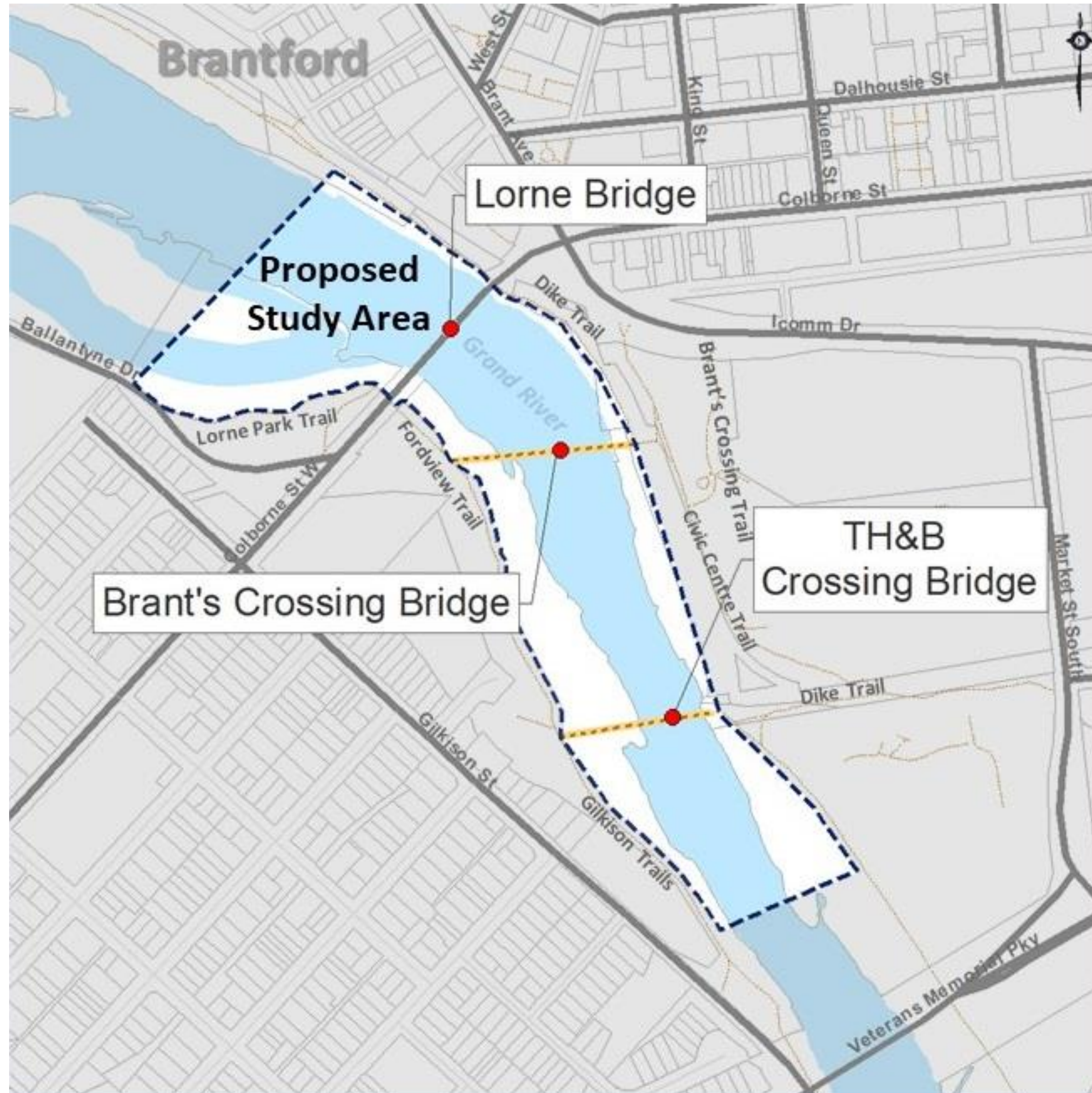


CITY OF BRANTFORD
**THREE GRAND
RIVER CROSSINGS**
MUNICIPAL CLASS EA

Virtual Public Information Centre
May 27 and June 17, 2020

Project Overview and Background



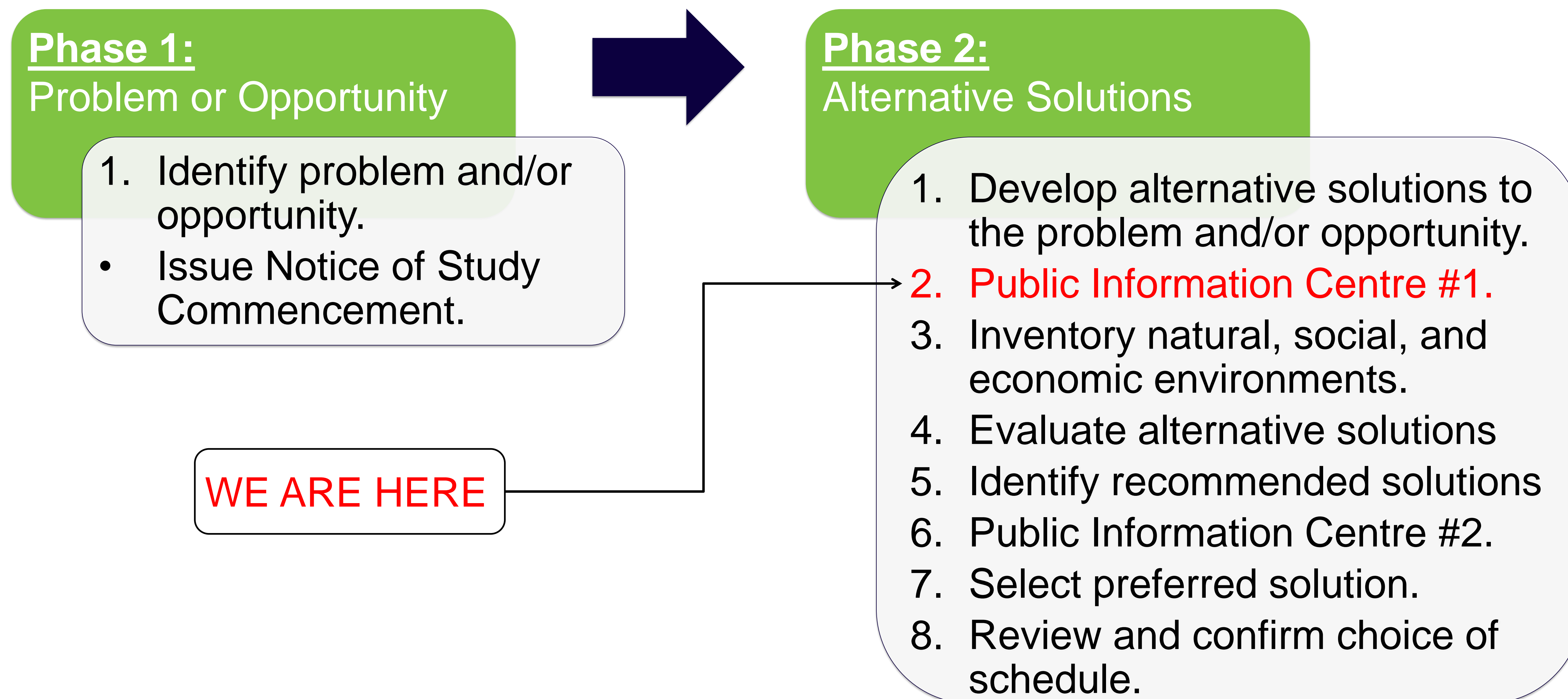
The City of Brantford has initiated a Municipal Class Environmental Assessment (MCEA) to review alternatives for three bridges over the Grand River, including the Lorne Bridge, Brant's Crossing Bridge and the TH&B Crossing Bridge.

