



Appendix 'P' – PIC #1 Materials



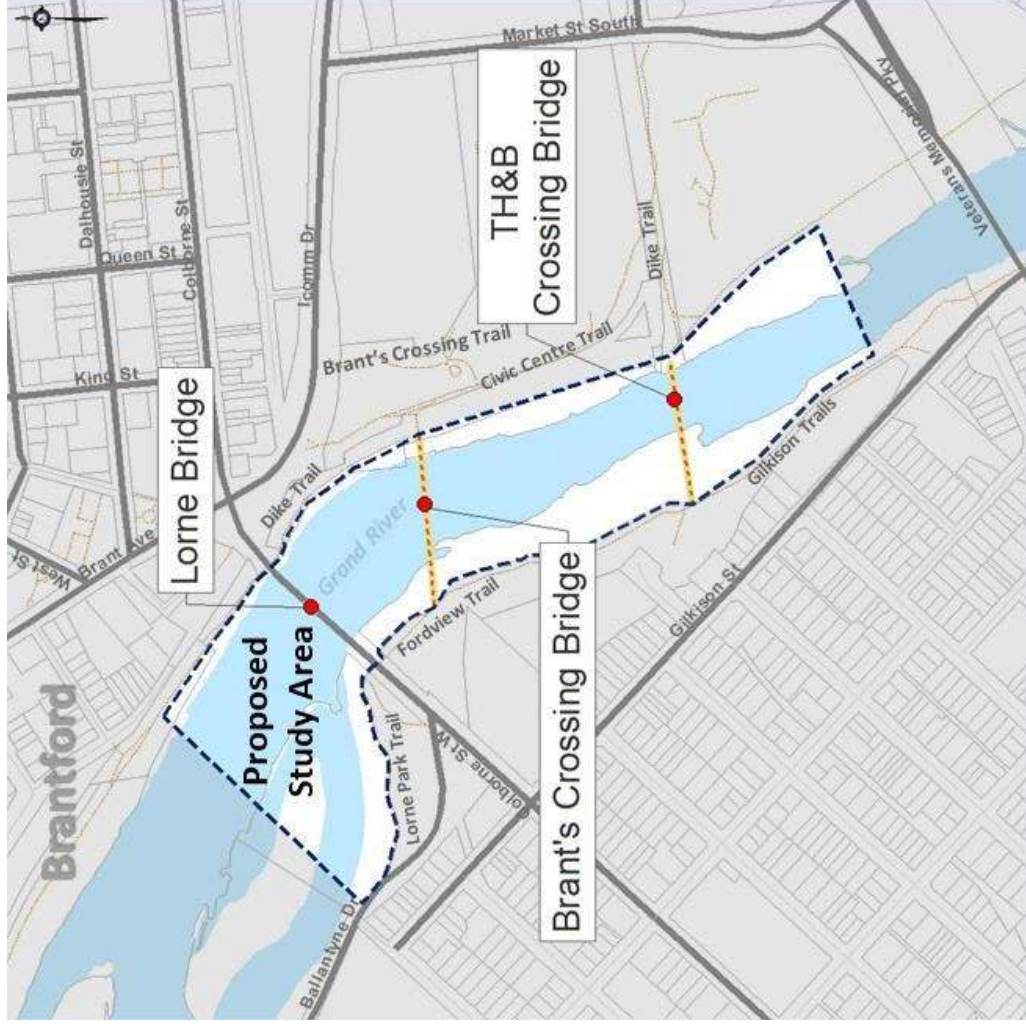


CITY OF BRANTFORD

THREE GRAND RIVER CROSSINGS MUNICIPAL CLASS EA

Virtual Public Information Centre May 27 and June 17, 2020

Project Overview and Background



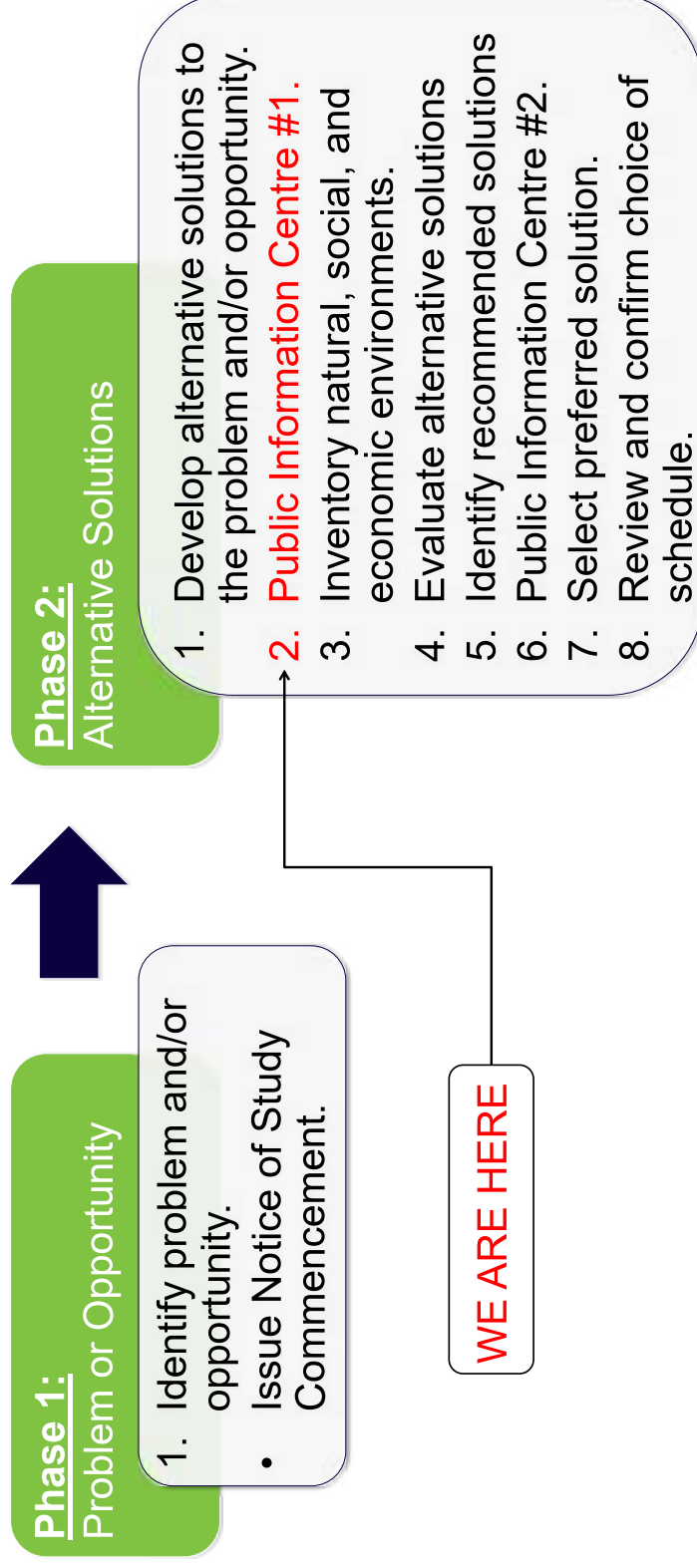
The City of Brantford has initiated a Municipal Class Environmental Assessment (MCEA) to review alternatives for three bridges over the Grand River, including the Lorne Bridge, Brant's Crossing Bridge and the TH&B Crossing Bridge.

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

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

Economic Environment

- High-Level Cost Estimates
- Lifecycle Costs Analysis

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

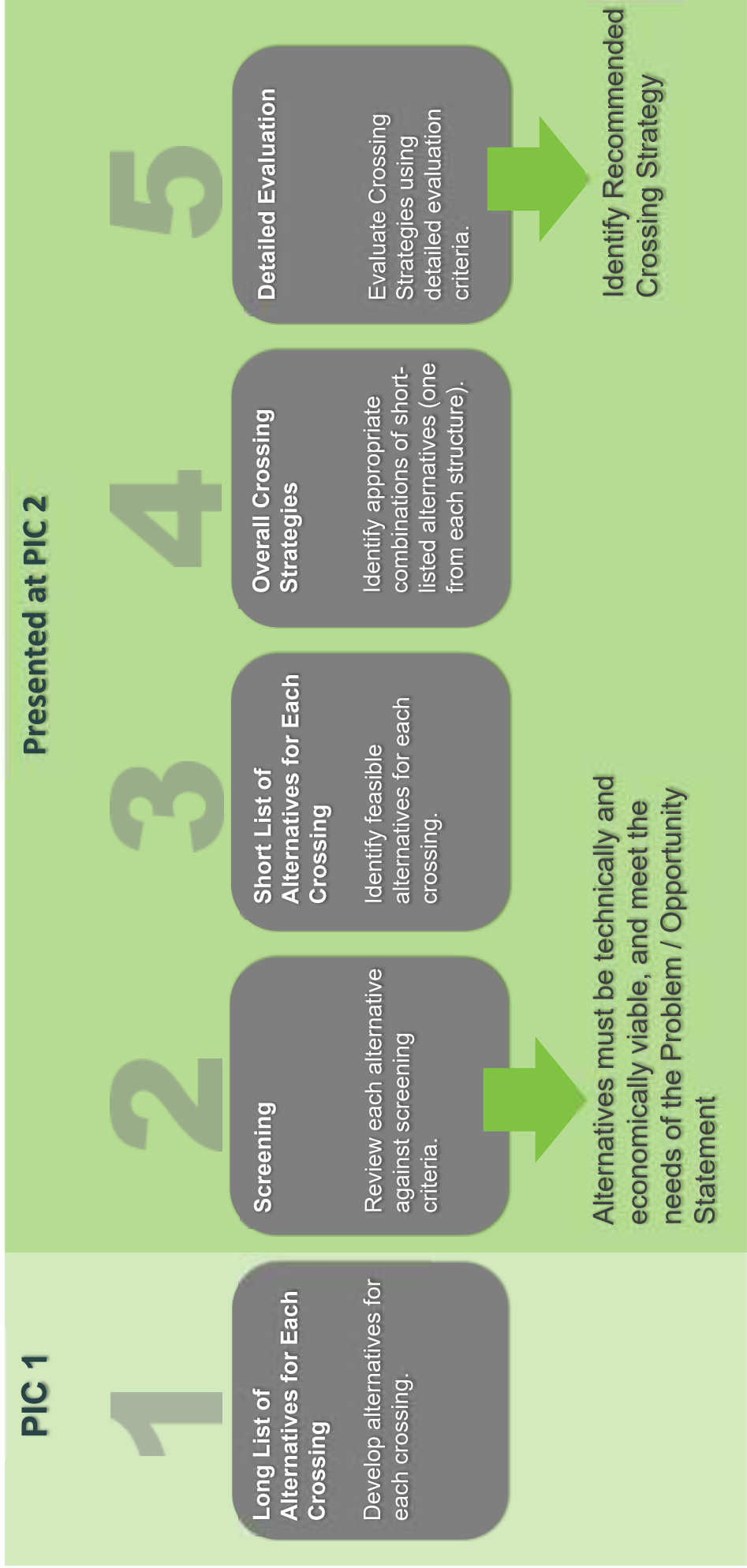
A. Do Nothing

- 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.
	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
	Natural	Terrestrial Wildlife & Vegetation
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
- 2) Notice 2 of Public Information Centre #1
- 3) PIC Presentation posted to project webpage
- 4) Question and Comment Period
- 5) Notice 3 of Public Information Centre #1
- 6) Question & Answer Video posted to project webpage
- 7) Question Period
- 8) Question List and FAQs with answers posted to project webpage

May 20/21, 2020

May 27/28, 2020

May 27, 2020

May 27 – June 10, 2020

June 10/11, 2020

June 17, 2020

June 17 – July 8, 2020

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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Guelph, ON N1K 1B8
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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



CITY OF BRANTFORD

THREE GRAND RIVER CROSSINGS MUNICIPAL CLASS EA

Virtual Public Information Centre Question and Answer Video June 17, 2020

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

PIC Presentation Video

The PIC presentation video can be viewed on the project webpage:

www.brantford.ca/ThreeGrandRiverCrossings

The PIC presentation covered the following topics:

- Project Overview and Background
- Alternative Solutions that will be considered
- Evaluation Framework
- Evaluation Criteria
- PIC #1 Process

Three Grand River Crossings Survey

WE WANT TO HEAR FROM YOU!

