sidewalk and deck repairs, bearing seat repairs, and replacement of the expansion joints.
- Exposed concrete deck is in fair to poor condition with narrow to wide cracking, concrete delaminations and previous patching. Concrete repairs and lane closures are required annually to address issues.
- Structural steel is in fair condition with localized poor conditions below the deck at the abutments and piers.
- Bridge bearings are in fair to poor condition with light to severe corrosion, flaking and pack rust.



Kensington Bridge – South Elevation



Localized corrosion on bridge truss



Kensington Bridge Soffit



# Study Area Features / Existing Conditions

## Cultural Heritage:

- A Cultural Heritage Evaluation Report was completed in 2018 and identified the bridge as having significant cultural heritage value or interest.
- The bridge acts as a gateway leaving the Blackfriars/Petersville HCD and entering the Downtown HCD.



## Archaeology Assessment Stage 1:

- A Stage 1 Archaeological Assessment is underway to determine the potential for Archaeological Resources.

The Draft Stage 1 Archaeological Assessment has determined that, while the majority of the Kensington Bridge MCEA Study Area was found to no longer retain Archaeological potential, a small parcel of land in the southwest corner continues to retain high potential for the recovery of pre-contact First Nation and 19<sup>th</sup> century Euro-Canadian Archaeological Resources.



# Heritage Summary

*From CHER 2018:*

## **Designation:**

- Kensington Bridge is designated under Part V of the Ontario Heritage Act as part of the Blackfriars/Petersville HCD.

## **John Rostron:**

- Assistant Engineer on Structural Works for the City of London.
- Identified as one of the key individuals for the design and construction.
- Worked on Victoria Bridge on Ridout Street.

## **Heritage Attributes:**

- Location and setting of the bridge at the Forks of the Thames.
- Riveted, modified Warren painted steel pony truss structure including:
  - Three spans of 32m (104 feet) each and overall length of 96m (315 feet).
  - Steel top and bottom chords.
  - Riveted steel lattice details on underside of steel chords.
  - Steel gusset plates.
- Remnants of decorative concrete and limestone end posts at west end of the bridge.
- Decorative lamp posts in centre of the bridge spans.
- Hand railings original to the design of the bridge.

## **Thames River:**

- Thames River is a designated heritage river as part of the Canadian Heritage Rivers System.

# Problem and Opportunity Statement

The Problem and Opportunity Statement is the principal starting point of a MCEA and becomes the central theme and integrating element of the project. It also assists in setting the scope of the project.

## **The Problem:**

- To address ongoing maintenance issues with the bridge and achieve an additional service life objective of 50 years, complete concrete deck replacement, steel recoating and other major repairs are required.
- The Thames Valley Parkway (TVP) passes below the east and west spans of the bridge, with height clearances of 2.5 to 4.0m.
- The Bridge meets the criteria to merit heritage designation under the Ontario Heritage Act (OHA) and is currently designated under Part V of the OHA as part of Blackfriars/Petersville Heritage Conservation District.

# Problem and Opportunity Statement

## The Opportunity:

- To identify the preferred solution for a new or rehabilitated Kensington Bridge through supporting background studies, field investigations and a systematic qualitative evaluation process.
- Gather feedback from public, area stakeholders, agencies and Indigenous Communities allowing the sharing of ideas.
- Coordinate any bridge work with planned improvements to the TVP.



Kensington Bridge



Thames Valley Parkway (TVP) – West Side, North of Kensington Bridge and The Queens Bridge



# Alternative Planning Solutions Presented at PIC #1 (June 2022)

Planning solutions are alternatives that can implement the previously identified opportunities. The Planning Solutions for this project were identified below:

1. **Do Nothing** – This alternative provides a basis to which other alternative planning solutions can be compared. This alternative does not address the Problem and Opportunity Statement and therefore will not be evaluated as a viable option.
2. **Rehabilitate the Existing Structure** - This alternative would involve completing the recommended works to achieve a minimum 50-year service life objective. **Recommended and Carried Forward for further evaluation.**
3. **Replace Structure**
  - a) New Bridge on the existing alignment (remove existing bridge). **Not Recommended for further evaluation.**
  - b) New Bridge on a new alignment to the south. **Not Recommended for further evaluation.**

