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Consulting Engineers

BLACK BRIDGE
Town of Bracebridge

Class EA Schedule B
Project File

FINAL DRAFT

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prepared for

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TABLE OF CONTENTS

Executive Summary		i
1	Introduction and Background	1
1.1	Introduction/Background	1
1.2	Class Environmental Assessment Process	1
1.2.1	Class EA Schedules	2
1.2.2	Class EA Terminology	4
1.2.3	Selected Schedule	4
1.3	Objectives of the Project File Report	5
1.4	Format of the Project File Report	5
2	Need & Justification	7
2.1	Existing Conditions	7
2.1.1	Load Capacity	7
2.1.2	Structural Condition	8
2.1.3	Hydraulic Assessment	8
2.1.4	Geometry	8
2.1.5	Barrier Protection	9
2.2	Problem/Opportunity Statement	9
3	Consultation - Study Commencement	10
3.1	Notification	10
3.2	Public Comments	10
3.3	Agency Comments	11

4	Alternative Solutions	12
4.1	Alternative A – Do Nothing	12
4.2	Alternative B – Rehabilitate the Existing Structure	12
4.3	Alternative C1 – Replace with Single Lane Bridge	12
4.4	Alternative C2 – Replace with Two Lane Bridge	13
5	Environment Inventories	14
5.1	Physical Environment	14
5.1.1	Existing Bridge Structure	14
5.1.2	Existing Approaches	14
5.1.3	Hydraulics	14
5.1.4	Traffic Operations	15
5.1.5	Geotechnical Considerations	15
5.2	Natural Environment	15
5.2.1	Terrestrial Resources	16
5.2.2	Fisheries and Aquatic Resources	16
5.2.3	Potential Mitigation Measures	16
5.3	Social Environment	17
5.3.1	Archaeological Investigation	17
5.3.2	Cultural Heritage Evaluation and Heritage Impact Assessment	17
5.4	Economic Environment	18
6	Evaluation of Alternative Solutions	19
6.1	Evaluation Criteria	19
6.2	Environment Impacts	19

6.2.1	Alternative A – Do Nothing	21
6.2.2	Alternative B – Rehabilitate the Existing Structure	21
6.2.3	Alternative C1 – Replace the Existing Structure with a Single Lane Structure	21
6.2.4	Alternative C2 – Replace the Existing Structure with a Two Lane Structure	21
6.3	Preliminary Preferred Solution	22
7	Consultation - Public Consultation Centre	23
7.1	Notification	23
7.2	Public Consultation Centre	23
7.3	Public Comment	24
7.4	Agency Comment	26
8	Identification of Preferred Solution	27
8.1	Preferred Solution	27
8.2	Confirmation of EA Schedule	27
9	Completion of the EA Process	28
9.1	Submission to the Town of Bracebridge	28
9.2	Stakeholder Consultation - Study Completion	28
9.3	30-Day Review Period	28
9.4	Implementation	29

APPENDICES

Appendix A: Consultation – Study Commencement

Appendix B: Archaeological Stage 1 Assessment Report and Cultural Heritage Evaluation & Heritage Impact Assessment Report

Appendix C: Natural Environment Review

Appendix D: Consultation – Public Information Centre

Appendix E: Consultation – Notice of Study Completion

Appendix F: Preferred Alternative Layout Sketch

LIST OF TABLES

Table 1: Study Commencement Public Comment Summary	10
Table 2: Pros & Cons of Alternative Solutions	20
Table 3: Study Commencement Public Comment Summary	24

LIST OF FIGURES

Figure 1: Key Map	1
Figure 2: Class EA Process	3

Executive Summary

Study Overview & Objective

The Black Bridge is a single lane through truss built circa 1922. The existing structure has a single span and a driving platform width of 4.1 m, and an overall structure width of 4.4 m. The Matthiasville Road is an east/west local road running roughly parallel with Ontario Highway 118. 2012 traffic counts indicate Average Annual Daily Traffic (AADT) numbers of 264 vehicles per day. The 2012, Road Needs Study, projects a 2022 AADT forecast of 350, which is likely generous based on the limited growth in this area. Even with the significant projected increases, the traffic volumes are below the threshold of 400 AADT and the bridge is considered to be a low volume road bridge under the MTO Structural Manual.

The existing bridge has several deteriorated elements, including the abutments. The truss elements have moderate corrosion, and the structure has an existing triple load posting of 12/18/22 tonnes.

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, geometry, and barrier protection.

Alternative Solutions

Four alternative solutions were explored with respect to the natural, social, physical and economic environments.

Alternative A is to do nothing, under which no repairs will be completed on the bridge and it will continue to deteriorate and the load capacity of the structure will continue to decrease.

Alternative B is to rehabilitate the existing structure. Considering the extent of deterioration and the structure type, this will be an extensive rehabilitation and only a short term solution. The bridge will remain deficient in geometry, and load capacity.

Alternative C1 is to replace the bridge with another single-lane structure. This alternative addresses load capacity and barrier protection deficiencies, however, will remain deficient in geometry.

Alternative C2 is to replace the bridge with a two-lane structure. This alternative will address all the deficiencies of geometry, load carrying capacity, and barrier protection. However it has the greatest impact to the environment as well as the greatest life cycle cost.

Environment Inventory

The purpose of the environment inventories is to provide the information from which the assessment of the alternative solutions can be based. A description of the study area has been developed considering

the identified improvement alternatives, existing land uses and developments, and the natural environment, physical environment, economic environment and cultural/heritage environment.

As requested by the Ministry of Culture, Tourism and Sport, a screening checklist was completed for the Bridge, and a Cultural Heritage Evaluation was completed by AMICK Consultants Ltd, with field work completed on April 3, 2017. The evaluation identifies the Black Bridge has cultural heritage value or interest under Ontario Regulation 9/06. Retention of the existing truss or replacement with a replica structure are both recommended mitigation options.

A Stage 1 Archaeological Assessment was carried out by AMICK Consultants Ltd., with the field work completed on May 1, 2017. The assessment indicates that study area is an area of archaeological potential due to the proximity to water and the potential that it was within an area of Native and/or early Euro-Canadian settlement. Any areas that are not considered previously disturbed or low lying and wet are recommended to have a Stage 2 Assessment undertaken if it is to be disturbed during construction. The areas identified for Stage 2 assessment include a significant portion of the property, excluding the footprint of the existing structure, areas under pavement and areas that are permanently wet. The remaining property are viable to assess.

No geotechnical investigation is proposed until a final alternative is chosen. The existing structure has a pile foundation under the north abutment and a shallow foundation on bedrock under the north abutment.

With respect to the economic environment, the associated costs incurred in implementing and maintaining the structure improvements were considered. The costs have been considered in relation to the extent of required upgrades or improvements to the existing bridge and construction of a new bridge. In addition, impacts to abutting lands have also been considered as part of the economic environment given the associated costs to obtain any required lands.

Preferred Solution

Following consideration of all comments received, the replacement of the existing structure with a single lane bridge was identified as the preferred solution. In consideration of the geometric deficiencies it was also identified that reducing the speed limit and installing warning signs should also be considered in the replacement design. Use of a sympathetic structure type is preferred to mitigate the heritage impact.

Next Steps

Following completion of the Class EA Schedule B process, which allows for one further point of public consultation and review, and provided there are no requests for a Part II Order, the Town may proceed to implementation.

1 Introduction and Background

1.1 Introduction/Background

The Town of Bracebridge is considering improvements to the site known as Black Bridge located on Matthiasville Road, 1 km north-east of Highway 118 East, on Lot 8, Concession 7, Geographic Township of Draper, in the Town of Bracebridge. The structure crosses the South Branch of the Muskoka River. A key map showing the site location can be seen in Figure 1.

C.C. Tatham & Associates Ltd. were retained by the Town to undertake a Municipal Class Environmental Assessment study, in accordance with the appropriate guidelines¹. The objective of the Class EA is to confirm the need for improvements and consider the most appropriate manner in which they can be implemented.

Figure 1: Key Map



1.2 Class Environmental Assessment Process

The Class Environmental Assessment process is defined in the *Municipal Class Environmental Assessment* document. Applying to all municipal road improvement projects, a number of study

¹ *Municipal Class Environmental Assessment*. Municipal Engineers Association, October 2000 as amended in 2007, 2011, & 2015.

categories or schedules have been established recognizing the range of environmental impacts. These are briefly described below whereas the process corresponding to each is illustrated in Figure 2.

1.2.1 Class EA Schedules

Schedule A

Schedule A projects generally include normal or emergency operational and maintenance activities. As the environmental effects of these activities are usually minimal, these projects are pre-approved and may proceed directly to implementation without the need to complete the design and planning process. No reports or study documents need to be prepared.

Schedule A+

Schedule A+, includes projects that are typically limited in size and scope, and thus have minimal associated environmental impacts. While these projects are also pre-approved, they require notification to the public prior to implementation. No reports or study documents need to be prepared outside of the notification.

Schedule B

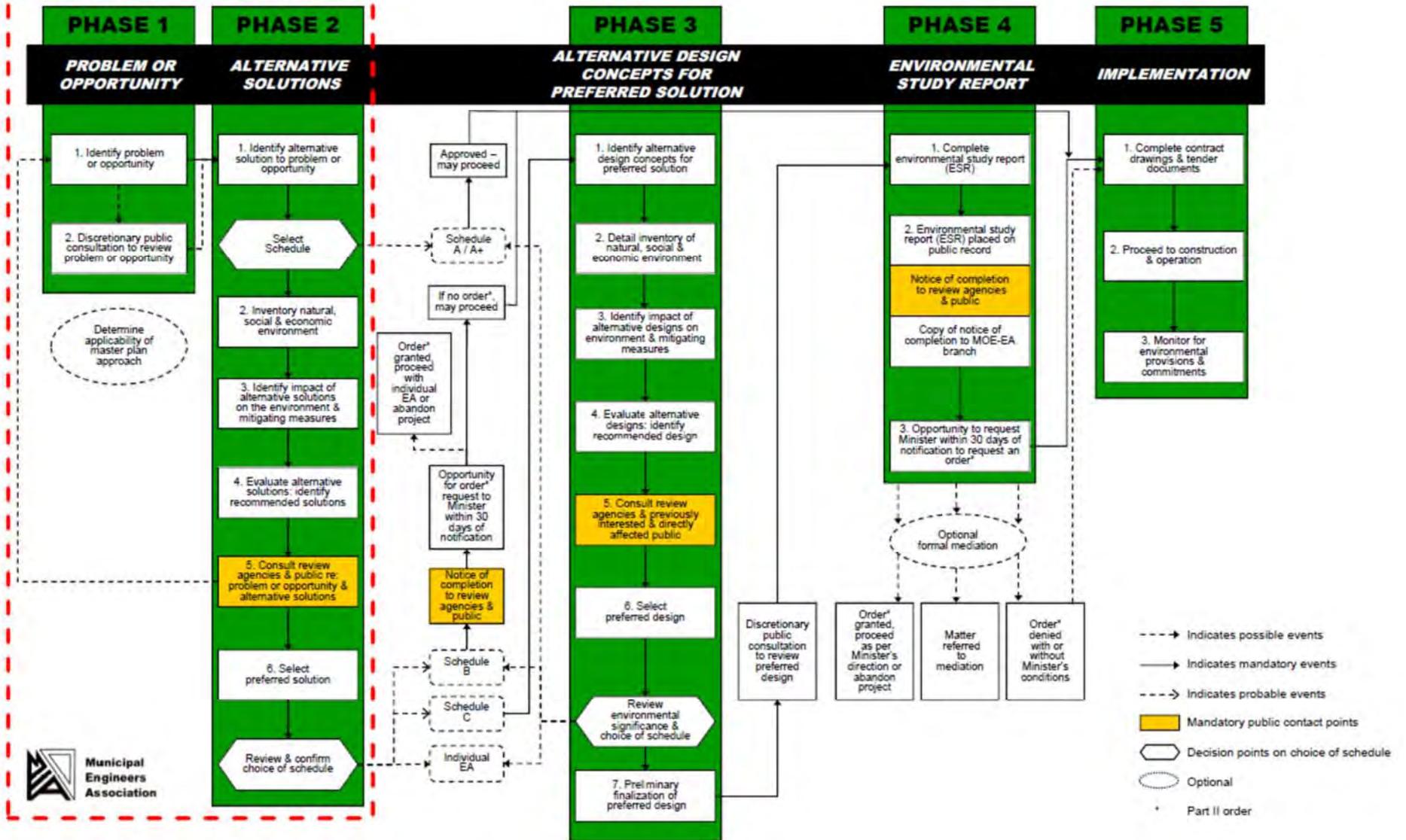
Schedule B projects generally include improvements and minor expansions to existing facilities. As there is the potential for some adverse environmental impacts, the municipality is required to conduct a screening process whereby members of the public and review agencies are informed of the project and given the opportunity to provide comment. Documentation of the planning and design process is required under a Schedule B study. As these studies are generally straightforward and do not require detailed technical investigations to arrive at the preferred solution, a formal report is not required. Rather, a Project File shall be prepared to demonstrate that the appropriate steps have been followed. The Project File is to be submitted for review by the public and review agencies.

Schedule C

Schedule C projects generally include the construction of new facilities and major expansions to existing facilities. As they have the potential for environmental impacts, they must proceed under the full planning and documentation procedures specified by the Municipal Class EA document. Schedule C projects require an Environmental Study Report (ESR) to be prepared and appropriately filed for review by the public and review agencies.

Figure 2: Class EA Process

Schedule B Phases



1.2.2 Class EA Terminology

Prior to determining the appropriate Class EA schedule, an understanding of the defining terminology is required as noted below:

Hydraulic Capacity

Means capacity defined in terms of the volume of water that can be conveyed under or through a water crossing structure.

Road Capacity

Means capacity defined in terms of the number of travelled lanes and does not differentiate between various lane widths to accommodate differing traffic volumes.

Same Purpose, Use, Capacity & Location

Refers to the replacement or upgrading of a structure or facility or its performance, where the objective and application remain unchanged, and the volume, size and capability do not exceed the minimum municipal standard, or the existing rated capacity, and there is no substantial change of location. Works carried out within an existing road allowance such that no land acquisition is required are considered to be in the same location. Conversely, it is thus inferred that should improvements extend beyond the existing road allowance and additional property is required, the location is considered to have changed.

Watercourse

Means flowing water, though not necessarily continuous, within a defined channel and with a bed and banks which usually discharges itself into some other watercourse or body of water.

1.2.3 Selected Schedule

As per the Class EA guidelines and in consideration of the improvement works, the following apply:

- Schedule A for the reconstruction or alteration of a structure or the grading adjacent to it when the structure is over 40 years old which after appropriate evaluation is found not to have cultural heritage value.
- Schedule A+ for the reconstruction of a water crossing for the same purpose, use, capacity (refers to either hydraulic capacity or road capacity) and at the same location;
- Schedule B for the reconstruction of a water crossing where the reconstructed facility will not be for the same purpose, use, capacity (refers to either hydraulic capacity or road capacity) or at the same location and provided the cost is less than \$2.4M;
- Schedule B for the construction of a new water crossing provided the cost is less than \$2.4M;

- Schedule B for the reconstruction or alteration of a structure or the grading adjacent to it when the structure is over 40 years old, which after appropriate evaluation is found to have cultural heritage value; and
- Schedule C for the above noted projects which exceed \$2.4M.

In consideration of the above Class EA guidelines, potential alternative solutions and the associated costs (the reconstruction of the existing bridge, or construction of a new bridge can each be implemented for less than \$2.4M), and to ensure appropriate public consultation throughout the study, the Schedule B Class EA process has been adopted. As illustrated in Figure 2, a Schedule B requires completion of Phases 1 and 2 of the Municipal Class EA planning and design process.

1.3 Objectives of the Project File Report

The overall objective of this report is to document the planning process undertaken during the Class EA process related to the development and evaluation of alternative solutions and designs. Specifically, the objectives of this report are as follows:

- to prepare a detailed description of the problem;
- to establish alternatives to address the problem;
- to prepare a detailed inventory of the affected/applicable environments (physical, natural, social, economic, cultural, etc.);
- to screen the impact of the alternatives on the environment; and
- to outline the remaining steps involved in the planning and design for improvements to the Black Bridge to complete the Municipal Class Environmental Assessment process.

1.4 Format of the Project File Report

The Project File Report has been prepared in accordance with the chronological order of the Class EA process and is structured as follows:

- Chapter 2 presents the need and justification of the study and the preparation of a problem statement to guide the Municipal Class EA process;
- Chapter 3 addresses the first point of public consultation - Notice of Study Commencement;
- Chapter 4 details the alternative solutions developed to address the problem statement;
- Chapter 5 identifies the affected environments and provides an inventory of such to be considered in the subsequent evaluation;

- Chapter 6 details the evaluation of the alternative solutions in context of the manner to which they satisfy the problem statement and potential impacts to the environments;
- Chapter 7 addresses the second point of public consultation - Public Information Centre 1;
- Chapter 8 identifies the preferred solution, considering the initial evaluation and comments received from Public Information Centre 1; and
- Chapter 9 outlines the remaining tasks in the Municipal Class EA process.

2 Need & Justification

The purpose of this Class EA study is to identify the most appropriate improvement strategy to address the needs for the Black Bridge. In doing so, it is first necessary to establish/understand the existing conditions from which the needs are determined. Once these existing conditions and needs are identified, the overall problem statement can be defined. These tasks have been completed in accordance with Phase 1 of the Class EA process, which culminates with the creation of the problem statement.

The main areas of concern are:

- identifying, evaluating and selecting long-term cost-effective strategies to address the deteriorated condition of the existing bridge;
- providing the necessary improvements to the roadway approaches to suit the bridge;
- minimizing and/or avoiding impacts to adjacent private property;
- provision of proven environmental protection and mitigation measures given the proximity of construction activities to the watercourse; and
- acquisition of necessary approvals, in a timely manner.

2.1 Existing Conditions

The Black Bridge is a single lane, structural steel through truss bridge and was built circa 1922. The existing structure has a single 36.7 m span and a driving platform width of 4.1 m, and an overall structure width of 4.4 m. The bridge underwent rehabilitation in 1981 to extend the life of the structure, at which time various steel elements were replaced, along with the timber deck and barriers. Further replacement of diagonal truss members that sustained cracking from vehicle impact, were completed in 2013.

Matthiasville Road is an east/west local road in the Town of Bracebridge, running approximately parallel to Ontario Highway 118. 2012 traffic counts indicate Average Annual Daily Traffic (AADT) numbers of 264 vehicles per day. The 2012 Road Needs Study indicates a 2022 AADT forecast of 350, which is likely generous based on the limited growth in this area. Even with the significant projected increases, the traffic volumes are below the threshold of 400 AADT and the bridge is considered to be a low volume road bridge under the MTO Structural Manual.

2.1.1 Load Capacity

The existing bridge has several deteriorated elements, including the abutments. The truss elements have moderate corrosion, and the structure has a load posting of 12/18/22 (posting bylaw 2015-013). The current load posting does not permit fully loaded municipal snow plough / sander truck movements

across the bridge. The load limit is expected to reduce as the bridge deteriorates further, which is unacceptable to the Town.

2.1.2 Structural Condition

The 2016 OSIM inspection report raised the following structural concerns:

- 100% of the substructure is in poor condition, with wide cracking, severe erosion/scour and concrete disintegration, and failed patches;
- 20% of the steel stringers are in poor condition with corrosion flaking (less than 10% section loss); and
- 15% of the deck is in poor condition.

A detailed theoretical evaluation was completed based on the existing MTO drawings. The evaluation included a 3 dimensional analysis of the overall structure, assuming one vehicle on the bridge due to geometry restrictions. The evaluation was completed in accordance with CHBDC S6-14 (April 2016 reprint) Chapter 14. It confirmed the current load posting of 12/18/22 on the bridge is acceptable.

2.1.3 Hydraulic Assessment

The Black Bridge spans the South Branch of the Muskoka River along Matthiasville Road, which is considered a local road. In accordance with Ministry Directive B-100, the design flood criteria is the 50 year design storm.

The Black Bridge is located downstream of the Matthiasville Dam and water levels and flows are largely controlled by the dam. Opportunities for improvements to the alignment vertically and horizontally to increase the hydraulic opening will be limited without major impacts to existing adjacent properties due to the relatively flat topography within the right of way.

The 1922 design drawings indicate a 1.2 m clearance from the high water level to the underside of the bottom chord. As there are no issues with the current bridge hydraulics, the alternative solutions are based on maintaining the existing hydraulic opening. Should replacement be identified as the preferred alternative, a hydraulic analysis should be performed during detail design to confirm the suitability of the current opening.

2.1.4 Geometry

The existing structure has an overall width of 4.4m with a travelled deck width of 4.1m. As the AADT is less than 400 vehicles per day, this roadway can be classified as a low volume road. As noted in the 2012 Road Needs Study, Matthiasville Road in the vicinity of the bridge has an 80 km/hr speed limit, although it is not signed. This bridge is the only width restriction along the road's length.

Treating the road as a low-volume road, the required minimum bridge width for traffic volumes between 200 and 400 AADT, and posted speeds of > 70 km/hr is 8.5 m. The current width of 4.1 m requires a reduced posted speed of < 50 km/hr as well as improvements to address the horizontal sight distance issues (ie additional signage or signals).

2.1.5 Barrier Protection

The existing barriers are non-standard, and were installed in 1982. They are a significant improvement over the original railings, however do not meet current crash test standards.

In addition, the approach guide rail is not continuous with the structure barrier, creating a vehicle snagging hazard, and the lengths are deficient and do not meet the 2002 MTO memorandum on length of protection for water hazards.

2.2 Problem/Opportunity Statement

In consideration of the existing conditions, the Problem Statement, which sets the framework for the remainder of the study, is as follows:

"The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection."

3 Consultation - Study Commencement

As per the Class EA process (refer to Figure 2), there are a number of points of stakeholder contact. The first point of contact, as discussed in this chapter, is the Notice of Study Commencement, which is used to inform the general public and stakeholders of the start of the study. The remaining points of contact are discussed further in the report following the chronological order in which they occurred.

3.1 Notification

A Notice of Study Commencement, which is a discretionary point of contact, was issued to all property owners (as determined from the Town of Bracebridge's records) within the study area on August 10, 2017. The notice identified the study area, the study methodology and EA guidelines to be followed. In addition, it invited public input and comments early in the process such that they could be considered in the overall study design and completion. A copy of the Notice of Study Commencement is provided in Appendix A.

Similar notices were also submitted to the appropriate review agencies, stakeholder groups and special interest groups, a listing of which is provided in Appendix A.

3.2 Public Comments

Public comments were received from four residents. Table 1 below, is a summary of the comments received prior to the PIC, with the number of people who made similar comments.

Table 1: Study Commencement Public Comment Summary

# of Times Received	Comment
3	The existing Black Bridge is beautiful/ a landmark/ historic/ part of our heritage
2	The existing Black Bridge adds value to adjacent properties
1	Twin structures would be unattractive
1	The replacement bridge should be black
1	The replacement bridge should be iconic / aesthetically pleasing
1	There should be a historic plaque installed on the new structure to commemorate the existing structure
1	The new bridge should have improved load capacity
1	The new bridge should be able to accommodate snow-plough services
1	The new bridge should have a multi-use pathway

# of Times Received	Comment
1	The old bridge steel should be used to create a sculpture.

3.3 Agency Comments

Comments were received from a number of review agencies and utility companies in response to the notice of study commencement. The comments are summarized below whereas the associated correspondence is provided in Appendix A.

Chippewas of Rama First Nation

- Advised that they had reviewed the Notice and forwarded the information on to the Council and the Williams Treaties First Nation Process Coordinator/Negotiator for further review.

Union Gas

- Advised that they had no facilities in the area and therefore had no comments or concerns with the project.

Hydro One

- Provided updated contact information.

The Ministry of Tourism, Culture and Sports (MTCS)

- Replied to advise that the area had archaeological potential (including land-based and marine) and they recommended that the Municipal Heritage Bridges Cultural, Heritage & Archaeological Resources Assessment checklist be completed.
- The checklist was completed and submitted to the MTCS. From the checklist it was determined that Cultural Heritage Evaluation, Heritage Impact Assessment and Stage 1 Archaeological Assessment would be required, and MTCS was advised that these studies were being undertaken by AMICK. Further comment has not been received from MTCS.

4 Alternative Solutions

Further to the identification of the Problem Statement, a number of possible bridge improvement solutions have been developed for consideration and evaluation. The associated tasks have been completed in accordance with Phase 2 of the Class EA process. It is noted that the alternative solutions are focussed on improving the safety of the bridge while addressing the existing deficiencies.

4.1 Alternative A – Do Nothing

No improvements or changes to the bridge will be made to solve the identified problems and as such, the problems will remain. The structure will continue to deteriorate, and will require eventual closure to vehicle traffic. While this will not satisfy the objectives of the Municipality to improve the safety, condition, and performance of the bridge, a do nothing option is suggested for consideration within the Municipal Class EA guidelines. A decision to do nothing would typically be made when the costs of all other alternatives, either financially and/or environmentally, significantly outweigh the benefits.

4.2 Alternative B – Rehabilitate the Existing Structure

The minimum repairs to address the structural and safety deficiencies will be completed, including improvement of approach roadway safety features. No increase in load carrying capacity or road capacity will be achieved. Anticipated work will involve concrete patching, replacing the current barrier system on the structure, replacing the wearing surface, and extending the steel beam guide rail on the approaches.

4.3 Alternative C1 – Replace with Single Lane Bridge

The existing bridge will be replaced by a single-lane, single span structure with a similar geometry and alignment to the current structure. This alternative will eliminate the load limits on the structure, permit the crossing of emergency vehicles and snow ploughs, and reduce ongoing maintenance costs. This alternative also provides opportunities to improve safety for motorists, pedestrians, cyclists, and fishermen. Consideration will be made for improving sight lines and/or installing additional signage or traffic signals. With respect to the replacement structure, options to be considered may include, but will not be limited to: prefabricated truss structure (Through Truss, Modular Truss, Replica Truss), steel girder, or concrete girder.

In-water work will be required under this option and therefore additional care will be required to minimize impacts to the watercourse and the surrounding natural area.

4.4 Alternative C2 – Replace with Two Lane Bridge

The existing bridge will be replaced by a two-lane single span structure. This alternative eliminates the safety concerns related to a single-lane structure. It will also eliminate the load limits on the structure. With respect to the replacement structure, options to be considered may include, but will not be limited to: prefabricated truss, concrete girder and steel girder.

In-water work will be required under this option and therefore additional care would be required to minimize impacts to the watercourse and the surrounding natural area.

5 Environment Inventories

A description of the study area has been developed considering the identified alternative solutions and considering the following environments:

- Physical Environment
- Natural Environment
- Social Environment
- Economic Environment

In accordance with the Class EA framework, detailed investigations and analyses with respect to the environment inventories were not required at this point in the study. Rather, data was obtained based on a number of site visits and from a review of secondary information pertaining to the study area. The purpose of the inventories is to obtain information upon which the assessment of the alternative solutions can be based. Brief descriptions of the various environments investigated are provided below.

5.1 Physical Environment

Several elements of the physical environment were presented in Section 2.2, particularly with respect to the structural condition of the bridge. Additional elements of the physical environment are presented below.

5.1.1 Existing Bridge Structure

As explained in Section 2.1, many of the bridge elements are considered to be in poor condition. Due to the condition and type of structure the bridge will need to be replaced or closed in the near future.

5.1.2 Existing Approaches

The existing approach to the bridge from the south is severely deficient in horizontal alignment with a sharp curve with a radius less than the minimum required for a 40 km/hr posted speed. There is a gentle grade on the approaches and across the bridge. Existing roadside protection consisting of steel beam guide rail appear to be in good condition however are deficient in length. The approach roadway is a 2 lane configuration tapering down to a single lane over the bridge. Additionally, the asphalt road surface is in fair condition with some signs of deterioration. Although not as critical as the work to be carried out at the bridge, improvements to the existing approaches will be considered.

5.1.3 Hydraulics

As noted in Section 2.2.3, it is assumed that the hydraulic capacity of the bridge is sufficient.

The 1922 design drawings indicate a 1.2 m clearance from the high water level to the underside of the bottom chord. During the 2013 spring melt, the resulting water levels were approximately equivalent to a 1 in 100 year design storm event, at which time there were no flooding issues at the bridge. As there are no issues with the current bridge hydraulics, the alternative solutions are based on maintaining the existing hydraulic opening. Should replacement be identified as the preferred alternative, a hydraulic analysis is recommended during detail design to confirm the current opening's suitability.

5.1.4 Traffic Operations

As mentioned previously, Matthiasville Road is considered a local road. 2012 traffic counts indicate Average Annual Daily Traffic (AADT) numbers of 264 vehicles per day. The 2012 Road Needs Study projects a 2022 AADT forecast of 350, which is likely generous based on the limited growth in this area. Even with the significant projected increases, the traffic volumes are below the threshold of 400 AADT and the bridge is considered to be a low volume road bridge under the MTO Structural Manual. When AADT is less than 200, the probability of two vehicles meeting on the bridge is low. The Structural Manual permits single lane structures when AADT is less than 400 and the operating speed is less than 50 km/hr. Higher operating speeds of up to 70 km/hr can be permitted if the traffic volumes are less than 200 AADT.

Typically, peak hour volumes account for 10% of the daily volumes and thus 35 vehicles per hour are expected during the peak hours (total of both directions). Local roads are assumed to have hourly capacities in the order of 400-500 vehicles per hour per lane.

A two lane road can accommodate in the order of 800-1000 vehicles per hour over two lanes. As the anticipated traffic volumes noted are well below these levels (volumes are 3.5 to 4.4% of the noted capacities), no operational improvements are required to increase the road capacity on the bridge approaches beyond two lanes. While traffic volumes are expected to increase in the future as areas develop, such increases are not expected to be significant in context of the reserve capacity remaining on the road system.

5.1.5 Geotechnical Considerations

A geotechnical investigation is not proposed to be completed until final design of the preferred Alternative, so that the comments and recommendations for the design of the preferred solution will be most accurate.

5.2 Natural Environment

Riverstone Environmental Solutions Inc. (Riverstone) was retained to complete a review of the natural environment at the Black Bridge, to document the natural features present in the area and evaluate the potential impacts to the natural environment based on the project alternatives. The Natural Environment Review can be found in Appendix E.

An initial search of the natural environment was conducted using the Ministry of Natural Resources (MNR) Natural Heritage Information Centre (NHIC) biodiversity explorer database online, as well as the Species at Risk (SAR) by Township tool provided by the Parry Sound District MNRF, and additional information sources detailed in the Natural Environment Review Report. A search of the area surrounding the project site was conducted to determine the element occurrences reported for natural areas, invasive species, plant communities, and wildlife concentration areas.

The Black bridge is near the southwestern boundary of Ecodistrict 5E-8 (Huntsville), comprised of bedrock exposures with a veneer of glacially derived sandy substrate.

The Black Bridge is located outside of any areas with an assigned ID, between the squares identified with the ID number 17PK3881 and 17PK3683. The searches were conducted for an additional two 1 km squares: 17PK3981, and 17PK3583.

5.2.1 Terrestrial Resources

With respect to wildlife there are no recent (within the last 10 years) elements of occurrence records on file with the NHIC, and no information is available within 1 km of the project site.

Based on Riverstone's initial desktop analysis and contact with the MNRF, eleven threatened or endangered species have the potential to occur on land at or adjacent to the Black Bridge.

5.2.2 Fisheries and Aquatic Resources

The South Branch of the Muskoka River at the bridge location is approximately 40 m wide with water flowing in an east-to-west direction.

The Muskoka River flows are governed by the Muskoka River Water Management Plan which considers water needs for many users, including the Matthias Generating Station upstream of the bridge.

Based on Riverstone's initial desktop analysis and contact with the MNRF, one threatened or endangered species (Blanding's Turtle) has the potential to use this reach of the Muskoka River and adjacent wetland features. Wetlands adjacent to the site are the features with the highest potential to provide habitat for SAR.

5.2.3 Potential Mitigation Measures

In order to preserve the environmentally sensitive characteristics at the Black Bridge site, standard environmental controls are recommended as follows:

- Erosion and sedimentation control measures are to be installed and maintained (i.e. silt fence); and
- Maintenance activities are to be conducted away from the watercourse.

5.3 Social Environment

The social environment includes any matters related to existing residents and area tenants, as well as the general public. Several matters for consideration in relation to the social environment include the following:

- Noise impacts to area residents are to be considered, however they are not expected to be an issue except for people who reside near the bridge;
- The safety of the crossing is of utmost importance;
- The issue of vehicle sight distance and pedestrian safety will need to be addressed as part of the future improvements; and
- Depending on the final preferred solution, property acquisition may be required if expansion of the right-of-way is deemed necessary.

It will be important to implement a traffic management plan during the construction phase of the project to ensure that local residents and the public can travel around the bridge site with minimal disruption. Muskoka Road 118 can be utilized as a detour with the bridge at Matthiasville Dam used to cross the River. This detour is considered reasonable at approximately 11.5 km or 15 minutes.

5.3.1 Archaeological Investigation

A Stage 1 Archaeological Assessment was carried out by AMICK Consultants Ltd., with the field work being completed on May 1, 2017. The results of the background research indicate that the study area is an area of archaeological potential due to the proximity to water and the potential that it was within an area of Native and/or early Euro-Canadian settlement. Any areas that are not considered previously disturbed or low lying and wet are recommended to have a Stage 2 Assessment undertaken if it is to be disturbed during construction.

A copy of the Archaeological Assessment Report is included in Appendix B.

5.3.2 Cultural Heritage Evaluation and Heritage Impact Assessment

A cultural heritage evaluation and heritage impact assessment was carried out by AMICK Consultants Ltd., with the field work being completed on May 1, 2017. The results of the evaluation indicate that the Black Bridge has local heritage value under O.Reg 9/06 pursuant to the Ontario Heritage Act. Various options were provided to mitigate the heritage impact of rehabilitation and replacement alternatives.

A copy of the Cultural Heritage Evaluation and Impact Assessment Report is included in Appendix B.

5.4 Economic Environment

With respect to the economic environment, the costs associated with each option are considered including construction costs and/or maintenance costs. For the purposes of preliminary assessments, the costs are considered on a qualitative basis only (e.g. least costly, most costly). In addition, impacts to abutting lands have been considered as part of the economic environment given the associated costs to acquire land; however no value has been associated with such acquisitions.

6 Evaluation of Alternative Solutions

This section will discuss the evaluation of the alternative solutions as previously described. The results of the evaluation are considered preliminary given the need to solicit agency and public input. The evaluation is descriptive or qualitative in nature allowing for a comparative evaluation of the pros and cons associated with each option.

6.1 Evaluation Criteria

In completing the evaluation, a number of criteria were considered as outlined below.

Physical Environment

- Road geometry and alignment
- Structural stability
- Roadside protection
- Traffic operations

Natural Environment

- Effects on fish habitat
- Effects on the Muskoka River (S. Branch)
- Effects on vegetation
- Effects on wildlife
- Effects on upstream floodplain

Social Environment

- Noise impacts
- Ease of access for residents
- Overall safety
- Property acquisition requirements
- Archaeological impacts
- Cultural heritage impacts

Economic Environment

- Construction costs
- Future maintenance costs
- Land acquisition costs

The key evaluation criteria will focus on issues such as cost (including initial capital costs, and long term life cycle maintenance and operational costs), structural performance, public safety, environmental impacts, traffic management, and construction duration.