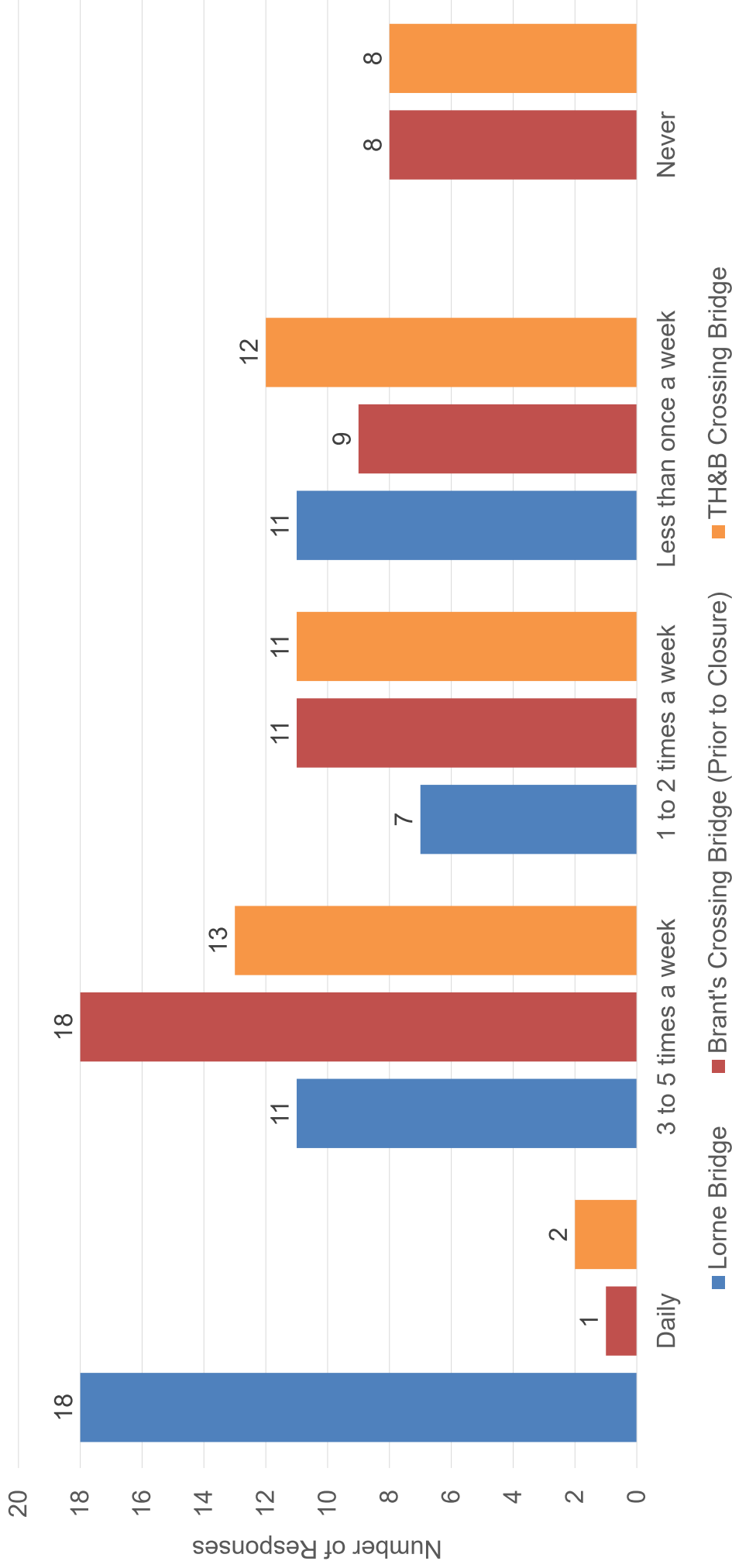
Your feedback is an important part of this project. Please take our survey to share your opinion by 4:30 p.m. on Wednesday, July 15, 2020.

The survey can be completed by following a link on the project webpage:

www.brantford.ca/ThreeGrandRiverCrossings

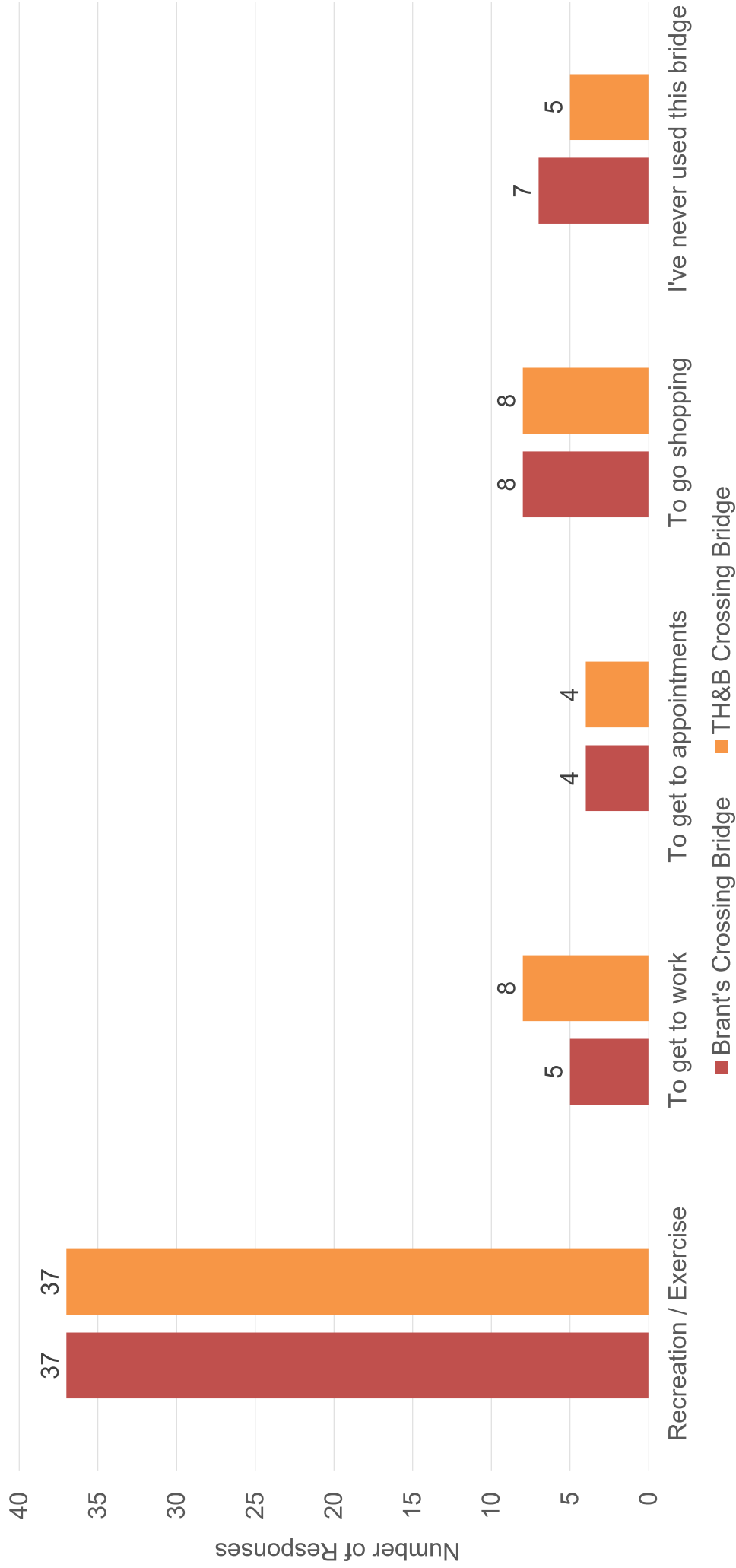
Three Grand River Crossings Survey

How frequently do you use the Three Grand River Crossings?



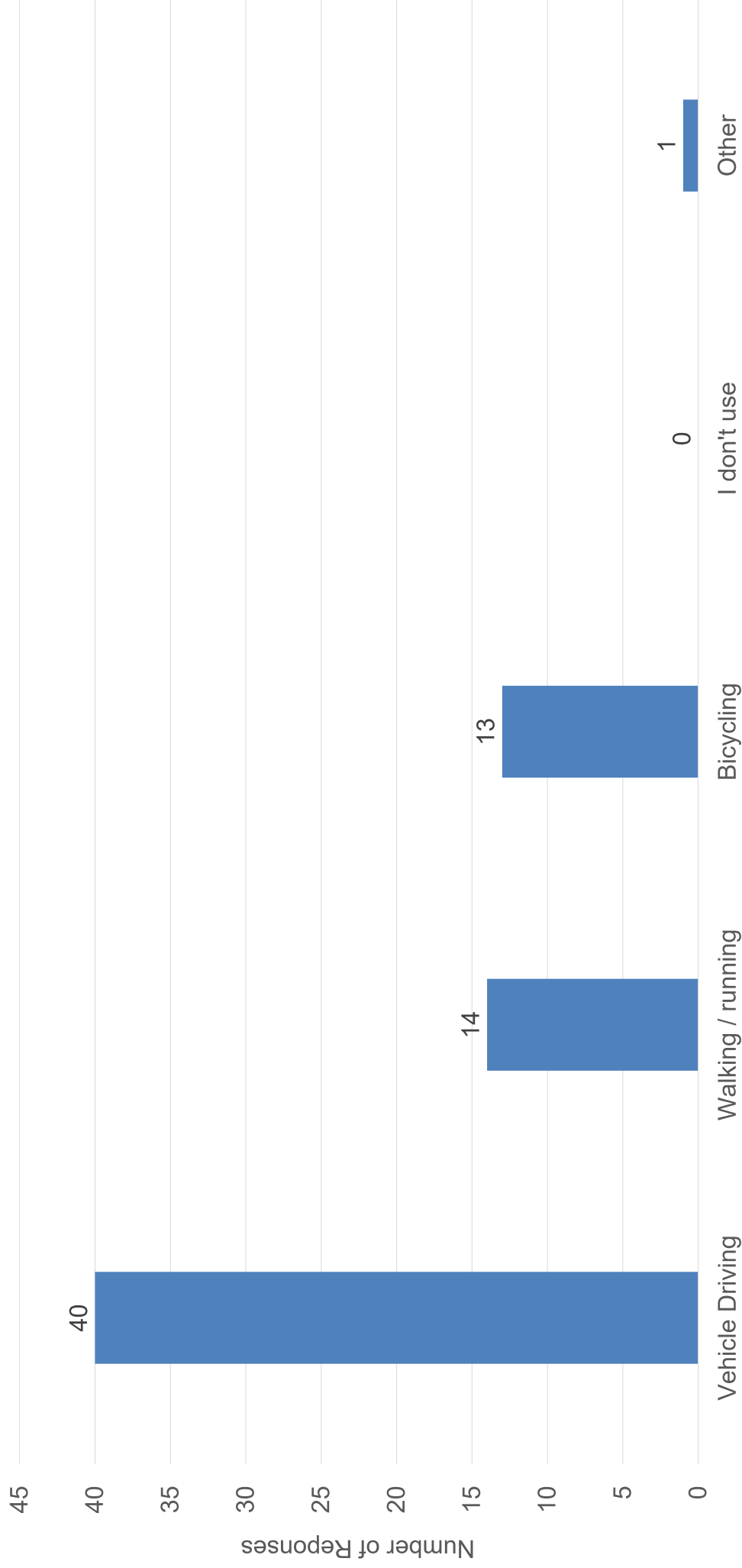
Three Grand River Crossings Survey

What do you use the Brant and TH&B Crossings for?



Three Grand River Crossings Survey

What kind of transportation do you use on Lorne Bridge?



Questions and Answers



After the PIC Presentation video was posted on May 27th, several questions and comments have been submitted to the Project Team.