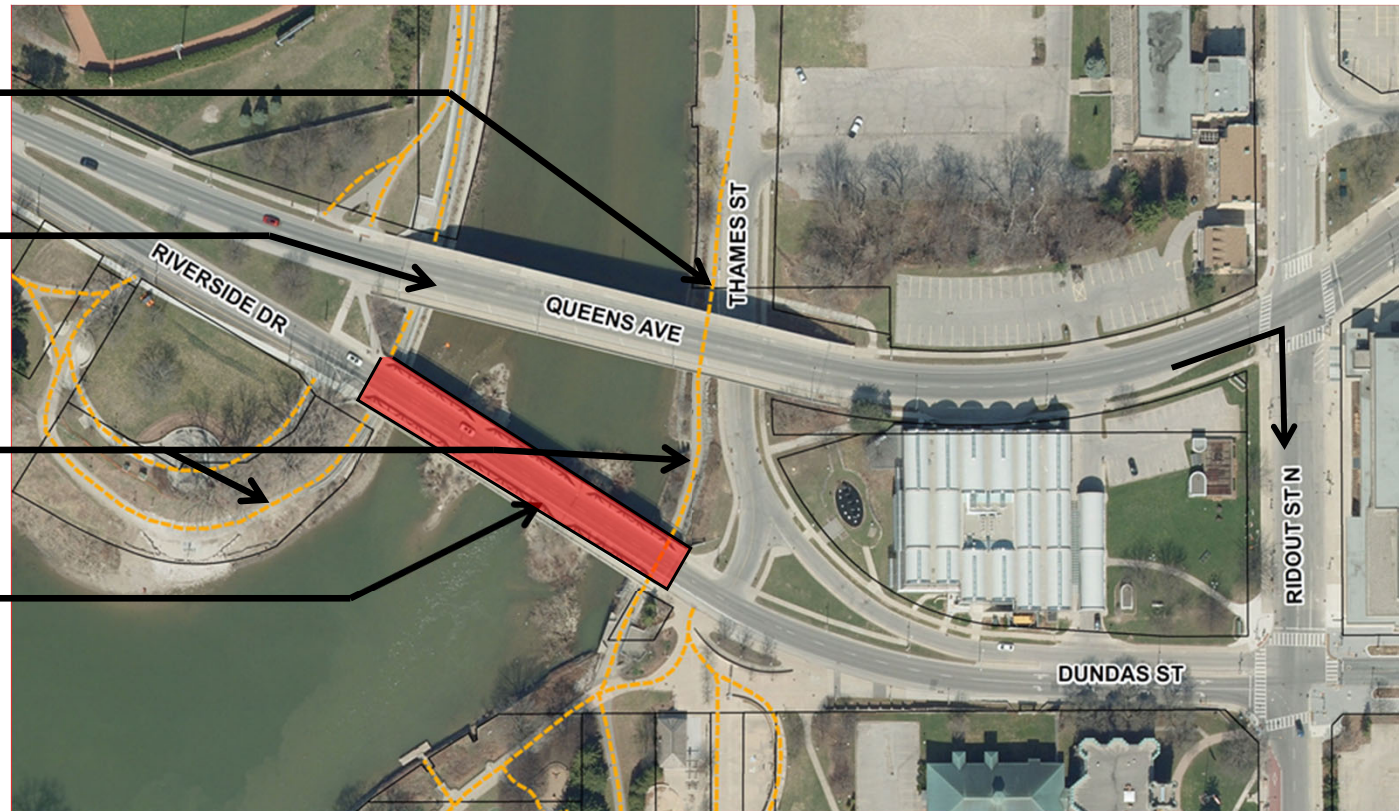
# PIC #1 Recommendation: Rehabilitate the Existing Structure

Coordination with planned replacement of retaining wall.

Traffic detour using The Queens Bridge during Construction.  
(coordination with Rapid Transit required).

TVP Closed during construction  
TVP Detours necessary.

Rehabilitate existing bridge with **necessary repairs to increase service life.**



# Design Alternatives - Summary

## General Bridge Rehabilitation Base Scope – **Required Works**

- Deck replacement.
- Patch repairs.
- Joint elimination.
- Structural steel strengthening and recoating.
- Substructure repairs.
- Replacement of street lighting.
- Coordinate TVP improvements in detailed design.