6.2 Environment Impacts

The potential effects and impacts associated with each alternative are noted in Table 22 whereas a summary of the evaluation is also provided for each alternative.

Table 2: Pros & Cons of Alternative Solutions

Evaluation Criteria	Alternative A Do Nothing	Alternative B Rehabilitate Existing Bridge	Alternative C1 Replace with Single Lane Bridge	Alternative C2 Replace with Two Lane Bridge
Physical Environment	<ul style="list-style-type: none"> ✗ safety of bridge will decrease over time ✗ no improvement to load carrying capacity ✗ no improvement to alignment or safety ✗ no improvement to barrier protection 	<ul style="list-style-type: none"> ✓ safety of bridge can be improved ✓ barrier protection can be upgraded to standard ✓ alignment deficiencies can be mitigated through signage and reduced speed posting ✗ no improvement to load carrying capacity ✗ shortest extension of service life 	<ul style="list-style-type: none"> ✓ increased load capacity to current standard ✓ barrier protection can be upgraded to standard ✓ alignment deficiencies can be mitigated through signage and reduced speed posting ✓ longest extension of service life ✗ bridge remains a traffic constriction 	<ul style="list-style-type: none"> ✓ increased load capacity to current standard ✓ barrier protection can be upgraded to standard ✓ alignment deficiencies can be mitigated through signage and reduced speed posting ✓ longest extension of service life ✓ removes traffic constriction
Natural Environment	<ul style="list-style-type: none"> ✓ no impacts to environment or habitat 	<ul style="list-style-type: none"> ✓ no significant impacts ✓ potential impacts can be mitigated with best practices 	<ul style="list-style-type: none"> ✗ potential for impacts in areas that may be widened beyond existing right-of-way ✗ increased review requirements from agencies 	<ul style="list-style-type: none"> ✗ greatest impacts in areas widened beyond existing right-of-way ✗ greatest impacts within watercourse to place new wider substructure ✗ greatest permit requirements
Social Environment	<ul style="list-style-type: none"> ✓ no impacts to existing abutting lands ✓ no construction delays or road closures 	<ul style="list-style-type: none"> ✓ no impacts to existing abutting lands ✗ shorter construction time and road closure 	<ul style="list-style-type: none"> ✓ no impacts to existing abutting lands ✗ longer construction time and length of road closure 	<ul style="list-style-type: none"> ✗ potential for impacts to abutting lands ✗ longest construction time and length of road closure
Cultural Heritage Environment	<ul style="list-style-type: none"> ✓ no archaeological or cultural/heritage impacts 	<ul style="list-style-type: none"> ✓ no archaeological impacts ✓ minimal impact to cultural heritage, repairs would be sympathetic to aesthetics 	<ul style="list-style-type: none"> ✗ some potential for archaeological materials should works extend beyond existing ROW or previously disturbed/constructed areas ✗ impacts to cultural heritage by removal of existing bridge ✓ additional studies to be undertaken as necessary 	<ul style="list-style-type: none"> ✗ greatest potential for archaeological materials should works extend beyond existing ROW or previously disturbed/constructed areas ✗ greatest impacts to cultural heritage by removal of existing bridge ✗ additional studies to be undertaken as necessary
Economic Environment	<ul style="list-style-type: none"> ✓ least overall construction costs ✓ greatest maintenance costs 	<ul style="list-style-type: none"> ✗ increased overall construction cost ✗ greater maintenance costs 	<ul style="list-style-type: none"> ✗ greater overall construction costs ✓ least maintenance costs 	<ul style="list-style-type: none"> ✗ greatest overall construction costs ✓ less maintenance costs

6.2.1 Alternative A – Do Nothing

The Do Nothing alternative does not adequately address the problem statement. While costs will be negligible for this alternative in the short term, long term maintenance costs will become substantial, especially as the bridge ages. A benefit to this alternative is that no negative impacts will be endured by the natural environment (although such impacts are expected to be minimal with the other alternative solutions and appropriately mitigated). This alternative however does not address public safety, or structural inadequacy issues, and thus does not consider the problem statement and does not achieve the goals of the study.

6.2.2 Alternative B – Rehabilitate the Existing Structure

Other than the Do Nothing alternative, this option is the least costly from a capital perspective, and most costly from a maintenance cost perspective. Access for residents can be maintained since traffic can be rerouted via local roads while causing minimum disturbance. While structural deficiencies will be addressed with this alternative, considering the age of the bridge, it is likely that additional structural problems will become apparent in the near future. In order to significantly extend the lifespan of the bridge, rehabilitation works will need to be extensive, increasing the economic impact. In addition, the existing load posting will remain in effect, and the single lane configuration will remain. Therefore, this option does not fully consider the problem statement.

6.2.3 Alternative C1 – Replace the Existing Structure with a Single Lane Structure

Replacement of the entire existing structure is more expensive and intrusive than Alternatives A and B. Impacts to the environment are increased, since work will occur within the watercourse, and there will be impacts to the heritage value of the existing structure. However, considering the condition of the structure, replacement is the only alternative that will fully address the problem statement, including safety, structural condition, performance, and compliance with current design standards. The existing water crossing location is optimized to minimize the bridge span. Relocation of the water crossing will require significant property acquisition, extensive disturbance to the natural environment, and significant financial cost. As such, replacement with a single lane bridge, in the same location will still require consideration to reduce the posted speed limit, install warning signage to improve motorist safety related to geometric deficiencies on the approach.

6.2.4 Alternative C2 – Replace the Existing Structure with a Two Lane Structure

Replacement with a two lane structure, with the costs associated with property and additional environmental controls in addition to the larger infrastructure and required road widenings, makes Alternative C2 the most expensive alternative. Although this structure would address all of the issues identified in the problem statement, the increased financial, environmental, social, and natural environment costs are considered extensive. As the geometric deficiencies can be addressed through

alternate methods to improve safety, and this is a low volume road not requiring a two lane bridge, alternative C1 is considered more appropriate.

6.3 Preliminary Preferred Solution

In consideration of the above, Alternative A is not considered appropriate as it does not address the problem statement. Existing deficiencies will persist and continue to worsen over time, resulting in eventual road closure. While Alternative B is expected to have positive benefits such as increasing the service life of the existing bridge, and improving roadside protection, the extent of the improvements is not considered sufficient to fully address the problem statement. Alternatives C1 and C2 will both address the issues within the problem statement, as the safety and condition of the existing crossing will be improved. While alternative C1 will not fully eliminate all geometric deficiencies of the roadway, reducing the speed limit, and the installation of signage can be used to minimize the risk to motorist and improve safety.

Based on the evaluation of the noted alternatives, the preliminary preferred solution is to replace the Black Bridge. Alternatives C1 and C2 should be considered further to address their technical ability to address the problem statement.

Mounting the existing truss sections onto a new structure would reduce the heritage impact, however the existing trusses will continue to deteriorate and require maintenance which will increase the maintenance costs to the Town. In addition the additional dead load induced on the new bridge from the existing trusses will increase the capital cost of the new structure and possibly result in a deeper girder requirement which could impact the hydraulic capacity or require additional work to adjust the vertical alignment of the approach roadway. Based on the existing geometry the available space to accommodate changes to the vertical or horizontal alignment of the road are very limited without impacting the embankments and watercourse. As such, use of a sympathetic structure type for the replacement is the preferred option to mitigate the heritage impact.

7 Consultation - Public Consultation Centre

Under a Schedule B Class EA Study, there are two points of mandatory stakeholder contact (the Notice of Study Commencement is discretionary). As noted in Figure 1, the first mandatory point occurs towards the end of Phase 2 when a notice is issued inviting stakeholder comment and input via a Public Consultation Centre. The second mandatory point of contact is upon completion of the planning process at which time a Notice of Completion is provided. In keeping with the chronological order in documenting events in the order that they occurred, the first mandatory point of contact is discussed in this chapter whereas the second point of contact is discussed further in the report, after the identification of the preferred solution and completion of the Schedule B Class EA requirements.

7.1 Notification

In accordance with the Class EA guidelines, notification of the Public Consultation Centre was issued inviting stakeholder comment and input. Stakeholders include review agencies and the public and thus notices were directed to each, in the same manner in which the Notice of Commencement was disseminated (copies of the notices and distribution list are provided in Appendix D).

Notices were also published in the local newspaper, the Bracebridge Examiner on October 5th and 12th preceding the public consultation centre. Notices were posted on the Town website, twitter and facebook accounts starting on October 5th. The Town published the notice in the local paper. CCTA mailed out the notice to the public as well as review agencies.

7.2 Public Consultation Centre

The purpose of the Public Consultation Centre was to provide information to the public and agencies and seek their input with respect to the following:

- Identification of the problem;
- Development and evaluation of alternative solutions to the problem;
- General inventory of the affected environments in order to determine the possible impacts; and
- Identification of the recommended alternatives.

The Public Consultation Centre was held on Wednesday, October 18, 2017 from 6:00 PM to 9:00 PM at the Town of Bracebridge Municipal Office Council Chambers. Display boards of the presentation material were displayed around the room's perimeter for people to review and ask questions. Representatives from the Town Public Works Department, Council members, and C. C. Tatham & Associates Ltd. were in attendance to answer any questions and provide assistance as necessary.

Various display boards were prepared for viewing by the public (as provided in Appendix D), which addressed the following:

- The Municipal Class EA process and those tasks relevant to this study;
- Existing conditions;
- Existing concerns;
- Hydraulic conditions;
- Alternative solutions for improvements to the Black Bridge;
- Replacement criteria and options;
- The remaining steps to completion; and
- Contact details for additional information.

Copies of the display materials were prepared as a handout for visitors to take with them.

Twelve people attended the Public Information Centre (a copy of the sign-in sheet is provided in Appendix D).

7.3 Public Comment

Additional comments were received from stakeholders either at the PCC or shortly thereafter via the comment sheets provided. A total of 32 comments were received through the PCCC, and have been summarized in Table 3 below. Three of the respondents from the notice of study commencement resubmitted comments following the PCC, revising their opinion on the suitability of the existing single lane structure and load posting.

Table 3: Study Commencement Public Comment Summary

# of Times Received	Comment
15	The Black Bridge is historic / a landmark/ part of the cultural heritage of the area / aesthetically pleasing / has character / becoming increasingly rare
6	The bridge should not be replaced by a bailey bridge or modular truss (even with the existing structure's truss attached to the outside)
5	The Black Bridge should be replaced with a similar style of through truss / heritage truss / replica of the existing bridge
4	Existing load limit posting is acceptable, fire trucks and other vehicles that can't cross the load-posted structure can access the road from the other access point at the dam

# of Times Received	Comment
4	There are no speed limit signs on Matthiasville Road, and the 80 km/hr limit indicated at the PCC would be hazardous based on roadway conditions. Speed limit signs should be installed to post to 60 km/hr (or less)
3	The new bridge should have improved load capacity for emergency services (fire)
3	The new bridge should be able to have snow-plough services
3	A two lane bridge is unnecessary / the structure should remain single-lane
2	The existing structure has good sight lines from both directions / keep vegetation cleared to maintain sight lines / bailey type will reduce sight lines
2	The area is known as Black Bridge
1	Matthiasville Road is a scenic road, used by walkers, cyclists and photographers
1	The replacement structure should be black
1	The roadway surface on Matthiasville Road should be improved
1	Unsafe ice conditions signage should be installed near the structure
1	Safety barriers and embankments on either side of the bridge should be improved
1	Signs on Highway 118 should be changed back to the original wording of "Matthiasville Road East" and "Matthiasville Road West"
1	The bridge should be removed from site, repaired and returned to new engineered footings.
1	At the west end of the bridge, the snow plough has nowhere to push the snow, creating a hazard in the winter.
1	The existing footprint/orientation should not be changed / no property should be acquired / no change in the geometry of the structure
1	The structure should not have fencing added to it.
1	The structure shouldn't have a pedestrian walkway added to it.
1	The structure should remain open to vehicle traffic
1	Previous rehabilitations have been at a reasonable cost
1	The current bridge adds value to adjacent properties
1	The existing truss should be affixed to the new structure.
1	The new bridge should have a gable truss roof

Some of the respondents further included their preferred rehabilitation alternatives, as follows:

Alternative A – Do Nothing	0
Alternative B – Rehabilitate the Existing Structure	26
Alternative C1 – Replace the Existing Structure with a Single Lane Structure	5
Alternative C2 – Replace the Existing Structure with a Two Lane Structure	0

The overall conclusion drawn from the comments received is that a single lane structure without signalization, is the preferred solution. The majority prefer a rehabilitation of the existing structure, regardless of the decreased service life and reduced load capacity. If a replacement is required, a similar style of truss painted black is the preferred alternative. A bailey style modular truss bridge is heavily opposed.

7.4 Agency Comment

In follow-up to the notification of the Public Consultation Centre, no comments were received from review agencies.

8 Identification of Preferred Solution

Following the Public Consultation Centre, the preliminary assessment was revisited to consider comments and input received from the various stakeholders.

8.1 Preferred Solution

The preferred solution remains Alternative C1 in consideration of the safety, performance, and integrity issues related to the structure which would be resolved while providing the greatest long term cost benefit to the Town. As previously noted, Alternative A does not address the problem statement. Alternative B provides short term improvement to the structure, but will not fully address the problem statement. The two lane bridge proposed under alternative C2 is not required based on the current traffic volumes. As such, alternative C1 best addresses the problem statement and is the most appropriate solution.

In order to address the resident concerns regarding heritage value it is recommended that the replacement structure be of a sympathetic structure type as recommended in the Cultural Heritage Evaluation and Heritage Impact Assessment Report.

A copy of the preferred alternative layout sketch is provided in Appendix F.

8.2 Confirmation of EA Schedule

As previously noted, the Schedule B guidelines apply to bridge construction provided the cost to construct is less than \$2.4M, not including land acquisition or engineering costs. Based on the extent of works anticipated, this cost threshold will not be surpassed and hence the Schedule B guidelines are appropriate.

9 Completion of the EA Process

This chapter details the steps remaining to complete the Schedule B Class Environmental process and to proceed to Phase 5: Implementation, which entails completion of the engineering drawings and construction.

9.1 Submission to the Town of Bracebridge

This Phase 1 & 2 Report was submitted to the Town of Bracebridge and the preferred solution endorsed by the Town Council was the replacement of the bridge with a single lane, single span structure.

9.2 Stakeholder Consultation - Study Completion

This represents the second mandatory point of stakeholder consultation in the Schedule B Class EA process. The purpose of such is to identify the conclusion of the study and provide an opportunity for additional review of the study findings and recommendations within a 30-day review period.

In accordance with the Class EA guidelines, a Notice of Completion was prepared to identify the preferred improvement solution and the opportunity for further review (a copy of the notice is provided in Appendix E). Notices were distributed as follows:

- Mailed to each of the review agencies and other stakeholder groups as previously contacted;
- Mailed to the area residents, businesses and landowners;
- Mailed to those in attendance at the Public Information Centre;
- Advertised in the local newspaper (Bracebridge Examiner) on two separate occasions, in accordance with the Class EA guidelines; and
- Posted on the Municipal website.

9.3 30-Day Review Period

The Phase 1 & 2 report will be placed on public record for a period of 30 days following the Notice of Completion, September 4, 2018 to October 4, 2018. As per the notice, the public and review agencies will be encouraged to further review the report and provide written comments to the Town on or before October 4, 2018.

If concerns arise regarding this study, which cannot be resolved in discussion with the Municipality or the Project Team, the public can request that the Minister of the Environment make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II Order), which

addresses individual environmental assessments. Requests are to be submitted to the Minister, and copied to the Municipality before the end of the 30-day review period.

If there is no request for a Part II Order, the project may proceed based on the identified preferred improvements.

9.4 Implementation

It is the intent of the Town to complete the design in 2018 and undertake the works when funding becomes available. As such, engineering drawings detailing the required works, including the need for mitigation measures to address impacts to the natural environment will be completed. Drawings will be submitted to the Town and the relevant agencies as required, to obtain the necessary approvals prior to construction. There are no further requirements with respect to public consultation during Phase 5.

Authored by: Emma Wilkinson, H.B.A, B.E.Sc., P.Eng.
Senior Engineer, Project Manager

Reviewed by: Bill Van Ryn, B.Eng., P.Eng.
Vice President, Manager – Bracebridge Office

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**APPENDIX A:
CONSULTATION – STUDY COMMENCEMENT**



NOTICE OF STUDY COMMENCEMENT

IMPROVEMENTS TO THE BLACK BRIDGE OVER THE MUSKOKA RIVER IN THE TOWN OF BRACEBRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDY

The Town of Bracebridge has initiated a Municipal Class Environmental Assessment (Class EA) Study for the proposed upgrades to the Black Bridge located on Matthiasville Road approximately 0.5 kms north of Highway 118 East (west entrance) in the Town of Bracebridge. The study is being planned under Schedule B of the *Municipal Class Environmental Assessment*.



Comments and information are being collected at this time to assist the study team. The information will be maintained on file for use during the study and, unless otherwise requested, may be included in the study documentation, which is made available for public review.

We welcome any comments or information prior to August 31, 2017 so the project schedule can be maintained. Subject to comments received and the receipt of necessary approvals, the Town of Bracebridge intend to proceed with the planning, design, and construction of this project.

This notice first issued August 10, 2017.

Owner:
Town of Bracebridge
Public Works Department
1000 Taylor Court
Bracebridge, ON P1L 1R6
Telephone: (705) 645-5264
Fax: (705) 645-1262

Inquiries:
Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
Senior Engineer, Project Manager
C.C. Tatham & Associates Ltd.
Bracebridge, ON P1L 0A1
Telephone: (705) 645-7756
Fax: (705) 645-8159
Email: ewilkinson@cctatham.com

Emma Wilkinson - Matthiasville Road

From: Michael Magann <SunMagann@msn.com>
To: "ewilkinson@cctatham.com" <ewilkinson@cctatham.com>
Date: 01/10/2017 12:27 PM
Subject: Matthiasville Road
Cc: Laura and Rick Rainey <laura.rainey@sympatico.ca>

Hello,

I have a residence at 1525 Matthiasville and property at 1527. My family has been in Muskoka since 1930 and residents at our current property since 1956.

The bridge across our property has always been a memorable part of being in Muskoka. The Blackbridge is noted on maps and a stopping point for residents and tourists to take pictures and stop for moments of reflection.

I understand that you have asked for comments regarding the road and bridge. I now understand that the fire trucks are unable to cross the existing bridge? I provide turnaround areas for the snow plows.

It would be a shame to see the historic bridge removed. You did not share any information on what you intend to replace it with. The bridge is historic and beautiful and would depreciate my property if not refitted or replaced with something equally beautiful.

Please let me know what your thoughts are so that I might meaningfully comment back.

Michael Magann
705-646-2947

Emma Wilkinson - Re: Summary of Black Bridge study results for August 31 2017 resident feedback (CCTA File 216580)

From: Laura Rainey <laura.rainey@sympatico.ca>
To: Emma Wilkinson <EWILKINSON@cctatham.com>
Date: 20/09/2017 8:57 PM
Subject: Re: Summary of Black Bridge study results for August 31 2017 resident feedback (CCTA File 216580)

Hello Emma:

Thank you for your informative response. The extension until Sept 29, 2017 is most appreciated.

Black Bridge is a destination. It can be found in a map. It is a heritage rural community that welcomes the close proximity to Bracebridge. The families on Matthiasville Road, formerly RR #3, have travelled over this iconic Black Bridge bridge into the Town of Bracebridge for generations. My family name is Rainey and we established Rainey Road in this beautiful river community in 1968. There are 5 taxpayers on Rainey Road now.

Black Bridge is on google maps and GPS systems. Still after 40 years as we take the bend in the road and see the iron BLACK Bridge my heart skips a beat. It welcomes me. It tells me I have arrived. Twinning bridges would unattractive and impractical and disruptive to any future branding opportunities.

A brand name like Black Bridge is highly marketable. It is an established community name. It may not be a marketing opportunity that Mattamy Homes is exploiting but a real estate development could happen here 10-20 years from now. We are only 10 minutes from town on water! A brand name like Black Bridge needs to be protected and respected with a black Bridge.

Today, real estate agents and residents alike use Black Bridge as a local identifier to communicate the location of this unique and beautiful area on the North Branch of the Muskoka River.

We don't want to see a silver Bridge in Black Bridge. It would turn our community into a joke. We need our Bridge to be black.

A black Bridge that is equally iconic but modern and safe with an improved load bearing capacity for snow and snow removal. Our community transports school buses over this bridge so immediate snowfall removal for safety and accessibility is a high priority for this community.

The new Black Bridge should also include a Pedestrian and cycling walkway. Black Bridge is a cycling destination listed on many Bracebridge recreational maps.

The less than ideal approach needs to include safer and improved lighting. However, any changes to the approach draws attention to environmental concerns. The natural plantings approaching the bridge provide homes for wildlife, beavers, butterflies and bees. Too much disruption to the shoreline would be invasive to the turtles, fish, and birds that find their food sources on the river banks because of this less than ideal approach. We all know and learn to love the slowing down, careful checking of the bridge conditions and crossing it at a careful pace. This less than ideal approach provides a natural slowing of the automobile that adds to the unmistakable charm of Black Bridge.

Saving the existing Bridge may be too costly an endeavour. Restore it if it's economically viable.

If not, please give us a historical plaque and a Mark DeSuvero like sculpture made from the bridge's beautiful iron work and a new, equally iconic BLACK Bridge that autos, cyclists and pedestrians alike continue to stop, photograph and slow down and enjoy for years to come.

Yours sincerely
Laura Rainey

Sent from my iPhone

On Aug 29, 2017, at 8:57 AM, Emma Wilkinson <EWILKINSON@cctatham.com> wrote:

Good morning Laura,

Further to our telephone conversation last week, this study is currently in the early stages of the process. At this point we are gathering information to develop alternative solutions and complete an assessment of these alternatives to address the problem statement associated with the Black Bridge. Attached is a flow chart from the Municipal Class Environmental Assessment Guide indicating where we are at currently.

The Black Bridge was constructed circa 1922, with repairs completed in 1981 and 2013. The bridge is a single 36.7 m span truss, with an overall width of 4.4 metres and a travel width of 4.1 metres (sufficient to carry 1 lane of traffic only). The existing bridge is located so as to minimize the span length required to cross the South Muskoka River. This results in a less than ideal horizontal alignment of the road. The current condition of the concrete abutments is poor with very wide cracks and large spalls on each side. The steel truss members, particularly the stringers, floor beams, and connections are severely corroded. The bridge is currently load posted with a triple posting of 12, 18, and 22 tonnes.

A matrix of alternative solutions will be developed for the Class EA Study, considering the need to address: existing structure deficiencies; public safety, improved load capacity, comply with current standards; and minimize environmental impact. These alternatives may include: doing nothing, structural repairs to the existing structure, twinning of the existing bridge to provide a second lane of traffic, and full bridge removal and replacement. Heritage considerations for replacement structures may include installation of a prefabricated truss bridge to provide a similar look to the existing, or mounting the existing trusses to the outside of a new structure.

As discussed, at this time we are looking for comments from the public to assist in the development of the alternative solutions and to understand what the public concerns are related to the structure (i.e. road width, sight lines, aesthetics, load capacity, heritage value etc). Once the alternative solutions are developed and the information is gathered, the Town intends to host a public information centre to present the project study and initial findings to the public for further comment on the alternatives prior to selecting the final solution and proceeding to design. As discussed a cultural heritage study is being completed and the results of this study are not finalized.

Should you or other members of the community wish to submit your comments, they can be emailed, faxed, or mailed/dropped off at our office in Bracbridge to my attention. The contact information is noted below:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
Senior Engineer, Project Manager
C.C. Tatham & Associates Ltd.
8 Barron Drive, Bracebridge, ON P1L 0A1
Telephone: (705) 645-7756
Fax: (705) 645-8159
Email: ewilkinson@cctatham.com

Please be advised that the time for initial comments has been extended to September 29, 2017 as requested.

Thank you for your interest in this project. We look forward to receiving your comments.

Emma Wilkinson, H.B.A, B.E.Sc.,P.Eng.
Senior Engineer, Project Manager

C.C. Tatham & Associates Ltd.
Consulting Engineers

Office: (705) 444-2565 (ext 253)
Cell: (705) 888-2567
Fax: (705) 444-2327
Email: ewilkinson@cctatham.com
www.cctatham.com

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>>> Laura Rainey <laura.rainey@sympatico.ca> 25/08/2017 1:50 PM >>>

Thank you Archie for returning my call.

Below is my email request to the Project Engineer, Emma Wilkinson for additional and more transparent information so we can comment by Aug 31 to the facts.

Besides not having the "initial information" our concern is the call to action isn't clear, who and how responses are received and the timeframe for parents and children returning to school makes Aug 31 an inappropriate response time.

We would like your support in improved communications and an extended timeline to Sept 31 so the residents of Black Bridge, Matthiasville and Uffington can respond.

August 31 is one of the busiest time of year for most people. A communication issued on Aug 10, received on Aug 16 by local residents, Aug 18 for Torontonians, gives 9 working days for residents to respond. This is not enough time for residents to form their email or hard copy responses. Please note that the Aug 10 communication did provide a mailing address for hard copy responses.

Thank you for your support,

Laura Rainey

416-996-1209

Sent from my iPhone

Begin forwarded message:

From: Laura Rainey <laura.rainey@sympatico.ca>
Date: August 25, 2017 at 11:16:47 AM EDT
To: ewilkinson@cctatham.com
Subject: Summary of Black Bridge study results for August 31 2017 resident feedback

Thank you Emma for returning my call. Thank you for agreeing to sending out a summary and any available and releasable documents which CC Tatham has collected to date.

Results of preliminary reviews from the Heritage review, environmental concerns, carrying capacity, etc., initial findings for plows and fire trucks, etc. would be appreciated.

I think residents would be better able to comment if they were presented with the available "Initial" findings. I appreciate that resident thoughts and feelings on the value of Black Bridge to the Matthiasville community is important. We appreciate being asked to comment by August 31. However, we do not have the advantage of any available facts or criteria being used to assess if the Black Bridge can meet modern standards.

I think sharing the findings of the initial Heritage Study (which is unknown to the residents) and any initial cost analysis would allow for more collaborative comments. My interest is a safe, modern solution that does not decrease the beauty and economic value of the historic Black Bridge to this growing residential community.

Thank you for your time and consideration

Laura Rainey
Laura.rainey@sympatico.ca
416-996-1209

Sent from my iPhone

<Municipal Class Environmental Assessment - Flow Chart.pdf>

From: Leah Rainey <leahrainey@gmail.com>
To: <ewilkinson@cctatham.com>
Date: 19/09/2017 3:35 PM
Subject: Black Bridge on Matthiasville Road

Hi Emily,

My name is Leah Rainey and I grew up along Matthiasville Road. I've heard recently that the old black bridge is going to be replaced. I understand this is necessary but would like suggest that the replacement, regardless of shape and structure be painted black to match its "ancestor".

For the longest time this bridge has been a landmark for locals, cottagers and visitors to the area.

For many years I lived and studied in the U.K. and a photograph of the black bridge travelled with me and was a reminder of home. Even now, when I come back to visit my parents from Toronto, turning the bend in the road, no matter what the season and seeing the iconic black steel silhouette is a reminder of where I'm from. A reminder of my forever home. Many people who grew up in Muskoka have this forever heart connection to the landscape of the area but these distinctive landmarks and structures are equally part of that landscape and trigger the same feelings of nostalgia and "home".

It's for these reasons that I strongly encourage the town to honour the locals, cottagers and visitors by ensuring that the new "black bridge" is painted black.

Thank you for your time and consideration in this matter.

Kind regards,
Leah Rainey

Sent from my iPhone

From: Gmail <terainey2@gmail.com>
To: <ewilkinson@cctatham.com>
Date: 17/10/2017 12:27 PM
Subject: Black Bridge, Matthiasville Road, Draper Township

To Whom it May Concern:

1. A bridge at the community of Black Bridge, should indeed be black.
2. A historical plaque should be created to commemorate the bridges that have crossed at this location and the pioneers who built them.
3. The new bridge should be 1.5 lanes wide to accommodate automobile, pedestrian and bicycle traffic on this scenic route.
4. Because the South Branch of the Muskoka River is a busy route for paddlers and small craft, the distance between the bottom of the bridge and the highest watermark should be sufficient to allow safe passage for these vessels.
5. The water levels of this portion of the river, between Trethewey Falls Dam and Matthiasville Dam are constantly fluctuating without warning. Therefore signs warning of unsafe ice conditions should be posted.
6. It is essential that approaches to the bridge be protected with guardrails.
7. A blind corner on the road approaching the bridge should be cleared extensively to provide adequate site lines.
8. The Magann property to the west of the bridge which may suffer damage due trucks engaged in the Black Bridge construction should be restored to its natural state.
9. The approaches to the new bridge should be paved with high quality asphalt rather than the current chip and seal done in 2003.

It is our hope that Black Bridge, one of the most scenic areas in Muskoka for paddlers, kayakers and cyclists, be respected by the Town of Bracebridge as a historic and current community and that the points made here are given due consideration.

Sincerely,

Tim and Lis Rainey
Residents of Rainey Road.

Sent from my iPhone

>>> <ricevans@bell.net> 20/09/2017 7:49 PM >>>

As a visual artist from Toronto I have been visiting the area of Black bridge for thirty years The bridge is an icon Any replacement should reflect this and by all means be Black in colour

Sent from my iPhone

APPENDIX B:
ARCHAEOLOGICAL STAGE 1 ASSESSMENT REPORT
AND CULTURAL HERITAGE EVALUATION & HERITAGE
IMPACT ASSESSMENT REPORT



1.0 PROJECT REPORT COVER PAGE

LICENSEE INFORMATION:

Contact Information:

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Licensee:

Michael Henry MSc

Ontario Archaeology Licence:

P058

PROJECT INFORMATION:

Corporate Project Number:

16121

MTCS Project Number:

P058-1616-2017

Investigation Type:

Stage 1 Archaeological Property Assessment

Project Name:

Black Bridge

Project Location:

Black Bridge, Parts of Lots 7 and 8, Concession 8; and
Lots 7 and 8, Concession 7
(Geographic Township of Draper),
Town of Bracebridge, District Municipality of Muskoka

Project Designation Number:

Not Currently Available

MTCS FILING INFORMATION:

Site Record/Update Form(s):

N/A

Date of Report Filing:

February 8, 2018

Type of Report:

ORIGINAL

2.0 EXECUTIVE SUMMARY

This report describes the results of the 2017 Stage 1 Archaeological Background Research Study of Black Bridge, Parts of Lots 7 and 8, Concession 8, and Lots 7 and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P058 issued to Michael Henry by the Minister of Tourism, Culture and Sport for the Province of Ontario. This assessment was undertaken as a requirement under the Environmental Assessment Act (RSO 1990b) as a component study of a Municipal Class Environmental Assessment (EA). The EA requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Tourism, Culture and Sport (MTCS). All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Research Study of Black Bridge of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation on 01 May 2017. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTCS) on behalf of the government and citizens of Ontario.

The study area has been identified as a property that exhibits potential to yield archaeological deposits of Cultural Heritage Value or Interest (CHVI). The objectives of the Stage 1 Background Study have therefore been met and in accordance with the results of this investigation, the following recommendations are made:

- *Stage 2 Archaeological Property Assessment is recommended should the preferred alternative necessitate any landscape alterations within areas identified within this report as lands with archaeological potential;*
- *The Stage 2 Property Assessment must be conducted using test pit methodology at a high intensity interval of 5 metres between individual test pits.*
- *The Provincial interest in archaeological resources has not been addressed until such time as any areas of potential impacts required to complete construction of the preferred alternative within areas identified within this report as lands with archaeological potential, are subject to Stage 2 Property Assessment and the resultant report is accepted into the Provincial Registry of Archaeological Reports;*
- *The proposed undertaking may not proceed until all archaeological concerns within areas of archaeological potential that may be impacted through completion of the preferred alternative for the proposed undertaking are subject*

2017 Stage 1 Archaeological Background Research of Black Bridge, Parts of Lots 7 and 8, Con. 8, and Lots 7 and 8, Con. 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka (AMICK File #16121/MTCS File #P058-1616-2017)

to Stage 2 Property Assessment and an acceptance letter is issued by MTCS for the archaeological license report documenting that assessment;

- *If the project area for the proposed undertaking expands outside of the Study area addressed within this report, additional Stage 2 Property Assessment will be required should any potential impacts affect any lands with archaeological potential;*
- *No further study is required for areas identified as having low archaeological potential, no archaeological potential, or as not viable to assess using conventional archaeological assessment methodology.*

3.0 TABLE OF CONTENTS

1.0	PROJECT REPORT COVER PAGE	1
2.0	EXECUTIVE SUMMARY	2
3.0	TABLE OF CONTENTS	4
4.0	PROJECT PERSONNEL	4
5.0	PROJECT CONTEXT	5
6.0	FIELD WORK METHODS AND WEATHER CONDITIONS	23
7.0	RECORD OF FINDS	24
8.0	ANALYSIS AND CONCLUSIONS	24
9.0	RECOMMENDATIONS	34
10.0	ADVICE ON COMPLIANCE WITH LEGISLATION	35
11.0	BIBLIOGRAPHY AND SOURCES	36
12.0	MAPS	39
13.0	IMAGES	45

4.0 PROJECT PERSONNEL

AMICK CONSULTANTS LIMITED PARTNERS

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Marilyn Cornies (MTCS Professional Archaeologist Licence #P038)

AMICK CONSULTANTS LIMITED BUSINESS MANAGER

Melissa Maclean BBA email mmaclean@amick.ca

PROJECT COORDINATOR

Melissa Maclean

PROJECT LICENSEE ARCHAEOLOGIST

Michael Henry (MTCS Professional Archaeologist Licence #P058)

PROJECT FIELD DIRECTORS

Michael Henry (MTCS Professional Archaeologist Licence #P058)

PROJECT FIELD ASSISTANTS

Marilyn Cornies (MTCS Professional Archaeologist Licence #P038)

PROJECT REPORT PREPARATION

Michael Henry (MTCS Professional Archaeologist Licence #P058)

PROJECT GRAPHICS

Kayleigh MacKinnon (MTCS Professional Archaeologist Licence #P384)

PROJECT PHOTOGRAPHY

Michael Henry (MTCS Professional Archaeologist Licence #P058)

5.0 PROJECT CONTEXT

5.1 DEVELOPMENT CONTEXT

This report describes the results of the 2017 Stage 1 Archaeological Background Research Study of Black Bridge, Parts of Lots 7 and 8, Concession 8, and Lots 7 and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P058 issued to Michael Henry by the Minister of Tourism, Culture and Sport for the Province of Ontario. This assessment was undertaken as a requirement under the Environmental Assessment Act (RSO 1990b) as a component study of a Municipal Class Environmental Assessment (EA). The EA requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Tourism, Culture and Sport (MTCS). All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Research Study of Black Bridge of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation on 01 May 2017. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTCS) on behalf of the government and citizens of Ontario.