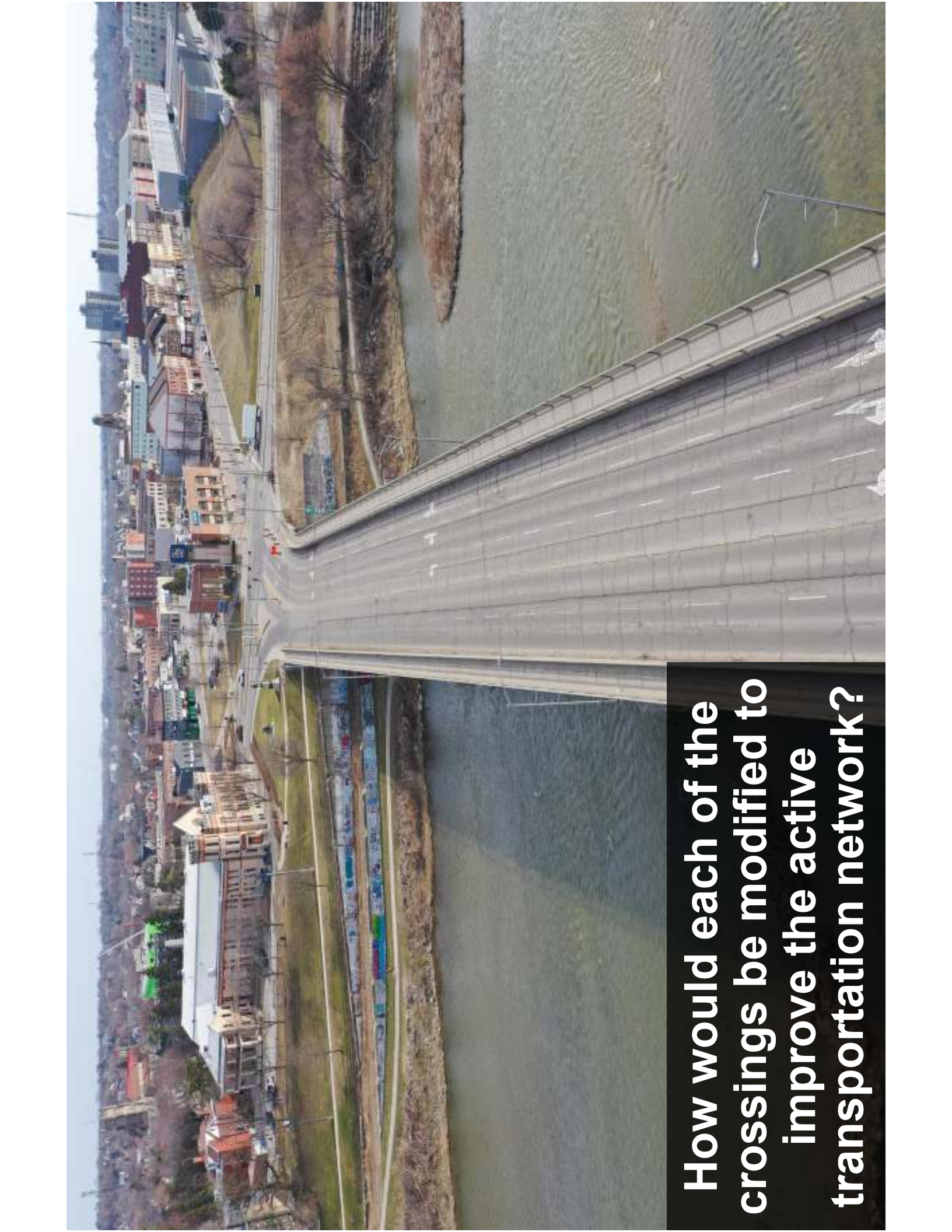
The remainder of this video will be dedicated to addressing the questions and comments that were submitted during the PIC process, up to June 10th, 2020.



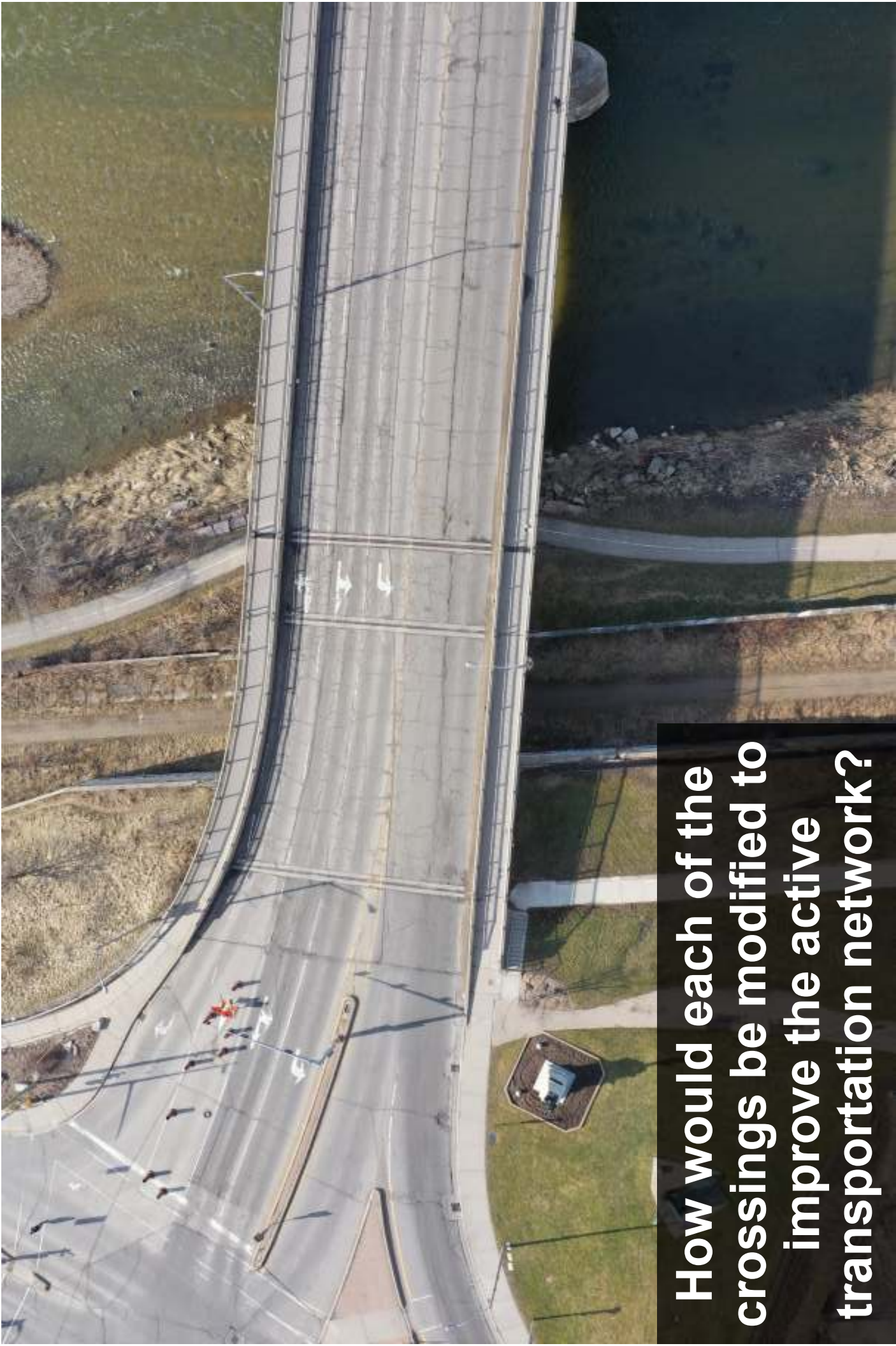
CITY OF BRANTFORD
**THREE GRAND
RIVER CROSSINGS**
MUNICIPAL CLASS EA



How can the active transportation network be maintained and/or improved in the Study Area?

An aerial photograph of a large, multi-lane concrete bridge spanning a wide river. The bridge has several lanes in each direction, with white lane markings. In the background, a city skyline is visible, including several tall buildings and a mix of residential and commercial structures. The river is a murky, brownish-green color. The sky is overcast and grey.

How would each of the crossings be modified to improve the active transportation network?



How would each of the crossings be modified to improve the active transportation network?

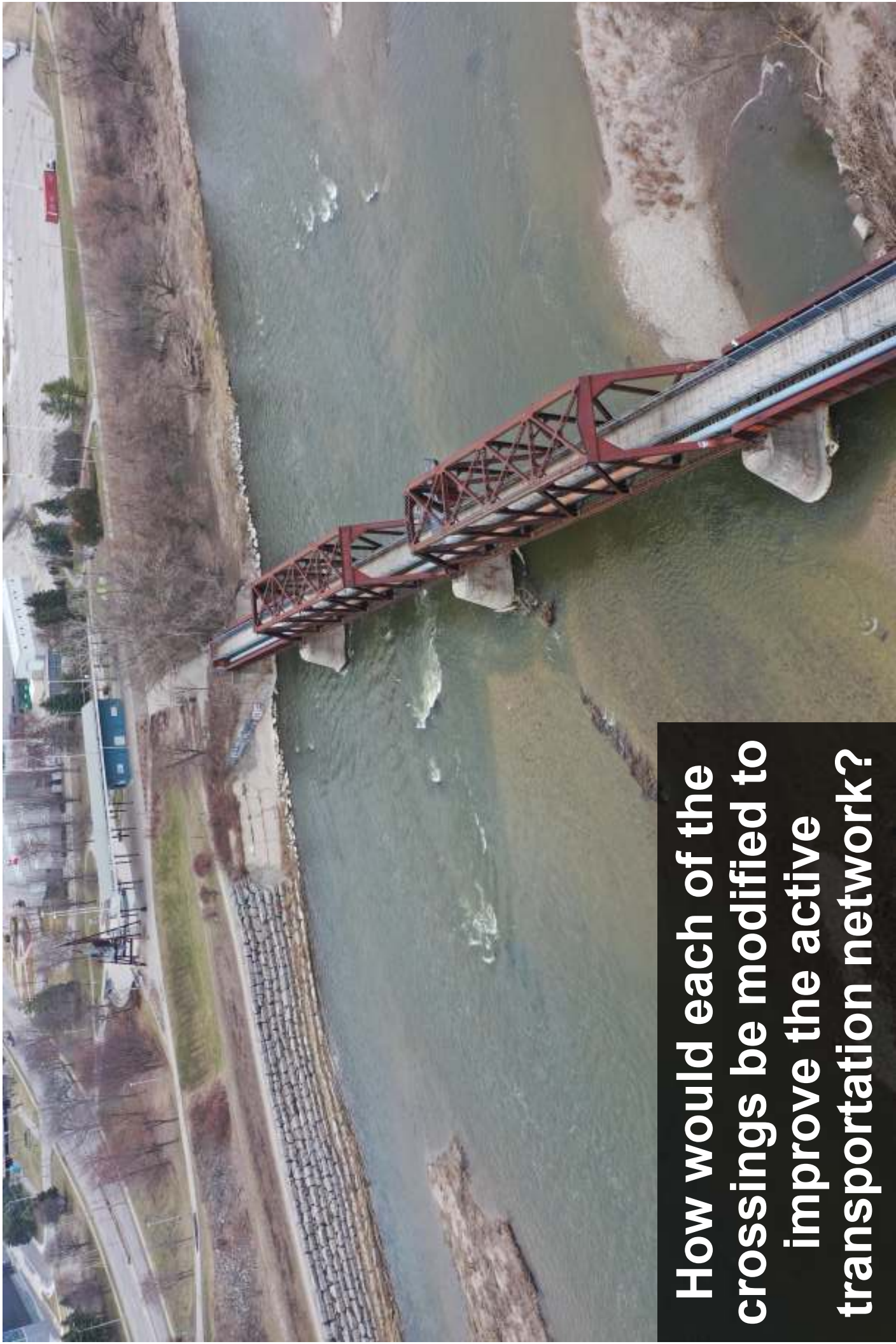
How would each of the crossings be modified to improve the active transportation network?