## Pedestrian Railing System Alternatives

1. Rehabilitate and reuse the existing railing system.
2. Replacement with replicated/sympathetic design approach – **Recommended.**

## Bridge Barrier System Alternative

1. Do Nothing – Structure and traffic are not protected from impact.
2. Concrete parapet wall.
3. Metal tube rail system – **Recommended.**

## Pillar Alternatives

1. Do Nothing – Maintain status quo (original pillars were removed and not part of arrangement).
2. Construct sympathetic Pillars at west end in the general area of the bridge in alignment with the truss (approaches/park).
3. Construct sympathetic Pillars at west end close to the bridge and outside of the sidewalk – **Recommended.**



# Base Rehabilitation Scope Summary

- Remove existing deck and replace with 225 mm thick concrete deck.
- Asphalt pavement and waterproofing (90 mm thick).
- Eliminate deck expansion joints at piers and abutments (to reduce deterioration to substructure elements).
- Complete structural steel repairs to trusses and floor beams and other miscellaneous steel repairs.
- Recoat structural steel including environmental protection.
- Jack bridge and replace bearings at abutments and piers.
- Construct barrier system on the north side of the bridge.
- Concrete patch repairs to substructure including piers (above waterline).
- Remove abandoned duct structures suspended from the bridge.
- incorporate general bridge drainage improvements (deck drains and piping below).
- Construction staging, with consideration for full traffic closure on the bridge.

# Bridge Barrier System Design Rationale and Summary

## Rationale for Tube System

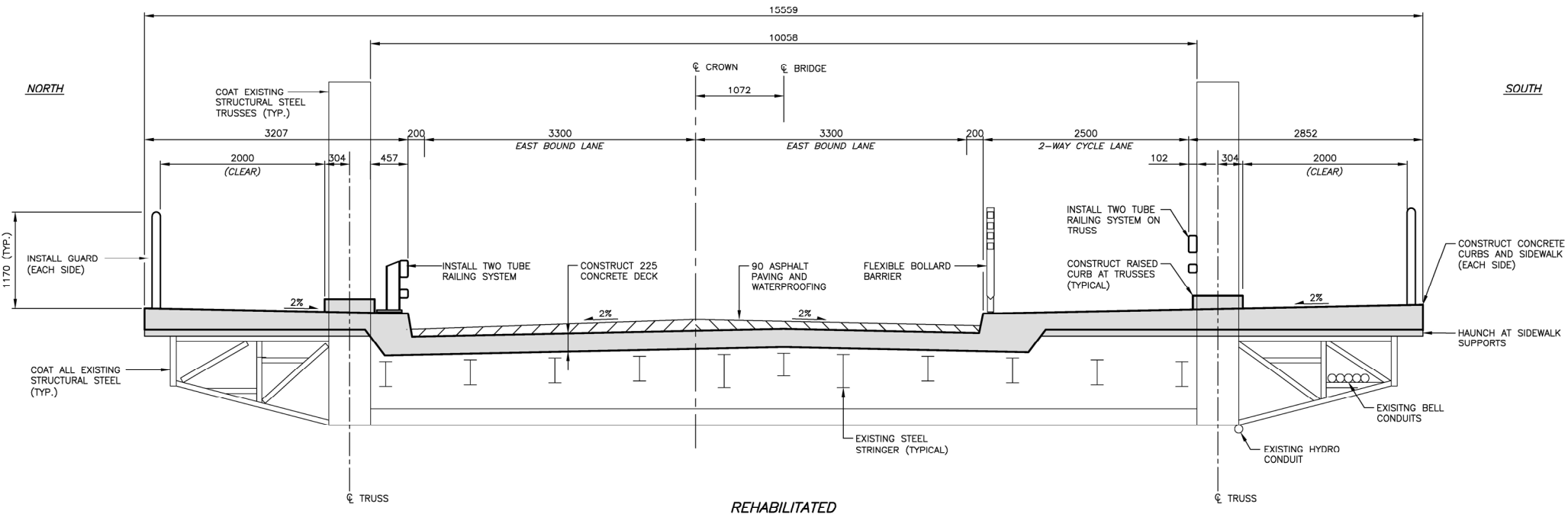
- Less aesthetic impact, preserves views from the bridge.
- Protects cyclists from impacts with the bridge trusses.
- Provides some vehicle collision protection for the bridge trusses.

## Design Summary for Tubes System Barrier

- Barrier will be adjacent to the curb on the north side of the bridge.
- Barrier will be adjacent to the trusses on the south side of the bridge.