The purpose of this Virtual Public Information Centre (PIC) is to introduce the study to stakeholders and the public, and offer an opportunity for interested parties to review and provide comments to the Project Team.

Project Overview and Background

Municipal Class Environmental Assessment Process

- This study is being undertaken as a Schedule “B” Municipal Class Environmental Assessment.
 - Two phase planning process under the Ontario EA Act.
 - Primary goal is to minimize, mitigate, or avoid impacts on the community and surrounding environment.



Project Overview and Background

The MCEA study was initiated with the following key objectives:

- Consider a reasonable range of appropriately planned potential solutions;
- Consider impacts to all aspects of the environment (social, natural, technical and economic);
- Select a preferred solution through a transparent decision-making process; and,
- Encourage public participation throughout the process.

Lorne Bridge



Brant's Crossing Bridge



TH&B Crossing Bridge



Project Overview and Background

Lorne Bridge

The Lorne Bridge consists of the three unique structures:

Lorne Arch Bridge

Consists of three concrete spandrel arches spanning over the Grand River. The original structure was built in 1924 and has undergone several rehabilitations.



Lorne Girder Bridge

Immediately east of the Lorne Arch Bridge, this structure consists of a single span precast, prestressed box girder. The bridge spans a former railway corridor.



Lorne Bridge Pedestrian Underpass

Immediately west of Lorne Arch Bridge, this single span precast, concrete box culvert serves as an underpass for pedestrian and cyclist traffic under Colborne Street West.



Project Overview and Background

Lorne Bridge

- Lorne Bridge currently carries five lanes of traffic on Colborne Street West, with sidewalks on the north and south sides of the bridge.
- Currently there are no formal cycle lane pavement markings in the roadway and cyclists typically share the sidewalk with pedestrians.
- The bridge has 30 tonne load limit in the winter.
- The original structure was built in 1924, and the bridge has been identified as requiring major structural repairs to maintain the crossing.

Deterioration of Concrete throughout Structure



Cracking on concrete spandrel arches



Project Overview and Background

Brant's Crossing Bridge

- Brant's Crossing Bridge is a four span bridge that was originally designed to convey railway traffic and has been converted to carry pedestrian and cyclist traffic across the Grand River.
- The bridge was closed in February 2018 following a flooding and ice jam event.
- A structural investigation took place following the flooding event. It was recommended that the City of Brantford keep the bridge closed until the necessary repairs can take place to ensure its safe use by the public.