05.18.2018

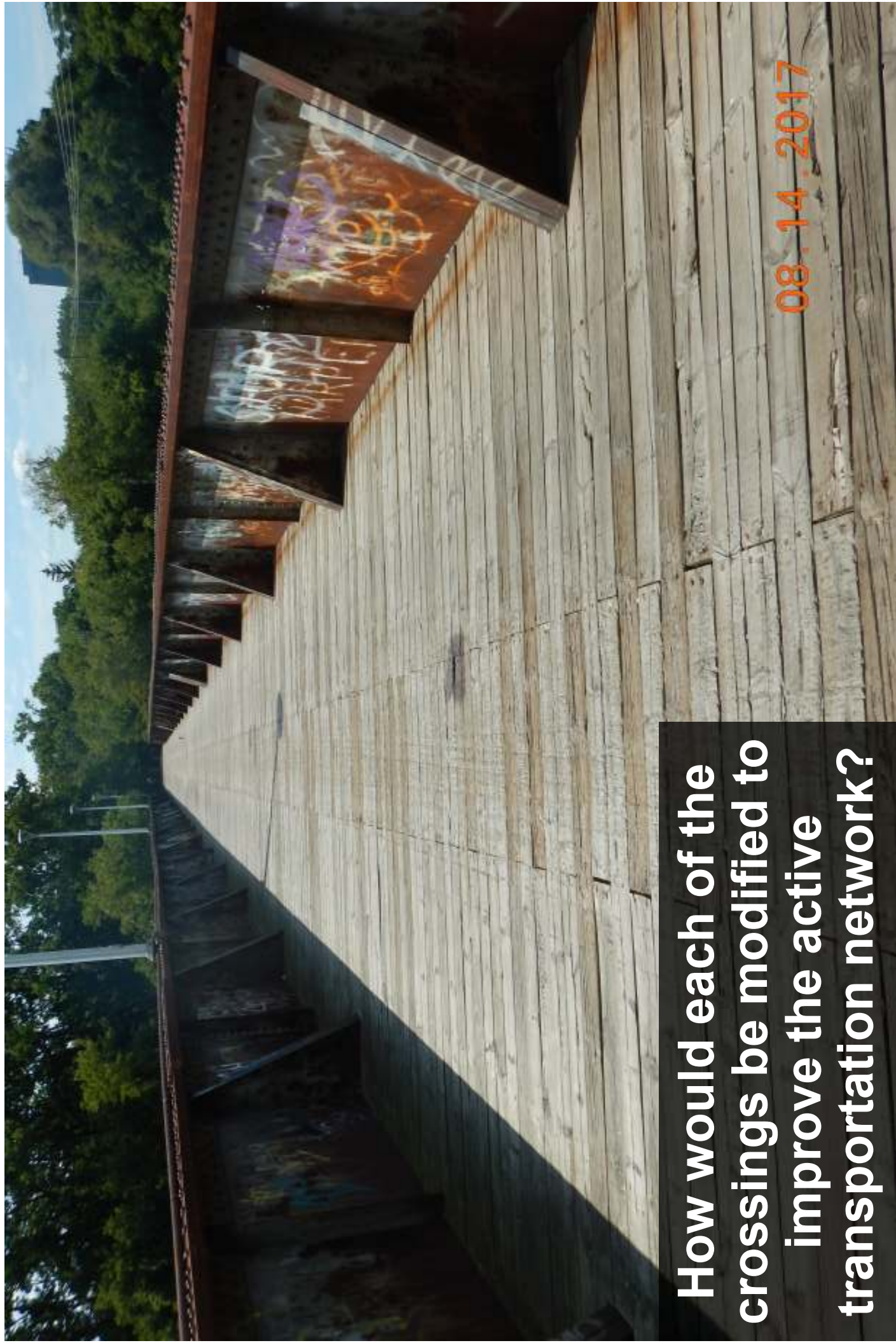
How would each of the crossings be modified to improve the active transportation network?

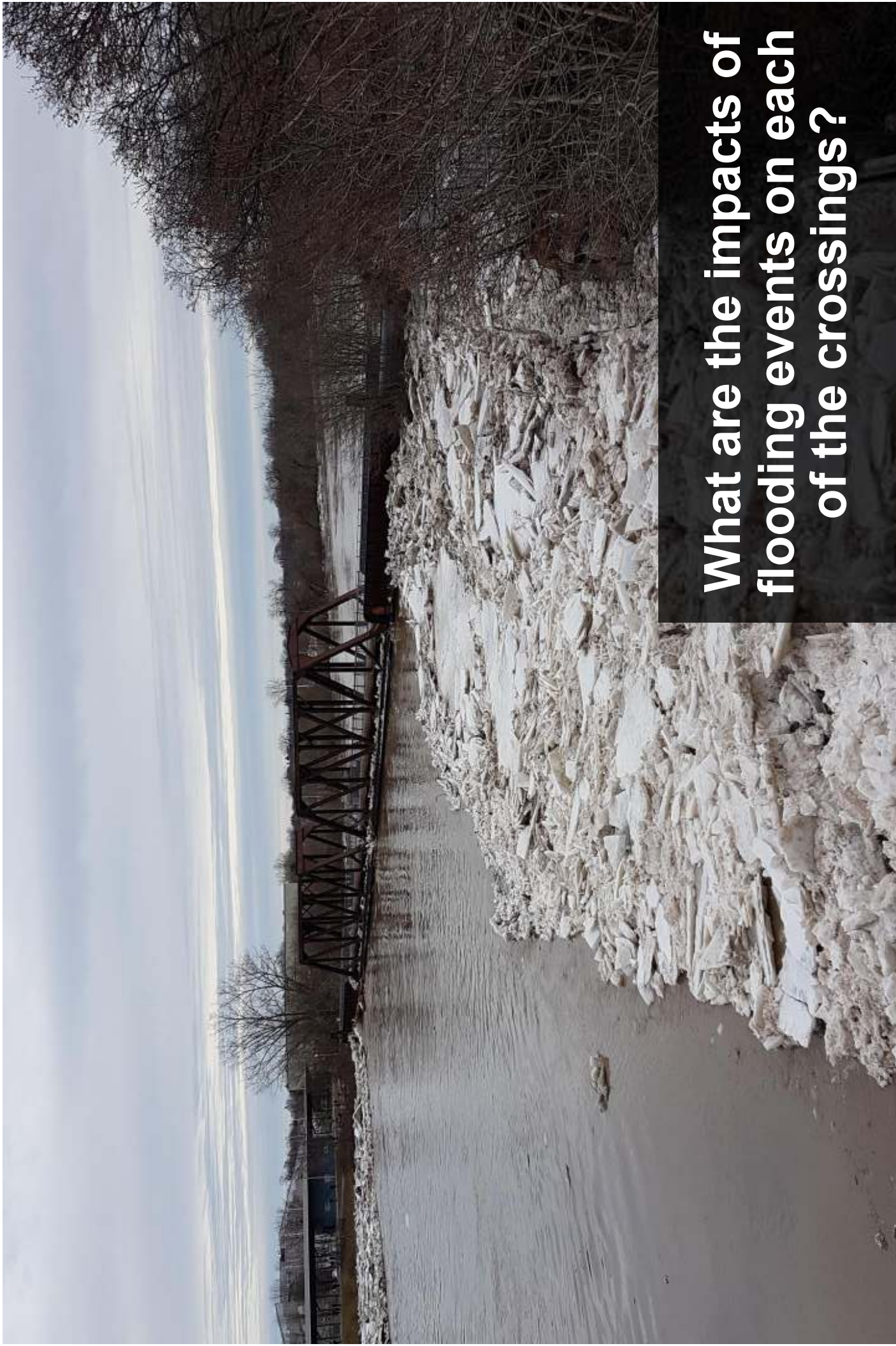


How would each of the crossings be modified to improve the active transportation network?

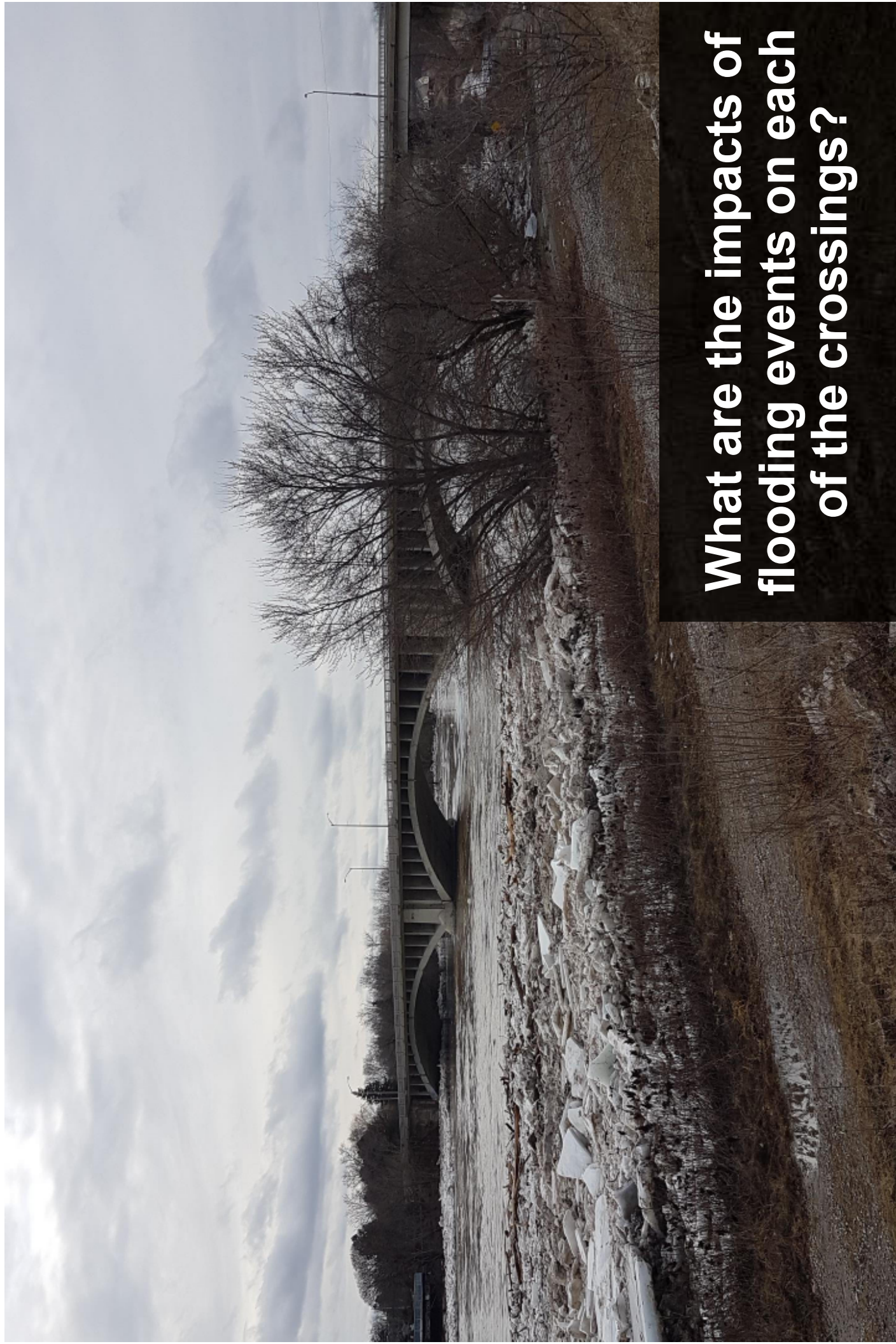
How would each of the crossings be modified to improve the active transportation network?