The proposed undertaking within the study area is a replacement bridge for the existing Black Bridge crossing, which was inspected in 2016 via municipal structure inspection (The Corporation of the Town of Bracebridge, 2016). A detailed plan of the proposed undertaking was not available at the time that this report was prepared.

5.2 HISTORICAL CONTEXT

5.2.1 GENERAL HISTORICAL OUTLINE

By the time the first European explorers, missionaries and traders arrived in the area in the early 17th Century; there were a number of First Nations peoples known to have been active in the Georgian Bay area. This would include the Ojibwa, Ottawa, Potawatomi, Nipissing, Cree, Huron and possibly other Iroquoian peoples to the south such as the Petun, and Neutral. Not all of these groups were necessarily resident in the area but the region is noted for its long association to important trade linkages. Historic documentation indicates that persons and trade merchandise from all of these Nations, and perhaps others moved through the local trade network that was part of a larger continent-wide system of communication and trade.

With the arrival of Europeans, their participation in the trade and in relationships with the First Nations active in the area would lead to the development of a new culture to be included in this list: the Metis.

The Algonkian speaking First Nations living in the Upper Great Lakes during the period of initial contact with the French would have referred to themselves as “Anishinaubag” or “spontaneous men” being the closest approximation to the idea expressed in English according to the Ojibwa historian, William Warren who completed his History of the Ojibway People in 1852 (1984). The expression is meant to convey the great antiquity of the people and that they are so ancient nobody knows how they first came to be; it seems as if they have always been here. As French exploration, missionary work and trade expanded into the Georgian Bay area in the middle of the 17th Century they began to make distinctions between various groups and to apply names to them. One of the first to be distinguished was the “Outaouak” or “Ottawa”. These were the first Algonkian people of the Upper Great Lakes with whom the French had contact.

Paul Le Jeune wrote in his “Relation of 1640”, that Manitoulin Island was inhabited by “the Outaouan”. He further relates that this group is part of “the nation of the raised hair” (Le Jeune 1896: 231). In this passage, the Jesuit priest is clearly referencing Champlain’s assignation of the name “Cheveux Releves” to these people during a voyage through this area in 1615.

Claude Charles Le Roy, Bacqueville de la Potherie, writing of the First Nations of the Upper Great Lakes in 1753, had the following to say about the use of the shoreline along Lake Huron:

This Sauteur tribe is divided: part of them have remained at home to live on this delicious fish in autumn, and they seek their food in Lake Huron during the winter; the others have gone away to two localities on Lake Superior, in order to live on the game which is very abundant there... Those who have remained at the Saut, their native country, leave their villages twice a year. In the month of June they disperse in all directions along Lake Huron, as also do the Missisakis and the Otter people. This lake has rocky shores, and is full of small islands abounding in blueberries. While there they gather sheets of bark from the trees for making their canoes and building their cabins. The water of the lake is very clear, and they can see fish in it at a depth of twenty-five feet. While the children are gathering a store of blueberries, the men are busy spearing sturgeon. When the grain that they have planted is nearly ripe, they return home. At the approach of winter they resort to the shores of the lake to kill beavers and moose, and do not return thence until the spring, in order to plant their Indian corn.

(Potherie 1753: 276-280)

The “Sauteurs” (probably Ojibwa), “Missisakis” (Mississaugas), and “Otter” (probably the Ottawa) peoples are all Algonkian speaking peoples. The Mississauga is a division of the

larger, and more generally known Ojibwa Nation. Some researchers suggest that the Ottawa were also part of the larger Ojibwa Nation.

Mr. Carver visited the region during his travels from 1766-1768 and described the eastern shore of Lake Huron as follows:

Lake Huron, into which you now enter from the Straights of St. Marie, is the next in magnitude to Lake Superior. It lies between forty-two and forty-six degrees of north latitude, and seventy-nine and eighty-five degrees of west latitude. Its shape is nearly triangular, and its circumference about one thousand miles.

On the north side of it lies an island that is remarkable for being near an hundred miles in length, and no more than eight miles broad. This island is known by the name of Manataulin, which signifies a Place of Spirits, and is considered by the Indians as sacred as those already mentioned in Lake Superior.

About the middle of the south-west side of this lake is Saganaum Bay. The capes that separate this bay from the lake, are about eighteen miles distant from each other; near the middle of the intermediate space stand two islands, which greatly tend to facilitate the passage of canoes and small vessels, by affording them shelter, as without this security it would not be prudent to venture across so wide a sea; and the coasting round the bay would make the voyage long and tedious. This bay is about eighty miles in length, and in general about eighteen or twenty miles broad.

(Carver 1778: 144-145)

No doubt Carver is referring to Georgian Bay under the First Nations name of “Saganaum”. The “Straights of St. Marie” separate Lakes Superior and Huron. He then goes on to relate that, “A great number of the Chipeway Indians live scattered around this lake, particularly near Saganaum Bay” (Carver 1778: 147). The “Chipeway” is a variant of Chippewa, which sometimes refers to a division of the larger Ojibwa Nation and sometimes refers to the whole Ojibwa Nation. Carver is very consistent in his use of the term throughout his book and the accompanying maps. He is clearly referring to the entirety of this Nation.

The site of the present Town of Parry Sound was a seasonal gathering place for the local Ojibwa people. Parry Sound is situated at the mouth of the Sequin River. The river apparently derives its name from the Algonquian word “see-kwun” for springtime, the traditional season of gathering at river mouths for fishing after winter. It is believed that large numbers of people congregated here every spring to fish and perhaps to harvest maple syrup from further up the river. The road leading north from Parry Sound to Commanda, built in the late 1860s, is said to have been laid directly over an old First Nations’ trail that ran from the present-day Town of Parry Sound to Lake Nipissing (Macfie 2004: 17). These observations would seem to suggest a continuity of the pattern reported over a century earlier by Potherie and would seem to substantiate the observations of Carver that large numbers of people lived in the area during the fur trade era.

Probably the greatest chief of the Ojibwa in Muskoka was the chief for whom the district gets its name. His Ojibwa name was written down as Musque Ukee or Misquakie. His English name was William Yellowhead. His family were often found in the southern and eastern parts of Muskoka during the summer months. They had a settlement at the Bracebridge falls (Pryke 2010: 15). W. E. Hamilton, who was the Immigration Agent at Bracebridge, wrote the text outlining the history and geographic descriptions included within the Guide Book and Atlas of Muskoka and Parry Sound Districts (Page 1879). He included the following story of a controversy respecting the name of Muskoka District.

“Before dismissing the subject of aboriginal settlers, we remark that the Indians have left their impression on the topographical vocabulary of the Muskoka District. These names, always mellifluous and suggestive, are happily to some extent retained amongst us. Thus Muskoka is now widely known to the reading public of Great Britain, through the medium of a tale published in All the Year Round, and the name is there stated to mean “clear sky land.” This is an erroneous derivation. True it is that the name of an Indian doctor or conjurer, who lived in Muskoka, might be so translated, but Muskoka take its name from a greater celebrity, even the warrior “Mesqua Ukee” (not easily turned back in the day of battle.) He fought side by side with the British in the War of 1812, and received the much coveted medal, bearing the image of King George on its silver surface. Mesqua Ukee was head chief of the Rama Indians, and lived in Rama. What is now called Muskoka was then divided into Indian hunting grounds, and the south branch of the Muskoka River was the exclusive patrimony of the Mesqua Ukee. True it is that Begamagobaway (who lived in Port Carling, and whose heir is now chief of the Parry Sounds Indians) ruled over a small section of the Hurons (or Ojibeways), which section we might call the Muskoka Indians; but he was the twinkling of a small star before the moon, when compared with Mesqua Ukee. Not only the south branch of the Muskoka River, but even the lake itself, and ultimately the whole district, became called after the great Chief Musqua Ukee. It will be easily seen how a slight corruption of the name gave us Muskoka instead of Musqua Ukee.”

(Page 1879: 15)

James Bigwin was another local First Nations hero of the War of 1812. His family maintained a summer camp at Bigwin Island, and also a more permanent settlement that included garden areas at the narrows in Dorset. The so-called Muskoka band had a permanent village at Port Carling. The Muskoka band hunted beaver and fished at Fairy and Peninsula Lakes. Another local band was known as the Menominee. This group were known to camp at various sites around Mary, Vernon and Peninsula Lakes. It is likely that the band’s name reflects a group expertise, as the name means “wild rice”, although some do believe that these people were once part of the larger nation known as the Menominee from the present-day state of Wisconsin (Pryke 2010: 15).

Beginning in the early nineteenth century, some exploration was conducted in Muskoka to determine if it would be possible to link Georgian Bay to the Ottawa River through the

construction of canals. These explorations were conducted initially in the interests of defense and then later revisited in the interest of commerce. Lieutenant Henry Briscoe of the Royal Engineers ascended the south branch of the Muskoka River in 1826. Alexander Sherriff canoed down the Oxtongue River, through Lake of Bays and on to Lake Muskoka by way of the south branch of the Muskoka River. He was the first to record the name Muskoka. His 1829 map shows a trading post where the Town of Huntsville was later built (Pryke 2010: 17).

The Robinson Treaty was signed in 1850. This treaty ceded the land northwest of Penetanguishene to Sault St. Marie and east to the Ottawa River to the government (MPSGG 1985). In 1859 a number of townships in what would become part of the Muskoka District were opened for settlement: Draper, Macaulay, Muskoka, and Minden. The remaining Townships would not be officially open for settlement until the passage of the Free Grants and Homestead Act in 1868 (Murray 1963: lxxx-lxxi).

With the government decision in 1858 to open up the Muskoka District for settlement, a bridge was constructed over the Severn River and a colonization road was pushed through to what would become the community of Gravenhurst (Cotton 2004: 17). The “Muskoka Road”, as it was called, from Severn Bridge to Gravenhurst was also referred to as “the portage” due to its reputation as the roughest fourteen miles of road to be found anywhere in Canada (Cotton 2004: 21). This road was extended to the northern boundary of Stephenson Township in 1863. In 1868 one of three new roads constructed was a fifteen-mile eastern branch off of the Muskoka Road. This road would eventually reach Huntsville in 1871 (Cotton 2004: 71).

The land agent for settlement of Muskoka reported that 54 location tickets were issued to settlers in 1859. This number increased steadily to 190 by 1861, 287 by the end of 1862 with an additional 743 occupying Crown land. The government of Ontario made efforts to increase these numbers through advertising in Europe, Great Britain and the rest of Canada during the late 1860s. Census returns for the second half of the 19th century showed significant increases in the population of Muskoka: 5360 in 1871; 12973 in 1881; 15666 in 1891 and 20971 in 1901. Subsequently, the population numbers fluctuated only slightly for many decades (Murray 1963: lxxxii).

Although trappers and traders had visited the area for years, it was Captain George Hunt who conceived of the idea to build a settlement at the location where the colonization road was to cross the Muskoka River. Hunt arrived and built his shanty in 1869. One of trappers, William Cann, had a shanty at the future site of Huntsville that he had been frequenting since he built it in 1862, although he had been coming to the area since 1860. Cann was initially opposed to the development of the site but was soon won over. By November of 1869 Hunt brought his wife and three daughters up to live in his shanty. Hunt was also made postmaster of a new post office named Huntsville in his honour. He ran the post office and a store out of his shanty at this time. He was also given permission to extend the Muskoka Road to Huntsville. In 1870 Hunt hired crews to extend the Muskoka Road and to build a bridge over

the Muskoka River. The bridge was completed in 1871 and Hunt then petitioned to extend the road north and east to meet the Bobcaygeon Road (Pryke 2010: 21-27).

Captain Denton was a master mariner who partnered with engineer John Smiley to establish a steamboat company operating on the northern Muskoka lakes. They promoted tourism in the northern Muskoka Lakes to attract customers. Steam navigation began on the northern Muskoka Lakes in 1877 with the launch of the side-wheel steamer, the *Northern*. The *Northern* was fitted with a hinged smokestack to pass under the Huntsville Bridge. The *Northern* was launched to coincide with the construction of a lock to bypass rapids on the Muskoka River between Fairy and Mary Lakes. Their business was originally located in Port Sydney but when the railway bypassed Port Sydney and built a station in Huntsville, the steamboats moved with the railway and began operating from a wharf adjacent to the Huntsville railway station in 1886 (Pryke 2010: 32-33).

The railway would not reach Gravenhurst until 1875 (Cotton 2004: 28). By 1884, it was clear that the railway would be coming to Huntsville. Captain Denton built another steamer, the *Florence*, and moved his business to Huntsville. The Pacific Junction Railway was eventually extended northward to Huntsville in 1886 (Cotton 2004: 63). In 1886, following completion of the railway to Huntsville, the Ontario government sent a dredge to widen and open the natural waterway between Fairy and Peninsula Lakes to allow for steamboat navigation. This work was completed in 1888 (Pryke 2010: 42). The arrival of the railway had a major impact on the development of Tourism in Muskoka, particularly as the passenger railway stations at Gravenhurst and Huntsville were adjacent to wharves serviced by steamboats operating on the lakes. The railways served to bring tourists and summer residents and vacationers to Muskoka where people would then take steamboats to resorts and cottages on the lakes.

“Had the railway not arrived, Huntsville would not be the community it is today. There would be no lumber industry, no tannery, no navigation company. Huntsville would not have become the gateway to Lake of Bays nor the port of entry to the popular tourist destinations in the northern Muskoka lakes.”

(Pryke 2010: 35)

The development of the area as a tourism destination was dependant upon the development of the transportation network by affording easy, cost effective, fast, reliable and comfortable travel through the development of overland roads and railways and an inland navigable waterway system. The study area is directly and historically associated with the historical development of transportation in Muskoka as it is adjacent to the Muskoka River, used as a waterway for steamboats, and the study area itself forms one of the early overland transportation routes in the settlement and development of the area.

The completion of the canal between Fairy and Peninsula Lakes considerably extended the economic influence and revenue of Huntsville. In addition to controlling waterborne traffic on three connected lakes, Denton’s boats were now within one mile of the lucrative commercial market within the Lake of Bays. The problem would not be overcome through

the construction of a canal or a lock. The difference in elevation placed the Lake of Bays over 100 feet above Peninsula Lake. However, the resulting fierce competition between the Lake of Bays fleet owned by Captain Marsh and the Huntsville fleet of Captain Denton, resulted in the demise of Denton's business by 1895 (Tatley 1994: 197-198). In March of 1900 the legislature of Ontario tabled a bill to establish a railway over the portage. However, although passed in the house, no money was provided and no steps were taken to follow through with the railway construction. Finally, as the proscribed period was about to expire, private money came to the rescue and work began in the fall of 1903. In 1904, the Ontario government voted to contribute \$10,000.00 to the project. The railway was constructed by 1904 and ready for passenger service in 1905 (Tatley 1994: 224-226).

Bracebridge was incorporated as a Village in 1875 and a Town in 1889. With the advent of regional government in January 1971, the Town of Bracebridge and the surrounding townships were brought together as one municipality. It encompasses 62,119 hectares and has five wards based on the original township structure: Bracebridge, Monck/Muskoka, Macaulay, Draper and Oakley (Bracebridge 2013).

Map 2 is a facsimile segment of the Township of Draper map reproduced from Guide Book and Atlas of Muskoka and Parry Sound Districts (H. R. Page & Co. 1879). Figure 2 illustrates the location of the study area and environs as of 1879. The study area straddles four Lots. Lot 7 of Concession 7 is shown to belong to Robert Eddie; one structure is indicated within his property but west of the overall study area and well away from the bridge. Lot 8 of Concession 7 is shown to belong to A. Fawcett but there is no indication of a structure within this property. Lot 7 of Concession 8 is shown to belong to Richard Laigheny. The house on this property is well to the west of the study area. Finally, Lot 8 of Concession 8 is owned by Rich Doherty at this time. A house is shown within this lot but it is well to the north of the study area. This demonstrates that the original properties of which the study area is a part was settled by the time that the atlas data was compiled. Accordingly, it has been determined that there is potential for archaeological deposits related to early Post-contact settlement within the study area. In addition, this map illustrates the Muskoka River channel flowing through the study area and an early settlement road is depicted as crossing the Muskoka River within the study area (i.e. the Black Bridge crossing). These features of early transportation also indicate potential for post-contact archaeological resources.

It must be borne in mind that inclusion of names of property owners and depictions of structures within properties on these maps were sold by subscription. While information included within these maps may provide information about occupation of the property at a specific point in time, the absence of such information does not indicate that the property was not occupied.

5.2.2 ONTARIO BRIDGE HISTORY

The history of settlement in Ontario is inextricably tied to the history or the development of overland transportation. As David Cuming notes in his Discovering Heritage Bridges on Ontario Roads (n.d.: 31), "Ontario with its myriad of rivers, creeks, streams and lakes has

resulted in a substantial number of minor barriers to communication”. As a result, bridges have always formed a significant component of overland transportation and communication routes. The first major roads in Ontario followed settlement by the United Empire Loyalists after the American War of Independence. These early roads were built for strategic military purposes but soon attracted settlement along these routes. Subsequent road construction, whether built by government agencies or private concerns also served to attract settlement and initial settlement promoted construction of further roadways as settlement moved inland from the Great lakes and the initial transportation corridors (Cuming n.d.: 32).

Bridges were a necessity from the earliest days of road construction. The earliest bridges consisted of nothing more than two parallel logs stretching from one bank to the other with logs overlying these at a right angle. These bridges could be easily and quickly replaced as they rotted or should they be swept away by floodwaters or ice flows (Cuming n.d.: 32). Bridges needed to cover larger spans were constructed by early settlers based on principles employed in the construction of early houses and barns. Truss systems used in the framing of structures were employed. Two such standard bridge types emerged fairly early on: The King Truss Bridge and the Queen Truss Bridge. The King Truss was built by setting a vertical beam supported by two inclined beams midway along a horizontal beam. The King Truss Bridge could span a gap of up to sixty (60) feet. The Queen truss system was employed for wider spans. This bridge was constructed with two vertical beams supported by one inclined beam for each and joined by a horizontal top beam. The Queen Truss Bridge could span a gap of up to one hundred and twenty (120) feet (Cuming n.d.: 35).

In the years between 1841 and 1849, the Department of Public Works spent \$1,300,564 on roads in Canada West, including the construction of forty-three major bridges at a total cost of \$206, 928. A full third of these bridges were timber-built Queen Truss bridges. During this same period numerous bridge designs were patented in the United States under fierce competition to increase the length and strength of bridges. As a result, bridge construction in North America began a period of transition from wood to metal structures (Cuming n.d.: 36).

Many road bridge designs that evolved were based on principles derived from railroad construction. Other designs that had a major impact on bridge engineering evolved independently. The Whipple Truss was first built in 1841. This new design consisted of a totally metal bowstring arch bridge. The arch of the bridge and the vertical supporting members were manufactured of cast iron while the diagonal bracing used wrought iron. The typical bridge built in the middle of the 19th century in the United States was entirely made of wrought iron (Cuming n.d.: 37). In Ontario the timber bridge dominated the landscape in rural areas from 1780-1880 and persisted into the early twentieth century. Wrought iron bridges were built in areas with higher population densities such as the thriving market towns of Brantford, Peterborough, London and Paris. These communities all had wrought iron bridges that were constructed during the 1870s (Cuming n.d.: 38).

Metal bridges were sold in separate components produced in factories and shipped to the location of construction and assembled on site. Bridge components were ordered through catalogues. To simplify construction, the first metal bridges were assembled using “pin

connections”, which were essentially threaded bolts that obviated the need for specialists or specialized equipment such as rivets required. Construction of such bridges could be completed with unskilled local labour in two to three weeks. These bridges were ideally suited to bridge construction in small communities or rural contexts (Cuming n.d.: 38).

Beginning in the 1880s designers began to replace wrought iron elements in bridges with steel. This marked the beginning of a transition from wrought iron to steel bridges (Cuming n.d.: 41). Several factors contributed to the rapid development and proliferation of steel bridges at the beginning of the twentieth century. Portable pneumatic tools allowed for the use of rivets on even rural sites of bridge construction and pin connections rapidly disappeared. Rivets allowed for longer and sturdier construction. New production methods made steel as cheap as wrought iron. The concurrent developments in heavier vehicle and agricultural machinery required bridges capable of taking heavier loads which made construction of timber bridges impractical even in rural areas. “Through truss” style construction was employed over larger spans or in locations where traffic loads were heavy. Steel bridges were erected in quantity throughout Ontario following 1900 (Cuming n.d.: 42). The improvement in highway and bridge construction was particularly notable following the end of the First World War with massive increases in automobile traffic and the development of heavy construction machinery. (Cuming n.d.: 51-53).

Experimentation with reinforced concrete bridge construction began in the 1880s in France followed by the United States. The first concrete arch bridge was constructed in Ontario in 1905 and was comprised of mass concrete. The first steel reinforced bridge was constructed in 1906. The appeal of reinforced concrete as a construction technology stemmed from its great strength, length of use and low maintenance requirements compared to steel or iron which required regular painting and rust removal (Cuming n.d.: 44). The strength of a reinforced tied concrete arch above the deck was early recognized as a design suitable for almost any location, particularly in crossings with low banks where arched construction below the deck was unsuitable (Cuming n.d.: 47). By 1914 it was clear that concrete would dominate the construction of bridges for the foreseeable future (Cuming n.d.: 49). Concrete bridge construction of two types, the tied arch and the concrete beam, boomed in the 1920s (Cuming n.d.: 51).

Beginning in the 1930s a new innovation in bridge design challenged more traditional arched designs. The rigid frame reinforced concrete bridge employed a shallow arch below the deck and could be easily widened to accommodate demands of growing traffic pressures. This was a major advantage over earlier bridge designs such as the tied arch for which such an alteration was impossible (Cuming n.d.: 52).

Conde McCullough achieved his reputation in bridge engineering largely due to his facility for recognizing cost-effective designs based on long-term maintenance costs. His Economics of Bridge Design was a well-received treatise on this subject when published in 1929. This promoted the rise of composite bridge construction during the Depression years of the 1930s. Composite design using steel, wood, and concrete arose; each material has individual strengths and weaknesses for use in bridge design. These range from weight capacity, durability, and, of course, cost.

The nature of materials often leads to their combination in bridge construction, where steel deck girders support a concrete floor or a timber bridge that rests upon a steel or concrete series of piers or abutments. These structures are referred to as “composite” design and by and large most bridges utilize more than a single material, if only for the wearing surface of the roadbed. For purposes of categorization their primary material, usually in reference to the structural support system, classifies bridges. As a result, a steel beam bridge with laminated wood deck and concrete piers is deemed a steel beam bridge.

Slab, beam and girder bridges are essentially similar and related designs, building upon the same basic structural principal, with a single member in tension that spans a void between two fixed points. Structurally a “slab” is the simplest, relying solely upon the inherent strength of a single member for both structure and road surface. A beam bridge is, in essence, a slab (the road deck) that is additionally strengthened by some number of longitudinal members. A girder bridge is a beam bridge with additional transverse supports between the beams (Kramer 2004: 7). Beam and Girder bridge types introduced in the 1930s remained in use throughout the post WWII period (Kramer 2004: 25)

Steel as used in composite bridge construction can be divided into two basic categories that reflect temporal advances in construction technology — rolled section beams versus the later use of welded members. Rolled sections refer to “H” or “I” or other shapes that are manufactured whole (the earlier of the technologies). Welded section beams are made of flat plates, welded into various shapes.

Based upon consideration of the above historic trends, the Town of Bracebridge Black Bridge is single span structural steel through truss bridge and was constructed in about 1922. The context suggests that the erection of this bridge was likely in response to the need for a structure to span a relatively narrow channel and to carry increasingly heavier loads due to the rise in popularity of automobile transportation and mechanical farm implements following the First World War. These bridges and related forms were constructed on a very wide scale throughout the province and a large number continue to serve as crossings.

5.2.3 SUMMARY OF HISTORICAL CONTEXT

The brief overview of documentary evidence readily available indicates that the study area is situated within an area that was close to the historic transportation routes and in an area well populated during the nineteenth century and as such has potential for sites relating to early Post-contact settlement in the region. Background research indicates the property has potential for significant archaeological resources of Native origins based on proximity to a natural source of navigable and potable water in the past.

5.2.4 CURRENT CONDITIONS

The present use of the study area is as an existing bridge crossing the Muskoka River. The Black Bridge is located over the Muskoka River South Branch adjacent 1527 Matthiasville Road, approximately 1 km north-east of Highway 118 East, on Lot 8, Concession 7, Geographic Township of Draper, in the Town of Bracebridge. The structure is a single span structural steel through truss bridge and was constructed in about 1922. The bridge has a 36.7 meters span, an overall width of 4.4 meters and a travelled deck width of 4.1 meters. A

bridge inspection conducted in 2016 has identified several deficiencies and concluded the Black Bridge has reached the end of its useful service life and should be replaced. The deficiencies to be addressed include public safety, traffic capacity, structure condition, approach alignment, load capacity, and current bridge standards. Alternatives to be considered would be to do nothing, structural repair solutions, widening of the existing bridge to incorporate an appropriately sized travel deck, and full bridge removal and replacement. The approaches to the Black Bridge from Matthiasville Road consist primarily of sandy soil adjacent to the paved travel surface of the road with shallow roadside ditches. The extent of disturbance within the road allowance beyond the paved surface does not appear to be of sufficient extent to have removed archaeological potential. The west approach to the bridge follows the bank of the river and the bank forms the north embankment of the roadway. This suggests that the roadbed is probably artificial on this side of the road and was raised through filling along the shoreline. However there is a sandy shoulder and a narrow grass-covered bank that should be subject to test pit survey at least to confirm disturbance in this area and that the disturbance extends the entire length of the roadside along the bank of the river.

5.3 ARCHAEOLOGICAL CONTEXT

The Archaeological Sites Database administered by the Ministry of Tourism, Culture and Sport (MTCS) indicates that there are no (0) previously documented sites within 1 kilometre of the study area. However, it must be noted that this is based on the assumption of the accuracy of information compiled from numerous researchers using different methodologies over many years. AMICK Consultants Limited assumes no responsibility for the accuracy of site descriptions, interpretations such as cultural affiliation, or location information derived from the Archaeological Sites Database administered by MTCS. In addition, it must also be noted that a lack of formerly documented sites does not indicate that there are no sites present as the documentation of any archaeological site is contingent upon prior research having been conducted within the study area.

On the basis of information supplied by MTCS, no archaeological assessments have been conducted within 50 metres of the study area. AMICK Consultants Limited assumes no responsibility for the accuracy of previous assessments, interpretations such as cultural affiliation, or location information derived from the Archaeological Sites Database administered by MTCS. In addition, it must also be noted that the lack of formerly documented previous assessments does not indicate that no assessments have been conducted.

Data contained in previous archaeological reports in close proximity to the study area that is relevant to Stage 1 Background Study is defined within the Standards and Guidelines for Consultant Archaeologists in Section 7.5.8 Standard 4 as follows:

“Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area, as documented by all available reports that include archaeological fieldwork carried out on the lands to be

impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50 m) to those lands.”

(MTCS 2011: 126 Emphasis Added)

In accordance with data supplied by MTCS for the purposes of completing this study, there are no previous reports detailing, “*archaeological fieldwork carried out on the lands to be impacted by this project*”, nor do any previous reports document known archaeological sites within 50 metres of the study area.

The Standards and Guidelines for Consultant Archaeologists stipulates that the necessity to summarize the results of previous archaeological assessment reports, or to cite MTCS File Numbers in references to other archaeological reports, is reserved for reports that are directly relevant to the fieldwork and recommendations for the study area (S & Gs 7.5.7, Standard 2, MTC 2011: 125). This is further refined and elaborated upon in Section 7.5.8, Standards 4 & 5, MTC 2011:

“4. Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area, as documented by all available reports that include archaeological fieldwork carried out on the lands to be impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50m) to those lands.”

“5. If previous findings and recommendations are relevant to the current stage of work, provide the following:

- a. *a brief summary of previous findings and recommendations*
- b. *documentation of any differences in the current work from the previously recommended work*
- c. *rationale for the differences from the previously recommended work”*

(Emphasis Added)

It must be further noted that there are no relevant historical plaques associated with the study area that would provide any indication of potential for significant archaeological resources associated with historical events or these or personalities in the immediate vicinity.

5.3.1 PRE-CONTACT REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MTCS. As a result it was determined that no (0) archaeological sites relating directly to Pre-contact habitation/activity had been formally registered within the immediate vicinity of the study area. However, the lack of formally documented archaeological sites does not mean that Pre-contact people did not use the area; it more likely reflects a lack of systematic archaeological research in the immediate vicinity. Even in cases where one or more assessments may have been conducted in close proximity to a proposed landscape alteration, an extensive area of

physical archaeological assessment coverage is required throughout the region to produce a representative sample of all potentially available archaeological data in order to provide any meaningful evidence to construct a pattern of land use and settlement in the past.

The Black Bridge crossing is situated over the Muskoka River, which is a source of potable water and a navigable water way. The distance to water criteria used to establish potential for archaeological sites suggests potential for Pre-contact occupation and land use in the area in the past.

TABLE 1 PRE-CONTACT CULTURAL CHRONOLOGY FOR SOUTHERN ONTARIO

Years ago	Period	Southern Ontario
250	Terminal Woodland	Ontario and St. Lawrence Iroquois Cultures
1000 2000	Initial Woodland	Princess Point, Saugeen, Point Peninsula, and Meadowood Cultures
3000 4000 5000 6000	Archaic	Laurentian Culture
7000 8000 9000 10000 11000	Palaeo-Indian	Plano and Clovis Cultures
		(Wright 1972)

Table 2 illustrates the chronological development of cultures within southern Ontario prior to the arrival of European cultures to the area at the beginning of the 17th century. This general cultural outline is based on archaeological data and represents a synthesis and summary of research over a long period of time. It is necessarily generalizing and is not necessarily representative of the point of view of all researchers or stakeholders. It is offered here as a rough guideline and outline to illustrate the relationships of broad cultural groups and time periods.

5.3.2 POST-CONTACT REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MTCS. As a result it was determined that no (0) archaeological sites relating directly to Post-contact habitation/activity had been formally registered within the immediate vicinity of the study area.

5.3.3 LOCATION AND CURRENT CONDITIONS

The study area is described as Black Bridge, Parts of Lots 7 and 8, Concession 8, and Lots 7 and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka, conducted by AMICK Consultants Limited. This study was

conducted under Professional Archaeologist License #P058 issued to Michael Henry by the Minister of Tourism, Culture and Sport for the Province of Ontario. This assessment was undertaken as a requirement under the Environmental Assessment Act (RSO 1990b) as a component study of a Municipal Class Environmental Assessment (EA). The EA requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Tourism, Culture and Sport (MTCS).

The proposed undertaking within the study area is a replacement bridge for the existing Black Bridge crossing, which was inspected in 2016 via municipal structure inspection (The Corporation of the Town of Bracebridge, 2016). A detailed plan of the proposed undertaking was not available at the time that this report was prepared.

The present use of the study area is as an existing bridge crossing the Muskoka River. The Black Bridge is located over the Muskoka River South Branch adjacent 1527 Matthiasville Road, approximately 1 km north-east of Highway 118 East, on Lot 8, Concession 7, Geographic Township of Draper, in the Town of Bracebridge. The structure is a single span structural steel through truss bridge and was constructed in about 1922. The bridge has a 36.7 meters span, an overall width of 4.4 meters and a travelled deck width of 4.1 meters. A bridge inspection conducted in 2016 has identified several deficiencies and concluded the Black Bridge has reached the end of its useful service life and should be replaced. The deficiencies to be addressed include public safety, traffic capacity, structure condition, approach alignment, load capacity, and current bridge standards. Alternatives to be considered would be to do nothing, structural repair solutions, widening of the existing bridge to incorporate an appropriately sized travel deck, and full bridge removal and replacement. The approaches to the Black Bridge from Matthiasville Road consist primarily of sandy soil adjacent to the paved travel surface of the road with shallow roadside ditches. The extent of disturbance within the road allowance beyond the paved surface does not appear to be of sufficient extent to have removed archaeological potential. The west approach to the bridge follows the bank of the river and the bank forms the north embankment of the roadway. This suggests that the roadbed is probably artificial on this side of the road and was raised through filling along the shoreline. However there is a sandy shoulder and a narrow grass-covered bank that should be subject to test pit survey at least to confirm disturbance in this area and that the disturbance extends the entire length of the roadside along the bank of the river.

5.3.4 PHYSIOGRAPHIC REGION

The study area is situated within the Number 11 Strip, a narrow strip in which sand and silt and clay deposits occupy the hollows. This area was just below the shoreline of Lake Algonquin. This area is characterised by deep soils that support farming settlements in sharp contrast to the bare rock ridges and poor shallow soil of the adjacent high ground. This area constitutes most of the farmland in Parry Sound and Muskoka (Chapman and Putnam 1984: 215).

5.3.5 SURFACE WATER

Sources of potable water, access to waterborne transportation routes, and resources associated with watersheds are each considered, both individually and collectively to be the highest criteria for determination of the potential of any location to support extended human activity, land use, or occupation. Accordingly, proximity to water is regarded as the primary indicator of archaeological site potential. The Standards and Guidelines for Consultant Archaeologists stipulates that undisturbed lands within 300 metres of a water source are considered to have archaeological potential (MTC 2011: 21).

The Black Bridge is located over the Muskoka River South Branch adjacent 1527 Matthiasville Road, approximately 1 km north-east of Highway 118 East, on Lot 8, Concession 7, Geographic Township of Draper, in the Town of Bracebridge. The west approach to the bridge follows the bank of the river and the bank forms the north embankment of the Matthiasville Road. Map 2 is a facsimile segment of the Township of Draper map reproduced from Guide Book and Atlas of Muskoka and Parry Sound Districts (H. R. Page & Co. 1879). Figure 2 illustrates the location of the study area and environs as of 1879. This map illustrates the Muskoka River channel flowing through the study area and an early settlement road is depicted as crossing the Muskoka River within the study area (i.e. the Black Bridge crossing).

5.3.6 CURRENT PROPERTY CONDITIONS CONTEXT

Current characteristics encountered within an archaeological research study area determine if property Assessment of specific portions of the study area will be necessary and in what manner a Stage 2 Property Assessment should be conducted, if necessary. Conventional assessment methodologies include pedestrian survey on ploughable lands and test pit methodology within areas that cannot be ploughed. For the purpose of determining where property Assessment is necessary and feasible, general categories of current landscape conditions have been established as archaeological conventions. These include:

5.3.6.1 BUILDINGS AND STRUCTURAL FOOTPRINTS

A building, for the purposes of this particular study, is a structure that exists currently or has existed in the past in a given location. The footprint of a building is the area of the building formed by the perimeter of the foundation. Although the interior area of building foundations would often be subject to property Assessment when the foundation may represent a potentially significant historic archaeological site, the footprints of existing structures are not typically assessed. Existing structures commonly encountered during archaeological assessments are often residential-associated buildings (houses, garages, sheds), and/or component buildings of farm complexes (barns, silos, greenhouses). In many cases, even though the disturbance to the land may be relatively shallow and archaeological resources may be situated below the disturbed layer (e.g. a concrete garage pad), there is no practical means of assessing the area beneath the disturbed layer. However, if there were

evidence to suggest that there are likely archaeological resources situated beneath the disturbance, alternative methodologies may be recommended to study such areas.