2018 Ice Jamming

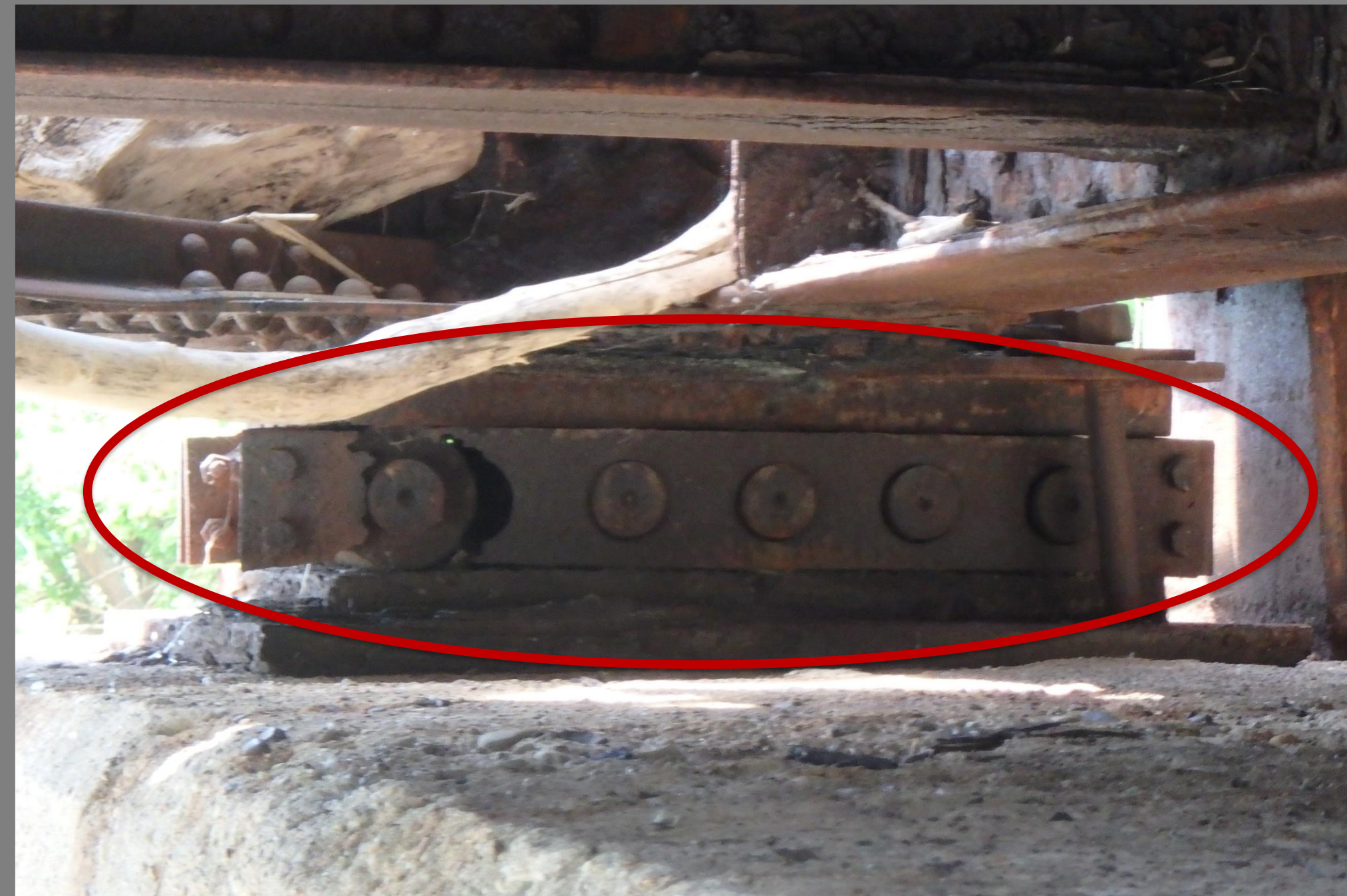
Deflection of Anchor Bolt



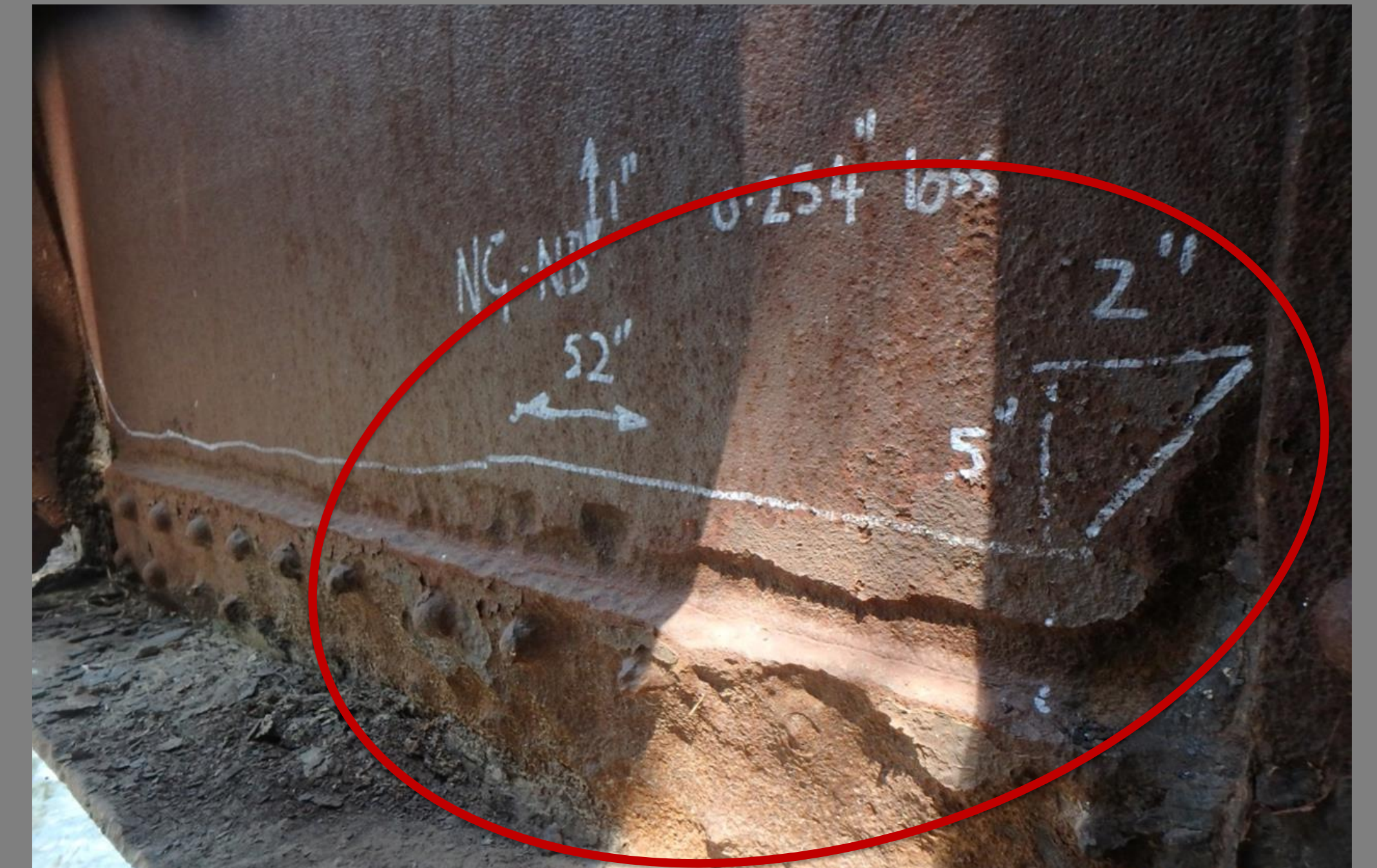
Project Overview and Background



Deterioration of concrete abutment



Seized roller bearings



Severe corrosion on girders



Complete loss of section on floor beams



Complete loss of section on girders



Section loss on diaphragms

Project Overview and Background

TH&B Crossing Bridge

- The TH&B Crossing Bridge currently carries pedestrian and cyclist traffic over the Grand River.
- The bridge was temporarily closed following the February 2018 flooding and ice jam event. The bridge was reopened following structural investigations but was identified as requiring repairs in the near future to maintain the existing crossing.
- The timber deck is not capable of supporting the desired City maintenance equipment.

Deterioration of Concrete Abutment



Deformation of Pier



Project Overview and Background

2018 Grand River Flooding and Ice Jam Event

- On February 21, 2018 the Grand River experienced ice jamming and high flows in the vicinity of the Three Grand River Crossings, with water levels rising to the underside of the TH&B and Brant crossings.
- Several bridges in the City were closed on the day of the event, including the Three Grand River Crossings. Lorne Bridge and TH&B Crossing Bridge have since been reopened while Brant's Crossing Bridge has remained closed.
- The flooding and ice jam event prompted detailed structural investigations of Brant's Crossing Bridge and TH&B Crossing Bridge which took place in the summer of 2018.



Problem / Opportunity Statement

A) Problem:

- Structural investigations have identified the need for structural repairs to each of the Three Grand River Crossings.

B) Opportunity:

- The City plans to identify the short and long-term plans for the three Grand River crossings. The study will include determining the feasibility of removing the winter load limit on Lorne Bridge and the need for one or both of the TH&B Crossing Bridge and Brant's Crossing Bridge based on an assessment of the technical, economic, social and environmental factors, including impacts to the active transportation network and the risks of future flooding events of the Grand River.