08.14.2017

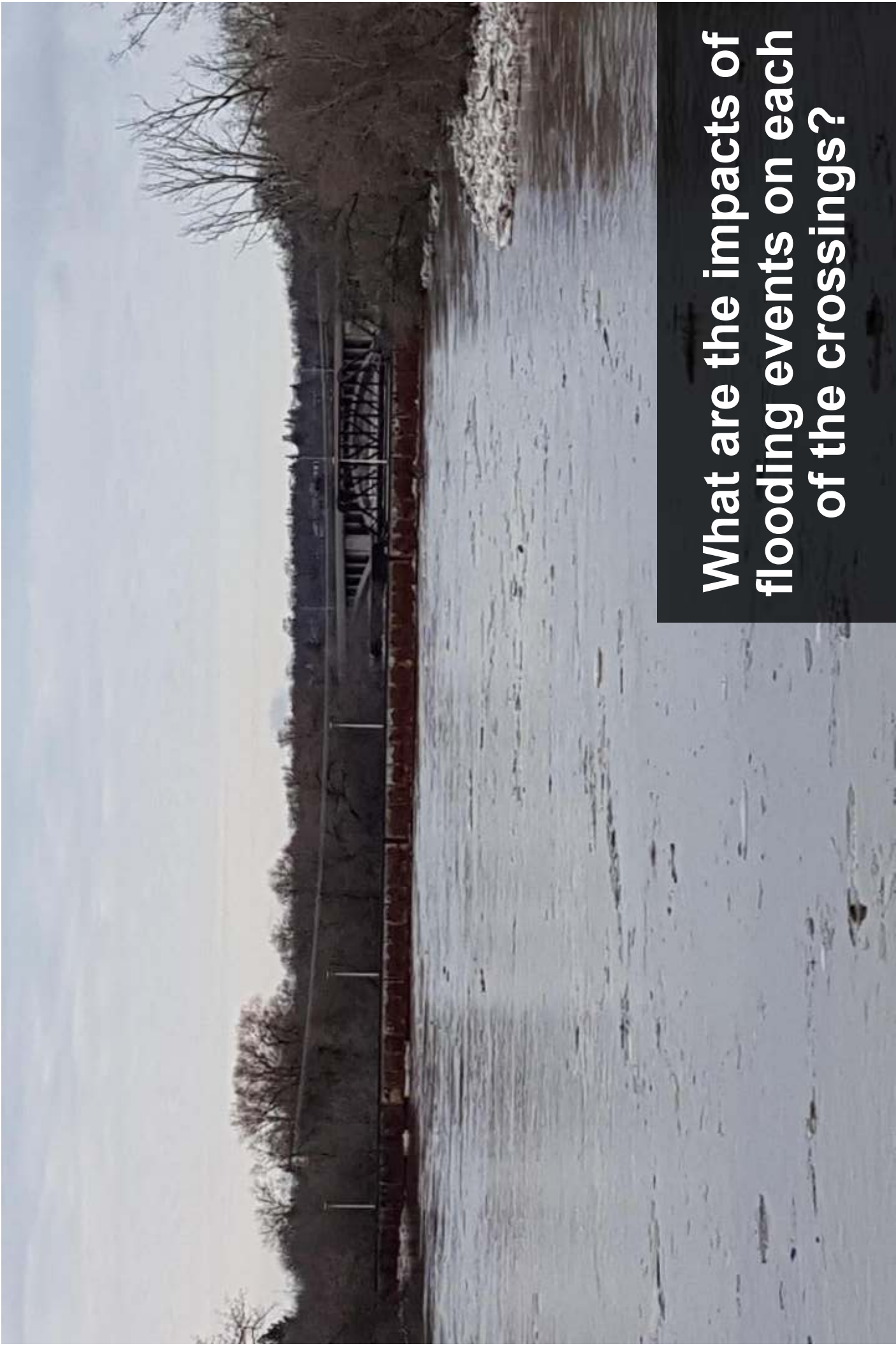




**What are the impacts of
flooding events on each
of the crossings?**



What are the impacts of flooding events on each of the crossings?



**What are the impacts of
flooding events on each
of the crossings?**



Does the Study Area contain resources that have cultural or heritage significance, and if so, how will the resource be considered in this Environmental Assessment?



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Does the Study Area contain resources that have cultural or heritage significance, and if so, how will the resource be considered in this Environmental Assessment?



Does the Study Area contain resources that have archaeological potential, and if so, how will the resource be considered in this Environmental Assessment?



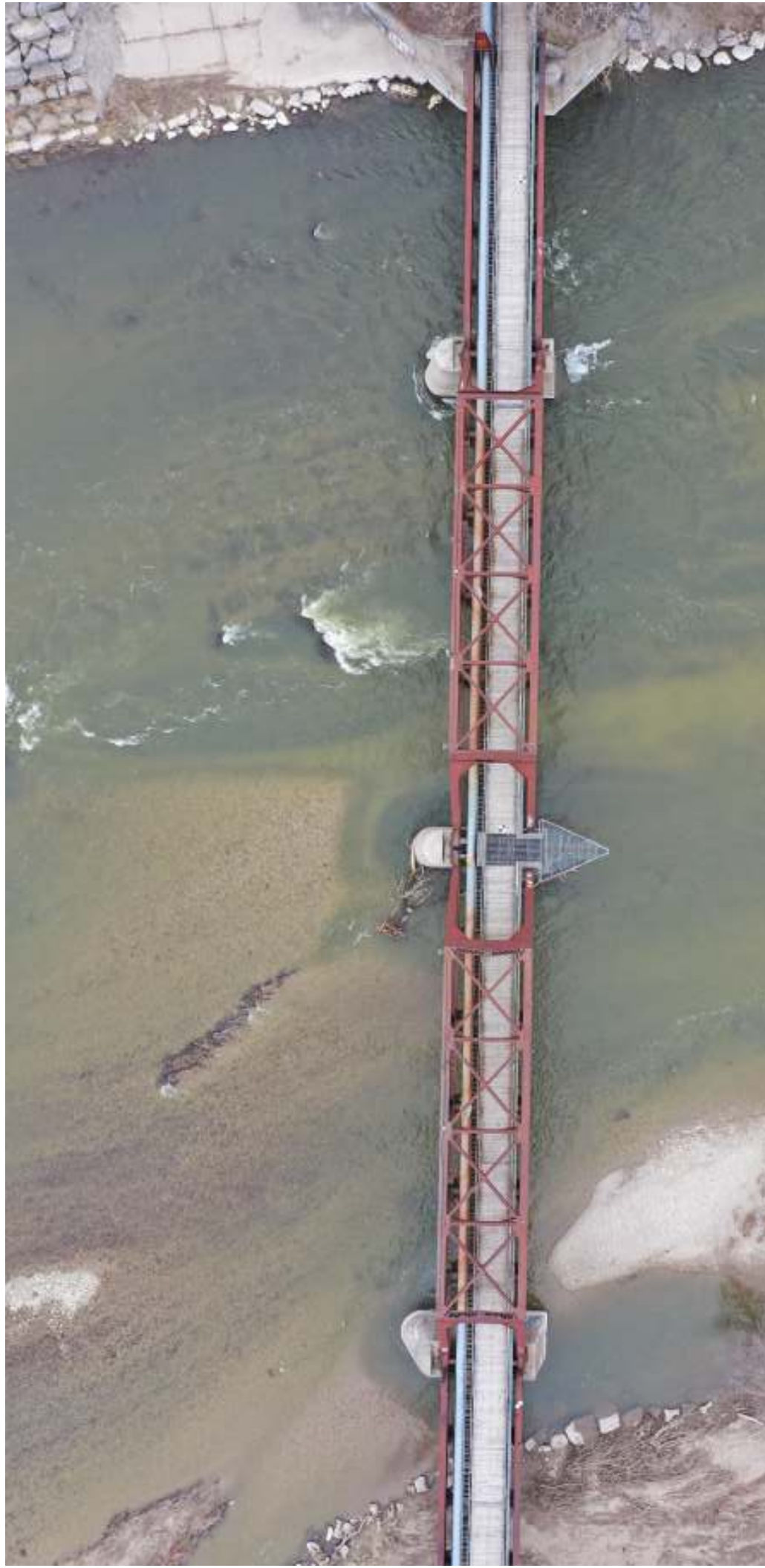
Does the Study Area contain resources that have archaeological potential, and if so, how will the resource be considered in this Environmental Assessment?

Will the alternative solutions impact the existing natural environment, and if so, how will it be considered in this Environmental Assessment? Additionally, will safe wildlife passage be included in the evaluation?





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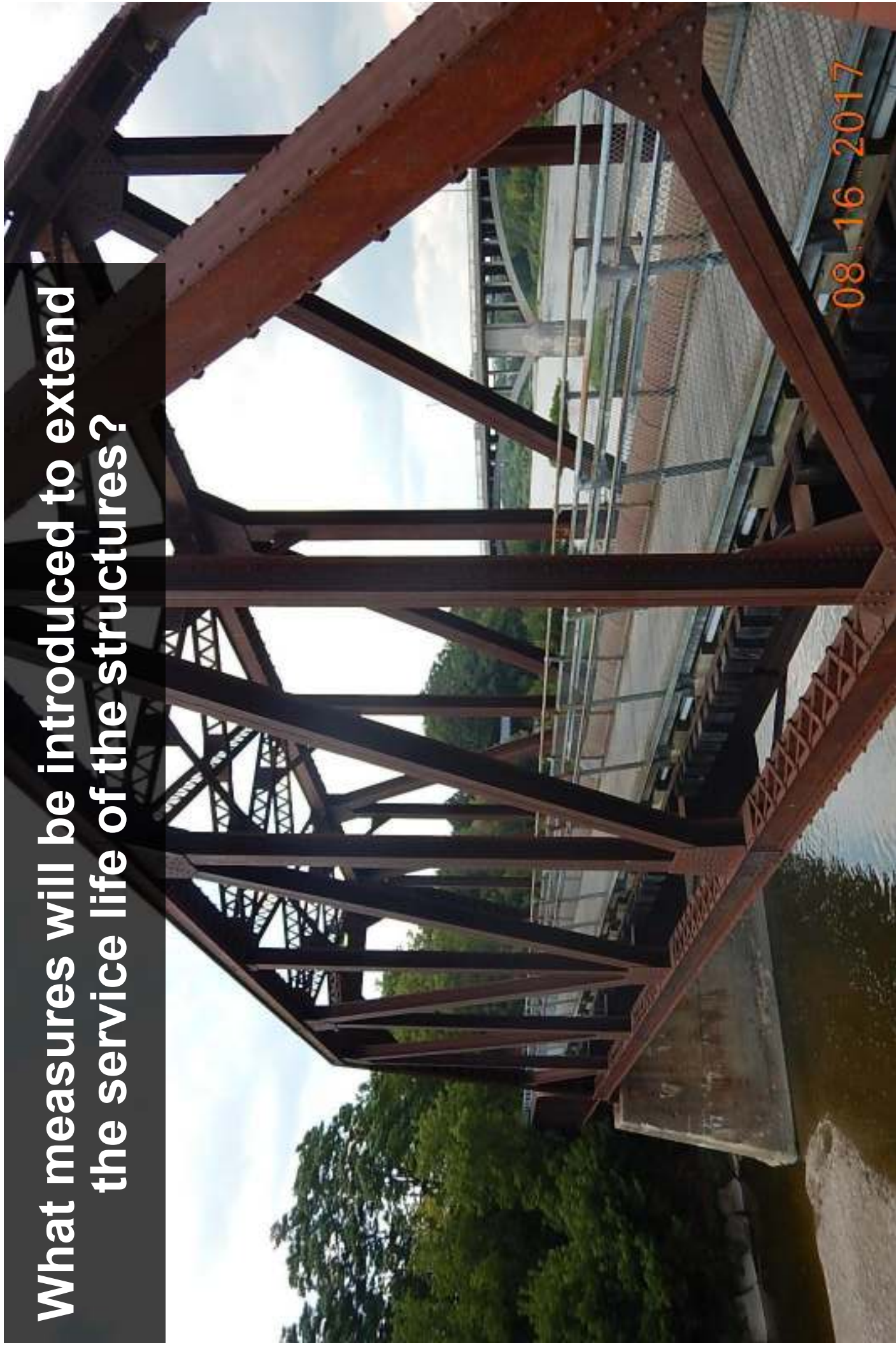