The study area contains the existing structural footprint of Black Bridge. The structure itself and associated footings have no archaeological potential and archaeological potential has been removed from beneath the supporting structural elements at either end of the bridge due to deep excavation at these locations.

5.3.6.2 DISTURBANCE

Areas that have been subjected to extensive and deep land alteration that has severely damaged the integrity of archaeological resources are known as land disturbances. Examples of land disturbances are areas of past quarrying, major landscaping, and sewage and infrastructure development (MTC 2011: 18), as well as driveways made of gravel or asphalt or concrete, in-ground pools, and wells or cisterns. Surfaces paved with interlocking brick, concrete, asphalt, gravel and other surfaces meant to support heavy loads or to be long wearing hard surfaces in high traffic areas, must be prepared by the excavation and removal of topsoil, grading, and the addition of aggregate material to ensure appropriate engineering values for the supporting matrix and also to ensure that the installations shed water to avoid flooding or moisture damage. All hard surfaced areas are prepared in this fashion and therefore have no or low archaeological potential. Major utility lines are conduits that provide services such as water, natural gas, hydro, communications, sewage, and others. These major installations should not be confused with minor below ground service installations not considered to represent significant disturbances removing archaeological potential, such as services leading to individual structures which tend to be comparatively very shallow and vary narrow corridors. Areas containing substantial and deeply buried services or clusters of below ground utilities are considered areas of disturbance, and may be excluded from Stage 2 Property Assessment. Disturbed areas are excluded from Stage 2 Property Assessment due to no or low archaeological potential and often because they are also not viable to assess using conventional methodology.

*“Earthwork is one of the major works involved in road construction. This process includes excavation, material removal, filling, compaction, and construction. Moisture content is controlled, and compaction is done according to standard design procedures. Normally, rock explosion at the road bed is not encouraged. While filling a depression to reach the road level, **the original bed is flattened after the removal of the topsoil.** The fill layer is distributed and compacted to the designed specifications. This procedure is repeated until the compaction desired is reached. **The fill material should not contain organic elements, and possess a low index of plasticity.** Fill material can include gravel and decomposed rocks of a particular size, but should not consist of huge clay lumps. Sand clay can be used. The area is considered to be adequately compacted when the roller movement does not create a noticeable deformation. **The road surface finish is reliant on the economic aspects, and the estimated usage.**” [Emphasis Added]*

(Goel 2013)

The supporting matrix of a hard paved surface cannot contain organic material which is

subject to significant compression, decay and moisture retention. Topsoil has no engineering value and must be removed in any construction application where the surface finish at grade requires underlying support.

Installation of sewer lines and other below ground services associated with infrastructure development often involves deep excavation that can remove archaeological potential. This consideration does not apply to relatively minor below ground services that connect structures and facilities to services that support their operation and use. Major servicing corridors will be situated within adjacent road allowances with only minor, narrow and relatively shallow underground services entering into the study area to connect existing structures to servicing mainlines. The relatively minor, narrow and shallow services buried within a residential property do not require such extensive ground disturbance to remove or minimize archaeological potential within affected areas.

In addition to the bridge structure, the paved surface and gravel shoulders of Matthiasville Road represent disturbances as described above. The construction of the roadway would have necessitated excavation well below the original topsoil layer. Even in areas of fill used to elevate the road, such areas require excavation and removal of at least the topsoil layer. In some cases archaeological deposits may still exist at depths greater than are generally required for roadway construction, however these circumstances are comparatively rare in a rural context, such as is the case in this study, where archaeological sites are typically of shallow depth.

5.3.6.3 LOW-LYING AND WET AREAS

Landscape features that are covered by permanently wet areas, such as marshes, swamps, or bodies of water like streams or lakes, are known as low-lying and wet areas. Low-lying and wet areas are excluded from Stage 2 Property Assessment due to inaccessibility.

The south branch of the Muskoka River over which Black Bridge carries Matthiasville Road is a permanently low-lying and wet area that cannot be assessed through land based archaeological methods. Permanently wet areas are usually deemed to be of low potential and not viable to assess.

5.3.6.4 STEEP SLOPE

Landscape which slopes at a greater than (>) 20 degree change in elevation, is known as steep slope. Areas of steep slope are considered uninhabitable, and are excluded from Stage 2 Property Assessment.

Generally, steep slopes are not assessed because steep slopes are interpreted to have low potential, not due to viability to assess, except in cases where the slope is severe enough to become a safety concern for archaeological field crews. In such cases, the Occupational Health and Safety Act takes precedence as indicated in the introduction to the Standards and Guidelines. AMICK Consultant Limited policy is to assess all slope areas whenever it is safe

to do so. Assessment of slopes, except where safety concerns arise, eliminates the invariably subjective interpretation of what might constitute a steep slope in the field. This is done to minimize delays due to conflicts in such interpretations and to increase the efficiency of review.

The study area does not contain areas of steep slope.

5.3.6.5 WOODED AREAS

Areas of the property that cannot be ploughed, such as natural forest or woodlot, are known as wooded areas. These wooded areas qualify for Stage 2 Property Assessment, and are required to be assessed using test pit survey methodology.

The margins of Matthiasville Road on both approaches to Black Bridge are generally tree covered and can only be assessed by test pit methodology.

5.3.6.6 PLOUGHABLE AGRICULTURAL LANDS

Areas of current or former agricultural lands that have been ploughed in the past are considered ploughable agricultural lands. Ploughing these lands regularly turns the soil, which in turn brings previously buried artifacts to the surface, which are then easily identified during visual inspection. Furthermore, by allowing the ploughed area to weather sufficiently through rainfall, soil is washed off of exposed artifacts at the surface and the visibility of artifacts at the surface of recently worked field areas is enhanced markedly. Pedestrian survey of ploughed agricultural lands is the preferred method of physical assessment because of the greater potential for finding evidence of archaeological resources if present.

The study area does not contain any ploughable lands.

5.3.6.7 LAWN, PASTURE, MEADOW

Landscape features consisting of former agricultural land covered in low growth, such as lawns, pastures, meadows, shrubbery, and immature trees. These are areas that may be considered too small to warrant ploughing, (i.e. less than one hectare in area), such as yard areas surrounding existing structures, and land-locked open areas that are technically workable by a plough but inaccessible to agricultural machinery. These areas may also include open area within urban contexts that do not allow agricultural tillage within municipal or city limits or the use of urban roadways by agricultural machinery. These areas are required to be assessed using test pit survey methodology.

There are narrow strips of grass and low weeds maintained as lawn adjacent to the gravel shoulders of Matthiasville Road.

5.3.7 SUMMARY

Background research indicates the vicinity of the study area has potential for archaeological resources of Native origins based on proximity to a source of potable water that was also used as a means of waterborne trade and communication. Background research also suggests potential for archaeological resources of Post-contact origins based on proximity to a historic roadway and proximity to locations of documented historic settlement.

Current conditions within the study area indicate that some areas of the property may have no or low archaeological potential and do not require Stage 2 Property Assessment or should be excluded from Stage 2 Property Assessment. These areas would include the footprint of existing structures (Black Bridge), areas under pavement (Matthiasville Road), and areas that are permanently wet (Muskoka River). A significant proportion of the study area does exhibit archaeological potential and is viable to assess and therefore a Stage 2 Property Assessment is required.

Archaeological potential does not indicate that there are necessarily sites present, but that environmental and historical factors suggest that there may be as yet undocumented archaeological sites within lands that have not been subject to systematic archaeological research in the past.

6.0 FIELD WORK METHODS AND WEATHER CONDITIONS

This report confirms that the study area was subject to Stage 1 Property Inspection on 01 May 2017.

The fieldwork undertaken as a component of this study was conducted according to the archaeological fieldwork standards and guidelines (including weather and lighting conditions). Weather conditions were appropriate for the necessary fieldwork required to complete the Stage 1 Property Inspection and to create the documentation appropriate to this study. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Maps 4 & 5 of this report. Upon completion of the property inspection of the study area, it was determined that select areas would require Stage 2 Property Assessment.

It must be noted that AMICK Consultants Limited has been retained to assess lands as specified by the proponent. As such, AMICK Consultants Limited is constrained by the terms of the contract in place at the time of the Archaeological Assessment and can only enter into lands for which AMICK Consultants Limited has received consent from the owner or their agent(s). The proponent has been advised that the entire area subject to potential construction impacts through the proposed undertaking must be subject to archaeological assessment and that portions of proposed undertaking may only be excluded from Stage 2 Property Assessment if they are of low potential or are not viable to assess.

7.0 RECORD OF FINDS

Section 7.8.2 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 137-138) outlines the requirements of the Record of Finds component of a Stage 2 report:

1. *For all archaeological resources and sites that are identified in Stage 2, provide the following:*
 - a. *a general description of the types of artifacts and features that were identified*
 - b. *a general description of the area within which artifacts and features were identified, including the spatial extent of the area and any relative variations in density*
 - c. *a catalogue and description of all artifacts retained*
 - d. *a description of the artifacts and features left in the field (nature of material, frequency, other notable traits).*
2. *Provide an inventory of the documentary record generated in the field (e.g. photographs, maps, field notes).*
3. *Submit information detailing exact site locations on the property separately from the project report, as specified in section 7.6. Information on exact site locations includes the following:*
 - a. *table of GPS readings for locations of all archaeological sites*
 - b. *maps showing detailed site location information.*

7.1 ARCHAEOLOGICAL RESOURCES

No archaeological resources of any description were identified anywhere within the study area through the Stage 1 Property Inspection or through documentary sources.

7.2 ARCHAEOLOGICAL FIELDWORK DOCUMENTATION

The documentation produced during the field investigation conducted in support of this report includes: one sketch map, one page of photo log, one page of field notes, and 27 digital photographs.

8.0 ANALYSIS AND CONCLUSIONS

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Research Study of Black Bridge of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation on 01 May 2017. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTCS) on behalf of the government and citizens of Ontario.

8.1 STAGE 1 ANALYSIS AND CONCLUSIONS

As part of the present study, background research was conducted in order to determine the archaeological potential of the proposed project area.

“A Stage 1 background study provides the consulting archaeologist and Ministry report reviewer with information about the known and potential cultural heritage resources within a particular study area, prior to the start of the field assessment.” (OMCzCR 1993)

The evaluation of potential is further elaborated Section 1.3 of the Standards and Guidelines for Consultant Archaeologist (2011) prepared by the Ontario Ministry of Tourism and Culture:

“ The Stage 1 background study (and, where undertaken, property inspection) leads to an evaluation of the property’s archaeological potential. If the evaluation indicates that there is archaeological potential anywhere on the property, the next step is a Stage 2 assessment.” (MTC 2011: 17)

Features or characteristics that indicate archaeological potential when documented within the study area, or within close proximity to the study area (as applicable), include:

“ - previously identified archaeological sites

- *water sources (It is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees.):*
 - *primary water sources (lakes, rivers, streams, creeks)*
 - *secondary water sources (intermittent streams and creeks, springs, marshes, swamps)*
 - *features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches)*
 - *accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)*
- *elevated topography (e.g., eskers, drumlins, large knolls, plateaux)*
- *pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground*
- *distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings.*
- *resource areas, including:*
 - *food or medicinal plants (e.g., migratory routes, spawning areas, prairie)*
 - *scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert)*

2017 Stage 1 Archaeological Background Research of Black Bridge, Parts of Lots 7 and 8, Con. 8, and Lots 7 and 8, Con. 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka (AMICK File #16121/MTCS File #P058-1616-2017)

- *early Post-contact industry (e.g., fur trade, logging, prospecting, mining)*
- *areas of early Post-contact settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.*
- *Early historical transportation routes (e.g., trails, passes, roads, railways, portage routes)*
- *property listed on a municipal register or designated under the Ontario Heritage Act that is a federal, provincial or municipal historic landmark or site*
- *property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations”*

(MTC 2011: 17-18)

The evaluation of potential does not indicate that sites are present within areas affected by proposed development. Evaluation of potential considers the possibility for as yet undocumented sites to be found in areas that have not been subject to systematic archaeological investigation in the past. Potential for archaeological resources is used to determine if property assessment of a study area or portions of a study area is required.

“Archaeological resources not previously documented may also be present in the affected area. If the alternative areas being considered, or the preferred alternative selected, exhibit either high or medium potential for the discovery of archaeological remains an archaeological assessment will be required.”

(MCC & MOE 1992: 6-7)

“The Stage 1 background study (and, where undertaken, property inspection) leads to an evaluation of the property’s archaeological potential. If the evaluation indicates that there is archaeological potential anywhere on the property, the next step is a Stage 2 assessment.”

(MTC 2011: 17)

In addition, archaeological sites data is also used to determine if any archaeological resources had been formerly documented within or in close proximity to the study area and if these same resources might be subject to impacts from the proposed undertaking. This data was also collected in order to establish the relative cultural heritage value or interest of any resources that might be encountered during the conduct of the present study. For example, the relative rarity of a site can be used to assign an elevated level of cultural heritage value or interest to a site that is atypical for the immediate vicinity. The requisite archaeological sites data of previously registered archaeological sites was collected from the Programs and Services Branch, Culture Programs Unit, MTCS and the corporate research library of AMICK Consultants Limited. The Stage 1 Background Research methodology also includes a review of the most detailed available topographic maps, historical settlement maps, archaeological management plans (where applicable) and commemorative plaques or monuments. When previous archaeological research documents lands to be impacted by the

proposed undertaking or archaeological sites within 50 metres of the study area, the reports documenting this earlier work are reviewed for pertinent information. AMICK Consultants Limited will often modify this basic methodology based on professional judgment to include additional research (such as, local historical works or documents and knowledgeable informants).

Section 7.7.3 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 132) outlines the requirements of the Analysis and Conclusions component of a Stage 1 Background Study.

- 1) *“Identify and describe areas of archaeological potential within the project area.*
- 2) *Identify and describe areas that have been subject to extensive and deep land alterations. Describe the nature of alterations (e.g., development or other activity) that have severely damaged the integrity of archaeological resources and have removed archaeological potential.”*

CHARACTERISTICS INDICATING ARCHAEOLOGICAL POTENTIAL

Section 1.3.1 of the Standards and Guidelines for Consultant Archaeologists specifies the property characteristics that indicate archaeological potential (MTC 2011: 17-18). Factors that indicate archaeological potential are features of the local landscape and environment that may have attracted people to either occupy the land or to conduct activities within the study area. One or more of these characteristics found to apply to a study area would necessitate a Stage 2 Property Assessment to determine if archaeological resources are present. These characteristics are listed below together with considerations derived from the conduct of this study.

- 1) *Previously Identified Archaeological Sites*
Previously registered archaeological sites have not been documented within 300 metres of the study area.
- 2) *Water Sources*
Primary water sources are described as including lakes, rivers streams and creeks. Close proximity to primary water sources (300 metres) indicates that people had access to readily available sources of potable water and routes of waterborne trade and communication should the study area have been used or occupied in the past.

The south branch of the Muskoka River constitutes a primary water source.

Secondary water sources are described as including intermittent streams and creeks, springs, marshes, and swamps. Close proximity (300 metres) to secondary water sources indicates that people had access to readily available sources of potable water, at least on a seasonal basis, and in some cases seasonal access to routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are unnamed tributary streams draining into the Muskoka River and there are wetlands adjacent to the river channel that are within 300 metres of the study area up an down stream from Black Bridge.

3) *Features Indicating Past Water Sources*

Features indicating past water resources are described as including glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, and cobble beaches. Close proximity (300 metres) to features indicating past water sources indicates that people had access to readily available sources of potable water, at least on a seasonal basis, and in some cases seasonal access to routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are no identified features indicating past water sources within 300 metres of the study area.

4) *Accessible or Inaccessible Shoreline*

This form of landscape feature would include high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.

The shorelines of the wetland basins adjacent to the Muskoka River channel are within 300 metres of the study area.

5) *Elevated Topography*

Features of elevated topography that indicate archaeological potential include eskers, drumlins, large knolls, and plateaux.

There are no identified features of elevated topography within the study area.

6) *Pockets of Well-drained Sandy Soil*

Pockets of sandy soil are considered to be especially important near areas of heavy soil or rocky ground.

The soil throughout the study area is dark brown sand, which indicates potential for archaeological resources in the vicinity since the region is known to be one characterized by exposed bedrock

7) *Distinctive Land Formations*

These are landscape features that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings.

There are no identified distinctive land formations within the study area.

8) Resource Areas

Resource areas that indicate archaeological potential include food or medicinal plants (e.g., migratory routes, spawning areas, and prairie), scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert) and resources of importance to early Post-contact industry (e.g., logging, prospecting, and mining).

There are no identified resource areas within the study area.

9) Areas of Early Post-contact Settlement

These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, and farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.

The study area is situated in close proximity to a several historic houses identified on the historic atlas map.

10) Early Historical Transportation Routes

This includes evidence of trails, passes, roads, railways, portage routes.

The study area is situated within 100 metres of an early settlement road that appears on the Historic Atlas Map of 1879. This is Matthiasville Road and the proposed undertaking is contained within this road allowance. The property is also situated within 300 metres of a body of water that was used for waterborne trade and communication. This is the south branch of the Muskoka River which carries Matthiasville Road over the Muskoka River.

11) Heritage Property

Property listed on a municipal register or designated under the *Ontario Heritage Act* or is a federal, provincial or municipal historic landmark or site.

There are no listed or designated heritage buildings or properties that form a part of the study area. There are no listed or designated heritage buildings or properties that are adjacent to the study area.

12) Documented Historical or Archaeological Sites

This includes property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations. These are properties which have not necessarily been formally recognized or for which there is additional evidence identifying possible archaeological resources associated with historic properties in addition to the rationale for formal recognition.

The current Black Bridge does constitute a known heritage resource. Although the current bridge is not of sufficient age to indicate associated archaeological resources of significance, the location of this crossing predates the construction of this bridge and there is potential to find evidence of archaeological resources associated with earlier crossings at the same location.

CHARACTERISTICS INDICATING REMOVAL OF ARCHAEOLOGICAL POTENTIAL

Section 1.3.2 of the Standards and Guidelines for Consultant Archaeologists specifies the property characteristics which indicate no archaeological potential or for which archaeological potential has been removed (MTC 2011: 18-19). These characteristics are listed below together with considerations derived from the conduct of this study.

The introduction of Section 1.3.2 (MTC 2011: 18) notes that “*Archaeological potential can be determined not to be present for either the entire property or a part(s) of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. This is commonly referred to as ‘disturbed’ or ‘disturbance’, and may include:”*

1) Quarrying

There is no evidence to suggest that quarrying operations were ever carried out within the study area.

2) Major Landscaping Involving Grading Below Topsoil

Unless there is evidence to suggest the presence of buried archaeological deposits, such deeply disturbed areas are considered to have lost their archaeological potential. Properties that do not have a long history of Post-contact occupation can have archaeological potential removed through extensive landscape alterations that penetrate below the topsoil layer. This is because most archaeological sites originate at grade with relatively shallow associated excavations into the soil. Pre-contact sites and early historic sites are vulnerable to extensive damage and complete removal due to landscape modification activities. In urban contexts where a lengthy history of occupation has occurred, properties may have deeply buried archaeological deposits covered over and sealed through redevelopment activities that do not include the deep excavation of the entire property for subsequent uses. Buildings are often erected directly over older foundations preserving archaeological deposits associated with the earlier occupation.

Matthiasville Road constitutes evidence that major landscaping operations involving grading below topsoil were carried out within the study area. Surfaces paved with interlocking brick, concrete, asphalt, gravel and other surfaces meant to support heavy loads or to be long wearing hard surfaces in high traffic areas, must be prepared by the excavation and removal of topsoil, grading, and the addition of aggregate material to ensure appropriate engineering values for the supporting matrix and also to ensure that the installations shed water to avoid flooding or moisture damage. All hard surfaced areas are prepared in this fashion and therefore have no or low

archaeological potential. Disturbed areas are excluded from Stage 2 Property Assessment due to no or low archaeological potential and often because they are also not viable to assess using conventional methodology.

3) *Building Footprints*

Typically, the construction of buildings involves the deep excavation of foundations, footings and cellars that often obliterate archaeological deposits situated close to the surface.

Black Bridge is a structure within the study area.

4) *Sewage and Infrastructure Development*

Installation of sewer lines and other below ground services associated with infrastructure development often involves deep excavation that can remove archaeological potential.

There is no evidence to suggest that substantial below ground services of any kind have resulted in significant impacts to any significant portion of the study area. Major utility lines are conduits that provide services such as water, natural gas, hydro, communications, sewage, and others. These major installations should not be confused with minor below ground service installations not considered to represent significant disturbances removing archaeological potential, such as services leading to individual structures which tend to be comparatively very shallow and vary narrow corridors. Areas containing substantial and deeply buried services or clusters of below ground utilities are considered areas of disturbance, and may be excluded from Stage 2 Property Assessment.

“Activities such as agricultural cultivation, gardening, minor grading and landscaping do not necessarily affect archaeological potential.”

(MTC 2011: 18)

“Archaeological potential is not removed where there is documented potential for deeply buried intact archaeological resources beneath land alterations, or where it cannot be clearly demonstrated through background research and property inspection that there has been complete and intensive disturbance of an area. Where complete disturbance cannot be demonstrated in Stage 1, it will be necessary to undertake Stage 2 assessment.”

(MTC 2011: 18)

SUMMARY

Table 2 below summarizes the evaluation criteria of the Ministry of Tourism and Culture together with the results of the Stage 1 Background Study for the proposed undertaking. Based on the criteria, the property is deemed to have archaeological potential on the basis of proximity to water, the presence of sandy soils, proximity to historic settlement structures, and the location of early historic settlement roads adjacent to the study area. Some portions

2017 Stage 1 Archaeological Background Research of Black Bridge, Parts of Lots 7 and 8, Con. 8, and Lots 7 and 8, Con. 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka (AMICK File #16121/MTCS File #P058-1616-2017)

of the study area may be excluded from physical assessment on the basis of deep prior disturbance or are permanently wet.

2017 Stage 1 Archaeological Background Research of Black Bridge, Parts of Lots 7 and 8, Con. 8, and Lots 7 and 8, Con. 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka (AMICK File #16121/MTCS File #P058-1616-2017)

TABLE 2 EVALUATION OF ARCHAEOLOGICAL POTENTIAL

FEATURE OF ARCHAEOLOGICAL POTENTIAL		YES	NO	N/A	COMMENT
1	Known archaeological sites within 300m		N		If Yes, potential determined
PHYSICAL FEATURES					
2	Is there water on or near the property?	Y			If Yes, what kind of water?
2a	Primary water source within 300 m. (lakeshore, river, large creek, etc.)	Y			If Yes, potential determined
2b	Secondary water source within 300 m. (stream, spring, marsh, swamp, etc.)	Y			If Yes, potential determined
2c	Past water source within 300 m. (beach ridge, river bed, relic creek, etc.)		N		If Yes, potential determined
2d	Accessible or Inaccessible shoreline within 300 m. (high bluffs, marsh, swamp, sand bar, etc.)	Y			If Yes, potential determined
3	Elevated topography (knolls, drumlins, eskers, plateaus, etc.)		N		If Yes, and Yes for any of 4-9, potential determined
4	Pockets of sandy soil in a clay or rocky area	Y			If Yes and Yes for any of 3, 5-9, potential determined
5	Distinctive land formations (mounds, caverns, waterfalls, peninsulas, etc.)		N		If Yes and Yes for any of 3-4, 6-9, potential determined
HISTORIC/PREHISTORIC USE FEATURES					
6	Associated with food or scarce resource harvest areas (traditional fishing locations, agricultural/berry extraction areas, etc.)		N		If Yes, and Yes for any of 3-5, 7-9, potential determined.
7	Early Post-contact settlement area within 300 m.	Y			If Yes, and Yes for any of 3-6, 8-9, potential determined
8	Historic Transportation route within 100 m. (historic road, trail, portage, rail corridors, etc.)	Y			If Yes, and Yes for any 3-7 or 9, potential determined
9	Contains property designated and/or listed under the Ontario Heritage Act (municipal heritage committee, municipal register, etc.)		N		If Yes and, Yes to any of 3-8, potential determined
APPLICATION-SPECIFIC INFORMATION					
10	Local knowledge (local heritage organizations, Pre-contact, etc.)	Y			If Yes, potential determined
11	Recent disturbance not including agricultural cultivation (post-1960-confirmed extensive and intensive including industrial sites, aggregate areas, etc.)	Y			If Yes, no potential or low potential in affected part (s) of the study area.

If **YES** to any of 1, 2a-c, or 10 Archaeological Potential is **confirmed**

If **YES** to 2 or more of 3-9, Archaeological Potential is **confirmed**

If **YES** to 11 or No to 1-10 Low Archaeological Potential is **confirmed** for at least a portion of the study area.

9.0 RECOMMENDATIONS

9.1 STAGE 1 RECOMMENDATIONS

Under Section 7.7.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 133) the recommendations to be made as a result of a Stage 1 Background Study are described.

- 1) *Make recommendations regarding the potential for the property, as follows:*
 - a. *if some or all of the property has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.*
 - b. *if no part of the property has archaeological potential, recommend that the property does not require further archaeological assessment.*
- 2) *Recommend appropriate Stage 2 assessment strategies.*

The study area has been identified as a property that exhibits potential to yield archaeological deposits of Cultural Heritage Value or Interest (CHVI). The objectives of the Stage 1 Background Study have therefore been met and in accordance with the results of this investigation, the following recommendations are made:

1. *Further archaeological assessment of the study area is warranted;*
2. *The Provincial interest in archaeological resources with respect to the proposed undertaking remains to be addressed;*
3. *The proposed undertaking has potential for archaeological resources and a Stage 2 Archaeological Property Assessment is recommended;*
4. *A test pit survey at 5 metre intervals between individual test pits is recommended in all areas that are viable to be assess;*
5. *No soil disturbances or removal of vegetation shall take place within the study area prior to the acceptance of a report into the Provincial Registry of Archaeological reports maintained by the Ministry of Tourism, Culture and Sport (MTCS) recommending that all archaeological concerns for the study area have been addressed and that no further archaeological studies are warranted*

10.0 ADVICE ON COMPLIANCE WITH LEGISLATION

While not part of the archaeological record, this report must include the following standard advisory statements for the benefit of the proponent and the approval authority in the land use planning and development process:

- a. This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c. 0.18. The report is reviewed to ensure that it complies with the standards and guidelines issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.*
- b. It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the Ontario Heritage Act.*
- c. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.*
- d. The Cemeteries Act, R.S.O. 1990, c. C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.*
- e. Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.*

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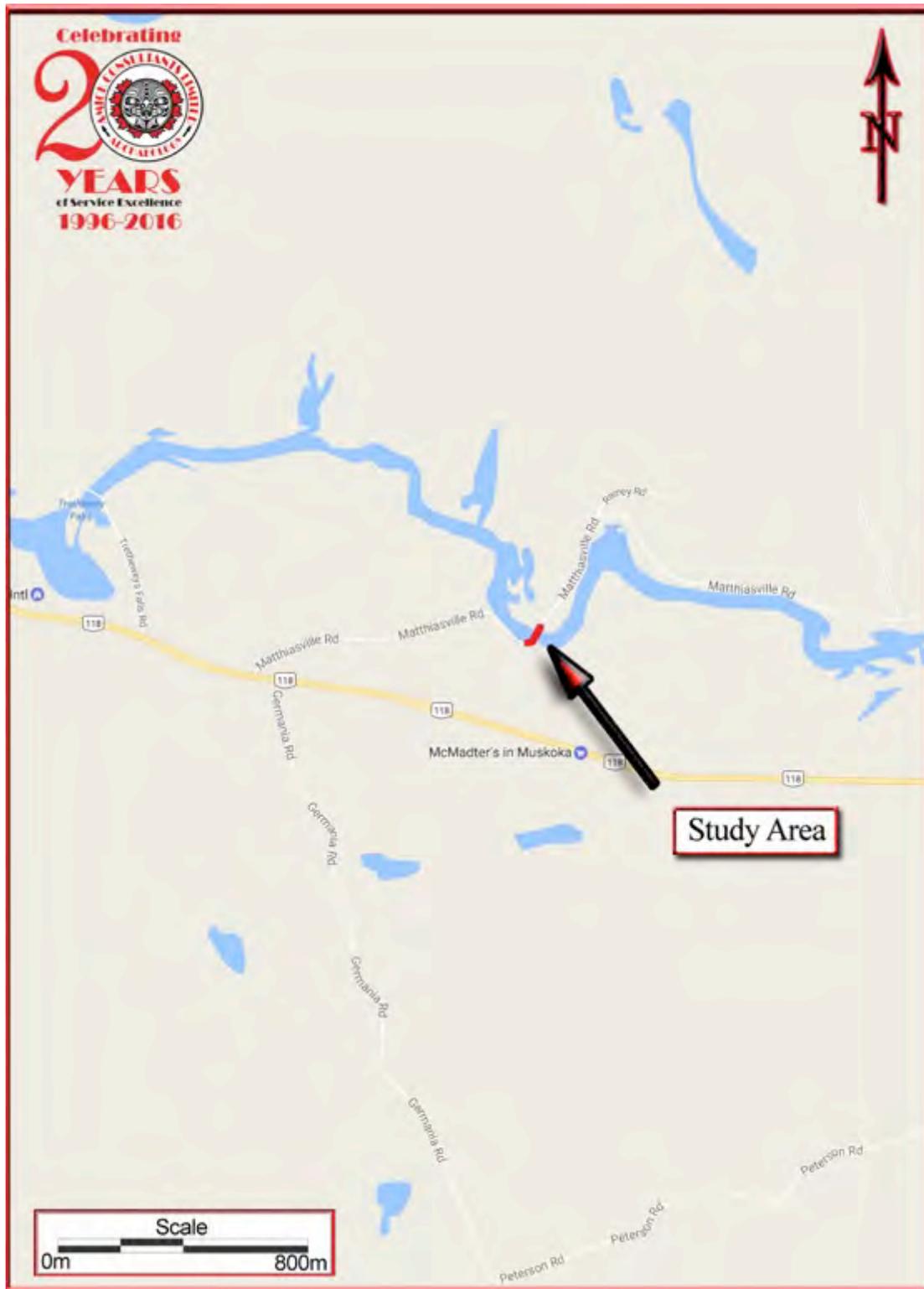
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12.0 MAPS



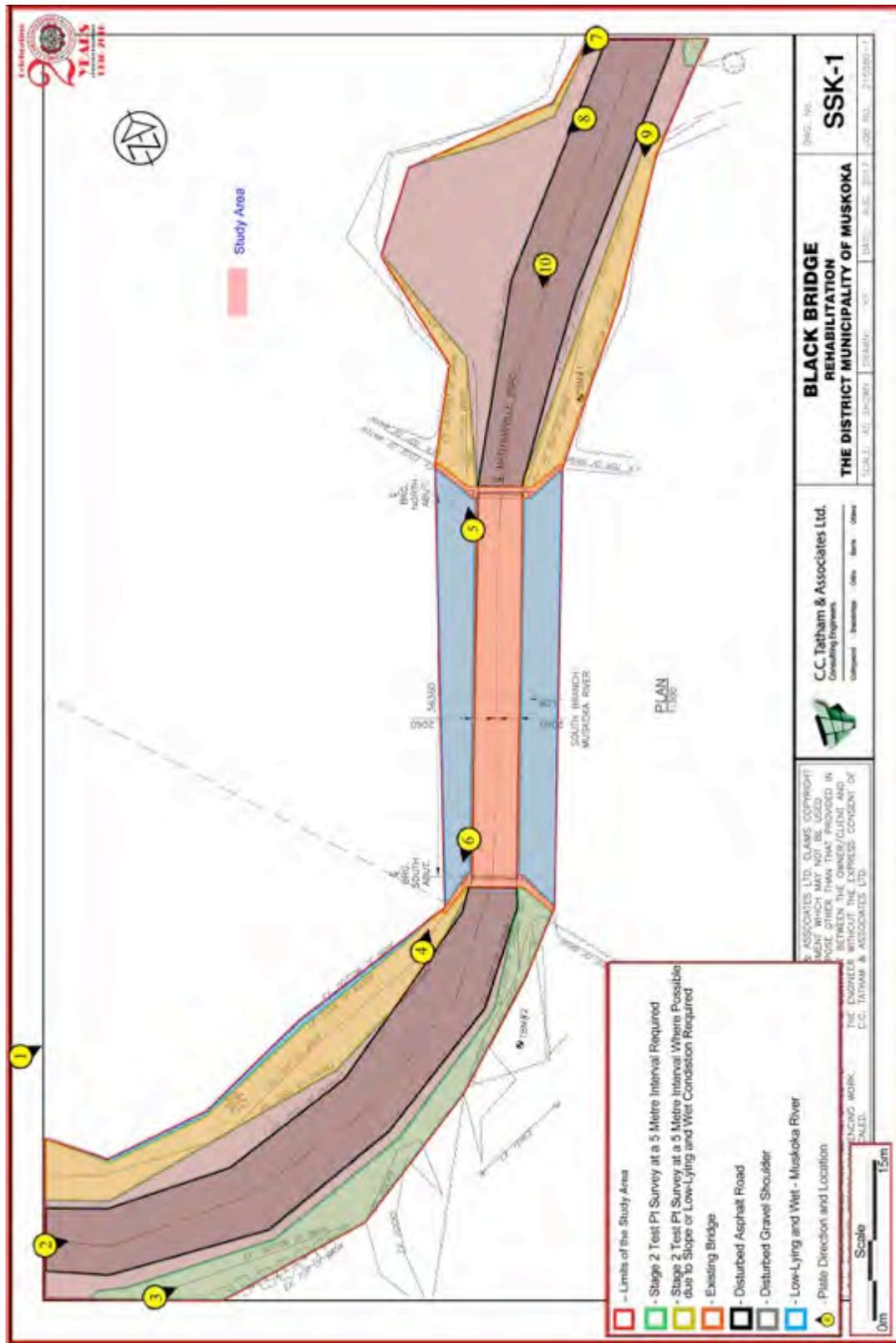
MAP 1 LOCATION OF THE STUDY AREA (GOOGLE MAPS 2012)

2017 Stage 1 Archaeological Background Research of Black Bridge, Parts of Lots 7 and 8, Con. 8, and Lots 7 and 8, Con. 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka (AMICK File #16121/MTCS File #P058-1616-2017)



MAP 4 AERIAL PHOTO OF THE STUDY AREA (GOOGLE EARTH 2011)

2017 Stage 1 Archaeological Background Research of Black Bridge, Parts of Lots 7 and 8, Con. 8, and Lots 7 and 8, Con. 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka
(AMICK File #16121/MTCS File #P058-1616-2017)



MAP 5 DETAILED PLAN OF THE STUDY AREA



MAP 6 ARCHAEOLOGICAL POTENTIAL MAP (GOOGLE EARTH 2011)

13.0 IMAGES



IMAGE 1 BLACK BRIDGE



IMAGE 2 ASPHALT ROADWAY WITH SHOULDER REQUIRING TEST PIT SURVEY AT A 5 METRE INTERVAL WHERE POSSIBLE



IMAGE 3 LAWN AREA REQUIRING TEST PIT SURVEY AT A 5 METRE INTERVAL



IMAGE 4 BLACK BRIDGE



IMAGE 5 BLACK BRIDGE FOOTING



IMAGE 6 BLACK BRIDGE FOOTING AND STEEP SLOPE ADJACENT TO ROADWAY

2017 Stage 1 Archaeological Background Research of Black Bridge, Parts of Lots 7 and 8, Con. 8, and Lots 7 and 8, Con. 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka (AMICK File #16121/MTCS File #P058-1616-2017)



IMAGE 7 WOODED AREA REQUIRING TEST PIT SURVEY AT A 5 METRE INTERVAL WHERE POSSIBLE DUE TO PROXIMITY TO MUSKOKA RIVER AND LOW-LYING AND WET CONDITIONS



IMAGE 8 GRAVEL PARKING AREA



IMAGE 9 WOODED AREA REQUIRING TEST PIT SURVEY AT A 5 METRE INTERVAL WHERE POSSIBLE DUE TO PROXIMITY TO MUSKOKA RIVER AND LOW-LYING AND WET CONDITIONS



IMAGE 10 ASPHALT ROADWAY



Cultural Heritage Evaluation Report (CHER) & Heritage Impact Assessment (HIA)

**Proposed Improvements to the Matthiasville Road Crossing of the Muskoka River
South Branch (Black Bridge), Parts of Lots 7 and 8, Concession 8, and Parts of Lots 7
and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District
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Corporate Project Number 16122

February 26 2018

EXECUTIVE SUMMARY

This report describes the results of the 2017 Cultural Heritage Evaluation of the Proposed Improvements to the Matthiasville Road Crossing of the Muskoka River South Branch (Black Bridge), Parts of Lots 7 and 8, Concession 8, and Parts of Lots 7 and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka conducted by AMICK Consultants Limited. Michael Henry, partner of AMICK Consultants Limited, conducted this study. This investigation was undertaken as a component study of the Class Environmental Assessment (E.A.) process under the Environmental Assessment Act (R.S.O. 1990) for approval from the Ministry of the Environment (MOE). This report will also address whether there are protected heritage properties abutting the project location, which might be directly or indirectly impacted by the proposed undertaking.