Existing Conditions

Background Studies

The following studies are being completed to inform the evaluation of the alternative solutions:

Social Environment

- Built Heritage Resources and Cultural Heritage Landscape/Resources Report
- Archaeological Assessment Report
- Noise and Vibration Report
- Wayfinding Strategy Report

Economic Environment

- High-Level Cost Estimates
- Lifecycle Costs Analysis

Natural Environment

- Natural Environment Assessment Report including Species at Risk
- Stormwater Management Report
- Phase 1 Environmental Site Assessment Report
- Hydrogeology Study Report

Technical Environment

- Site Survey
- Structural Evaluation Report
- Transportation and Traffic Analysis Report
- Active Transportation Strategy Report
- Geotechnical Investigation Report
- Hydraulic Impact Study

Alternative Solutions

1. Lorne Bridge

A. Do Nothing

- No change to existing conditions. Selection of this alternative would postpone any action until further into the future, but would eventually lead to the selection of one of the other alternatives.
- Not likely to be carried forward as it does not define a long term plan for the structure.

B. Close Crossing Permanently

- Closing the bridge permanently for all uses.
- Not likely to be carried forward to evaluation as this structure is a critical transportation link in the City and Colborne Street West is identified as a Major Arterial Road in Official Plans.

C. Rehabilitate

- Complete repairs to the existing bridge to maintain use as a crossing over the Grand River.
- The study will investigate the potential to:
 - Strengthen the bridge to remove the 30 tonne winter load limit.
 - Make improvements to the active transportation network over the structure.

D. Replace

- Replace part of or all of the existing structure to maintain a crossing over the Grand River.
- Potential for improvements to the active transportation network over the crossing could be included with a new structure.

Alternative Solutions

2. Brant's Crossing Bridge

A. Do Nothing

- No change to existing conditions. Selection of this alternative would postpone any action until further into the future, but would eventually lead to the selection of one of the other alternatives.

B. Close Permanently

- Closing the bridge permanently for all uses.
 - i. With Retention of Existing Structure as a Monument**
 - Bridge would remain in place; however, more restrictive measures would be implemented to prevent the crossing of the structure.
 - ii. With Structure Removal**
 - The steel superstructure and potentially the concrete abutments and piers would be removed.

C. Rehabilitate

- Complete repairs to the existing structure to re-open the crossing to pedestrian and cyclist use.

D. Replace

- Replace the structure and re-open the crossing for pedestrian and cyclist use.

Alternative Solutions

3. TH&B Crossing Bridge

A. Do Nothing

- No change to existing conditions. Selection of this alternative would postpone any action until further into the future, but would eventually lead to the selection of one of the other alternatives.

B. Close Permanently

- Closing the bridge permanently for all uses.
 - i. With Retention of Existing Structure as a Monument**
 - Bridge would remain in place; however, restrictive measures would be implemented to prevent the crossing of the structure.
 - ii. With Structure Removal**
 - The steel superstructure and potentially the concrete abutments and piers would be removed.

C. Rehabilitate

- Complete repairs to the existing structure to maintain the crossing to pedestrian and cyclist use.

D. Replace

- Replace the structure to maintain the crossing for pedestrian and cyclist use.