**Can Lorne Bridge accommodate
expanded cycling lanes without
reducing vehicle capacity?**



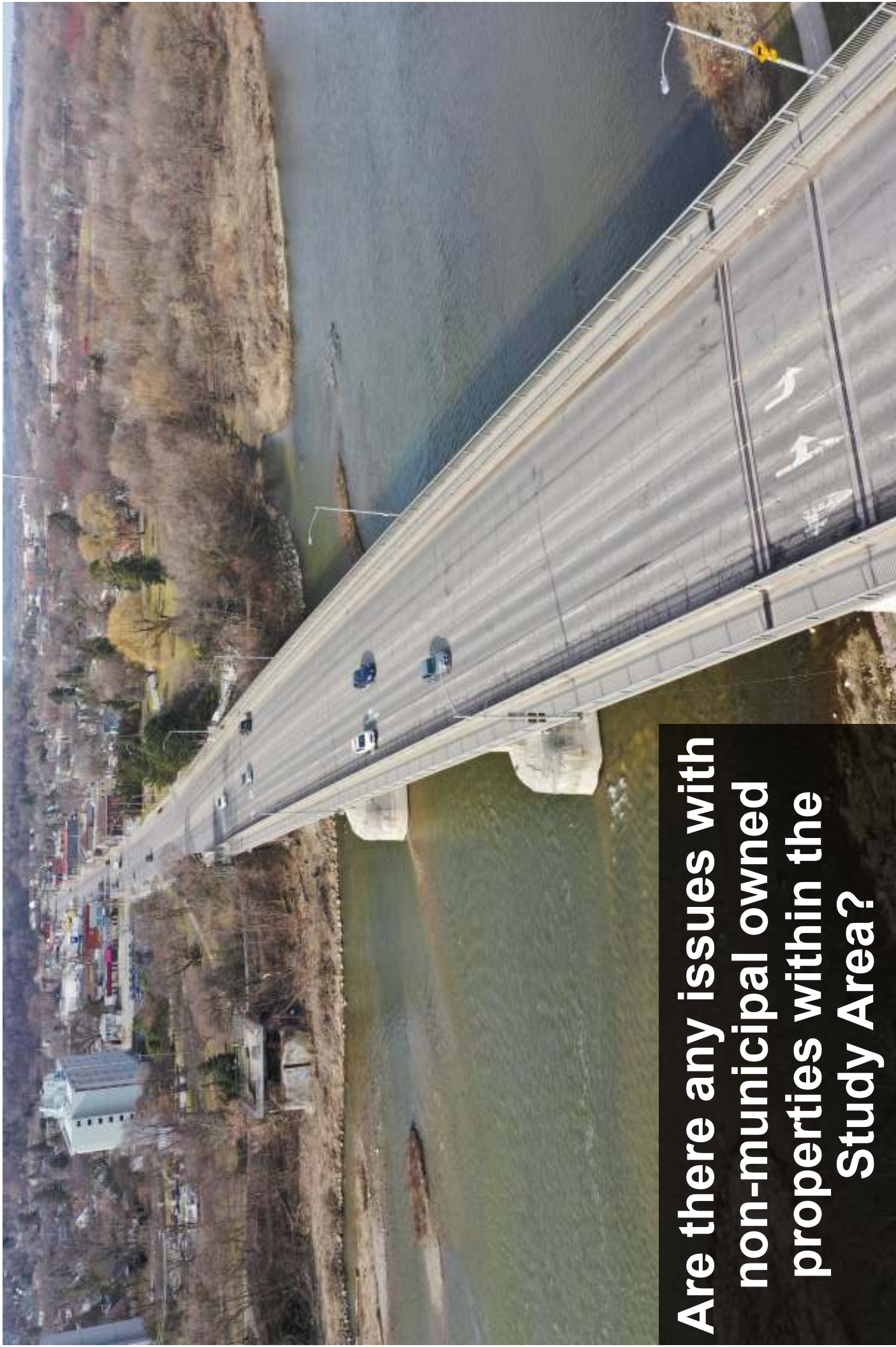
Can Lorne Bridge accommodate expanded cycling lanes without reducing vehicle capacity?

**What measures will be introduced to extend
the service life of the structures?**



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the service life of the structures?**

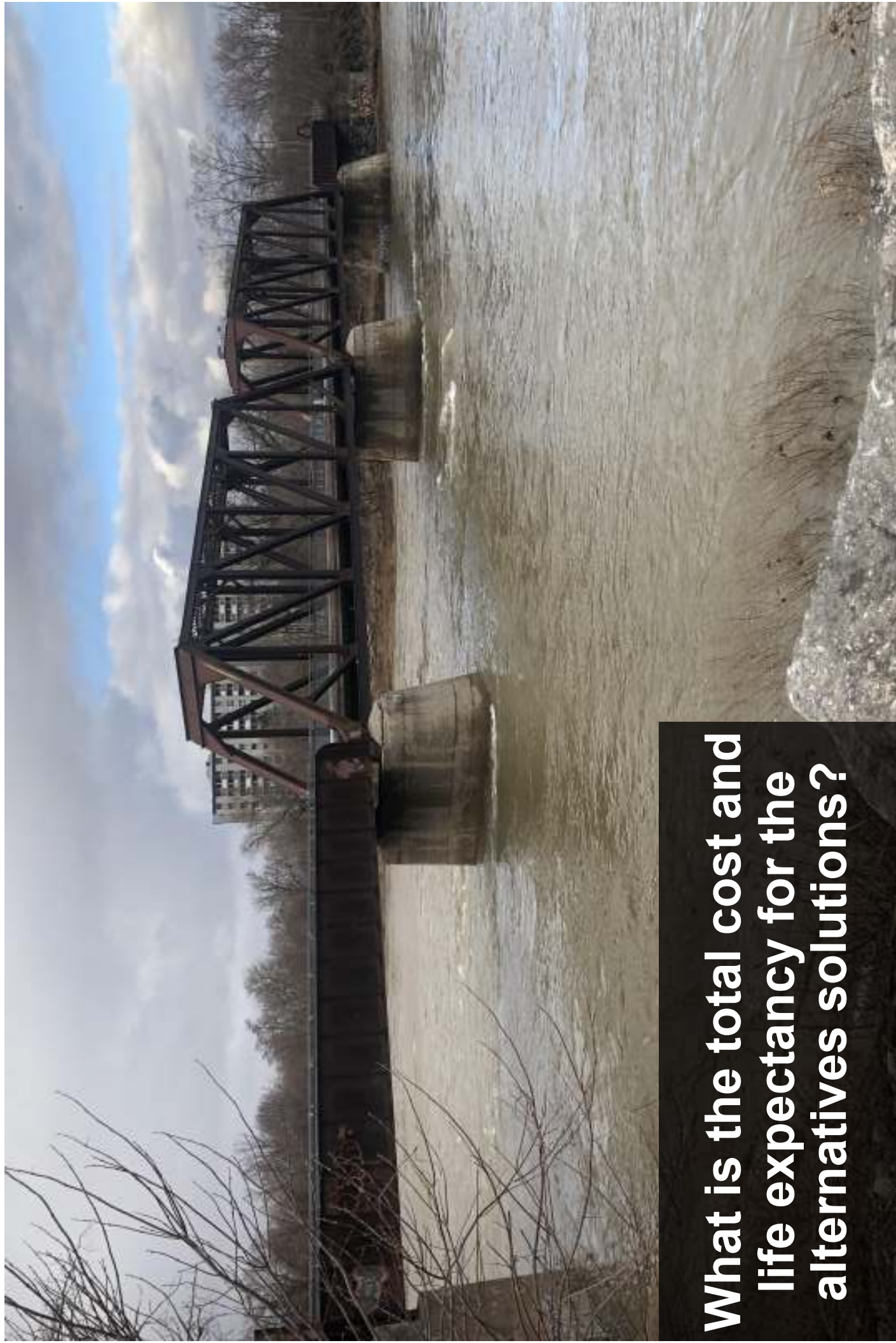




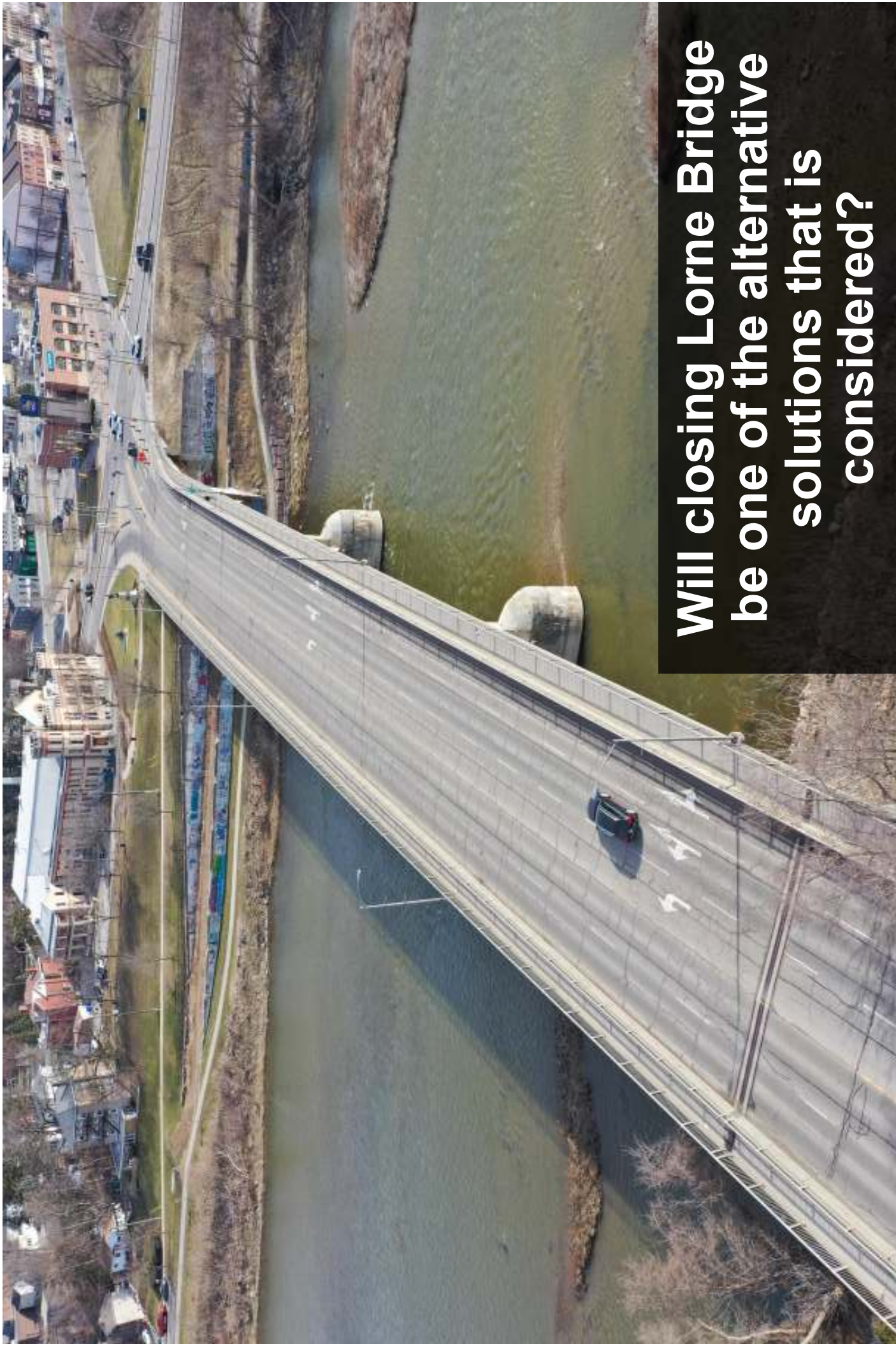
**Are there any issues with
non-municipal owned
properties within the
Study Area?**

What is the timeline for implementing the selected Recommended Crossing Strategy and what would be the duration of construction?





What is the total cost and life expectancy for the alternatives solutions?



**Will closing Lorne Bridge
be one of the alternative
solutions that is
considered?**



Several comments received, including input using the survey, identified preferred solutions for the various crossings.

We Want to Hear from You!