AMICK Consultants Limited was engaged by the proponent to undertake a Cultural Heritage Resources Assessment of lands potentially affected by the proposed undertaking and was granted permission to enter the property for the purposes of completing necessary fieldwork on 03 April 2017. The study area was subject to reconnaissance and photographic documentation on 01 May 2017. A Stage 1 Archaeological Background Research Study has been completed under separate cover (AMICK 2017). A Stage 2 Archaeological Property Assessment has been recommended for portions of the study area.

The cultural heritage evaluation of the proposed undertaking was conducted in order to identify cultural heritage resources including built heritage resources and cultural heritage landscapes. The anticipated development impacts to cultural heritage landscapes and built heritage resources are displacement and disruption. Displacement occurs when cultural heritage features are removed as part of the development of the proposed undertaking. Disruption, or indirect impact, occurs through the introduction of physical, visual, audible or atmospheric elements that are not consistent with the setting or the character of the cultural heritage features.

The present use of the study area is as an existing bridge crossing the Muskoka River. The Black Bridge is located over the Muskoka River South Branch adjacent 1527 Matthiasville Road, approximately 1 km north-east of Highway 118 East, on Lot 8, Concession 7, Geographic Township of Draper, in the Town of Bracebridge. The structure is a single span structural steel through truss bridge and was constructed in about 1922. A bridge inspection conducted in 2016 has identified several deficiencies and concluded the Black Bridge has reached the end of its useful service life and should be replaced. The deficiencies to be addressed include public safety, traffic capacity, structure condition, approach alignment, load capacity, and current bridge standards. Alternatives to be considered would be to do nothing, rehabilitate the existing bridge, replacement with a single lane bridge and replacement with a two lane bridge.

The Corporation of the Town of Bracebridge Environmental Assessment for Black Bridge is being undertaken to assess the impact of the replacement or rehabilitation of the existing bridge.

This report has identified that the bridge has cultural heritage value or interest under Ontario Regulation 9/06.

Given the potential impacts to the structure of Black Bridge, this HIA has identified a series of mitigation options that should be considered to mitigate the impacts to the heritage value of the bridge. The recommended mitigation options are identified below.

- 1. Retention of the existing truss superstructure to affix to the new bridge construction. This option allows for the replacement bridge to have the very close appearance of the old bridge. The truss structure could be affixed to the outer edges of the deck on the new bridge.*
- 2. Replacement of the existing truss structure with a more durable replica superstructure. This option also preserves the appearance and heritage character of the bridge to users and observers of the landscape, but eliminates the difficulties associated with attempting to reuse deteriorated steel components which will continue to require maintenance and would ultimately require replacement. This option allows for an authentic commemoration of the existing bridge but can be done in a manner that lasts the desired service life of the new bridge.*
- 3. The cultural heritage value of the bridge could be remembered with a commemorative monument, memorial, or art installation that could be incorporated into the landscape surrounding the existing bridge. A commemorative monument could incorporate distinctive elements of the bridge such as steel members or a portion of the steel plate with the manufacturer's mark. Similar monuments have been undertaken recently in other municipalities such as the Region of Niagara or the City of London.*
- 4. Prior to the demolition of the truss structure, historic materials including the steel portions of the truss or the manufacturer's plate could be salvaged for reuse as museum artifacts, or put on display in a nearby public location. A local museum may wish to have a portion of the bridge.*
- 5. Prior to the demolition of the bridge, the structure should be documented to high graphic standards to document the existing structure for a historic and archival record. Copies of the photographic documentation should be compiled with this report and should be deposited within a local public archive.*

TABLE OF CONTENTS

Report Cover Page	1
Executive Summary	2
Table of Contents	3
Project Personnel	4
1.0 INTRODUCTION	5
1.1 Project Description	6
2.0 REGULATORY CONTEXT	10
2.1 Environmental Assessment Act	10
2.2 Planning Act	10
2.3 Provincial Policy Statement	10
2.4 Heritage Act	13
2.5 Project Context	14
2.6 Project Assessment	14
3.0 HISTORICAL CONTEXT	15
3.1 General Historical Outline	16
3.2 Historic Maps	19
3.3 Summary of Historical Context	19
4.0 GEOGRAPHIC CONTEXT	20
4.1 Location and Current Conditions	20
4.2 Physiographic Region	22
4.3 Surface Water	22
5.0 STUDY AREA INSPECTION	23
5.1 Built Heritage Resources	24
5.2 Cultural Heritage Landscape Resources	24
6.0 ANALYSIS AND CONCLUSIONS	25
7.0 RECOMMENDATIONS	28
8.0 BIBLIOGRAPHY AND SOURCES	29
9.0 STUDY AREA RECONNAISSANCE PHOTOGRAPHS	31

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1.0 INTRODUCTION

This report describes the results of the 2017 Cultural Heritage Evaluation of the Proposed Improvements to the Matthiasville Road Crossing of the Muskoka River South Branch (Black Bridge), Parts of Lots 7 and 8, Concession 8, and Parts of Lots 7 and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka conducted by AMICK Consultants Limited. Michael Henry, partner of AMICK Consultants Limited, conducted this study. This investigation was undertaken as a component study of the Class Environmental Assessment (E.A.) process under the Environmental Assessment Act (R.S.O. 1990) for approval from the Ministry of the Environment (MOE). This report will also address whether there are protected heritage properties abutting the project location, which might be directly or indirectly impacted by the proposed undertaking.

AMICK Consultants Limited was engaged by the proponent to undertake a Cultural Heritage Resources Assessment of lands potentially affected by the proposed undertaking and was granted permission to enter the property for the purposes of completing necessary fieldwork on 03 April 2017. The study area was subject to reconnaissance and photographic documentation on 01 May 2017. A Stage 1 Archaeological Background Research Study has been completed under separate cover (AMICK 2017). A Stage 2 Archaeological Property Assessment has been recommended for portions of the study area.

1.1 Project Description

In accordance with the terms of reference for the planning and design work for the proposed undertaking, the Corporation of the Town of Bracebridge is initiating the planning and design process for the reconstruction of Matthiasville Road Crossing of the Muskoka River South Branch (Black Bridge) in the Town of Bracebridge (Bracebridge 2016). The planning and design portions for this work are to be completed in 2017 and 2018 with construction completed in 2019.

The structure is a single span structural steel through truss bridge and was constructed in about 1922. The bridge has a 36.7 meters span, an overall width of 4.4 meters and a travelled deck width of 4.1 meters. A bridge inspection conducted in 2016 has identified several deficiencies and concluded the Black Bridge has reached the end of its useful service life and should be replaced. The deficiencies to be addressed include public safety, traffic capacity, structure condition, approach alignment, load capacity, and current bridge standards. Alternatives to be considered would be to do nothing, rehabilitate the existing bridge, replacement with a single lane bridge and replacement with a two lane bridge.

A Cultural Heritage Evaluation Report (CHER) was deemed a necessary component of the Municipal Class EA to ensure that adverse impacts to potentially significant cultural heritage features are identified and addressed as part of the overall project.

2017 CHER & HIA of Proposed Improvements to the Matthiasville Road Crossing of the Muskoka River South Branch (Black Bridge), Parts of Lots 7 and 8, Concession 8, and Parts of Lots 7 and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka (AMICK File #16122)



Figure 1 Location of the Study Area (Google Maps 2012)

2.0 REGULATORY CONTEXT

2.1 Environmental Assessment Act

Ontario's Environmental Assessment Act (R.S.O. 1990) requires an environmental assessment of any major public sector undertaking that has the potential for significant environmental effects. This includes public roads, transit, wastewater and stormwater installations. Environmental assessments determine the ecological, cultural, economic and social impact of the project. Environmental assessment is a key part of the planning process and must be completed before decisions are made to proceed on a project. The Environmental Assessment Act also establishes a "Class Environmental Assessment" process to streamline the planning of municipal projects — including some road, water, and sewage and storm water projects.

2.2 Planning Act

The Planning Act (R.S.O. 1990) and the Provincial Policy Statement (P.P.S. 2005) also address heritage resources from the perspective of the provincial interest. Section 2 of the Planning Act provides a list of matters of provincial interest. Planning authorities regulated under the Planning Act must have regard for matters of provincial interest in the conduct of their responsibilities.

“The Minister, the council of a municipality, a local board, a planning board and the Municipal Board, in carrying out their responsibilities under this Act, shall have regard to, among other matters, matters of provincial interest such as,...

... (d) the conservation of features of significant architectural, cultural, historical, archaeological or scientific interest;”

(Planning Act R.S.O. 1990, Part 1, s. 2)

2.3 Provincial Policy Statement

The current Provincial Policy Statement (PPS 2014) provides direction on provincial expectations with respect to how provisions under the Planning Act are interpreted and implemented. This Provincial Policy Statement was issued under Section 3 of the Planning Act (R.S.O. 1990) and came into effect on April 30, 2014. It replaces the Provincial Policy Statement of 2005.

“The Provincial Policy Statement provides policy direction on matters of provincial interest related to land use planning and development. As a key part of Ontario’s policy-led planning system, the Provincial Policy Statement sets the policy foundation for regulating the development and use of land.”

(P.P.S. 2014: 1)

“In respect of the exercise of any authority that affects a planning matter, Section 3 of the Planning Act requires that decisions affecting planning matters ‘shall be consistent with’ policy statements issued under the Act.”

(P.P.S. 2014: 1)

Part V: Policies (P.P.S. 2014) provides direction for the appropriate management of resources of provincial interest. Section 2 of Part V entitled Wise Use and Management of Resources includes sub-Section 2.6 Cultural Heritage and Archaeology.

“2.6 Cultural Heritage and Archaeology

- 2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.*
- 2.6.2 Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.*
- 2.6.3 Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.*
- 2.6.4 Planning authorities should consider and promote archaeological management plans and cultural plans in conserving cultural heritage and archaeological resources.*
- 2.6.5 Planning authorities shall consider the interests of Aboriginal communities in conserving cultural heritage and archaeological resources.”*

(P.P.S. 2014: 29)

Part V, Section 6 of the PPS includes an alphabetical listing of definitions for the terms employed in the PPS. The following are of particular relevance to the cultural heritage evaluation undertaken in support of the proposed undertaking:

*“**Built heritage resource:** means a building, structure, monument, installation or any manufactured remnant that contributes to a property’s cultural heritage value or interest as identified by a community, including an Aboriginal community. Built heritage resources are generally located on property that has been designated under Parts IV or V of the Ontario Heritage Act, or included on local, provincial and/or federal registers.”* (P.P.S. 2014: 39)

*“**Conserved:** means the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained under the Ontario Heritage Act. This may be achieved by the implementation of*

recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.” (P.P.S. 2014: 40)

*“**Cultural heritage landscape:** means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Aboriginal community. The area may involve features such as structures, spaces, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Examples may include, but are not limited to, heritage conservation districts designated under the Ontario Heritage Act; villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trailways, viewsheds, natural areas and industrial complexes of heritage significance; and areas recognized by federal or international designation authorities (e.g. a National Historic Site or District designation, or a UNESCO World Heritage Site).” (P.P.S. 2014: 40)*

*“**Heritage attributes:** means the principal features or elements that contribute to a protected heritage property’s cultural heritage value or interest, and may include the property’s built or manufactured elements, as well as natural landforms, vegetation, water features, and its visual setting (including significant views or vistas to or from a protected heritage property).” (P.P.S. 2014: 43)*

*“**Protected heritage property:** means property designated under Parts IV, V or VI of the Ontario Heritage Act; property subject to a heritage conservation easement under Parts II or IV of the Ontario Heritage Act; property identified by the Province and prescribed public bodies as provincial heritage property under the Standards and Guidelines for Conservation of Provincial Heritage Properties; property protected under federal legislation, and UNESCO World Heritage Sites.” (P.P.S. 2014: 47)*

*“**Significant:** means...e) in regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest for the important contribution they make to our understanding of the history of a place, an event, or a people.” (P.P.S. 2014: 49)*

HERITAGE RESOURCES IN THE LAND USE PLANNING PROCESS: *Cultural Heritage and Archaeology Policies of the Ontario Provincial Policy Statement, 2005* published in 2006 by the Ontario Ministry of Culture (now the Ministry of Tourism, Culture and Sport), provides further details on the policies of the Ministry of Tourism, Culture and Sport (MTCS) who are mandated to regulate the provincial interest with respect to heritage under the Ontario Heritage Act (R.S.O. 1990) and the Ontario Heritage Amendment Act (S.O. 2005).

This document largely reviews the information discussed previously with respect to the provincial interest in heritage matters. However, additional information is provided with respect to forms of cultural heritage landscapes. Three types of cultural heritage landscapes are defined:

“There are generally three main types of cultural heritage landscapes. The following are taken from the Operational Guidelines adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Committee in 1992, and are widely accepted as the three primary landscape types:

- **Designed landscapes:** those which have been intentionally designed e.g. a planned garden or in a more urban setting, a downtown square.*
- **Evolved landscapes:** those which have evolved through the use by people and whose activities have directly shaped the landscape or area. This can include a ‘continuing’ landscape where human activities and uses are still on-going or evolving e.g. residential neighbourhood or mainstreet; or in a ‘relict’ landscape, where even though an evolutionary process may have come to an end, the landscape remains historically significant e.g. an abandoned mine site or settlement area.*
- **Associative landscapes:** those with powerful religious, artistic or cultural associations of the natural element, as well as with material cultural evidence e.g. a sacred site within a natural environment or a historic battlefield.*

(MTC 2006: 10)

2.4 Heritage Act

The criteria to define local cultural heritage significance is prescribed in O. Reg. 9/06 made pursuant to section 29(1) (a) of the Ontario Heritage Act. The criteria set forth are reproduced below from sub-Section 2:

“A property may be designated under section 29 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:

- 1. The property has design value or physical value because it,
 - i. is a rare, unique, representative or early example of a style, type, expression, material or construction method,*
 - ii. displays a high degree of craftsmanship or artistic merit, or*
 - iii. demonstrates a high degree of technical or scientific achievement.**
- 2. The property has historical value or associative value because it,
 - i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,*
 - ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or*
 - iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.**
- 3. The property has contextual value because it,
 - i. is important in defining, maintaining or supporting the character of an area,*
 - ii. is physically, functionally, visually or historically linked to its surroundings,**or**

iii. is a landmark.

(O. Reg. 9/06, s. 1 (2))

2.5 Project Context

In consideration of the above-described definitions of terminology related to heritage conservation, the proposed undertaking has the potential to adversely impact cultural heritage resources through displacement or disruption. Displacement occurs when cultural heritage features are removed as part of the development of the proposed undertaking. Disruption, or indirect impact, occurs through the introduction of physical, visual, audible or atmospheric elements that are not consistent with the setting or the character of the cultural heritage features.

This Cultural Heritage Evaluation Report (CHER) addresses above ground cultural heritage resources. These heritage resources fall into two broad categories: built heritage resources and cultural heritage landscapes. Cultural landscapes are related sets of individual artificial features or modifications to the environment and associated with forms of settlement and land use tied to historically defined time periods and cultural groups. Built heritage features are individual buildings or structures associated with changes over time in architectural design and building technology or with historic patterns of settlement. A third category of cultural heritage resources, archaeological deposits, has been addressed under separate cover specific to the nature of those forms of cultural heritage resource (AMICK 2017).

2.6 Study Area Evaluation

The purpose of this study is to identify and evaluate cultural heritage resources that may be impacted through proposed land use changes or landscape modifications. Within the HERITAGE RESOURCES IN THE LAND USE PLANNING PROCESS: *Cultural Heritage and Archaeology Policies of the Ontario Provincial Policy Statement, 2005* published in 2006 by the Ontario Ministry of Culture (now MTCS) the means of identifying cultural heritage resources during an evaluation is described:

- ***Historical Research***

Consulting maps, land records, photographs, publications, primary and other sources.

- ***Site Survey and Analysis***

Windshield surveys, intensive surveys, site surveys and analysis of the various features and characteristics which make up the cultural heritage landscape as well as delineation of landscape boundaries.

- ***Evaluation***

Applying criteria for evaluating design, history, and context of the entire subject area.
(MTC 2006: 10)

A heritage feature documented during the course of the evaluation that meets one or more of the criteria noted in Section 2.4 above may require more detailed assessment in order to

determine the level of significance and appropriate measures to mitigate potential adverse impacts once the preferred alternative for the proposed undertaking is selected.

The identification of cultural heritage landscapes typically falls within one of a number of conventionally used classifications. It should be noted as well that classes of heritage landscapes could overlap.

Historic Settlement: groupings of two or more structures identified with a commonly applied name.

Historic Agricultural Landscape: a historically established agricultural land use with defined land use areas such as fields or pastures and often associated with built features such as barns, outbuildings, fences, vehicle lanes, etc.

Farm Complex: consisting of at least two buildings including at least a farm house or a barn and often associated with tree lines, lanes, orchards, gardens, wells, silos, various forms of outbuildings, etc.

Streetscapes: usually refers to a paved roadway that is bounded on either side by urban density historically rooted development.

Roadscapes: are typically rural equivalents to streetscapes that are no more than two lanes in width with associated narrow shoulders, ditches, tree lines, bridges etc. that typify historically developed rural roads.

Railscapes: both active and inactive railway lines and railway rights-of-way and associated features such as artificial embankments, cuts, retaining walls, culverts, bridges, etc.

Waterscapes: water features that contribute to the overall character of a cultural heritage landscape and may have had a significant impact on the development of historically rooted settlement.

Cemeteries: land set aside for the purpose of burying human remains.

3.0 HISTORICAL CONTEXT

This section provides an outline and summary of historic research and identified cultural heritage resources above ground that may be adversely impacted by the proposed improvements to the Matthiasville Road crossing of the Muskoka River South Branch (Black Bridge), Parts of Lots 7 and 8, Concession 8, and Parts of Lots 7 and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka.

3.1 General Historical Outline

By the time the first European explorers, missionaries and traders arrived in the area in the early 17th Century; there were a number of First Nations peoples known to have been active in the Georgian Bay area. This would include the Ojibwa, Ottawa, Potawatomi, Nipissing, Cree, Huron and possibly other Iroquoian peoples to the south such as the Petun, and Neutral. Not all of these groups were necessarily resident in the area but the region is noted for its long association to important trade linkages. Historic documentation indicates that persons and trade merchandise from all of these Nations, and perhaps others moved through the local trade network that was part of a larger continent-wide system of communication and trade.

With the arrival of Europeans, their participation in the trade and in relationships with the First Nations active in the area would lead to the development of a new culture to be included in this list: the Metis.

The Algonkian speaking First Nations living in the Upper Great Lakes during the period of initial contact with the French would have referred to themselves as “Anishinaubag” or “spontaneous men” being the closest approximation to the idea expressed in English according to the Ojibwa historian, William Warren who completed his History of the Ojibway People in 1852 (1984). The expression is meant to convey the great antiquity of the people and that they are so ancient nobody knows how they first came to be; it seems as if they have always been here. As French exploration, missionary work and trade expanded into the Georgian Bay area in the middle of the 17th Century they began to make distinctions between various groups and to apply names to them. One of the first to be distinguished was the “Outaouak” or “Ottawa”. These were the first Algonkian people of the Upper Great Lakes with whom the French had contact.

Paul Le Jeune wrote in his “Relation of 1640”, that Manitoulin Island was inhabited by “the Outaouan”. He further relates that this group is part of “the nation of the raised hair” (Le Jeune 1896: 231). In this passage, the Jesuit priest is clearly referencing Champlain’s assignation of the name “Cheveux Releves” to these people during a voyage through this area in 1615.

Claude Charles Le Roy, Bacqueville de la Potherie, writing of the First Nations of the Upper Great Lakes in 1753, had the following to say about the use of the shoreline along Lake Huron:

This Sauteur tribe is divided: part of them have remained at home to live on this delicious fish in autumn, and they seek their food in Lake Huron during the winter; the others have gone away to two localities on Lake Superior, in order to live on the game which is very abundant there... Those who have remained at the Saut, their native country, leave their villages twice a year. In the month of June they disperse in all directions along Lake Huron, as also do the Missisakis and the Otter people. This lake has rocky shores, and is full of small islands abounding in blueberries. While there they gather sheets of bark from the trees for making their canoes and building their cabins. The water of the lake is very clear, and they can see fish in it at a depth of twenty-five feet. While the children are gathering a store of blueberries, the men are busy spearing sturgeon. When the grain that they have planted is nearly ripe, they return home. At the approach of winter they resort to the shores of the lake to kill beavers and moose, and do not return thence until the spring, in order to plant their Indian corn.

(Potherie 1753: 276-280)

The “Sauteurs” (probably Ojibwa), “Missisakis” (Mississaugas), and “Otter” (probably the Ottawa) peoples are all Algonkian speaking peoples. The Mississauga is a division of the

larger, and more generally known Ojibwa Nation. Some researchers suggest that the Ottawa were also part of the larger Ojibwa Nation.

Mr. Carver visited the region during his travels from 1766-1768 and described the eastern shore of Lake Huron as follows:

Lake Huron, into which you now enter from the Straights of St. Marie, is the next in magnitude to Lake Superior. It lies between forty-two and forty-six degrees of north latitude, and seventy-nine and eighty-five degrees of west latitude. Its shape is nearly triangular, and its circumference about one thousand miles.

On the north side of it lies an island that is remarkable for being near an hundred miles in length, and no more than eight miles broad. This island is known by the name of Manataulin, which signifies a Place of Spirits, and is considered by the Indians as sacred as those already mentioned in Lake Superior.

About the middle of the south-west side of this lake is Saganaum Bay. The capes that separate this bay from the lake, are about eighteen miles distant from each other; near the middle of the intermediate space stand two islands, which greatly tend to facilitate the passage of canoes and small vessels, by affording them shelter, as without this security it would not be prudent to venture across so wide a sea; and the coasting round the bay would make the voyage long and tedious. This bay is about eighty miles in length, and in general about eighteen or twenty miles broad.

(Carver 1778: 144-145)

No doubt Carver is referring to Georgian Bay under the First Nations name of “Saganaum”. The “Straights of St. Marie” separate Lakes Superior and Huron. He then goes on to relate that, “*A great number of the Chipeway Indians live scattered around this lake, particularly near Saganaum Bay*” (Carver 1778: 147). The “Chipeway” is a variant of Chippewa, which sometimes refers to a division of the larger Ojibwa Nation and sometimes refers to the whole Ojibwa Nation. Carver is very consistent in his use of the term throughout his book and the accompanying maps. He is clearly referring to the entirety of this Nation.

The site of the present Town of Parry Sound was a seasonal gathering place for the local Ojibwa people. Parry Sound is situated at the mouth of the Sequin River. The river apparently derives its name from the Algonquian word “see-kwun” for springtime, the traditional season of gathering at river mouths for fishing after winter. It is believed that large numbers of people congregated here every spring to fish and perhaps to harvest maple syrup from further up the river. The road leading north from Parry Sound to Commanda, built in the late 1860s, is said to have been laid directly over an old First Nations’ trail that ran from the present-day Town of Parry Sound to Lake Nipissing (Macfie 2004: 17). These observations would seem to suggest a continuity of the pattern reported over a century earlier by Potherie and would seem to substantiate the observations of Carver that large numbers of people lived in the area during the fur trade era.

Probably the greatest chief of the Ojibwa in Muskoka was the chief for whom the district gets its name. His Ojibwa name was written down as Musque Ukee or Misquakie. His English name was William Yellowhead. His family were often found in the southern and eastern parts of Muskoka during the summer months. They had a settlement at the Bracebridge falls (Pryke 2010: 15). W. E. Hamilton, who was the Immigration Agent at Bracebridge, wrote the text outlining the history and geographic descriptions included within the Guide Book and Atlas of Muskoka and Parry Sound Districts (Page 1879). He included the following story of a controversy respecting the name of Muskoka District.

“Before dismissing the subject of aboriginal settlers, we remark that the Indians have left their impression on the topographical vocabulary of the Muskoka District. These names, always mellifluous and suggestive, are happily to some extent retained amongst us. Thus Muskoka is now widely known to the reading public of Great Britain, through the medium of a tale published in All the Year Round, and the name is there stated to mean “clear sky land.” This is an erroneous derivation. True it is that the name of an Indian doctor or conjurer, who lived in Muskoka, might be so translated, but Muskoka take its name from a greater celebrity, even the warrior “Mesqua Ukee” (not easily turned back in the day of battle.) He fought side by side with the British in the War of 1812, and received the much coveted medal, bearing the image of King George on its silver surface. Mesqua Ukee was head chief of the Rama Indians, and lived in Rama. What is now called Muskoka was then divided into Indian hunting grounds, and the south branch of the Muskoka River was the exclusive patrimony of the Mesqua Ukee. True it is that Begamagobaway (who lived in Port Carling, and whose heir is now chief of the Parry Sounds Indians) ruled over a small section of the Hurons (or Ojibeways), which section we might call the Muskoka Indians; but he was the twinkling of a small star before the moon, when compared with Mesqua Ukee. Not only the south branch of the Muskoka River, but even the lake itself, and ultimately the whole district, became called after the great Chief Mesqua Ukee. It will be easily seen how a slight corruption of the name gave us Muskoka instead of Mesqua Ukee.”

(Page 1879: 15)

James Bigwin was another local First Nations hero of the War of 1812. His family maintained a summer camp at Bigwin Island, and also a more permanent settlement that included garden areas at the narrows in Dorset. The so-called Muskoka band had a permanent village at Port Carling. The Muskoka band hunted beaver and fished at Fairy and Peninsula Lakes. Another local band was known as the Menominee. This group were known to camp at various sites around Mary, Vernon and Peninsula Lakes. It is likely that the band’s name reflects a group expertise, as the name means “wild rice”, although some do believe that these people were once part of the larger nation known as the Menominee from the present-day state of Wisconsin (Pryke 2010: 15).

Beginning in the early nineteenth century, some exploration was conducted in Muskoka to determine if it would be possible to link Georgian Bay to the Ottawa River through the

construction of canals. These explorations were conducted initially in the interests of defense and then later revisited in the interest of commerce. Lieutenant Henry Briscoe of the Royal Engineers ascended the south branch of the Muskoka River in 1826. Alexander Sherriff canoed down the Oxtongue River, through Lake of Bays and on to Lake Muskoka by way of the south branch of the Muskoka River. He was the first to record the name Muskoka. His 1829 map shows a trading post where the Town of Huntsville was later built (Pryke 2010: 17).

The Robinson Treaty was signed in 1850. This treaty ceded the land northwest of Penetanguishene to Sault St. Marie and east to the Ottawa River to the government (MPSGG 1985). In 1859 a number of townships in what would become part of the Muskoka District were opened for settlement: Draper, Macaulay, Muskoka, and Minden. The remaining Townships would not be officially open for settlement until the passage of the Free Grants and Homestead Act in 1868 (Murray 1963: lxxx-lxxi).

With the government decision in 1858 to open up the Muskoka District for settlement, a bridge was constructed over the Severn River and a colonization road was pushed through to what would become the community of Gravenhurst (Cotton 2004: 17). The “Muskoka Road”, as it was called, from Severn Bridge to Gravenhurst was also referred to as “the portage” due to its reputation as the roughest fourteen miles of road to be found anywhere in Canada (Cotton 2004: 21). This road was extended to the northern boundary of Stephenson Township in 1863. In 1868 one of three new roads constructed was a fifteen-mile eastern branch off of the Muskoka Road. This road would eventually reach Huntsville in 1871 (Cotton 2004: 71).

The land agent for settlement of Muskoka reported that 54 location tickets were issued to settlers in 1859. This number increased steadily to 190 by 1861, 287 by the end of 1862 with an additional 743 occupying Crown land. The government of Ontario made efforts to increase these numbers through advertising in Europe, Great Britain and the rest of Canada during the late 1860s. Census returns for the second half of the 19th century showed significant increases in the population of Muskoka: 5360 in 1871; 12973 in 1881; 15666 in 1891 and 20971 in 1901. Subsequently, the population numbers fluctuated only slightly for many decades (Murray 1963: lxxxii).

Although trappers and traders had visited the area for years, it was Captain George Hunt who conceived of the idea to build a settlement at the location where the colonization road was to cross the Muskoka River. Hunt arrived and built his shanty in 1869. One of trappers, William Cann, had a shanty at the future site of Huntsville that he had been frequenting since he built it in 1862, although he had been coming to the area since 1860. Cann was initially opposed to the development of the site but was soon won over. By November of 1869 Hunt brought his wife and three daughters up to live in his shanty. Hunt was also made postmaster of a new post office named Huntsville in his honour. He ran the post office and a store out of his shanty at this time. He was also given permission to extend the Muskoka Road to Huntsville. In 1870 Hunt hired crews to extend the Muskoka Road and to build a bridge over

the Muskoka River. The bridge was completed in 1871 and Hunt then petitioned to extend the road north and east to meet the Bobcaygeon Road (Pryke 2010: 21-27).

Captain Denton was a master mariner who partnered with engineer John Smiley to establish a steamboat company operating on the northern Muskoka lakes. They promoted tourism in the northern Muskoka Lakes to attract customers. Steam navigation began on the northern Muskoka Lakes in 1877 with the launch of the side-wheel steamer, the *Northern*. The *Northern* was fitted with a hinged smokestack to pass under the Huntsville Bridge. The *Northern* was launched to coincide with the construction of a lock to bypass rapids on the Muskoka River between Fairy and Mary Lakes. Their business was originally located in Port Sydney but when the railway bypassed Port Sydney and built a station in Huntsville, the steamboats moved with the railway and began operating from a wharf adjacent to the Huntsville railway station in 1886 (Pryke 2010: 32-33).

The railway would not reach Gravenhurst until 1875 (Cotton 2004: 28). By 1884, it was clear that the railway would be coming to Huntsville. Captain Denton built another steamer, the *Florence*, and moved his business to Huntsville. The Pacific Junction Railway was eventually extended northward to Huntsville in 1886 (Cotton 2004: 63). In 1886, following completion of the railway to Huntsville, the Ontario government sent a dredge to widen and open the natural waterway between Fairy and Peninsula Lakes to allow for steamboat navigation. This work was completed in 1888 (Pryke 2010: 42). The arrival of the railway had a major impact on the development of Tourism in Muskoka, particularly as the passenger railway stations at Gravenhurst and Huntsville were adjacent to wharves serviced by steamboats operating on the lakes. The railways served to bring tourists and summer residents and vacationers to Muskoka where people would then take steamboats to resorts and cottages on the lakes.

“Had the railway not arrived, Huntsville would not be the community it is today. There would be no lumber industry, no tannery, no navigation company. Huntsville would not have become the gateway to Lake of Bays nor the port of entry to the popular tourist destinations in the northern Muskoka lakes.”

(Pryke 2010: 35)

The development of the area as a tourism destination was dependant upon the development of the transportation network by affording easy, cost effective, fast, reliable and comfortable travel through the development of overland roads and railways and an inland navigable waterway system. The study area is directly and historically associated with the historical development of transportation in Muskoka as it is adjacent to the Muskoka River, used as a waterway for steamboats, and the study area itself forms one of the early overland transportation routes in the settlement and development of the area.

The completion of the canal between Fairy and Peninsula Lakes considerably extended the economic influence and revenue of Huntsville. In addition to controlling waterborne traffic on three connected lakes, Denton’s boats were now within one mile of the lucrative commercial market within the Lake of Bays. The problem would not be overcome through

the construction of a canal or a lock. The difference in elevation placed the Lake of Bays over 100 feet above Peninsula Lake. However, the resulting fierce competition between the Lake of Bays fleet owned by Captain Marsh and the Huntsville fleet of Captain Denton, resulted in the demise of Denton's business by 1895 (Tatley 1994: 197-198). In March of 1900 the legislature of Ontario tabled a bill to establish a railway over the portage. However, although passed in the house, no money was provided and no steps were taken to follow through with the railway construction. Finally, as the proscribed period was about to expire, private money came to the rescue and work began in the fall of 1903. In 1904, the Ontario government voted to contribute \$10,000.00 to the project. The railway was constructed by 1904 and ready for passenger service in 1905 (Tatley 1994: 224-226).

3.2 ONTARIO BRIDGE HISTORY

The history of settlement in Ontario is inextricably tied to the history or the development of overland transportation. As David Cuming notes in his Discovering Heritage Bridges on Ontario Roads (n.d.: 31), "Ontario with its myriad of rivers, creeks, streams and lakes has resulted in a substantial number of minor barriers to communication". As a result, bridges have always formed a significant component of overland transportation and communication routes. The first major roads in Ontario followed settlement by the United Empire Loyalists after the American War of Independence. These early roads were built for strategic military purposes but soon attracted settlement along these routes. Subsequent road construction, whether built by government agencies or private concerns also served to attract settlement and initial settlement promoted construction of further roadways as settlement moved inland from the Great lakes and the initial transportation corridors (Cuming n.d.: 32).