Alternative Solutions

4. New Pedestrian River Crossing

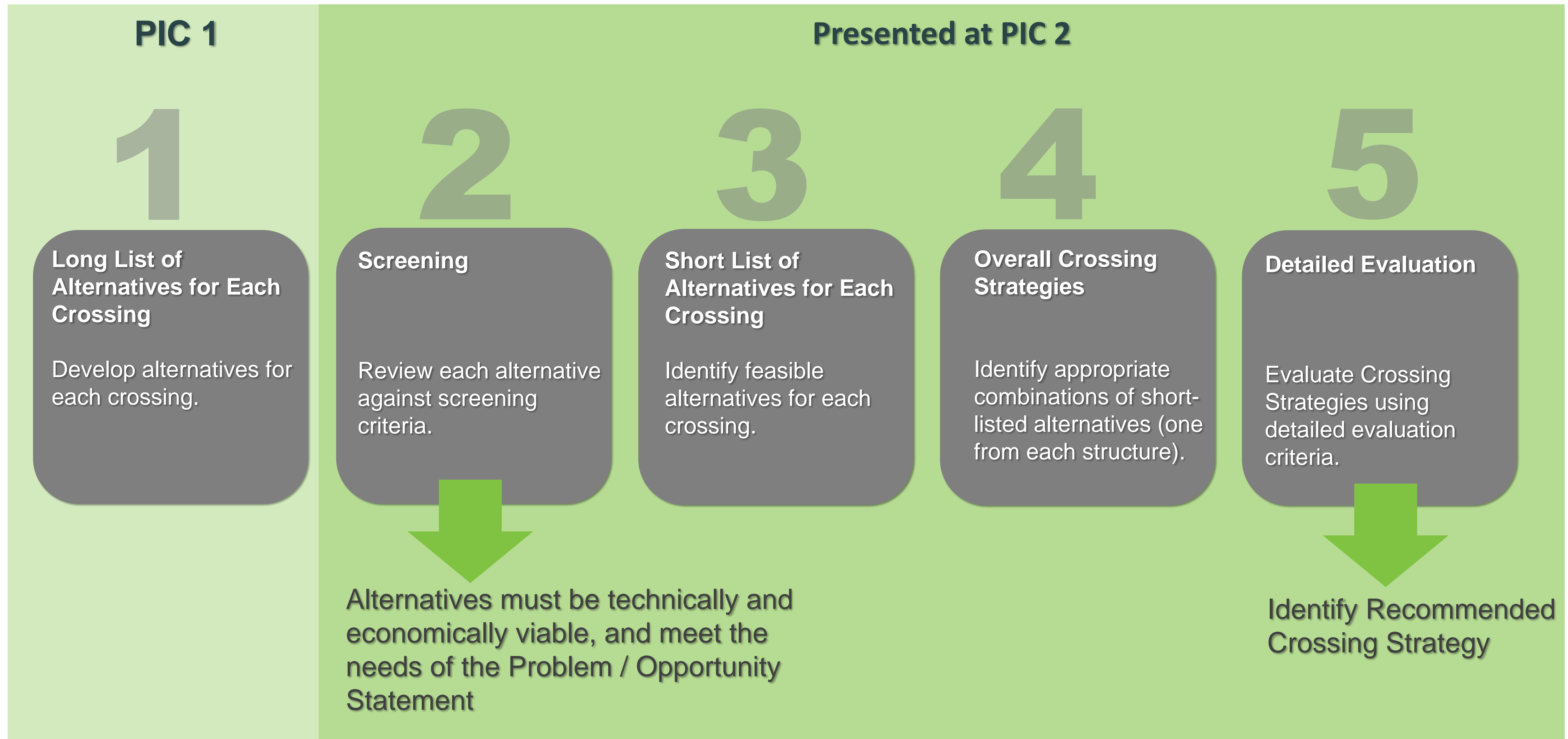
A. Do Nothing

- No new crossing would be constructed.

B. Construct New Crossing

- A new crossing would be constructed within the study area.
- The optimal location of the new crossing would be explored during the study and would consider links to the active transportation network, the natural environment impacts, among other evaluation criteria.

Alternative Solutions – Evaluation Framework



Alternative Solutions – Evaluation Framework

Examples of Overall Crossing Strategy Alternatives

Overall Crossing Strategy Alternative	Lorne Bridge	Brant's Crossing Bridge	TH&B Crossing Bridge	New Bridge Crossing
Alternative A	1.C - Rehabilitation	2.C - Rehabilitation	3.C - Rehabilitation	4.A – Do Nothing
Alternative B	1.C - Rehabilitation	2.D - Replacement	3.B.i Closure with retention of structure	4.A – Do Nothing
Alternative C	1.C - Rehabilitation	2.B.ii – Closure with removal of structure	2.B.ii – Closure with removal of structure	4.B – Construct new crossing

Please note that the above illustrates an example of the some possible combinations that could be considered for the Overall Crossing Strategy. The combinations will vary depending the outcome of the screening and the examples shown above are not meant to prejudice the MCEA Process. The combinations of the various individual structure alternatives will be evaluated at a later date and will be presented at PIC 2.