Thank you for participating in this 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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519.824.8150 ext. 1237
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PIC Materials, including Comment Sheets and the Survey, are available on the project webpage:
www.brantford.ca/ThreeGrandRiverCrossings

Comments submitted by **July 8th, 2020** will be considered for the FAQ list posted on July 15, 2020



CITY OF BRANTFORD

THREE GRAND RIVER CROSSINGS

MUNICIPAL CLASS EA

VIRTUAL PUBLIC INFORMATION CENTRE (PIC) 1

FREQUENTLY ASKED QUESTIONS (FAQ) DOCUMENT

FIRST POSTED ON JULY 15, 2020

1. INTRODUCTION

The City of Brantford has initiated a Schedule 'B' Municipal Class Environmental Assessment (EA) for the three bridges over the Grand River, including the Lorne Bridge, Brant's Crossing Bridge and the TH&B Crossing Bridge. As shown in **Figure 1**, the Study Area encompasses an area approximately 175 metres wide starting 200 metres north of Lorne Bridge to 200 metres south of the TH&B Crossing Bridge along the Grand River. Lorne Bridge currently carries traffic on Colborne Street West across the Grand River with a 30 tonne load limit in the winter. Brant's Crossing Bridge was closed in February 2018 following a flooding and ice jam event; the bridge formerly carried pedestrian and cyclist traffic over the Grand River and would require structural repairs in order to be re-opened. The TH&B Crossing Bridge currently carries pedestrian and cyclist traffic over the Grand River and has been identified as requiring structural repairs to maintain the existing crossing.

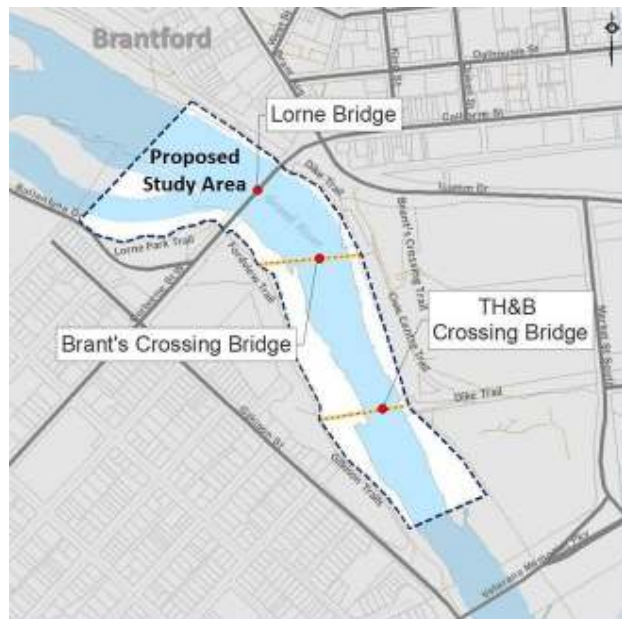


Figure 1 - Study Area

The study is intended to identify the short and long-term plans for the three Grand River bridge 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, social and environmental factors, including impacts to the active transportation network and the risks of future flooding events of the Grand River.



This document provides a consolidated question and answer list for comments submitted to the Project Team throughout Virtual Public Information Centre 1. The Public Information Centre (PIC) process to-date has included a presentation video, posted to the project webpage on May 27th, 2020, and a Question and Answer (Q&A) video, posted to the project webpage on June 17th, 2020.

The PIC presentation and Q&A videos can be viewed on the project webpage at:

www.brantford.ca/ThreeGrandRiverCrossings

To understand the background of the Three Grand River Crossings Municipal Class Environmental Assessment, it is suggested that you review the material presented in the PIC presentation and Q&A videos prior to reviewing this document.

As a recap, the PIC presentation video covered the following topics:

- Project Overview and Background;
- Alternative Solutions that will be considered;
- The Evaluation Framework and the sequence in which alternative solutions will be considered;
- Evaluation Criteria for how the alternative solutions will be evaluated; and,
- An overview of the process for PIC 1.

2. SURVEY RESULTS

In addition to the PIC video that was posted on May 27th, a survey regarding the Three Grand River Crossings was posted to the project webpage on Friday, June 5th.

As of July 8th there were a total of 162 responses. The survey will remain live up to July 15th at 4:30pm. The following sections summarize the results from the survey.

2.1 How frequently do you use the Three Grand River Crossings?

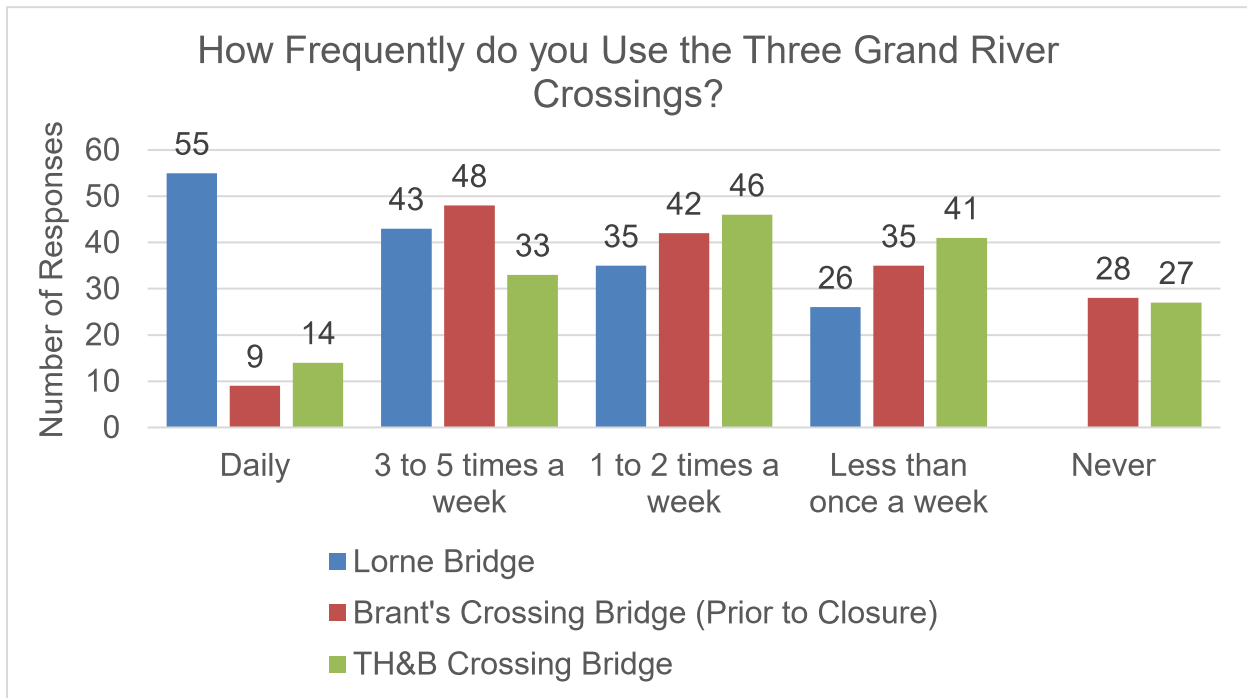


Figure 2 Frequency of Use for Three Bridges

Figure 2 above depicts the responses to the survey question “How frequently do you use the Three Grand River Crossings?” The blue bars represent responses for Lorne Bridge which include: 55 responses for daily use, 43 responses for three to five times a week, 35 responses for one to two times per week and 26 responses for less than once a week.

The red bars represent responses for Brant’s Crossing Bridge which include: 9 responses for daily use, 48 responses for three to five times a week, 42 responses for one to two times a week, 35 responses for less than once a week and 28 responses indicating they have never used the bridge.

The green bars represent responses for TH&B Crossing Bridge which include: 14 responses for daily use, 33 responses for three to five times a week, 46 responses for one to two times a week, 41 responses for less than once a week and 27 responses indicating they have never used the bridge.

2.2 What do you normally use the Brant and TH&B Crossings for?

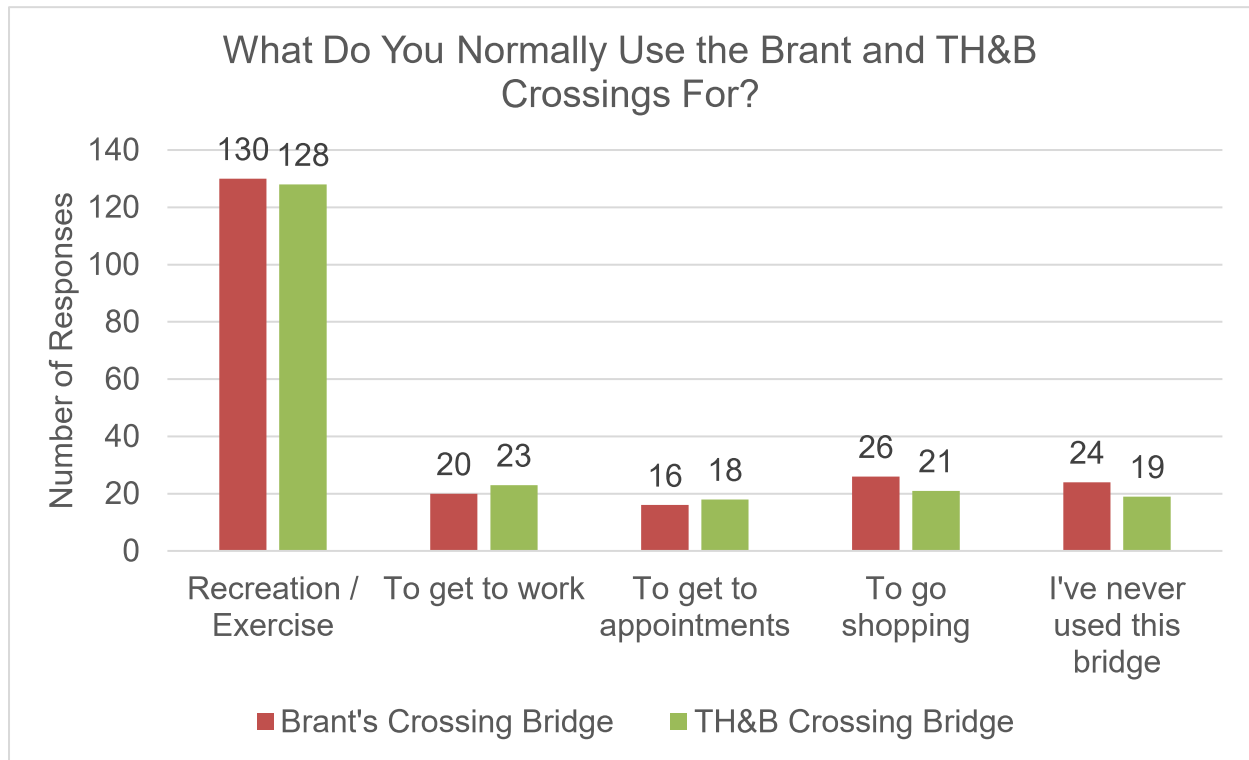


Figure 3 How Brant and TH&B Crossings are Utilized

Figure 3 above depicts the results to the survey question “What do you normally use the Brant and TH&B Crossings for?” Respondents could provide multiple answers for uses of each bridge.

The red bars represent responses for Brant’s Crossing Bridge. There were 130 responses for recreation or exercise, 20 responses for getting to work, 16 responses for getting to appointments, 26 responses for going shopping and 24 responses for never using the bridge.

The green bars represent responses for TH&B Crossing Bridge. There were 128 responses for recreation or exercise, 23 responses for getting to work, 18 responses for getting to appointments, 21 responses for going shopping and 19 responses for never using the bridge.

It should be noted that the number of respondents that indicated that they never use Brant’s Crossing Bridge or TH&B Crossing Bridge decreased from Question 2.1. This could be due to respondents missing or skipping this question while they were taking the survey.