Bridges were a necessity from the earliest days of road construction. The earliest bridges consisted of nothing more than two parallel logs stretching from one bank to the other with logs overlying these at a right angle. These bridges could be easily and quickly replaced as they rotted or should they be swept away by floodwaters or ice flows (Cuming n.d.: 32). Bridges needed to cover larger spans were constructed by early settlers based on principles employed in the construction of early houses and barns. Truss systems used in the framing of structures were employed. Two such standard bridge types emerged fairly early on: The King Truss Bridge and the Queen Truss Bridge. The King Truss was built by setting a vertical beam supported by two inclined beams midway along a horizontal beam. The King Truss Bridge could span a gap of up to sixty (60) feet. The Queen truss system was employed for wider spans. This bridge was constructed with two vertical beams supported by one inclined beam for each and joined by a horizontal top beam. The Queen Truss Bridge could span a gap of up to one hundred and twenty (120) feet (Cuming n.d.: 35).

In the years between 1841 and 1849, the Department of Public Works spent \$1,300,564 on roads in Canada West, including the construction of forty-three major bridges at a total cost of \$206, 928. A full third of these bridges were timber-built Queen Truss bridges. During this same period numerous bridge designs were patented in the United States under fierce competition to increase the length and strength of bridges. As a result, bridge construction in North America began a period of transition from wood to metal structures (Cuming n.d.: 36).

Many road bridge designs that evolved were based on principles derived from railroad construction. Other designs that had a major impact on bridge engineering evolved independently. The Whipple Truss was first built in 1841. This new design consisted of a totally metal bowstring arch bridge. The arch of the bridge and the vertical supporting members were manufactured of cast iron while the diagonal bracing used wrought iron. The typical bridge built in the middle of the 19th century in the United States was entirely made of wrought iron (Cuming n.d.: 37). In Ontario the timber bridge dominated the landscape in rural areas from 1780-1880 and persisted into the early twentieth century. Wrought iron bridges were built in areas with higher population densities such as the thriving market towns of Brantford, Peterborough, London and Paris. These communities all had wrought iron bridges that were constructed during the 1870s (Cuming n.d.: 38).

Metal bridges were sold in separate components produced in factories and shipped to the location of construction and assembled on site. Bridge components were ordered through catalogues. To simplify construction, the first metal bridges were assembled using “pin connections”, which were essentially threaded bolts that obviated the need for specialists or specialized equipment such as rivets required. Construction of such bridges could be completed with unskilled local labour in two to three weeks. These bridges were ideally suited to bridge construction in small communities or rural contexts (Cuming n.d.: 38).

Beginning in the 1880s designers began to replace wrought iron elements in bridges with steel. This marked the beginning of a transition from wrought iron to steel bridges (Cuming n.d.: 41). Several factors contributed to the rapid development and proliferation of steel bridges at the beginning of the twentieth century. Portable pneumatic tools allowed for the use of rivets on even rural sites of bridge construction and pin connections rapidly disappeared. Rivets allowed for longer and sturdier construction. New production methods made steel as cheap as wrought iron. The concurrent developments in heavier vehicle and agricultural machinery required bridges capable of taking heavier loads which made construction of timber bridges impractical even in rural areas. “Through truss” style construction was employed over larger spans or in locations where traffic loads were heavy. Steel bridges were erected in quantity throughout Ontario following 1900 (Cuming n.d.: 42). The improvement in highway and bridge construction was particularly notable following the end of the First World War with massive increases in automobile traffic and the development of heavy construction machinery. (Cuming n.d.: 51-53).

Experimentation with reinforced concrete bridge construction began in the 1880s in France followed by the United States. The first concrete arch bridge was constructed in Ontario in 1905 and was comprised of mass concrete. The first steel reinforced bridge was constructed in 1906. The appeal of reinforced concrete as a construction technology stemmed from its great strength, length of use and low maintenance requirements compared to steel or iron which required regular painting and rust removal (Cuming n.d.: 44). The strength of a reinforced tied concrete arch above the deck was early recognized as a design suitable for almost any location, particularly in crossings with low banks where arched construction below the deck was unsuitable (Cuming n.d.: 47). By 1914 it was clear that concrete would

dominate the construction of bridges for the foreseeable future (Cuming n.d.: 49). Concrete bridge construction of two types, the tied arch and the concrete beam, boomed in the 1920s (Cuming n.d.: 51).

Beginning in the 1930s a new innovation in bridge design challenged more traditional arched designs. The rigid frame reinforced concrete bridge employed a shallow arch below the deck and could be easily widened to accommodate demands of growing traffic pressures. This was a major advantage over earlier bridge designs such as the tied arch for which such an alteration was impossible (Cuming n.d.: 52).

Conde McCullough achieved his reputation in bridge engineering largely due to his facility for recognizing cost-effective designs based on long-term maintenance costs. His Economics of Bridge Design was a well-received treatise on this subject when published in 1929. This promoted the rise of composite bridge construction during the Depression years of the 1930s. Composite design using steel, wood, and concrete arose; each material has individual strengths and weaknesses for use in bridge design. These range from weight capacity, durability, and, of course, cost.

The nature of materials often leads to their combination in bridge construction, where steel deck girders support a concrete floor or a timber bridge that rests upon a steel or concrete series of piers or abutments. These structures are referred to as “composite” design and by and large most bridges utilize more than a single material, if only for the wearing surface of the roadbed. For purposes of categorization their primary material, usually in reference to the structural support system, classifies bridges. As a result, a steel beam bridge with laminated wood deck and concrete piers is deemed a steel beam bridge.

Slab, beam and girder bridges are essentially similar and related designs, building upon the same basic structural principal, with a single member in tension that spans a void between two fixed points. Structurally a “slab” is the simplest, relying solely upon the inherent strength of a single member for both structure and road surface. A beam bridge is, in essence, a slab (the road deck) that is additionally strengthened by some number of longitudinal members. A girder bridge is a beam bridge with additional transverse supports between the beams (Kramer 2004: 7). Beam and Girder bridge types introduced in the 1930s remained in use throughout the post WWII period (Kramer 2004: 25)

Steel as used in composite bridge construction can be divided into two basic categories that reflect temporal advances in construction technology — rolled section beams versus the later use of welded members. Rolled sections refer to “H” or “I” or other shapes that are manufactured whole (the earlier of the technologies). Welded section beams are made of flat plates, welded into various shapes.

Based upon consideration of the above historic trends, the Town of Bracebridge Black Bridge is a single span structural steel through truss bridge and was constructed in about 1922. The context suggests that the erection of this bridge was likely in response to the need for a structure to span a relatively narrow channel and to carry increasingly heavier loads due to the rise in popularity of automobile transportation and mechanical farm implements

following the First World War. These bridges and related forms were constructed on a very wide scale throughout the province and a considerable number continue to serve as crossings.

3.3 Historic Maps

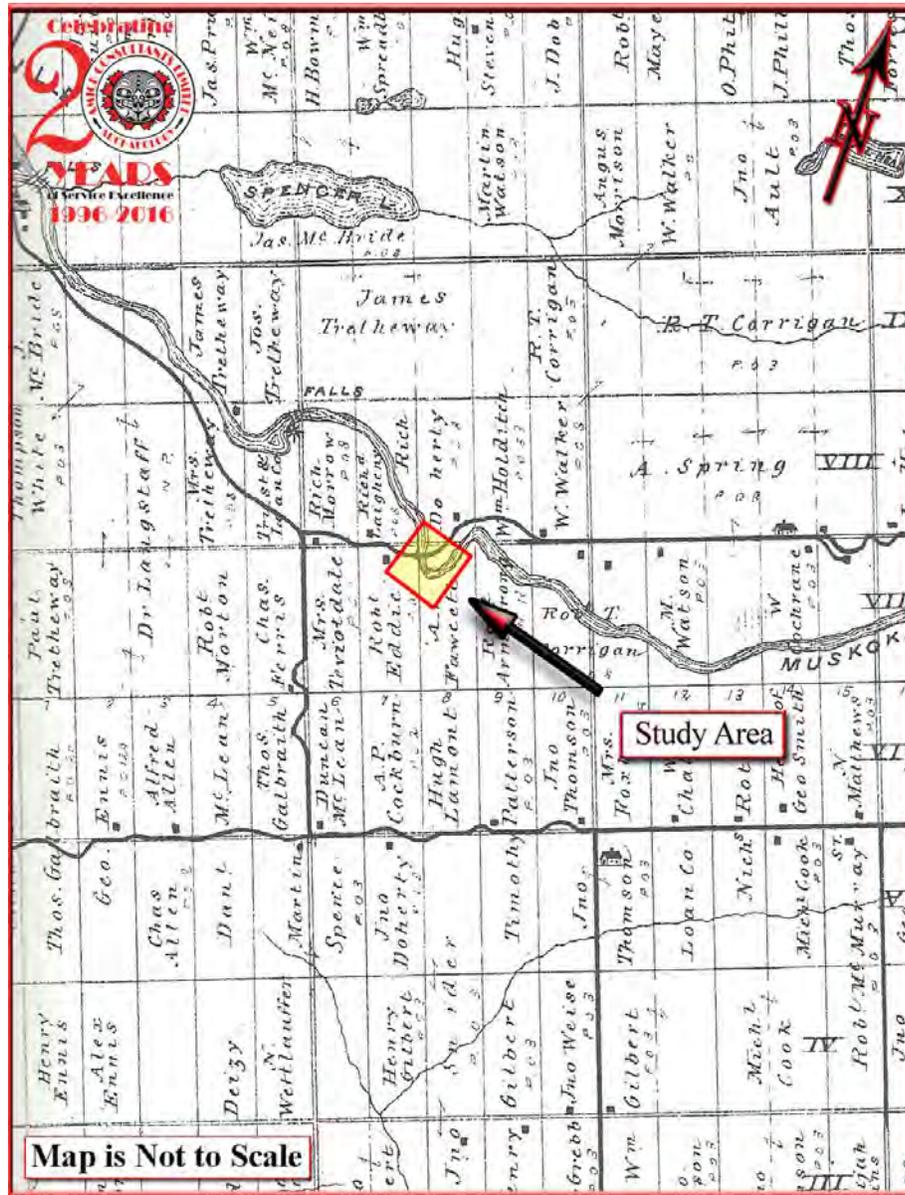


Figure 2 Facsimile Segment of the Historic Atlas Map of the Township of Draper (H. R. Page & Co. 1879)

Figure 2 is a facsimile segment of the Township of Draper map reproduced from *Guide Book and Atlas of Muskoka and Parry Sound Districts* (H. R. Page & Co. 1879). Figure 2 illustrates the location of the study area and environs as of 1879. The study area straddles

four Lots. Lot 7 of Concession 7 is shown to belong to Robert Eddie; one structure is indicated within his property but west of the overall study area and well away from the bridge. Lot 8 of Concession 7 is shown to belong to A. Fawcett but there is no indication of a structure within this property. Lot 7 of Concession 8 is shown to belong to Richard Laigheny. The house on this property is well to the west of the study area. Finally, Lot 8 of Concession 8 is owned by Rich Doherty at this time. A house is shown within this lot but it is well to the north of the study area. This demonstrates that the original properties of which the study area is a part was settled by the time that the atlas data was compiled. Accordingly, it has been determined that there is potential for features of the landscape with Cultural Heritage Value or Interest (CHVI) related to early Post-contact settlement within the study area. In addition, this map illustrates the Muskoka River channel flowing through the study area and an early settlement road is depicted as crossing the Muskoka River within the study area (i.e. the Black Bridge crossing). These features of early transportation also indicate potential for cultural heritage resources.

It must be borne in mind that inclusion of names of property owners and depictions of structures within properties on these maps were sold by subscription. While information included within these maps may provide information about occupation of the property at a specific point in time, the absence of such information does not indicate that the property was not occupied.

3.3 Summary of Historical Context

The brief overview of documentary evidence readily available indicates that the study area is situated within an area that was populated by the third quarter of the nineteenth century and as such has potential for cultural heritage features relating to early Euro-Canadian settlement in the region. Figure 2 also demonstrates that the travelled route under consideration is of relatively early construction and is a heritage roadway. The Matthiasville Road crossing of the Muskoka River South Branch dates to the period of initial settlement of the area and since the current steel structure dates to about 1922, this location has likely had one or more previous bridges at or near the current location. Local residents have said that the previous bridge piers remain in the water downstream of the bridge. Accordingly, it has been determined that there is potential for significant heritage features related to early settlement of the area to be found along the route, or in close proximity of the proposed undertaking.

4.0 GEOGRAPHIC CONTEXT

The map of the project location below (Figures 1 & 2) shows that none of the protected properties listed in *Appendix G: Protected Properties for which the Minister of Tourism and Culture Has Authority* within the 2011 Protected Properties, Archaeological and Heritage Resources: An Information Bulletin for Applications Addressing the Cultural Heritage Component of Projects Subject to Ontario Regulation 359/09 Renewable Energy Approvals issued by the Ministry of Tourism and Culture are located at the project location as required by subsection 19(3) of O. Reg. 359/09. Although the proposed undertaking is not a Renewable Energy Application and is therefore not subject to O. Reg. 359/09, consideration

of the protected properties listed in the above information bulletin is nevertheless appropriate. In addition, a review of the Registry of Heritage Properties for the Town of Bracebridge confirmed that there were no known heritage resources potentially affected by the proposed work program.

4.1 Location and Current Conditions

The study area is illustrated in Figures 1 and 2 (above) and can be described as the Proposed Improvements to the Matthiasville Road Crossing of the Muskoka River South Branch (Black Bridge), Parts of Lots 7 and 8, Concession 8, and Parts of Lots 7 and 8, Concession 7 (Geographic Township of Draper), Town of Bracebridge, District Municipality of Muskoka. This investigation was undertaken as a component study of the Class Environmental Assessment (E.A.) process under the Environmental Assessment Act (R.S.O. 1990) for approval from the Ministry of the Environment (MOE). This report will address whether there are protected heritage properties abutting the project location.

An aerial image from the District of Muskoka is included as Figure 3 below.



Figure 3 Aerial Image of Study Area (Muskoka 2016)

4.2 Physiographic Region

The study area is situated within the Number 11 Strip, a narrow strip in which sand and silt and clay deposits occupy the hollows. This area was just below the shoreline of Lake Algonquin. This area is characterised by deep soils that support farming settlements in sharp contrast to the bare rock ridges and poor shallow soil of the adjacent high ground. This area

constitutes most of the farmland in Parry Sound and Muskoka (Chapman and Putnam 1984: 215).

4.3 Surface Water

The Black Bridge is located over the Muskoka River South Branch adjacent 1527 Matthiasville Road, approximately 1 km north-east of Highway 118 East, on Lot 8, Concession 7, Geographic Township of Draper, in the Town of Bracebridge. The west approach to the bridge follows the bank of the river and the bank forms the north embankment of the Matthiasville Road. Figure 2 is a facsimile segment of the Township of Draper map reproduced from *Guide Book and Atlas of Muskoka and Parry Sound Districts* (H. R. Page & Co. 1879). Figure 2 illustrates the location of the study area and environs as of 1879. This map illustrates the Muskoka River channel flowing through the study area and an early settlement road is depicted as crossing the Muskoka River within the study area (i.e. the Black Bridge crossing).

5.0 STUDY AREA INSPECTION

The descriptions of conditions within the study area included within this section were informed by a field reconnaissance carried out on 01 May 2017 and also as a result of a field inspection of the study area completed as part of the Stage 1 Archaeological Background Study completed in 2017. The Stage 1 Archaeological Background Study has been prepared under separate cover (AMICK 2017). The field reconnaissance photographs are included at the end of this report.

The descriptive categories below have been employed as a heritage based classificatory scheme to document landscape conditions relevant to the cultural heritage evaluation for the study area.

5.1 Built Heritage Resources

The study area is located within a predominantly rural and tree covered area and much of the affected road allowances are adjacent to vacant woodlot. There are scattered individual residential properties along the route. The proposed undertaking will have no direct impact on these developed properties or associated structures or yard areas as no modifications require direct construction impacts to any of these properties. No portion of these properties will be altered or damaged as a result of the proposed undertaking. Once the proposed undertaking is built there should be no perceived changes to any adjacent structures through either direct or indirect impacts.

5.2 Cultural Heritage Resources

With the exception of the Black Bridge, no features of Cultural Heritage Value or Interest, as outlined by O. Reg. 9/06, were identified in any location anywhere along the route of proposed roadway improvements. Black Bridge which is a structure that will be directly impacted

through any proposed crossing improvements. This structure will be displaced through alteration or replacement regardless of the option selected, unless it is decided to leave the structure as is without any improvements to the crossing.

According to the criteria used by MTCS to evaluate the potential for heritage resources of cultural heritage value or interest (CHVI), and represented in Table 1 below, Black Bridge is a feature with CHVI and must be subject to a Heritage Impact Assessment on the basis of the age of the structure. Unless nothing is done as a result of the EA, the structure will be subjected to either alteration or replacement.

Table 1 Potential Cultural Heritage Resources Checklist

Step 1 - Screening Potential Resources			
<i>Built Heritage Resources</i>		YES	NO
Does the property contain any built structures, such as:			N
	Residential Structures (e.g. House, apartment building, trap line shelter)		N
	Agricultural (e.g. Barns, outbuildings, silos, windmills)		N
	Industrial (e.g. Factories, complexes)		N
	Engineering Works (e.g. Bridges, roads, water/sewer systems)	Y	
<i>Cultural Heritage Landscapes</i>		YES	NO
Does the property contain landscapes such as:			
	Burial sites and/or cemeteries		N
	Parks		N
	Quarries or mining operations		N
	Canals		N
	Other human-made alterations to the natural landscape	Y	

Step 2 - Screening for Potential Significance		
A property's heritage significance may be identified through the following	YES	NO
1. Is it designated or adjacent to a property designated under the Ontario Heritage Act?		N
2. Is it listed on the municipal heritage register or provincial register (e.g. Ontario Heritage Bridge List)?		N
3. Is it within or adjacent to a Heritage Conservation District?		N
4. Does it have an Ontario Heritage Trust easement or is it adjacent to such a property?		N
5. Is there a provincial or federal plaque?		N
6. Is it a National Historic Site?		N
7. Does documentation exist to suggest built heritage or cultural heritage landscape potential (e.g. Research studies, heritage impact assessment reports, etc.)		N
8. Was the municipality contacted regarding potential cultural heritage value?		N
9. What are the dates of construction?		
Are the buildings and/or structures over 40 years old?	Y	
Is it within a Canadian Heritage River watershed?		N
10. Is a renowned architect or builder associated with the property?		N

Note: If you answer "yes" to any of the questions in Step 2, a Heritage Impact Assessment is Required.

Step 3 - Screening for Potential Impacts		
	YES	NO
Destruction of any, or part of any, significant heritage attribute or feature	Y	
Alteration that is not sympathetic, or is incompatible, with the historic fabric or appearance	Y	
Shadows created that alter the appearance of a heritage attribute or change the visibility of a natural feature or plantings, such as a garden		N
Isolation of a heritage attribute from its surrounding environment, context or a significant relationship		N
Direct or indirect obstruction of significant views or vistas from, within, or to a built and natural feature		N
A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open space		N
Land disturbances such as a change in grade that alters soils and drainage patterns that adversely affect an archaeological resource		N

6.0 HERITAGE IMPACT ASSESSMENT

The criteria to define local cultural heritage significance is prescribed in Ontario Regulation (O. Reg.) 9/06 made pursuant to section 29(1) (a) of the Ontario Heritage Act. The criteria set forth are reproduced below from sub-Section 2:

“A property may be designated under section 29 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:

1. *The property has design value or physical value because it,*
 - i. *is a rare, unique, representative or early example of a style, type, expression, material or construction method,*
 - ii. *displays a high degree of craftsmanship or artistic merit, or*
 - iii. *demonstrates a high degree of technical or scientific achievement.*
2. *The property has historical value or associative value because it,*
 - i. *has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,*
 - ii. *yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or*
 - iii. *demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.*
3. *The property has contextual value because it,*
 - i. *is important in defining, maintaining or supporting the character of an area,*

- ii. is physically, functionally, visually or historically linked to its surroundings,*
or
- iii. is a landmark.*

(O. Reg. 9/06, s. 1 (2))

Background research was conducted using historic sources about the area, historic atlas of the county, and the 2011 Protected Properties, Archaeological and Heritage Resources: An Information Bulletin for Applications Addressing the Cultural Heritage Component of Projects Subject to Ontario Regulation 359/09 Renewable Energy Approvals issued by the Ministry of Tourism and Culture. Although this project does not fall under O. Reg. 359/09, it was considered appropriate to consult this document to ensure that there were no protected properties affected by the proposed undertaking. Full references for all background research can be found in section 8.0 of this report. A property reconnaissance was conducted which included a site visit and visual inspection of the study area. Table 1 below provides a listing of the results of the study.

6.1 PROPOSED UNDERTAKING

In accordance with the terms of reference for the planning and design work for the proposed undertaking, the Corporation of the Town of Bracebridge is initiating the planning and design process for the reconstruction of Matthiasville Road Crossing of the Muskoka River South Branch (Black Bridge) in the Town of Bracebridge (Bracebridge 2016). The planning and design portions for this work are to be completed in 2017 and 2018 with construction completed in 2019.

The structure is a single span structural steel through truss bridge and was constructed in about 1922. The bridge has a 36.7 meter span, an overall width of 4.4 meters and a travelled deck width of 4.1 meters. A bridge inspection conducted in 2016 has identified several deficiencies and concluded the Black Bridge has reached the end of its useful service life and should be replaced. The deficiencies to be addressed include public safety, traffic capacity, structure condition, approach alignment, load capacity, and current bridge standards. Alternatives to be considered would be to do nothing, structural repair solutions, widening of the existing bridge to incorporate an appropriately sized travel deck, and full bridge removal and replacement.

The proposed undertaking contemplates the replacement of the existing Black Bridge. The proposed alternative structures for a replacement bridges include prefabricated truss, concrete girder, or steel girder bridges. Either of these choices would necessitate in the removal of the existing Black Bridge and replacement with a new structure. In order to rehabilitate the existing structure and extend its service life, it is anticipated that significant steel components would require replacement including the top chords and diagonal members. This would also require additional structural support from the stream and road closure. The disadvantage to rehabilitation of the structure is that it cannot be modified to conform to current roadway and bridge standards. A steel truss bridge is a single load structure wherein the superstructure of the bridge carries the load and failure or removal of any component has the potential to cause

complete structural failure. This is one of the reasons why truss structure bridges are no longer employed.

6.2 POTENTIAL IMPACTS

The potential impacts of the proposed undertaking were evaluated according to the MTCS' Ontario Heritage Toolkit: Heritage Resources in the Land Use Planning Process. This resource document identifies seven potential impacts to consider when evaluating development or alteration that may impact heritage features. Impacts may include:

- *Loss/Destruction of any, or part of any, significant heritage attributes or features;*
- *Alteration that is not sympathetic or is incompatible, with the historic fabric and appearance;*
- *Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden;*
- *Isolation of a heritage attribute from its surrounding environment, context or significant relationship;*
- *Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features; or*
- *A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces.*

The proposed replacement of the Black Bridge would result in the demolition and removal of the existing steel truss structure. The demolition of the bridge would ultimately lead to the loss of all of the Heritage Attributes of the structure.

6.3 Potential Mitigation

Best practice for heritage conservation dictates that the preferred option conserves a property's cultural heritage value. The Provincial Policy Statement, 2014, identifies the requirement to conserve cultural heritage value. Section 2.6.1 states that "Significant built heritage resources and significant cultural heritage landscapes shall be conserved."

Typically, this involves maintaining a heritage resource in its original location.

It is more often the case that socio-economic, technical, and/or environmental site considerations may require compromise and/or alternatives in order to achieve some level of heritage conservation. In order to mitigate the impacts of the loss of the Black Bridge, AMICK Consultants Limited has evaluated a number of mitigation options for the consideration of the Town of Bracebridge.

The potential mitigation options in order from the most to least appropriate form of mitigation, are described below.

1. *Retention of the existing truss superstructure to affix to the new bridge construction. This option allows for the replacement bridge to have the very close appearance of the old bridge. The truss structure could be affixed to the outer edges of the deck on the new bridge.*
2. *Replacement of the existing truss structure with a more durable replica superstructure. This option also preserves the appearance and heritage character of the bridge to users and observers of the landscape, but eliminates the difficulties associated with attempting to reuse deteriorated steel components which will continue to require maintenance and would ultimately require replacement. This option allows for an authentic commemoration of the existing bridge but can be done in a manner that lasts the desired service life of the new bridge.*
3. *The cultural heritage value of the bridge could be remembered with a commemorative monument, memorial, or art installation that could be incorporated into the landscape surrounding the existing bridge. A commemorative monument could incorporate distinctive elements of the bridge such as steel members or a portion of the steel plate with the manufacturer's mark. Similar monuments have been undertaken recently in other municipalities such as the Region of Niagara or the City of London.*
4. *Prior to the demolition of the truss structure, historic materials including the steel portions of the truss or the manufacturer's plate could be salvaged for reuse as museum artifacts, or put on display in a nearby public location. A local museum may wish to have a portion of the bridge.*
5. *Prior to the demolition of the bridge, the structure should be documented to high graphic standards to document the existing structure for a historic and archival record. Copies of the photographic documentation should be compiled with this report and should be deposited within a local public archive.*

7. RECOMMENDATIONS

The Corporation of the Town of Bracebridge Environmental Assessment for Black Bridge is being undertaken to assess the impact of the replacement or rehabilitation of the existing bridge.

This report has identified that the bridge has cultural heritage value or interest under Ontario Regulation 9/06.

Given the potential impacts to the structure of Black Bridge, this HIA has identified a series of mitigation options that should be considered to mitigate the impacts to the heritage value of the bridge. Based on the above noted mitigation options the following select options are the recommended mitigation options:

- 1. Retention of the existing truss superstructure to affix to the new bridge construction. This option allows for the replacement bridge to have the very close appearance of the old bridge. The truss structure could be affixed to the outer edges of the deck on the new bridge.*
- 2. Replacement of the existing truss structure with a more durable replica superstructure. This option also preserves the appearance and heritage character of the bridge to users and observers of the landscape, but eliminates the difficulties associated with attempting to reuse deteriorated steel components which will continue to require maintenance and would ultimately require replacement. This option allows for an authentic commemoration of the existing bridge but can be done in a manner that lasts the desired service life of the new bridge.*
- 3. The cultural heritage value of the bridge could be remembered with a commemorative monument, memorial, or art installation that could be incorporated into the landscape surrounding the existing bridge. A commemorative monument could incorporate distinctive elements of the bridge such as steel members or a portion of the steel plate with the manufacturers mark. Similar monuments have been undertaken recently in other municipalities such as the Region of Niagara or the City of London.*
- 4. Prior to the demolition of the truss structure, historic materials including the steel portions of the truss or the manufacturer's plate could be salvaged for reuse as museum artifacts, or put on display in a nearby public location. A local museum may wish to have a portion of the bridge.*
- 5. Prior to the demolition of the bridge, the structure should be documented to high graphic standards to document the existing structure for a historic and archival record. Copies of the photographic documentation should be compiled with this report and should be deposited within a local public archive.*

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**APPENDIX C:
NATURAL ENVIRONMENT REVIEW**



BLACK BRIDGE
MUNICIPAL CLASS
ENVIRONMENTAL ASSESSMENT
NATURAL ENVIRONMENT REVIEW
October 2017



RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.



RIVERSTONE
ENVIRONMENTAL SOLUTIONS INC.

October 9, 2017
RS#2016-169

Emma Wilkinson, H.B.A, B.E.Sc.,P.Eng.
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SUBJECT: Black Bridge Municipal Class Environmental Assessment –Natural Environment Review.

Dear Ms. Wilkinson:

RiverStone Environmental Solutions Inc. is pleased to provide you with the attached report.

Please contact us if there are any questions regarding the report, or if further information is required.

Best regards,

RiverStone Environmental Solutions Inc.

Report prepared by:

Al Shaw, M.Sc.
Senior Aquatic Ecologist

Craig Mann, H.B.Sc.F, Dipl. IFRM.
Terrestrial Ecologist

ENVIRONMENTAL ASSESSMENT NON-TECHNICAL SUMMARY

Type of Study Natural Environment Review		Date October 9, 2017
Project Manager Al Shaw	Project Location Black Bridge on Matthiasville Road over the South Branch of Muskoka River	Development Proposed Municipal Class Environmental Assessment
	Planning Authorities Town of Bracebridge, District of Muskoka	Owner/Agent Town of Bracebridge/CC Tatham & Associates

Report Summary

The purpose of this study was to review the natural environment at the Black Bridge over the south branch of Muskoka River located on the Matthiasville Road, to document the natural features present in the area and evaluate the potential impacts to the natural environment based on various project alternatives. Natural features reviewed included fish habitat, ecological communities, significant wildlife habitat, and Species at Risk.

Our analysis determined that the level of potential impacts on the natural environment would increase with the alternative that require increasing footprint. For example, the alternatives that propose upgrades to the current bridge or replacement in the same footprint have reduced potential impact over the alternative proposal to replace the bridge with a two lane structure. The former has little additional impact over the current condition, while the latter would expand the footprint and impact to permit the additional lane. It is our opinion that the alternatives with the lowest environmental impact are A: Do Nothing, B: rehabilitate the existing bridge, C1: replace the structure with a new single lane bridge and C2: replace the existing structure elsewhere on the River. For Alternative A, B and C1, no additional studies would be required to support these alternatives, and limited permitting would be required through the DFO and MNRF. Alternative C2 would most certainly require authorization from DFO and permits from MNRF.

Table of Contents

1. BACKGROUND..... 7

2. APPROACH AND METHODS 7

Information Sources Used to Assess Site Conditions 7

Site Investigation..... 8

 2.1.1. General Approach..... 8

 2.1.2. Terrain, Drainage, and Soils..... 9

 2.1.3. Vegetation Communities 9

 2.1.4. Watercourse/River 9

 2.1.5. Species at Risk..... 10

 2.1.5.1 Habitat-based Approach..... 10

 2.1.5.2 Adjacent and Adjoining Lands 10

Assessment of Conformance with Applicable Environmental Policies 11

Environmental Assessment Project Alternatives 12

3. BIOPHYSICAL FEATURES (EXISTING CONDITIONS)..... 12

 3.1. Terrain, Drainage, and Soils 13

 3.2. Vegetation Communities 13

 3.3. Fish Habitat..... 17

 3.4. Species of Conservation Interest 19

4. ASSESSMENT OF PROJECT ALTERNATIVES 19

Alternative A: Do Nothing 19

Alternative B: Rehabilitate Existing Bridge 19

Alternative C1: Replace with Single Lane Bridge..... 20

Alternative C2: Replace with Two Lane Bridge 21

5. CONCLUSIONS..... 22

6. REFERENCES 22

List of Figures

Figure 1. Location of Black Bridge 24

Figure 2. Proposed alternatives, 25

Figure 3. Natural and existing features, 26

List of Appendices

Appendix 1. Assessment of Species at Risk

1. **BACKGROUND**

Matthiasville Road is located north of Highway 118, ~3.1 km east of the Highway 11 and Highway 118 intersection. The Black Bridge is located ~ 1.0 from the Highway 118 and Matthiasville Road intersection along Matthiasville Road. The bridge conveys traffic over the south branch of the Muskoka River. Due to structural deficiencies on the Black Bridge, the Town of Bracebridge is looking at various alternatives to maintaining a safe, cost effective crossing of the river in this general vicinity.

Upgrades to municipal bridges are subject to the requirements of a Class Environmental Assessment Process specific to Municipal Road Projects under the *Environmental Assessment Act*. In the case of the Black Bridge, the project is classified as a Schedule B project. These types of projects have the potential for adverse environmental effects and require direct contact with the public and relevant government agencies to ensure that concerns are appropriately addressed.

Given the potential for adverse environmental effects, RiverStone Environmental Solutions Inc. (hereafter, RiverStone) was retained to provide expertise relating to the natural environment surrounding the project area. This report describes our evaluation of the environmental conditions within the immediate potential project area and adjacent lands, as well as assesses each of the alternatives in terms of their potential negative impacts to the aquatic and terrestrial environments.

2. **APPROACH AND METHODS**

The general approach used to carry out this scoped EIS involved the following:

1. Assemble background information to identify the existing biophysical features and functions of the subject property prior to the site investigation.
2. Conduct a site investigation to field-verify the biophysical features and functions identified during background information gathering and to collect additional field data (e.g., habitat information, etc.) that will assist with completing the report.
3. Determine the extent to which existing biophysical features and functions constrain the property as it relates to the proposed development.
4. Provide an overall assessment of conformance of the proposed development with all applicable municipal, provincial, and federal environmental requirements.

2.1 Information Sources Used to Assess Site Conditions

Information pertaining to the biophysical features and functions of the subject property and surrounding lands was obtained from the following sources:

- **Email Correspondence provided by Ontario Ministry of Natural Resources and Forestry (MNRF)** pertaining to fish habitat, Species at Risk, Areas of Natural and Scientific Interest, and other natural heritage features (Jeremy Rouse May, 2017).
- **Species at Risk (SAR) by Township** tool provided by Parry Sound District MNRF (“SAR in PS District v5.0.xls”) regarding the SAR potentially occurring in the geographic township of interest (January 2015).
- **MNRF Natural Areas Mapping** from the Natural Heritage Information Centre (NHIC) regarding information on occurrences of species of conservation interest on or adjacent to the subject property, as well as significant natural areas (accessed May 2017)

http://www.gisoeapp.lrc.gov.on.ca/web/MNR/NHLUPS/NaturalHeritage/Viewer/Viewer.html?utm_source=MNRCentral&utm_medium=Twitter&utm_term=natural%2Bheritage&utm_content=natural%2Bheritage%2Bbiodiversity&utm_campaign=Biodiversity

- **Ontario Breeding Bird Atlas (OBBA) Online Database** and Atlas of the Breeding Birds of Ontario, 2001–2005 (Cadman et al. 2007) regarding birds that were documented to be breeding in the vicinity of the subject lands during the 2001–2005 period (atlas square numbers: 17PK38) <http://www.birdsontario.org/atlas/squareinfo.jsp>
- **Species at Risk: Potentially Suitable Habitat Mapping** (Glenside Ecological Services Limited (2009) regarding species at risk habitat in the District Municipality of Muskoka.
- **SAR Range Maps** provided on MNR's website: http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_WHATS_AT_RISK_EN.html
- **Natural Heritage Evaluation of Muskoka** (Reid and Bergsma (1994) regarding Natural Heritage Areas in the District Municipality of Muskoka.
- **Great Lakes Conservation Blueprint for Terrestrial Biodiversity, Volume 2** (Henson and Brodribb (2005) regarding terrestrial biodiversity within Ecodistrict 5E-8 (Huntsville).
- **Great Lakes Conservation Blueprint for Aquatic Biodiversity, Volume 2** (Phair et al. 2005) regarding aquatic biodiversity within tertiary watershed 2EC (Black River – Lake Simcoe).
- **Precambrian Geology Mapping for the Gravenhurst Area** (Lumbers et al. 2000) to ascertain the bedrock geology of the subject property.
- **Quaternary Geology of the Huntsville–Penetanguishene Area, Central Ontario** (Bajc 1994) to ascertain the surficial deposits of the subject property.
- **District of Muskoka Official Plan (Consolidated 2014)**
- **Town of Bracebridge Official Plan (2016)**
- **Digital Ontario Base Maps (OBMs; 1:10,000)** to ascertain topography.
- **Colour aerial photography** of the property (digital orthophotos: leaf-off, spring 2008).
- RiverStone's **in-house databases and reference collections.**
- On-site investigations by RiverStone staff

Site Investigation

2.1.1. General Approach

The results of background information gathering outlined above in **Section 2.1** helped direct on-site data collection activities associated with a site investigation. Overall, the level of effort expended on-site was deemed adequate to document the features and functions with recognized status given the location and scale of the project area. Features of interest were photographed, and all information collected was catalogued for future reference.