Alternative Solutions – Evaluation Criteria

Category	Criteria	Measures
Social	Property Impacts	<ul style="list-style-type: none"> • Permanent impacts to public and private land including acquisition, access and/or displacement of facilities
	Impacts to Connectivity	<ul style="list-style-type: none"> • Permanent impacts to pedestrian, cyclist, and vehicular connectivity
	Impacts of Construction	<ul style="list-style-type: none"> • Temporary issues (noise, dust, air, vibration, access, connectivity)
	Public Health & Safety	<ul style="list-style-type: none"> • Overall safety of all users (vehicles, pedestrians, and cyclists)
	Aesthetics	<ul style="list-style-type: none"> • Change in the appearance of the structures and views to the surrounding landscape.
Natural	Cultural Heritage Resources	<ul style="list-style-type: none"> • Changes to appearance or character • Threatened viability of heritage or archaeological resource • Impacts to Indigenous Communities
	Terrestrial Wildlife & Vegetation	<ul style="list-style-type: none"> • Impacts on terrestrial species (flora and fauna) affected, including Species at Risk
	Aquatic Wildlife & Vegetation	<ul style="list-style-type: none"> • Impacts on aquatic species affected, including Species at Risk

Alternative Solutions – Evaluation Criteria

Category	Criteria	Measures
Technical	Design	<ul style="list-style-type: none"> • Service life of structure • Structural integrity (overloading of bridge and compliance with design standards) • Geometry
	Transportation	<ul style="list-style-type: none"> • Impacts on vehicular, pedestrian, and cyclist traffic flow (e.g. increase congestions)
	Constructability	<ul style="list-style-type: none"> • Ease of construction • Utility conflicts • Approval requirements
Economic	Lifecycle Costs	<ul style="list-style-type: none"> • Maintenance requirements • Initial and future capital investment requirements

PIC #1 Process

- | | | |
|----|---|------------------------|
| 1) | Notice 1 of Public Information Centre #1 | May 20/21, 2020 |
| 2) | Notice 2 of Public Information Centre #1 | May 27/28, 2020 |
| 3) | PIC Presentation posted to project webpage | May 27, 2020 |
| 4) | Question and Comment Period | May 27 – June 10, 2020 |
| 5) | Notice 3 of Public Information Centre #1 | June 10/11, 2020 |
| 6) | Question & Answer Video posted to project webpage | June 17, 2020 |
| 7) | Question Period | June 17 – July 8, 2020 |
| 8) | Question List and FAQs with answers posted to project webpage | July 15, 2020 |

Next Steps in MCEA Study

Points of Contact

- | | | | |
|-------------------------------------|----|------------------------------|----------------|
| <input checked="" type="checkbox"/> | 1) | Notice of Study Commencement | March 5, 2020 |
| <input checked="" type="checkbox"/> | 2) | Public Information Centre #1 | May-July, 2020 |
| | 3) | Public Information Centre #2 | Fall 2020 |
| | 4) | Notice of Study Completion | Early 2021 |

We Want to Hear from You!

Thank you for participating in the Virtual Public Information Centre.

IF YOU WISH TO SUBMIT COMMENTS OR WOULD LIKE TO BE ADDED TO THE PROJECT MAILING LIST, PLEASE CONTACT:

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Comment Sheets are available at the Three Grand River Crossings website:
www.brantford.ca/threegrandrivercrossings

Comments submitted by **June 10th, 2020** will be considered for the Q&A video posted on June 17, 2020
Comments submitted by **July 8th, 2020** will be considered for the FAQ list posted on July 15, 2020