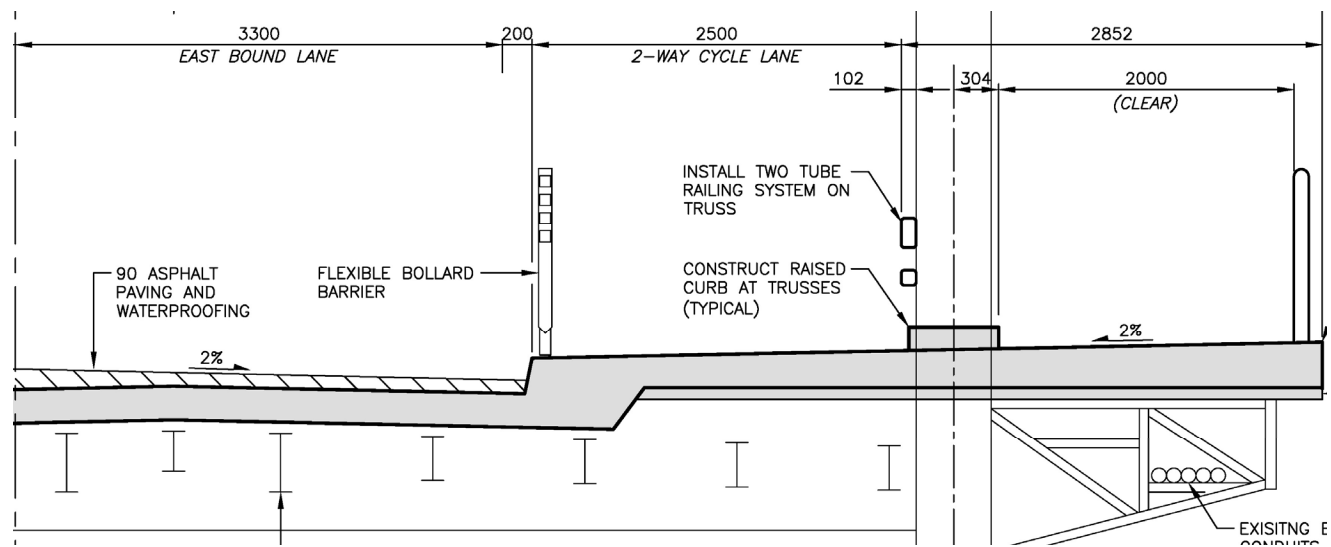
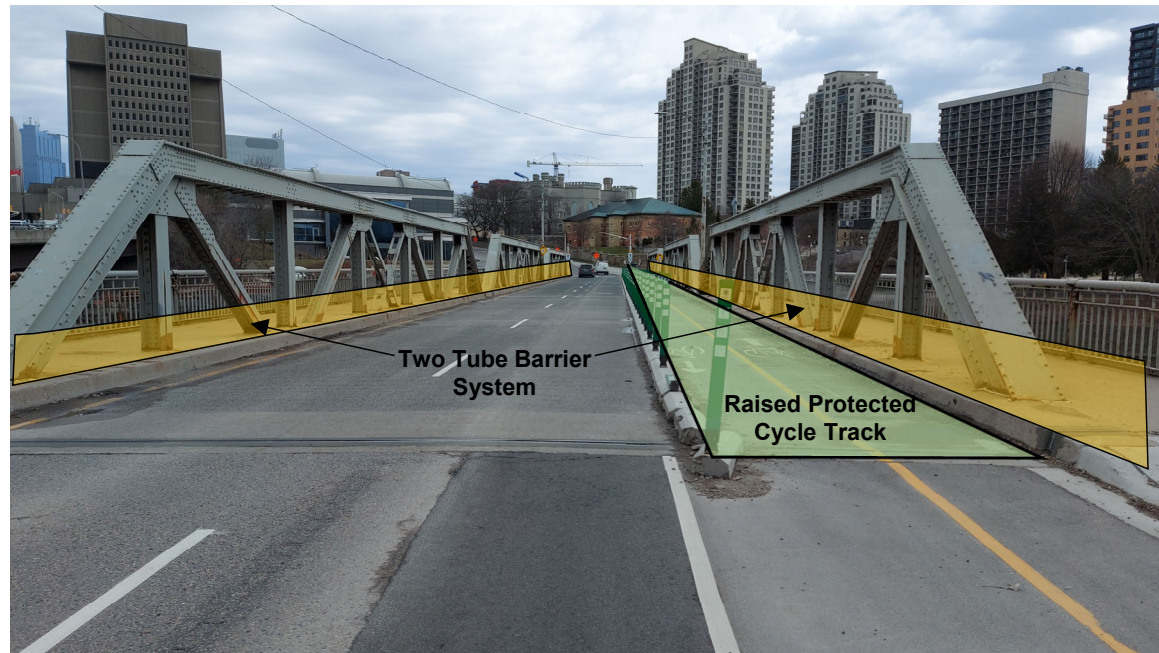