Evidence for the presence of a species or use of an area was determined from visual and/or auditory observation (e.g., song, call) and observation of nests, tracks, burrows, browse, skins, and scats. Ecological Land Classification vegetation mapping (**Section 3.2.**) that was completed also provides

information regarding the likelihood that plant species of conservation interest may be present (for example, most rare plants have strong affinities for specific ecological communities). Additionally, if a potentially rare plant not in flower was encountered, then a second site visit would have been conducted during the appropriate season for flowering or fruiting to confirm identification. This approach acceptably minimizes the risk that rare plant species would have gone undetected.

Natural features of interest (e.g., SAR habitat, vegetation community boundaries) were delineated in the field with a tablet and GPS capable of 1-m accuracy. Features of interest were photographed and all information collected was catalogued for future reference. Photographs representative of onsite conditions are provided throughout report with additional photographs on file at RiverStone.

2.1.2. Terrain, Drainage, and Soils

Geology is a significant factor in the formation of soil, the physical characteristics of a watershed, and ultimately surface water quality. The bedrock and overlying deposits influence surface runoff and infiltration, directly influencing the nutrient balance of receiving water bodies. Knowledge of the existing terrain in a study area is important in understanding how a property and its associated natural environment will respond to development pressures. The geophysical setting of the project area was reviewed using OBMs, soils mapping, and aerial photography, and subsequently verified on-site.

2.1.3. Vegetation Communities

The vegetation communities on the subject property were characterized in accordance with Ontario's Ecological Land Classification (ELC) system. The ELC system defines ecological units or communities based on bedrock, climate (temperature, precipitation), physiography (soils, slope, aspect), and corresponding vegetation. Use of the system permits biologists and other land managers to use a common language to describe ecological communities, which in turn facilitates the identification of communities likely to support features or functions of conservation interest. The ELC system is an organizational framework that can be applied at different scales. The ecological units most useful for site-specific evaluations are ecosites and vegetation types (also known as ecoelements). Vegetation types are the finest level of resolution in the ELC system and are recurring patterns found in the plant species assemblages that are associated with a particular ecosite (Lee et al. 1998).

Forest communities were classified according to the Ontario Ecological Land Classification system Ecosites of Ontario – The Great Lakes St. Lawrence field manual, Banton et al. (2009). Plant nomenclature is generally consistent with the Southern Ontario Vascular Plant Species List, Third Edition (Bradley 2013) except where updates that postdate publication of the list are noted in the Integrated Taxonomic Information System database.

2.1.4. Watercourse/River

The Black Bridge crossing over the South Branch of the Muskoka River was reviewed for several important characteristics. In the immediate area surrounding the bridge and the adjacent lands, the nearshore area of the river was assessed for the presence of aquatic vegetation, substrates, and water depth, along with the adjoining riparian vegetation and onshore slopes. The MNR was contacted for information related to this reach of the Muskoka River. The Muskoka River flows are governed by the Muskoka River Water Management Plan which considers water needs for many users, including the Tretheweys Falls Generating Station downstream of the Black Bridge location.

2.1.5. Species at Risk

For the purposes of this report, Species at Risk refers to those species listed as *Threatened* or *Endangered* on the Species at Risk in Ontario List (O. Reg. 230/08) receiving protection under s.9 and s.10 of the *Endangered Species Act, 2007*.

2.1.5.1 Habitat-based Approach

Properly assessing whether an area is likely to contain species of conservation interest for the purposes of determining whether a proposed development is likely to have a negative impact is becoming more difficult as the number of listed species increases. Approaches that depend solely on documenting the presence of individuals of a species in an area almost always underrepresent the biodiversity actually present because of the difficulty of observing species that are usually rare and well camouflaged. Given these difficulties, and the importance of protecting habitats of Species at Risk, RiverStone's primary approach to site assessment is habitat-based. This means that our field investigations focus on evaluating the potential for features within an area of interest to function as habitat for species considered potentially present, rather than searching for live specimens. An area is considered potential habitat if it satisfies a number of criteria, usually specific to a species, but occasionally characteristic of a broader group (e.g., several turtles of conservation interest use sandy shorelines for nesting). Physical attributes of a site that can be used as indicators of its potential to function as habitat for a species include structural characteristics (e.g., physical dimensions of rock fragments or trees, water depth), ecological community (e.g., meadow marsh, rock barren, coldwater stream), and structural connectivity to other habitat features required by the species. Species-specific habitat preferences and/or affinities are determined from status reports produced by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Cadman et al. (2007), published and unpublished documents, and direct experience.

In instances where habitat features are such that either (i) a species presence cannot be easily determined through an assessment of habitat feature alone, or (ii) habitat features are such that they suggest a species may be present in an area where development is proposed and impacts are likely, RiverStone adds an additional level of rigor to our work by completing further species-specific assessments (e.g., Whip-poor-will call surveys, Massasauga hibernation/gestation surveys, etc.) in accordance with industry standard methods and protocols.

2.1.5.2 Adjacent and Adjoining Lands

Provincial policy regarding the protection of significant natural heritage features, as reflected in Section 2.1 of the PPS, recognizes that lands adjacent to a proposed development may have features and functions that would be negatively affected if land use changes were to proceed without appropriate consideration. To ensure that potential impacts are duly considered and/or prevented, the Province developed the concept of "Adjacent Lands." The following definition of Adjacent Lands is provided in the 2014 PPS:

- b) for the purposes of policy 2.1.8 those lands contiguous to a specific *natural heritage feature or area* where it is likely that development or site alteration would have a *negative impact* on the feature or area. The extent of the *adjacent lands* may be recommended by the Province or based on municipal approaches which achieve the same objectives...

Properly assessing the extent of Adjacent Lands is important because of the following policy in Section 2.1 of the PPS:

2.1.8 *Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5 and 2.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

Furthermore, if a significant natural heritage feature being considered is habitat for a species designated Endangered or Threatened in Ontario, then the Endangered Species Act, 2007 (ESA) prohibits the damaging or destroying of this habitat, in addition to prohibitions against killing, harming, or harassing the species.

Given the policies of the PPS and the prohibitions set out in the ESA, it is clearly important to be able to make defensible arguments regarding the extent of lands within which the potential for negative impacts on significant features has been evaluated. Determining what constitutes Adjacent Lands for a specific feature requires consideration of the following factors:

1. Type of feature (e.g., Provincially Significant Wetland, habitat for Endangered and Threatened species).
2. Sensitivity of the feature to disturbance (e.g., based on habitat function or ecological community).
3. Ecological attributes that are species-specific (e.g., the appropriate distance within which to consider impacts for a Blanding's Turtle should be considerably larger than for a Butternut tree).
4. The scale and type of development being considered or that would be permissible under the proposed zoning.

Unfortunately, the term Adjacent Lands, as defined in the PPS, is not particularly useful for evaluating potential impacts in the initial stages of impact assessment because in the majority of cases the location of significant natural heritage features, particularly Species at Risk habitat, is unknown prior to the completion of on-site investigations. Additionally, site investigations often have to be conducted prior to fully understanding the proposed development, adding to the difficulty of determining what constitutes Adjacent Lands while on site. Therefore, given the importance of the Adjacent Lands concept for addressing both PPS and ESA considerations, particularly the value of using ecologically based extents to evaluate potential impacts, RiverStone measures species- and feature-specific distances from the boundaries of proposed lots or development area(s)—rather than from the boundary of the significant natural heritage feature—and refers to this area as adjoining lands. Evaluating the likelihood of species' presence and the potential for negative impacts using this approach ensures that the Adjacent Lands test of the PPS will be met.

As described above, RiverStone's primary approach to site assessment is habitat-based. For species and ecological communities of conservation interest, this approach involves both desktop and on-site assessments.

Assessment of Conformance with Applicable Environmental Policies

The suite of relevant municipal and environmental policies that apply to the project area and proposed alternatives are listed below. Based on the results of the background information gathering, site

investigation, and input to alternatives, RiverStone has advised the extent to which the proposed alternatives will comply with the legislation and policies below.

- Federal *Fisheries Act*, R.S.C. 1985, c. F-14, including:
 - *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations*, S.O.R/2013-191
 - Fisheries Protection Policy Statement (Oct. 2013)
- *Provincial Policy Statement*, 2014, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13, including:
 - Significant Wildlife Habitat Technical Guide (OMNR 2000)
 - Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (OMNR 2010)
- Provincial *Endangered Species Act* (ESA), S.O. 2007, c. 6, including:
 - Ontario Regulation 230/08: Species at Risk in Ontario List
 - Ontario Regulation 242/08: “Exemption Regulation”
- District Municipality of Muskoka *Official Plan* (consolidation October 3, 2014)
- Town of Bracebridge *Official Plan* (December 20, 2016), including:
 - Appendix A (Environmental Features and Constraints)

Environmental Assessment Project Alternatives

As required by the Class Environmental Assessment process for municipal bridge projects, each project alternative must be assessed for impacts on the natural environment. The current Black Bridge is a single lane trussell bridge that crosses the South Branch of the Muskoka River.

Alternatives were devised based on traffic flow and road safety with four project alternatives selected to be evaluated. The six project alternatives are listed below and shown in **Figure 2**.

Alternative A - Do nothing

Alternative B - Rehabilitate existing bridge

Alternative C1 – Replace with single lane bridge (with similar span and width on the same alignment)

Alternative C2 – Replace with two lane bridge

These alternatives are individually evaluated in **Section 4** for potential impacts on the natural environment.

3. BIOPHYSICAL FEATURES (EXISTING CONDITIONS)

The South Branch of the Muskoka River originates in two headwater areas as the Oxtongue River and the Hollow River. The Oxtongue River begins in Algonquin Park and empties into the northern shoreline of Lake of Bays, near Dwight. The Hollow River begins upstream of Kawagama Lake,

passing through several smaller lakes in Haliburton, before draining into Lake of Bays along the southeastern shoreline in Dorset. The outlet of Lake of Bays in Baysville is the beginning of the South Branch of the Muskoka River, which drains southwest to Bracebridge, passing the Matthias, Trethewey, Hanna Chute and South Falls, before convergence with the North Branch of the Muskoka River in Bracebridge. The location of the Black Bridge is immediately upstream of the Trethewey Falls Generating Station and downstream of the Matthiasville Falls Dam.

3.1. Terrain, Drainage, and Soils

The subject property is situated near the southwestern boundary of Ecodistrict 5E-8 (Huntsville). This ecodistrict is comprised of bedrock exposures (primarily orthogneisses and migmatites) complexed with a veneer of glacially-derived sandy substrate (Henson and Brodribb 2005). Differential erosion of the bedrock since the Grenville Orogeny over one billion years ago has generated a landscape of gently- to steeply-sloping ridges separated by hollows filled by wetlands or lakes. Proglacial Lake Algonquin (a precursor to Lake Huron) drowned most of the western half of the ecodistrict following glacial recession around 10,000 years ago.

The South Branch of the Muskoka River is ~ 40 m wide at the Black Bridge with water flowing in an east to west direction. The channel is relatively steep walled with vegetated slopes and riparian vegetation along most of the project area and adjacent lands. Soils are relatively deep due to deposition, especially on the north side of the project area where spits of land line the river. Wetland communities are located behind these two spits to the east and west of the north shore. Bedrock is present at the south bridge abutment on both sides.

3.2. Vegetation Communities

In general, the project area has been highly modified through past road construction, road maintenance and residential construction activities. Vegetation communities are relatively young and comprised of deciduous communities north of the river and conifer plantation communities south of the river. Primary wetland communities are located north of the river as inlets or possibly old river sections and in a small area south of Matthiasville road associated with a culvert draining from the South Branch Muskoka River. North of the crossing, a parking area/snow plough turnaround was noted. This area along with vegetation between the roadway and river is disturbed through periodical clearing and cultural vegetation species are dominant. As noted in **Section 2.1.3.**, vegetation communities on the subject property were classified in accordance with the 2008 update to the Ecological Land Classification system community codes. Three distinctive vegetation communities were delineated in the project area, a description of each community follows, with all communities illustrated on **Figure 2.**

Maple Hardwood Swamp (G131)

Located north of the river between the river and wetland communities are spits of land that are best classified at Maple Hardwood Swamp communities (**Photograph 1**). This community is very dynamic with fluctuating water levels changing the moisture conditions and presence of vegetation species over time. This community relative young in age and has a range of species depending on location on the spit. Species present in the canopy of this community include Silver Maple (*Acer saccharinum*), American Elm (*Ulmus americana*), Yellow Birch (*Betula allegheniensis var. fallax*), Balsam Fir (*Abies balsamea*), Eastern White Pine (*Pinus strobus*), Northern Red Oak (*Quercus rubra*) and Black

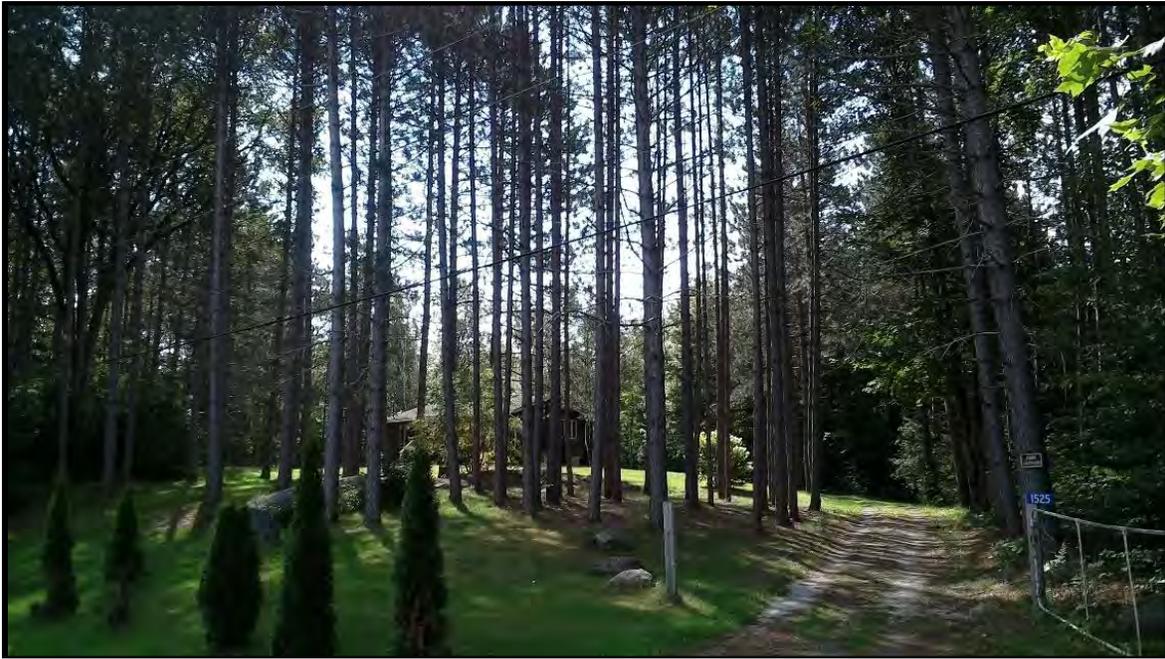
Cherry (*Prunus serotina*). The understory is dense with vegetative growth especially along the riverbanks, species present include Mountain Holly (*Ilex mucronatus*), Beaked Hazel (*Corylus cornuta* var. *cornuta*), Speckled Alder (*Alnus incana* ssp. *rugosa*), Sensitive Fern (*Onoclea sensibilis*), Royal Fern (*Osmunda regalis* var. *spectabilis*), Interrupted Fern (*Osmunda claytoniana*), Northern Bracken Fern (*Pteridium aquilinum* var. *latiusculum*), Northern Starflower (*Trientalis borealis*), Canada Mayflower (*Maianthemum canadense*), Bladder Sedge (*Carex intumescens*) and Beaded Shorthusk (*Brachyelytrum erectum*).



Photograph 1. Silver Maple dominated forest located along the river north of the crossing (August 17, 2017).

Dry, Sandy: Red Pine – White Pine Conifer (G033)

This forest community (**Photograph 2**) occurs south of the river and Matthiasville Road and is associated with a residential property. The majority of the community consists of Red Pine (*Pinus resinosa*) plantation (**Photograph 2**) with more natural occurring vegetation of Eastern White Pine, Balsam Fir, Eastern Hemlock (*Tsuga canadensis*), Northern Red Oak closer to and along the river. Within the residential area, the understory has been removed and mown lawn is present. Additional species noted in this community include, Beaked Hazel, Virginia Strawberry (*Fragaria virginiana*), Wild Sarsaparilla (*Aralia nudicaulis*), Northern Bracken Fern, Large-leaf Wood Aster (*Eurybia macrophylla*), Spreading Dogbane (*Apocynum androsaemifolium*), and Bearded Shorthusk.



Photograph 2. Red Pine plantation located south of the crossing extending down to the Muskoka River (August 17, 2017).

Mineral Shallow Marsh (G148)

Mineral Marsh is located in three areas within the project area. Two areas are located north of the crossing and are directly associated with the Muskoka River (**Photograph 3**). The other area is south of the crossing and linked to Muskoka River via a culvert (**photograph 4**). Species present in this community include Pickerelweed (*Pontederia cordata*), Three-way Sedge (*Dulichium arundinaceum* var. *arundinaceum*), Canada Bluejoint (*Calamagrostis canadensis* var. *canadensis*), spotted Joepyeweed (*Eutrochium maculatum* var. *purpureum*), White Meadow-sweet (*Spiraea alba*), Sensiteve Fern, Water Shield (*Brasenia schreberi*), Fraser's Marsh St. Johnswort (*Triadenum virginicum*), Fringed Sedge (*Carex crinite* var. *crinite*), White Water Lily (*Nymphaea odorata* ssp. *odorata*) and Ostrich Fern (*Matteuccia struthiopteris*).



Photograph 3. Mineral Marsh located south of the river and directly connected to the Muskoka River (August 17, 2017).



Photograph 4. Mineral marsh located south of the Muskoka River and road, connected by culvert (August 17, 2017).

3.3. Fish Habitat

The study area has a single permanent watercourse, the South Branch, Muskoka River, that may potentially be affected by proposed upgrades to the Black Bridge on Matthaisville Road. Depending on the construction alternative that is chosen, wetland communities to the south and north, which are directly connected to the river, could also be affected. The river flows ~ 11 km before joining with the Muskoka River and is part of the Muskoka River Watershed. At the crossing the river is ~40 m wide and slow moving. The river is classified as having a cool/warmwater thermal regime with a primarily warmwater fish community present.

Fish species present at the location of the Black bridge include those species found in Lake of Bays able to thrive in a more warmwater environment after moving downstream of the dam in Baysville. This would include Northern Pike (*Esox lucius*), Smallmouth Bass (*Micropterus dolomieu*), Largemouth Bass (*Micropterus salmoides*), Yellow Perch (*Perca flavescens*), Black Crappie (*Pomoxis nigromaculatus*), Pumpkinseed (*Lepomis gibbosus*), Bluegill (*Lepomis macrochirus*) and Rock Bass (*Ambloplites rupestris*). Many of these species rely on aquatic vegetation as a primary habitat characteristic for spawning and rearing young, as well as feeding and refugia habitat to evade predators.

Aquatic information was collected at the location of the bridge, but was restricted to the nearshore area due to the depth of water. A sparse diversity of submerged aquatic vegetation (**Photograph 5**) were observed in shallow areas along the perimeter and at the abutments in all quadrants. Species present include Pickerelweed (*Pontederia cordata*), Water Shield (*Brasenia schreberi*) and White Water Lily (*Nymphaea odorata ssp. odorata*). Substrates adjacent to the abutments consist of sand with organics and the shoreline drops off abruptly at the edge of all abutments. Overhanging vegetation is present along the shoreline up and in the northeast quadrant downstream of the crossing with Canada Bluejoint, spotted Joe-pye-weed, White Meadow-sweet, Ostrich Fern, Mountain Holly and Speckled Alder present. The southeast shoreline has a more defined bedrock influence with outcroppings present at the abutment. The Red Pine, White Pine and White Birch occurring along the shoreline with lower amounts of overhanging woody vegetation (**Photograph 6**). In the northwest and northeast quadrants, two low-lying areas are present, these areas are described above as Mineral Marsh communities. At the time of the site visit these communities were connected to the watercourse and likely provide important fish habitat for the species present in this reach of the river.



Photograph 5. Minimal submerged aquatic and shoreline vegetation along the watercourse (August 17, 2017).



Photograph 6. Forested overhanging trees and limited aquatic vegetation in southeast quadrant (August 17, 2017).

3.4. Species of Conservation Interest

Based on the initial steps of our desktop analysis and contact with the MNRF, Thirteen (13) threatened or endangered species had the potential to occur on the property or on adjacent lands. Following review of the aerial photography and our site assessment, two (2) threatened or endangered species (Blanding's Turtle, Barn Swallow) has the potential to use this reach of the Muskoka River, adjacent wetland features in the potential project area, or the bridge structure. Features with the highest potential to provide habitat for species at risk were associated with the wetland communities, possibly functioning as potential habitat for Blanding's Turtle and the bridge structure. Evidence of One (1) special concern species (Snapping Turtle) was noted in the form of a predated nest along the shoulder of the roadway, southwest of the bridge. Snapping Turtle is not a protected species under the ESA, and with nesting occurring on the side of a municipal road, is not considered Significant Wildlife Habitat. See **Appendix 1** for a detailed technical description of RiverStone's assessment.

4. ASSESSMENT OF PROJECT ALTERNATIVES

The following paragraphs detail the pros and cons of each alternative based only on how each would potentially impact the natural features and functions of conservation interest. The primary features of conservation interest assessed along the project route include fish habitat, and habitat for SAR. The proposed different alternatives are shown in **Figure 2**.

Alternative A: Do Nothing

The Do Nothing decision requires little assessment from a biological perspective. Clearly if there is no construction work associated with this alternative, there can be little environmental impact related to construction activities, clearing of vegetation or disturbance of aquatic habitat features. However, should nothing be done and the bridge does fail to some degree, it is expected that there will be considerable impact to the aquatic community.

Alternative B: Rehabilitate Existing Bridge

This alternative would involve repairs to extend the life of the existing bridge. There would be no improvements to existing approaches or alignment of roadway

Assessment of Impacts

Construction of Alternative B would result in limited disturbance to natural environment features. Given that construction will be on the existing structure and within the existing disturbed ROW impacts to the natural environment would be limited to disturbance to cultural vegetation at the bridge approaches to access the bridge abutments along with disturbance at staging areas. Vegetation is expected to naturally regrow following the completion of construction. Potential in water or near water works will be limited to the abutment areas, with the river considered to be direct fish habitat, there is low potential for impact to fish habitat by this construction alternative. Under Fisheries and Oceans Canada's (DFO's) self-assessment criteria for assessing *serious harm to fish* under the *Fisheries Act*, all bridge works that are not considered bridge maintenance activities or bridge repairs which involve "no temporary or permanent increase in existing footprint below the High Water Mark", and "no new temporary or permanent fill placed below the High Water Mark" require DFO review. As this proposed alternative will likely required in-water works DFO review under the *Fisheries Act* would likely be required. A federal permit is also a trigger for the *Canadian Environmental Assessment Act*.

Even though the inwater works would be limited to the abutments, the MNRF will also likely require a permit under the *Lakes and Rivers Improvement Act*.

SAR potential is limited to Blanding's Turtle movement and foraging along the river and potential nesting on adjacent road shoulders along with potential Barn Swallow nesting on the bridge. Implementation of appropriate mitigation measures will limit impacts to potential SAR.

Overall, the predicted impacts of Alternative B are expected to be low. At present, DFO authorization and MNRF permits under the *Lakes and Rivers Improvement Act* along with timing windows for migratory birds would be required relating to the natural environment. The bridge does provide potential Barn Swallow nesting habitat, as do most bridge structures, and should be checked prior to any changes to the structure during the nesting period, to ensure no resent nests have been constructed. If Barn Swallow nests are present, registration of the activity and a mitigation plan will need to be implemented through MNRF.

Alternative C1: Replace with Single Lane Bridge

This alternative would replace the existing single lane bridge with a new single lane bridge of similar span on the same alignment. Potential improvements to the approach may be completed however, no change to road alignment.

Assessment of Impacts

Impacts for this alternative are very similar to Alternative B, with construction confined to the existing ROW and bridge location. Impacts to the natural environment is expected to be minimal with disturbance assumed to be limited to cultural vegetation at the bridge approaches to provide access to the abutments for removal and reconstruction along with disturbance at staging areas. Alternative C1, may require the removal of a slightly increased amount of vegetation at the abutments depending on bridge design. Vegetation is expected to naturally regrow following the completion of construction. Potential in water or near water works will be limited to the abutment areas, with the river considered to be direct fish habitat, there is potential for impacts to fish habitat by this construction alternative. As noted for Alternative B above, under Fisheries and Oceans Canada's (DFO's) self-assessment criteria for assessing *serious harm to fish* under the *Fisheries Act*, all bridge works that are not considered bridge maintenance activities or bridge repairs which involve "no temporary or permanent increase in existing footprint below the High Water Mark", and "no new temporary or permanent fill placed below the High Water Mark" require DFO review. As this proposed alternative will likely required in-water works DFO review under the *Fisheries Act* is likely required. A federal permit is also a trigger for the Canadian Environmental Assessment Act. The MNRF will also likely require a permit under the *Lakes and Rivers Improvement Act*.

SAR potential is limited to Blanding's Turtle movement and foraging along the river and potential nesting on adjacent road shoulders along with potential Barn Swallow nesting on bridge. Implementation of appropriate mitigation measures will limit impacts to potential SAR and to fish habitat.

Overall, the predicted impacts of Alternative C1 are expected to be similarly low to Alternative B; however, higher than Alternative A. We would expect at a minimum, a project review through DFO

and a permit from MNRF under the Lakes and Rivers Improvement Act would be required. The bridge also provides potential Barn Swallow nesting habitat and would need to be checked prior to construction to ensure no resent nests have been constructed Barn Swallow. If Barn Swallow nests are present, registration of the activity and a mitigation plan will need to be required. This is an online process and is regularly accepted by MNRF for road construction projects.

Alternative C2: Replace with Two Lane Bridge

This alternative would allow traffic from both directions to cross the bridge simultaneously. Due to the constrained location of the existing bridge and the approaching road locations, there would be very limited ability to adjust the approaching road alignment of the bridge. In addition to potential limited realignment, this alternative would be similar to Alternative C1, but would impact a larger areas of potential fish habitat, cultural roadside and potential clearing of adjacent trees.

Assessment of Impacts

Impacts for this alternative are very similar to Alternatives B and C1, with construction confined the existing disturbed ROW. However, impacts to the natural environment is expected to increase with this alternative due to the increase in size of abutments and increase width of bridge. Disturbance assumed to be limited to cultural vegetation for the construction of the bridge approaches and to provide access to the shoreline, along with disturbance at staging areas. Alternative C2, will require the removal of a larger amount of vegetation for abutments construction. Vegetation is expected to permanently lost for the footprint of the wider abutments. Potential in water or near water works will be increased from Alternatives B and C1 with direct fish habitat impacts expected and greater potentially impact to fish habitat for Alternative C2. Under Fisheries and Oceans Canada's (DFO's) self-assessment criteria for assessing *serious harm to fish* under the *Fisheries Act, 1985*, all bridge works that are not considered bridge maintenance activities or bridge repairs which involve "no temporary or permanent increase in existing footprint below the High-Water Mark", and "no new temporary or permanent fill placed below the High Water Mark" require DFO review. As this proposed alternative will likely required in water works DFO review under the *Fisheries Act* is required. A federal permit is also a trigger for the Canadian Environmental Assessment Act. The MNR will also require a permit under the Lakes and Rivers Improvement Act.

SAR potential is limited to Blanding's Turtle movement and foraging along the river and potential nesting on adjacent road shoulders along with potential Barn Swallow nesting on bridge. Implementation of appropriate mitigation measures will limit impacts to potential SAR and to fish habitat.

Overall, the predicted impacts of Alternative C2 are expected to be moderated, however higher than the other alternatives. At present, no permits, letters of advice or project reviews would be required relating to the natural environment. However, the bridge does provide potential Barn Swallow nesting and should be checked prior to construction to ensure no resent nests have been constructed Barn Swallow. If Barn Swallow nests are present, registration of the activity and a mitigation plan will need to be required.

Overall, the predicted impacts of Alternative C2 are expected to be moderate, and greater than all other alternatives. Depending on the scope of the changes to the road and the extent of expansion of the bridge to two lanes, we would expect that a full authorization from DFO would be required as well as a permit from the MNRF under the *Lakes and Rivers Improvement Act*. As with Alternatives B and C1,

registration of the project will be required should there be Barn Swallows nesting on the structure, which will require a mitigation plan that includes the construction of a nesting structure and monitoring for a number of years following completion.

5. CONCLUSIONS

Based upon the assessment provided herein, the potential impacts of the project alternatives range from no impacts (do nothing alternative) to high potential impacts where a new two lane bridge would be constructed.

Our evaluation suggests that potential impacts on the natural environment will increase as the size of the bridge increases and if the road moves farther from its current location, the level of impact increases because additional areas of the terrestrial and aquatic community will be disturbed, which also requires additional permits and authorizations.

It is our determination that the alternative with the least environmental impact is Do Nothing, where there is no movement of the current roadway. Alternative B will result in some impacts as the bridge repair will likely require some in water works and adjacent clearing. These impacts increase slightly in Alternative C1 and increase further in Alternative C2, where authorizations and permits will be required. This last alternative has the highest potential to negatively impact the natural environment, based primarily on expanding the footprint of the bridge and road.

6. REFERENCES

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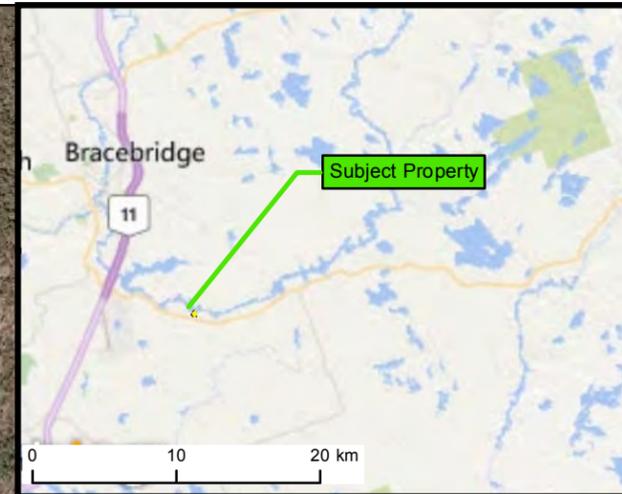
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South Branch, Muskoka River

Matthiasville Road

Highway 118



Legend

 Subject Property



Orthorectified aerial photo - spring 2008

Scale	RS Project No.	Date Last Updated	By
1:10,000	2016-169	May 11, 2017	AS

0 150 300 Metres



Figure 1. Location of Black Bridge, South Branch Muskoka River, Lot 8 Concession 7, Geographic Township of Draper, Town of Bracebridge

Prepared for Town of Bracebridge, c/o C.C. Tatham and Associates Ltd.

Disclaimers:

- the scale text on this figure (e.g., 1:1000) is based on a 11x17" print. If this figure has been printed on a different page size, then only the scale bar is accurate.
- figure should not be used in place of a professional survey



South Branch,
Muskoka River

Matthiasville Road

G148

G131

G148

G148

G033

G033

285

280

280

Legend

Ontario Base Mapping (OBM)

5 m Contours

Planning Boundaries

Subject Property

Biophysical Features+Functions-RiverStone

G131 - Maple Hardwood Swamp

G148 - Mineral Shallow Marsh

G033 - Dry Sandy: Red Pine - White Pine Conifer



Orthorectified aerial photo - spring 2008

Scale	RS Project No.	Date Last Updated	By
1:750	2016-169	May 11, 2017	AS

0 10 20 Metres

Figure 2. Biophysical Features surrounding Black Bridge, South Branch Muskoka River, Lot 8 Concession 7, Geographic Township of Draper, Town of Bracebridge

Prepared for Town of Bracebridge, c/o C.C. Tatham and Associates Ltd.