2.3 What kind of transportation do you normally use on Lorne Bridge?

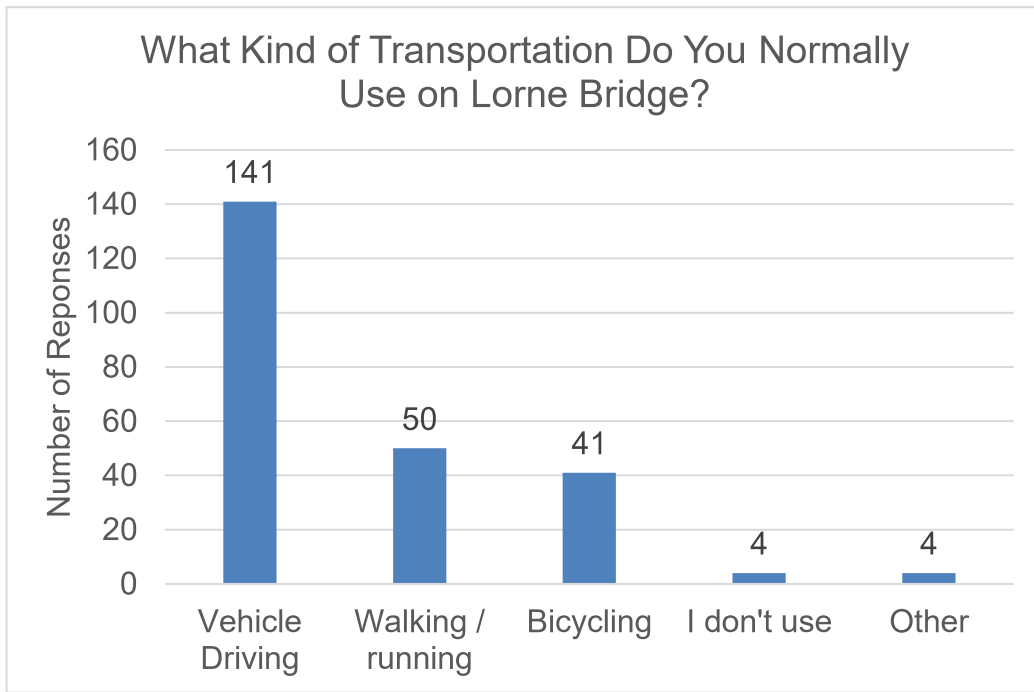


Figure 4 Kind of Transportation Used on Lorne Bridge

The last survey question that we will note in this document asked what methods of transportation were used over Lorne Bridge. Similar to Question 2.2, respondents could provide multiple methods of transportation for this question.

There were 141 responses for crossing the bridge in a vehicle, 50 responses for walking or running, 41 responses for bicycling, 4 responses indicating they did not use the bridge and 4 responses for other (2 indicating mobile scooter and 2 indicating public transit).



3. FREQUENTLY ASKED QUESTIONS

Numerous questions and comments have been submitted to the Project Team throughout the first Virtual Public Information Centre process. The questions and comments received up to July 8th, 2020 have been responded to and grouped into various themes in the section below.

QUESTION THEME INDEX

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Cultural / Heritage Resources	10
Natural Environment.....	11
Technical Environment.....	11

3.1 Timing

3.1.1 What is the timeline for implementing the selected Recommended Crossing Strategy and what would be the duration of construction?

This Environmental Assessment is scheduled to be completed in spring 2021. Implementation of the Recommended Crossing Strategy would be subject to City budgets and council approval and are unknown at this time.

The high-level estimated construction duration will be considered during the evaluation of each alternative solution and will be discussed at the Fall Public Information Centre.

3.2 Costing and Life Expectancy

3.2.1 What is the total cost and life expectancy for the alternative solutions?

As part of the Environmental Assessment, preliminary costing of the recommended alternative solutions will be estimated, including lifecycle costing.

A higher-level cost of the other alternatives will be completed to permit evaluation of the economic criteria.

These calculations have not yet been completed but will be discussed at the Fall Public Information Centre.

3.3 Alternative Solutions

3.3.1 What is the evaluation framework for developing, screening, evaluating and ultimately identifying the recommended solution?

Please refer to Slides 17 through 20 of the PIC presentation slide set.

The alternatives for each individual structure will be screened against the screening criteria (refer to Slides 19 and 20 of the PIC presentation slide set). The alternatives must be technically and economically viable and meet the needs of the Problem and Opportunity Statement. Once the alternatives have been screened, the feasible short-listed alternative solutions for each crossing will be identified.

Feasible combinations of the short-listed alternatives will then be identified to create a list of Overall Crossing Strategy Alternatives for the study that encompass all three structures and a potential new crossing. A detailed evaluation will take place to evaluate each Overall Crossing Strategy Alternative, ultimately leading to the selection of a recommended Overall Crossing Strategy for the Three Grand River Crossings.

The combinations of Overall Crossing Strategies (examples are depicted on Slide 18 of the PIC presentation slide set) will vary depending the outcome of the screening. The examples shown on Slide 18 are not meant to prejudice the Environmental Assessment Process. The combinations of the various individual structure alternatives will be evaluated at a later date and will be presented at the Fall Public Information Centre.

3.3.2 Will closing Lorne Bridge be one of the alternative solutions that is considered?

A “Closure” alternative for the Lorne Bridge is being considered for completeness of the Environmental Assessment; however, it is not expected to be the recommended option for Lorne Bridge when evaluated against the social, natural, technical and economic criteria.

We note that Colborne Street West, the roadway over Lorne Bridge, is identified as an arterial road and a critical transportation link in the City.

3.3.3 Will another vehicular crossing in addition to the Lorne Bridge be one of the alternative solutions that is considered?

Constructing a new bridge in the same location as the Lorne Bridge is one of the alternatives being considered.

A new vehicular crossing, at a new location, within the Study Area will not be considered. Additional vehicular crossings outside of the Study Area are beyond the scope of this Environmental Assessment.

3.4 Active Transportation Network

3.4.1 How can the active transportation network be maintained and/or improved in the study area?

As part of this Environmental Assessment, only the active transportation network over each structure, as well as the trail networks connectivity at the approaches of each structure, will be evaluated. Improvements to signage or pavement markings on existing trails are not included within the scope of this project.

Additionally, a Traffic Impact, Safety and Active Transportation study is being conducted to evaluate pedestrian and cycling movements within the Study Area. The study will include, but is not limited to, consultation with the public and City staff, identifying operational deficiencies and evaluating the benefits of cycling lanes.

3.4.2 How would each of the crossings be modified to improve the active transportation network?

Only the active transportation network over each of the bridges and the connectivity to the trail network at the approaches of each structure will be evaluated.

3.4.3 Several comments noted concerns with the existing cycling facilities on Lorne Bridge.

The evaluation of Lorne Bridge will consider whether improvements can be made to the active transportation network over the structure. Improvements that will be evaluated during this Environmental Assessment could include providing expanded or delineated active transportation facilities over Lorne Bridge.

3.4.4 Several comments noted concerns with the existing shared-use trail under Lorne Bridge, on the east river bank.

The City is in the process of formalizing an additional shared-use trail along the rail trail corridor. The existing shared-use trail under Lorne Bridge would be decommissioned for use by cyclists and would function for pedestrian use only. This shift in trail functions is anticipated to improve safety and accessibility of the trails for both cyclists and pedestrians. This work is being completed by the City Parks Department and is independent of this Environmental Assessment.

3.4.5 How will the active transportation network over Brant's Crossing Bridge be improved?

The ability to improve cyclist and pedestrian access over Brant's Crossing Bridge will be evaluated.

3.4.6 How will the active transportation network over TH&B Crossing Bridge be improved, specifically the condition of the existing wood deck?

The evaluation could determine that improvements to the deck over the TH&B Crossing Bridge are warranted to improve overall safety.

Additionally, the project will explore and evaluate raising the bridge deck to provide users improved views of the Grand River and surrounding landscape.

3.4.7 How will wayfinding within the Study Area be improved?

As part of this Environmental Assessment, a Wayfinding Strategy Report will be prepared to detail the location and inventory of existing regulatory signs, informational signs, electronic signs and static signs. The report will include recommendations for improved wayfinding signage specific to the areas around each bridge.

3.5 Flooding Events

3.5.1 What are the impacts of flooding events on each of the crossings?

As part of the Environmental Assessment, a Hydraulic Impact Study is being conducted to review the flood behaviour of the Grand River in the vicinity of the three bridges.

The study will analyze whether the existing bridges are at risk of future flooding events and whether preventative action should be considered. Preventative action could involve raising the bridges to accommodate a flooding event.

The study is not yet complete. The results will be included in the evaluation of the alternative solutions and will be discussed at the Fall Public Information Centre.

3.6 Cultural / Heritage Resources

3.6.1 Does the Study Area contain resources that have archaeological potential, and if so, how will the resource be considered in this Environmental Assessment?

As part of the Environmental Assessment, an Archaeological Assessment study is being conducted to identify areas within the Study Area that exhibit archaeological potential.

The purpose of the report is to identify the areas with archeological potential and make recommendations on whether further investigations would be required if these areas are disturbed.

The study is not yet complete. The results and recommendations of the study will be included in the evaluation of the alternative solutions and will be discussed at the Fall Public Information Centre.

3.6.2 Does the Study Area contain resources that have cultural or heritage significance, and if so, how will the resource be considered in this Environmental Assessment?

As part of the Environmental Assessment, a Built Heritage Resources and Cultural Heritage Landscape Resources study is being conducted to formally identify the cultural and/or heritage resources.

The study will identify the significance of the resource as well as provide recommendations for mitigation measures if any of the alternative solutions will impact that resource. Mitigation measures could include, but are not limited to, rehabilitation that is sympathetic to the original design, reconstruction that is sympathetic to the original design, installation of plaques and documentation of the resource.

The study is not yet complete. The results of the study, including appropriate mitigation measures, will be included in the evaluation of the alternative solutions and will be discussed at the Fall Public Information Centre.

3.7 Natural Environment

3.7.1 Will the alternative solutions impact the existing natural environment, and if so, how will it be considered in this Environmental Assessment?

As part of the Environmental Assessment, a Natural Environment Assessment Report is being conducted to formally characterize the existing natural environment conditions.

Based on the results of field surveys and background investigations, potential permits, monitoring requirements and mitigation measures will be identified for each alternative.

The results of the Natural Environment Report, including appropriate mitigation measures, will be used to evaluate the alternative solutions, which will be discussed at the Fall Public Information Centre.

3.7.2 Will safe wildlife passage be included in the evaluation of alternatives?

The Grand River itself is an existing natural barrier. Typically, construction of wildlife crossings is considered for artificial impediments such as roadways through wildlife habitats. The Project Team does not anticipate wildlife crossing as a criterion for evaluation.

3.8 Technical Environment

3.8.1 Can Lorne Bridge accommodate expanded cycling lanes without reducing vehicle capacity?

As part of the Environmental Assessment, a Structural Evaluation study and a Traffic Impact, Safety and Active Transportation study are being conducted to evaluate the existing structural conditions and traffic movements over the bridge. The studies will determine if expansion of the deck is realistic and if the existing deck top can be modified to maintain the same vehicle capacity while providing additional active transportation opportunities.

3.8.2 Can Lorne Girder Bridge be finished the same as the Lorne Pedestrian Underpass?

As part of the Environmental Assessment, a Structure Evaluation study is being conducted. As part of this study, the benefits of replacing the Lorne Girder Bridge with a concrete box culvert (similar to the Lorne Pedestrian Underpass) will be considered.

3.8.3 What measures will be introduced to extend the service life of the structures?

A review of the maintenance program for each bridge will occur, and if applicable, changes to these programs will be recommended. Recommendations could include de-icing that does not involve salt, as salt will accelerate the deterioration of steel structures.

Additionally, measures such as galvanic cathodic protection, which utilizes sacrificial additional elements added to structures to slow down corrosion of the main structural load carrying members, may be explored.

3.8.4 Are there any issues with non-municipal owned properties within the Study Area?

A review of property ownership within the Study Area will be completed as part of the Environmental Assessment. Additionally, construction works in and around the Grand River will need to be permitted by the Grand River Conservation Authority, Department of Fisheries and Oceans and other regulatory authorities. The Project Team has been in contact with regulatory authorities and will consult them throughout the study process. The required permitting and any required property acquisitions will be incorporated into the evaluation of alternatives which will be presented at the Fall Public Information Centre.

3.8.5 Brant's Crossing Bridge and TH&B Crossing Bridge formerly carried rail traffic. Will either of these structures be converted back to railway crossings, potentially with a pedestrian pathway?

The existing geometry of the Brant's Crossing Bridge and TH&B Crossing Bridges will not allow for simultaneous railway and pedestrian traffic. The Structural Evaluation of the TH&B and Brant Crossing Bridges is not considering railway traffic loading. Furthermore, the re-implementation of railway traffic through the Study Area is not within the scope of this Environmental Assessment.