West Brough's Bridge – Example of two tube system



Preliminary Design Only – Lane widths and tube railing system to be confirmed during detailed design

# Bridge Barrier System Design Rationale and Summary





# Pedestrian Railing System Design Rationale and Summary

## Rationale for Sympathetic Replication/Replacement

- Existing railing have sections with perforations and section loss (holes).
- Hidden deterioration likely and additional damage during rehabilitation (abrasive blast cleaning).
- Existing railing top rail has a large diameter (exceeds some code requirements).
- Top rail caps pose an injury risk to pedestrians such as hand abrasions.
- Replacement of the railing will provide a longer service life.
- The cost of replacement vs. rehabilitation is comparable.

## Design Summary for Recommended Sympathetic Replication/Replacement

- Replicated railing will maintain general arrangement and aesthetics of the existing railing.
- A reduced top rail diameter may be incorporated (subject to further review during detailed design).
- Maintain existing post spacing with an additional post between.
- Top cap plates at the posts would not be integrated with the new design.
- Heritage Alteration permit required.



15 Kensington Bridge Existing Railing



Kensington Bridge Existing Railing



TVP - Existing Railing

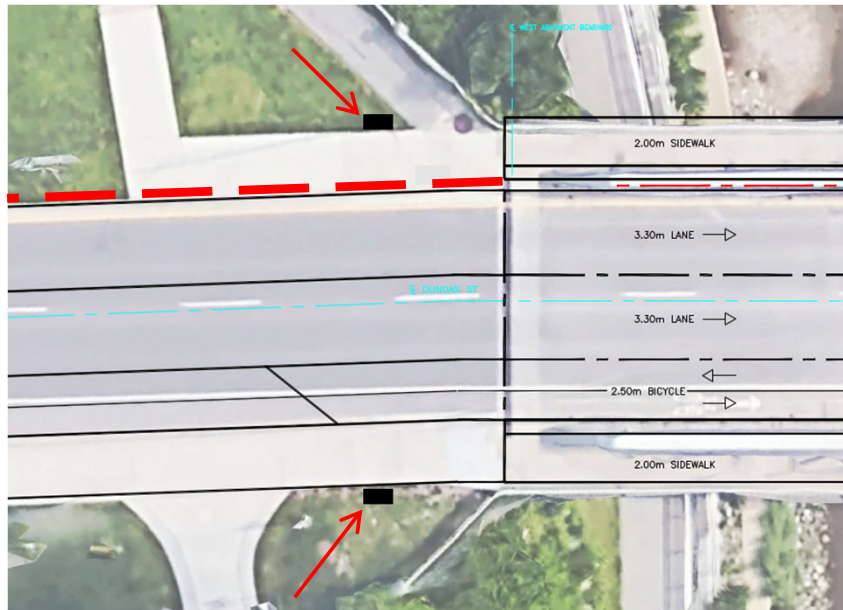
# Pillars Design Rationale and Summary

## Summary for Original Pillars

- Original Pillars are not officially recognized as a Heritage Attribute.
- Removed circa 2006.
- Opportunity to use similar sympathetic light fixtures.

## Place Pillars Outside of the Walking Area on West Side

- Placing Pillars outside of the walking area is safer for active transportation and road users.
- Does not obstruct site lines.
- Prevents damage from vehicles and ploughs and reduces potential for deterioration from winter salt.
- Placing the Pillars on the west side will create a gateway feature entering the Downtown Core.



Kensington Bridge Pillar (Removed in 2006)



# Other Considerations

## Lighting

- Two of four original poles are still in place, but original decorative lighting arms were replaced.
- Existing light poles are in poor condition and require replacement.
- Existing light poles have decorative sleeve that will be mimicked.
- Lighting levels to be upgraded to current standards.

## Structural Steel Coating

- Coating to be similar grey colour as existing.



Kensington Bridge Truss



Kensington Bridge Existing Light Standard  
Base



Kensington Bridge Existing Light Standard



# Next Steps

## Winter 2023 Collect input from PIC #2

Receive and consider input from the public, agencies and stakeholders to confirm the preferred planning alternatives.

## Winter/Spring 2023 Environmental Study Report

Prepare Environmental Study Report (ESR)

CACP Review of ESR

Report will be available for Public Review for 30-Days.

If no issues are raised within the 30-day review period and subject to MECP acceptance, the City can proceed to detailed design and HAP.