Disclaimers:

- the scale text on this figure (e.g., 1:1000) is based on a 11x17" print. If this figure has been printed on a different page size, then only the scale bar is accurate.
- figure should not be used in place of a professional survey

Appendix 1. Assessment of Species at Risk

Common Name ¹	Scientific Name	Step 1 (Desktop): Rationale for considering	Step 2 (Desktop): Do site-specific attributes (e.g., ecological system and landscape configuration) assessed from aerial photography and other information sources indicate that potential habitat or communities might be present?		Step 3 (On Site): Potential and/or confirmed habitat documented during on-site assessment		Step 4: Is there potential for the species, its habitat, or ecological community to be negatively impacted by the activities that would be permissible within the AOI?
			Area of Interest (AOI)	Adjoining Lands (AL)	Area of Interest (AOI)	Adjoining Lands (AL)	
Endangered & Threatened (Provincially): status from Species at Risk in Ontario List (O Reg 230/08); updated June 2016							
Blanding's Turtle	<i>Emydoidea blandingii</i>	SAR by Geo-Township Tool (MNR)	YES, suitable wetland and/or aquatic communities are present.	YES, suitable wetland and/or aquatic communities are present.	YES, suitable wetland and/or aquatic communities are present.	YES, suitable wetland and/or aquatic communities are present.	YES, in water works have the potential to negatively impact this species.
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	SAR by Geo-Township Tool (MNR)	YES, a mosaic of open-canopy communities and mixed forest are present.	YES, a mosaic of open-canopy communities and mixed forest are present.	NO, the project area is dissected by a roadway and construction anticipated within existing ROW. Habitat potential in the project area is limited and likely not used By Eastern Hog-nosed Snake.	NO, the project area is dissected by a roadway with limited habitat potential in the project area and likely not used By Eastern Hog-nosed Snake.	NO, given that extent of suitable habitat is limited and open areas will remain, both the quantity and quality of habitat should remain the same; thus, likelihood of negative impacts is low.
Eastern Whip-poor-will	<i>Caprimulgus vociferus</i>	SAR by Geo-Township Tool (MNR)	YES, both natural and anthropogenic openings in canopy could provide suitable breeding and foraging habitat.	YES, both natural and anthropogenic openings in canopy could provide suitable breeding and foraging habitat.	No, anthropogenic openings the project area likely do not provide suitable breeding and foraging habitat.	No, anthropogenic openings the project area likely do not provide suitable breeding and foraging habitat.	NO, see step 3.
Bobolink	<i>Dolichonyx oryzivorus</i>	SAR by Geo-Township Tool (MNR)	NO, suitable grassland or agricultural communities are absent.	NO, suitable grassland or agricultural communities are absent.	NO, suitable grassland or agricultural communities are absent.	NO, suitable grassland or agricultural communities are absent.	NO, see steps 2 and 3.
Least Bittern	<i>Ixobrychus exilis</i>	SAR by Geo-Township Tool (MNR)	NO, suitable wetland communities (e.g., cattail marsh) are absent.	NO, suitable wetland communities (e.g., cattail marsh) are absent.	NO, suitable wetland communities (e.g., cattail marsh) are absent.	NO, suitable wetland communities (e.g., cattail marsh) are absent.	NO, see steps 2 and 3.
Chimney Swift	<i>Chaetura pelagica</i>	SAR by Geo-Township Tool (MNR)	NO, dark sheltered hollow vertical antropogenic structures (chimneys, smoke stacks, silos) suitable for nesting or roosting are absent.	NO, dark sheltered hollow vertical antropogenic structures (chimneys, smoke stacks, silos) suitable for nesting or roosting are absent.	NO, dark sheltered hollow vertical antropogenic structures (chimneys, smoke stacks, silos) suitable for nesting or roosting are absent.	NO, dark sheltered hollow vertical antropogenic structures (chimneys, smoke stacks, silos) suitable for nesting or roosting are absent.	NO, see steps 2 and 3.
Barn Swallow	<i>Hirundo rustica</i>	SAR by Geo-Township Tool (MNR)	YES, man-made or natural structures suitable for nesting may be present.	YES, man-made or natural structures suitable for nesting may be present.	YES, the bridge provide potential suitable for nesting sites.	YES, the bridge provide potential suitable for nesting sites.	YES, no nests were not documented on the bridge during site investigations, however the structure does provide potential nesting locations.
Eastern Meadowlark	<i>Sturnella magna</i>	SAR by Geo-Township Tool (MNR)	NO, suitable grassland or agricultural communities are absent.	NO, suitable grassland or agricultural communities are absent.	NO, suitable grassland or agricultural communities are absent.	NO, suitable grassland or agricultural communities are absent.	NO, see steps 2 and 3.
Bank Swallow	<i>Riparia riparia</i>	SAR by Geo-Township Tool (MNR)	NO, man-made or natural structures suitable for nesting are absent.	NO, man-made or natural structures suitable for nesting are absent.	NO, man-made or natural structures suitable for nesting are absent.	NO, man-made or natural structures suitable for nesting are absent.	NO, see steps 2 and 3.
Eastern Small-footed Myotis	<i>Myotis leibii</i>	SAR by Geo-Township Tool (MNR)	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	NO, potential habitat not observed; however, trees suitable for gestating or roosting may be present.	NO, potential habitat not observed; however, trees suitable for gestating or roosting may be present.	NO, see step 3.
Little Brown Bat	<i>Myotis lucifugus</i>	SAR by Geo-Township Tool (MNR)	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	YES, dark sheltered hollow vertical structures (e.g., large trees with cavities or rock crevices) suitable for gestating or roosting may be present.	NO, potential habitat not observed; however, trees suitable for gestating or roosting may be present.	NO, potential habitat not observed; however, trees suitable for gestating or roosting may be present.	NO, see step 3.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	SAR by Geo-Township Tool (MNR)	YES, dead or partially-decayed trees with crevices beneath exfoliating/peeling bark may be present.	YES, dead or partially-decayed trees with crevices beneath exfoliating/peeling bark may be present.	NO, potential habitat not observed; however, trees suitable for gestating or roosting may be present.	NO, potential habitat not observed; however, trees suitable for gestating or roosting may be present.	NO, see step 3.

¹Shaded rows denote species or communities for which negative impacts have been deemed possible.

**APPENDIX D:
CONSULTATION – PUBLIC INFORMATION CENTRE**



**TOWN OF BRACEBRIDGE CLASS ENVIRONMENTAL ASSESSMENT
THE BLACK BRIDGE ON MATTHIASVILLE ROAD
OVER THE MUSKOKA RIVER**

NOTICE OF PUBLIC CONSULTATION CENTRE NO.1

To address structural deficiencies and safety concerns, the Town is considering replacement of the Black Bridge with due consideration for the local heritage value of the bridge to the Community.

The project is being planned as a Schedule B project under the Municipal Class Environmental Assessment. A Public Consultation Centre has been arranged to provide further information to the members of the public, approval agencies and interested stakeholders on the proposal and to receive further input. All those with an interest in the project are encouraged to attend.

Date: Wednesday, October 18, 2017
Time: 6:00 p.m – 8:00 p.m
Location: Town of Bracebridge Municipal Office, Council Chambers
1000 Taylor Court, Bracebridge ON

Comments and information collected at the public consultation centre will be maintained on file for use during the Study, and, unless otherwise requested, may be included in the Study documentation which is made available for public review.

Following the public consultation centre, further comments are invited, for incorporation into the planning and design of this project, and will be received until November 10, 2017.

This notice issued October 5, 2017.

Owner:
Town of Bracebridge
Public Works Department
1000 Taylor Court
Bracebridge, ON P1L 1R6
Telephone: (705) 645-5264
Fax: (705) 645-1262

Inquiries:
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District/County	Type	Company	Address1	Address2	City	PostalCode	FirstName	LastName	Title	Job Title	WorkPhone	Fax	Email
Simcoe/Muskoka	School Board	Simcoe Muskoka Catholic District School Board	46 Alliance Blvd.		Barrie, Ontario	L4M 5K3	Jennifer	Sharpe		Senior Planner	705-722-3555	705-733-0198	jsharpe@smcddb.on.ca
Simcoe/Muskoka	School Board	Simcoe County Student Transportation Consortium	566 Bryne Drive		Barrie, Ontario	L4N 9P6	Michael	Carvalho	Mr.	Transportation Supervisor			mcarvalho@scslc.ca
Muskoka	Municipal	Muskoka EMS					Jeff	McWilliam	Mr.	Chief, Paramedic Services and Emergency Planning	705-645-2100 ext 209	705-646-9011	Jeff.McWilliam@muskoka.on.ca
Muskoka	Municipal	Muskoka Ambulance Dispatch	911 Cedar Lane,	PO Box 149	Bracebridge ON	P1L 1T5	Judy	Moore		Manager	705-645-2323	705-645-1191	
Muskoka	Municipal	Medavie EMS	15 Ott Drive		Huntsville ON	P1H 0A2	Pauline	Meunier			705-787-9300	705-787-9301	
Muskoka	School Board	Trillium Lakelands District School Board	76 Pine Street		Bracebridge, ON	P1H 1N4	Patricia	Hayward			705-645-8704	705-645-8646	Patricia.Hayward@tldsbo.on.ca
Muskoka	Municipal	Bracebridge Provincial Police									705-645-2211	705-645-3350	
Muskoka	Municipal	Bracebridge Fire Department									705-645-8258	705-646-2121	
Muskoka	Municipal	Town of Bracebridge									705-645-5264	705-645-7525	
Muskoka	Municipal	District Municipality of Muskoka	70 Pine Street		Bracebridge		Michael	Duben	Mr.	Chief Administrative Officer	(705) 645-2100 ext. 272	(705) 645-5319	michael.duben@muskoka.on.ca
Muskoka	Utility	Union Gas Ltd.	36 Charles Street East	P.O. Box 3040	North Bay, Ontario	P1A 1E9	Ted	Wright	Mr.	Construction Project Manager	(705) 475-7925	866 252-2012	TWright@uniongas.com
Muskoka	Utility	Lakeland Power Distribution Ltd.	200-395 Centre Street North		Huntsville, Ontario	P1H 2M2	Brian	Elliot	Mr.	Manager of Operations			belliott@lakelandpower.on.ca
Muskoka	Utility	Bell Alliant	9 High Street, 2nd Floor		Huntsville, Ontario	P1H 1P2	Mark	Reynaert	Mr.	Implementation Manager			mark.reynaert@bell.ca
Muskoka	Utility	Cogeco Cable	20 West Street South		Huntsville, ON	P1H 1P2	Scott	Acton	Mr.	Manager, Programming and Customer Relations	705-789-9801	705 789-2331	Scott.Acton@cogeco.com
Federal	Agency	MOECC - EAA Branch											MEA.Notices.EAAB@ontario.ca
Federal	Agency	Fisheries Protection Program	867 Lakeshore Road		Burlington, Ontario	L7S 1A1					1-855-852-8320		FisheriesProtection@dfo-mpo.gc.ca
Provincial	Agency	Aboriginal Affairs and Northern Development Canada	5H- 5th Floor		Gatineau, QC	K1A 0H4	Allison	Berman		Regional Subject Expert for Ontario	819-934-5267		CAU-UCA@aandnc-aandnc.gc.ca
Provincial	Agency	Ministry of Tourism, Culture & Sport	401 Bay Street	17th Floor	Toronto, ON	M7A 0A7	Rosi	Zirger		A/ HeritagePlanner	416-314-7159		rosi.zirger@ontario.ca
Provincial	Agency	Ministry of Transportation	Ontario Government Complex 447 McKeown Avenue	Suite 301	North Bay, Ontario	P1B 9S9	Roch	Pilon	Mr.	Head, Planning & Design	705-497-6845	705-497-5208	Roch.Pilon@ontario.ca
Provincial	Agency	Ministry of Transportation	207 Main Street West		Huntsville, Ontario	P1H 1Z9	Doug	Rivers	Mr.	Area Contracts Engineer	705-497-6833	705-789-3606	doug.rivers@ontario.ca
	Utility	Hydro One Networks Inc.	45 Sargeant Drive	PO Box 6700	Barrie, Ontario	L4M 5m5	Diane	Camelino		Lines Customer Support Clerk	705-728-5017 ext. 6331	705-727-4803	Diane.Camelino@HydroOne.com
	First Nations Communities	The Chiefs of Ontario	111 Peter Street	Suite 804	Toronto, ON	M5V 2H1							
	First Nations Communities	Chippewas of Rama First Nation	5884 Rama Road	Suite 200	Rama, ON	L0K 1T0	Sharon	Sinon-Henry	Ms.	Chief			
	First Nations Communities	Pottawatomi of Moose Deer Point	3720 Twelve Mile Bay Road	P.O. Box 119	Mac Tier, ON	P0C 1H0	Barron	King	Mr.	Chief			
	First Nations Communities	Wahta Mohawk	P.O. Box 260	2664 Muskoka Road	Bala, ON	P0C 1A0	Blaine	Commandant	Mr.	Chief			
	First Nations Communities	Wasauksing First Nation (Parry Island)	P.O. Box 250	1508 Lane "G" Geewadin Road	Parry Sound, ON	P2A 2X4	Warren	Tabobondung	Mr.	Chief			
	First Nations Communities	Chippewas of Georgina Island	R. R. #2	Box N-13	Sutton West, ON	LOE 1R0	Donna	Big Canoe	Ms.	Chief			
	First Nations Communities	Beausoleil First Nation (Christian Island)	11 Ogema Milkaan	Christian Island	Cedar Point, ON	L0K 1R0	Roland	Monague	Mr.	Chief			
	First Nations Communities	Shawanaga First Nation	RAR#1		Nobel, ON	P0G 1G0	Adam	Good	Mr.				
	First Nations Communities	Moon River Métis Council	7678 McNiece Cres.	Box 286	Washago, ON	L0K 2B0	Larry	Duval	Mr.	President			
	First Nations Communities	Métis Nation of Ontario head Office	500 Old St. Patrick Street	Unit D	Ottawa, ON	K1N 9G4				Métis Consultation Unit			

Hiles, Milton
1044 Mathiasville Road
Bracebridge ON P1L 1X1

Town of Bracebridge
1000 Taylor Court
Bracebridge ON P1L 1R6

Attention: Barb Summers, Cemetery Secretary

Anthony and Ann Worobec
2282 Melton Court
Mississauga ON L4Y 1M1

Richard and Hazel St. Cyr
1003 Mathiasville Road
Bracebridge ON P1L 1X1

Donald Ward
1004 Mathiasville Road
Bracebridge ON P1L 1X1

Linda and Robert Quevillon
1092 Mathiasville Road
Bracebridge ON P1L 1X1

Deanna and Jamie Robbins
1102 Mathiasville Road
Bracebridge ON P1L 1X1

Jacqueline Finlayson
1317 Carlismount Road
Bracebridge ON P1L 1X1

Vicki Parkin
37 Pine Bough Manor
Richmond Hill ON L4S 1A6

Robert Fleming
26 Belair Drive
St. Catharines ON L2N 6W5

Maureen Kelly
83 Holborne Avenue
Toronto ON M4C 2R3

Lorraine and Robert Johnston
996594 Mulmur Tosorontio Townline
Murmur ON L9V 0N2

Marilyn and Matthias Hendrycks
1140 Mathiasville Road
Bracebridge ON P1L 1X1

Daniel MacNaughtan and Cassandra Hendrycks
1023 Uffington Road
Bracebridge ON P1L 1X1

Maggie Plaunt
1240 Matthiasville Road
Bracebridge ON P1L 1X1

Kenneth Nicolson and Beverly Rogers
8823 14th Avenue
Markham ON L6B 1A8

Bruce and Michelle Murray
98 Copeland Creek Drive
Tiny ON L9M 0M2

Barbara Mowder
1210 Matthiasville Road
Bracebridge ON P1L 1X1

Gloria Smith
1158 Matthiasville Road
Bracebridge ON P1L 1X1

Deborah and William Anderson
1160 Matthiasville Road
Bracebridge ON P1L 1X1

Shifan Chen and Jing Jing Feng
104B – 2050 White Birch Road
Sidney BC V8L 2R1

David and Kathleen King
1264 Matthiasville Road
Bracebridge ON P1L 1X1

Kris and Paula King
1252 Matthiasville Road
Bracebridge ON P1L 1X1

Gregory King
120 – 1 Progress Drive
Gravenhurst ON P1P 1X4

MOVED, NO
FORWARDED
ADDRESS

Anthony King
960 Muskoka Road South
Gravenhurst ON P1P 1R6

Craig Schell
1292 Matthiasville Road
Bracebridge ON P1L 1X1

Marcia and Randall Townsend
66 College Cres
Barrie ON P4M 2W2

Muskoka Roofing Company Limited
117 Keith Road
Bracebridge ON P1L 0A1

Christine Bib and Laura Rosch
1312 Matthiasville Road
Bracebridge ON P1L 1X1

Juan and Fresia Aros
17 Twin Pines Drive
Wasaga Beach ON L9Z 1B5

Ronald MacLeod
1282 Matthiasville Road
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James Courtney
1324 Matthiasville Road
Bracebridge ON P1L 1X1

John Curran
1358 Matthiasville Road
Bracebridge ON P1L 1X1

Betty MacFarlane
1334 Matthiasville Road
Bracebridge ON P1L 1X1

Christopher Wagner and Andrea Liebster
1330 Matthiasville Road
Bracebridge ON P1L 1X1

Christopher and Judith Terry
1355 Matthiasville Road
Bracebridge ON P1L 1X1

Anne and John Jenkinson
198 Hiscock Blvd
Scarborough ON M1G 1V1

Irene Kneeshaw
1380 Matthiasville Road
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Glenn Raggett
2762 Inlake Court
Mississauga ON L5N 2A5

Wendy and David Lawton
1438 Matthiasville Road
Bracebridge ON P1L 1X1

Donald and Diane Andrews
1260 Matthiasville Road
Bracebridge ON P1L 1X1

Christopher Curran
12 Clinton Street
Orillia ON L3V 6A1

Richard and Candace Poitras
1464 Matthiasville Road
Bracebridge ON P1L 1X1

Jason Arcand and Aimee McAnsh
1494 Matthiasville Road
Bracebridge ON P1L 1X1

Linda Allen and Lorelee Hunter
1486 Matthiasville Road
Bracebridge ON P1L 1X1

Tanya Gilbert and Kenneth Kennedy
1506 Matthiasville Road
Bracebridge ON P1L 1X1

Douglas and Karen Hunter
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Mary Ingleson and George Syvert
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Gravenhurst ON P1P 1R3

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1616 Matthiasville Road
Bracebridge ON P1L 1X1

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PO Box 441
Bracebridge ON P1L 1T7

Steven Brinks
1013 Church Hill Road
Bracebridge ON P1L 1X1

Wendy and Michael Magann
22 Morrow Drive
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Robert and Susan Cockburn
1545 Matthiasville Road
Bracebridge ON P1L 1X1

Garry and Dianne Cockburn
1533 Matthiasville Road
Bracebridge ON P1L 1X1

Karen and Kim Haddon
1541 Matthiasville Road
Bracebridge ON P1L 1X1

James and Christine Rennie
1537 Matthiasville Road
Bracebridge ON P1L 1X1

Henry and Carolyn Castella
1549 Matthiasville Road
Bracebridge ON P1L 1X1

Wyne Senecal
1529 Matthiasville Road
Bracebridge ON P1L 1X1

Andrew Marshall
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Bracebridge ON P1L 1X1

Margaret Butler
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Powassan ON P0H 1Z0

Lillie Johnson
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Mississauga ON L5N 2A5

Gail Shrives
83 Summerwalk Place
Ottawa ON K2G 5Y4

Philip and Betty Edwards
66 Balsam Street
Tiny ON L0L 1P1

Graham and Patricia Silcox
RR 3
Milton ON L9T 2X7

Paul McLaughlin
597 Muskoka Road N
Gravenhurst ON P1P 1E7

Cassandra and Charles Whitehead
1007 Rainey Road
Bracebridge ON P1L 1X1

Laura Rainey
4 Euclid Place
Toronto ON M6J 1J9

SEND VIA EMAIL
laura.rainey@sympatico.ca

Paul Rainey
1031 Rainey Road
Bracebridge ON P1L 1X1

Timothy and Elisabeth Rainey
1049 Rainey Road
Bracebridge ON P1L 1X1

Daniela Bajec
1054 Rainey Road
Bracebridge ON P1L 1X1

Chiefs of Ontario
111 Peter Street, Suite 804
Toronto ON M5V 2H1

Chippewas of Rama First Nation
5884 Rama Road, Suite 200
Rama ON L0K 1T0

Pottawatomi of Moose Deer Point
3720 Twelve Mile Bay Road
MacTier ON P0C 1H0

Attention: Chief Sharon Stinson-Henry

Attention: Chief Barron King

Wahta Mohawk
PO Box 260, 2664 Muskoka Road
Bala ON P0C 1A0

Wasauksing First Nation (Parry Island)
PO Box 250, 1508 Lane "G" Geewadin Road
Parry Sound ON P2A 2X4

Attention: Chief Blaine Commandant

Attention: Chief Warren Tabobondung

Chippewas of Georgina Island
RR #2, Box N-13
South West ON L0E 1R0

Beausoleil First Nation (Christian Island)
11 Ogema Miikan
Christian Island ON L9M 0A9

Attention: Chief Donna Big Canoe

Attention: Chief Roland Monague

Shawanaga First Nation
2 Village Road
Nobel ON P0G 1G0

Moon River Métis Council
3-820 Muskoka Road S
Gravenhurst ON P1P 1K2

Attention: Adam Good

Attention: Larry Duval, President

Metis Nation of Ontario Head Office
500 Old St. Patrick Street
Unit D
Ottawa ON K1N 9G4

Attention: Métis Consultation Unit

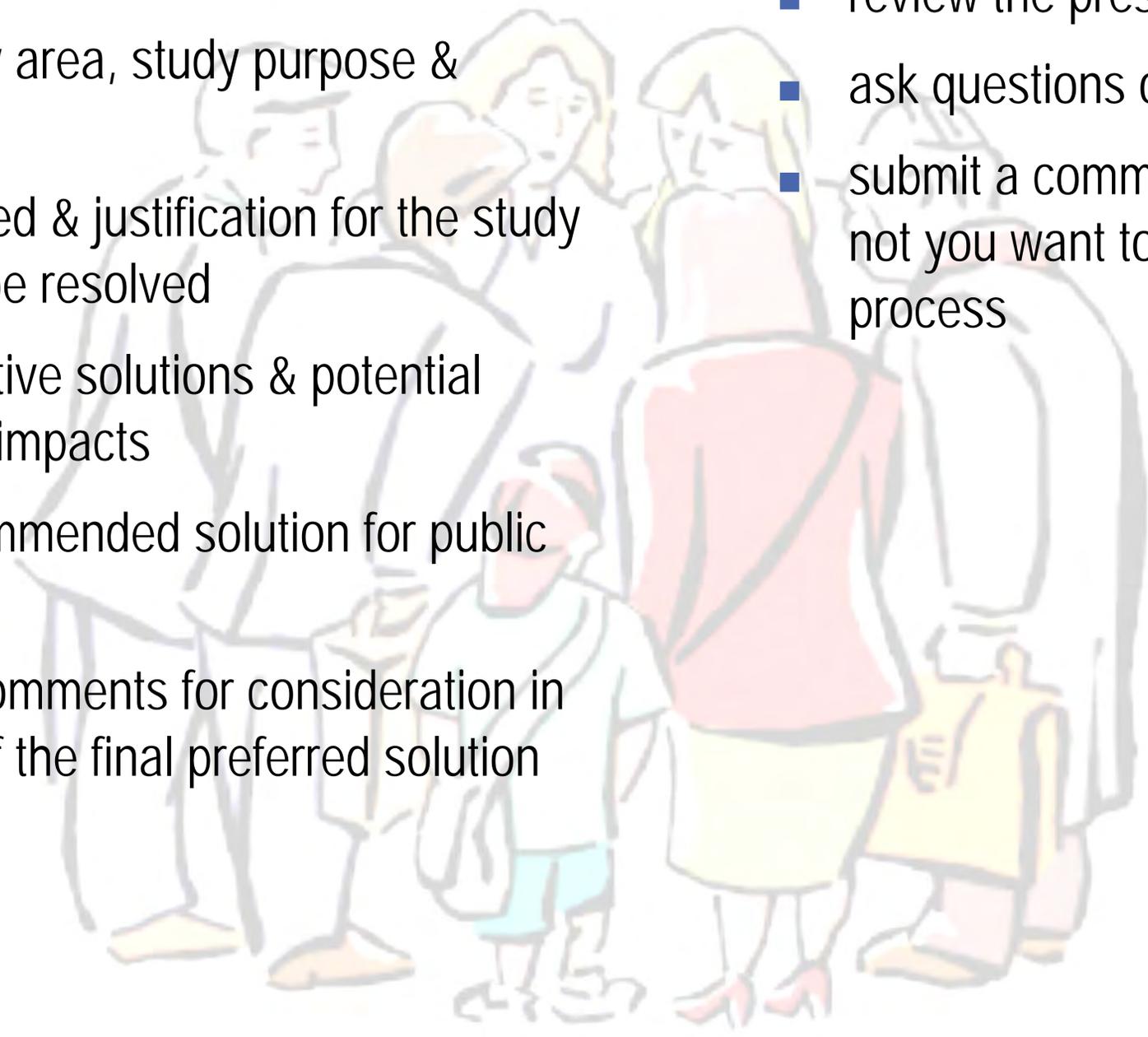
Public
Consultation
Centre 1
(PCC 1)



**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, BRACEBRIDGE
Class Environmental Assessment**



- This Public Information Centre will:
 - establish channels of communication with public & stakeholders
 - detail the study area, study purpose & objective
 - present the need & justification for the study and issues to be resolved
 - identify alternative solutions & potential environmental impacts
 - identify a recommended solution for public review
 - seek input & comments for consideration in the selection of the final preferred solution
- Public & Stakeholders should:
 - sign the registry
 - review the presentation material
 - ask questions of the Town and/or Consultant
 - submit a comment sheet & indicate whether or not you want to be kept informed of the process



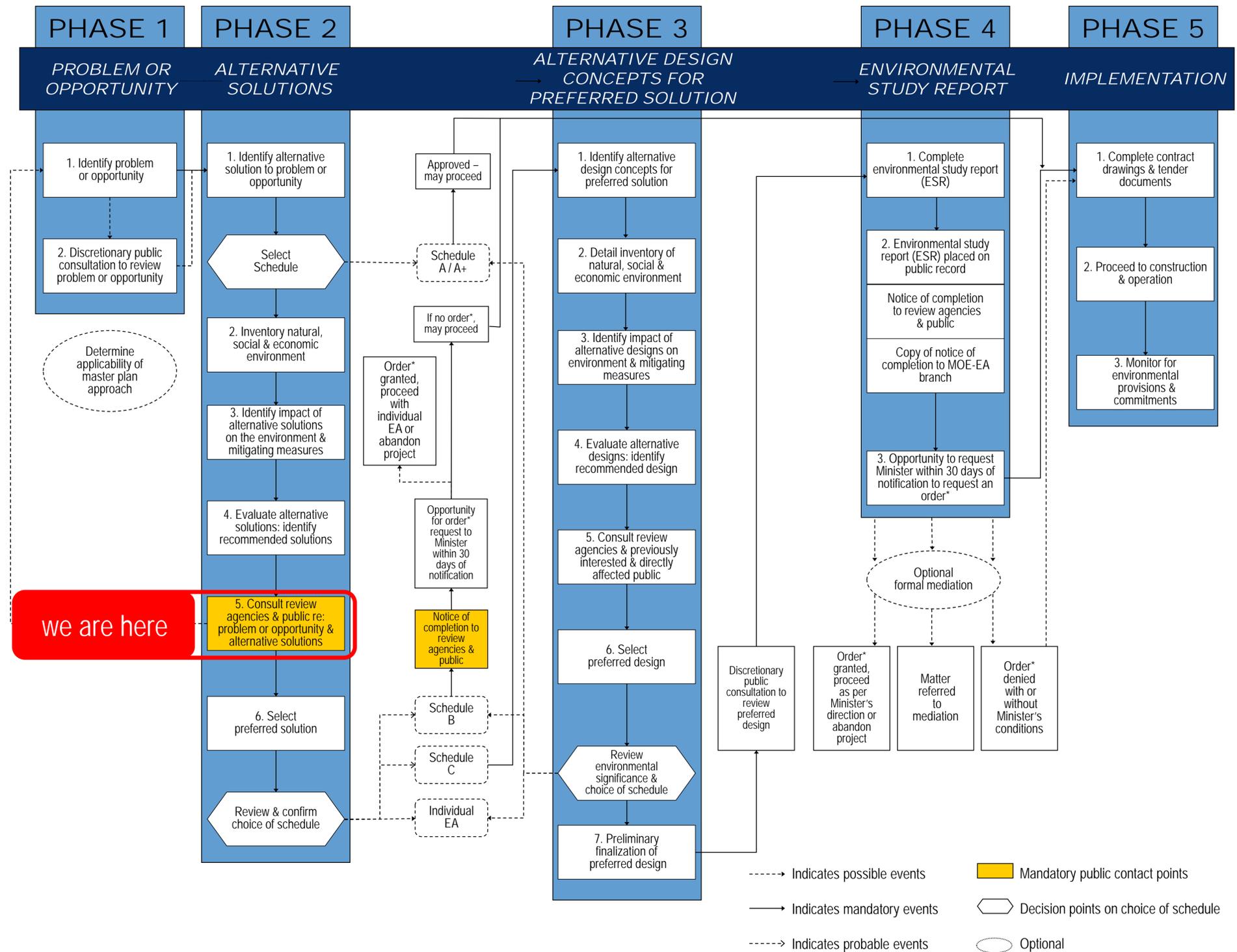


- *2016 Bridge Needs Study*
 - noted several deficiencies including:
 - 100% of the substructure in poor condition;
 - 20% of steel stringers in poor condition;
 - Barriers do not meet current standards;
 - 15% of deck in poor condition; and
 - Load restriction in effect.
 - identified the need to replace the Black Bridge within 1-5 years
- The objectives of the study are to:
 1. improve public safety
 2. eliminate or reduce load capacity restrictions
 3. improve geometric and alignment deficiencies
 4. improve barrier protection
 5. extend the life of the water crossing
- The purpose of the study is to:
 - develop alternative solutions to improving public safety, load capacity, geometry, barrier protection, and physical condition.
 - identify the location, extent and sensitivity of affected environments
 - assess the alternatives given potential environmental impacts
 - identify the preferred solutions
 - establish measures to mitigate impacts
 - satisfy the Class EA requirements

Municipal Class EA Process



- The Class EA schedule is based on the type of work, potential impacts & \$ value
- Black Bridge improvements
 - will be undertaken as a Schedule B process
 - Phases 1 & 2 will be completed
- Opportunities for public review & input
 - Notices
 - Public consultation centre
 - 30-day review of project file & findings



----- Indicates possible events
 ----- Indicates probable events
 ----- Indicates mandatory events
 ----- Indicates optional events
 [Yellow Box] Mandatory public contact points
 [Hexagon] Decision points on choice of schedule
 [Oval] Optional

* Part II order

- The Black Bridge is located on Matthiasville Road, approximately 1 km north east of Ontario Highway 118



Existing Conditions

6



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- The Black Bridge was originally constructed circa 1922, rehabilitated circa 1981, with minor repairs in 2012.
- 2012 Average Annual Daily Traffic (AADT) based on counts = 264 vehicles/day
- 2022 Projected AADT = 350 vehicles/day
- Speed limit for Matthiasville Rd = 80 km/hr
- Travel width over bridge = 4.1 m
- Span = 36.6 m (120 ft)
- Current triple load posting of 12/18/22. This prevents snow plows as well as fire trucks from being able to cross the bridge.
- The approaches are deficient in horizontal alignment at the current speed limit.
- The existing bridge is too narrow for the existing speed limit and traffic volumes.



Existing Conditions (cont.)

- The existing abutments and wingwalls are severely deteriorated
- The structural steel is corroding and 20% of the stringers are severely corroded with loss of section
- The asphalt wearing surface is severely deteriorated
- 15% of the timber deck is in poor condition
- The existing barrier (over the bridge as well as on the approaches) does not meet current standards



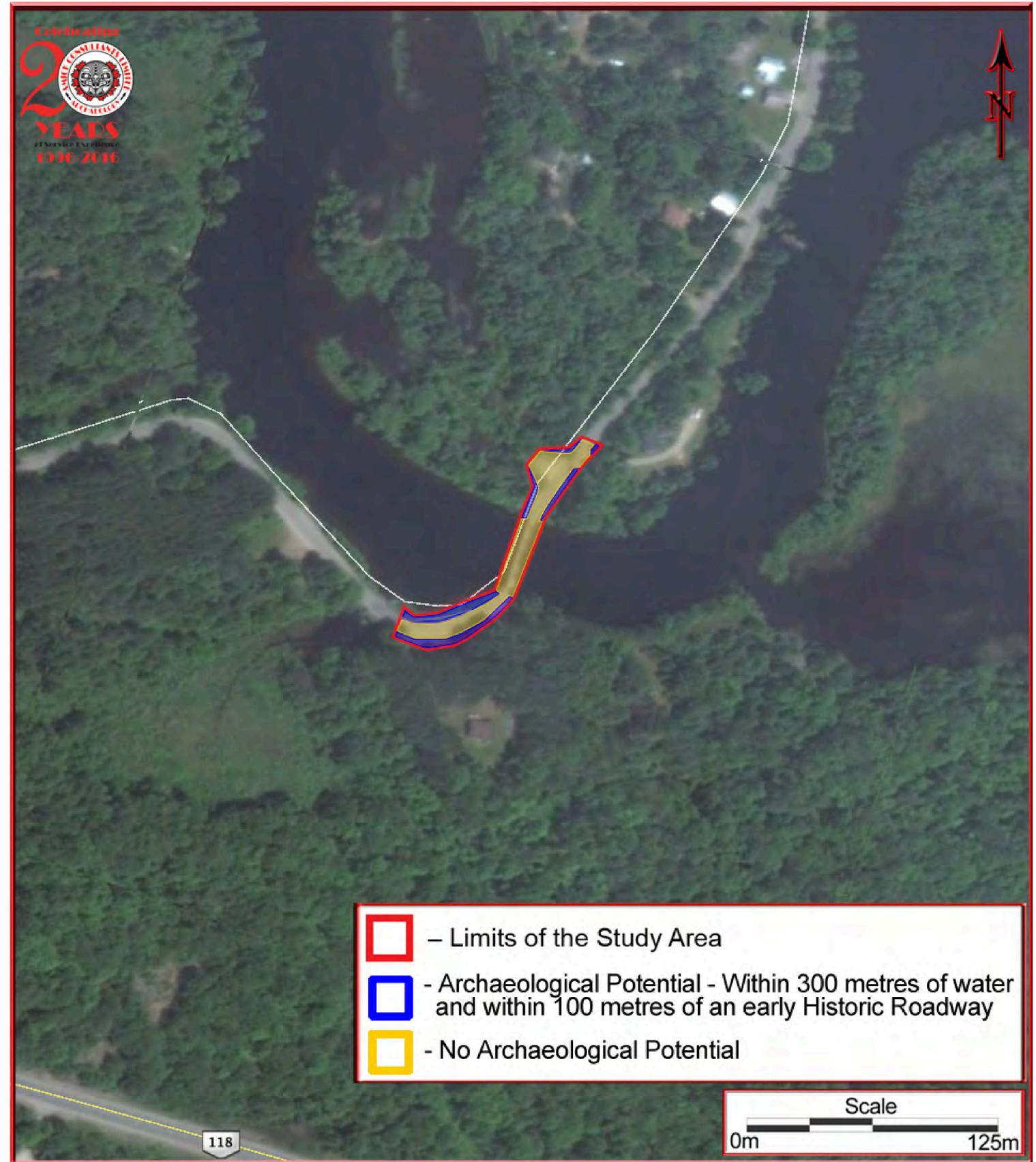
- The black bridge is located downstream of the Matthiasville Dam and water levels and flows are largely controlled by the dam.
- Improvements to the alignment vertically and horizontally to increase the hydraulic opening will be limited without major impacts to existing adjacent properties due to the relatively flat topography within the right of way.
- The 1922 design drawings indicate that there is a 1.2 m clearance from the high water level to the underside of the bottom chord.
- We are not aware of any issues with the current bridge hydraulics.
- Should replacement be required, a detailed hydrology and hydraulic analysis will be required during detail design to confirm the proposed opening remains suitable



- Cultural Heritage Evaluation
 - AMICK Consultants completed a Cultural Heritage Evaluation and Heritage Impact Assessment
 - The Black Bridge was found to have local heritage value under O.Reg 9/06 pursuant to the Ontario Heritage Act.
- Most preferred mitigation options if replacement is required
 - Retention of the existing truss superstructure to be affixed to the new structure
 - Replacement with a more durable replica truss structure
- Geotechnical Considerations
 - No geotechnical investigation has been completed at the project location to date
 - The existing design drawings from 1922 indicate:
 - The northeastern abutment is supported on 34 round piles of unknown dimension, material, or length.
 - The southwestern abutment is founded directly on bedrock
 - Should replacement be determined as the preferred solution a geotechnical investigation will be required to facilitate design

- RiverStone Environmental Solutions completed a review of the natural environment
 - The project site is situated near the southwestern boundary of Ecodistrict 5E-8 (Huntsville), and is comprised of bedrock exposures with a veneer of glacially derived sandy substrate.
 - The project area has been highly modified through past road construction, road maintenance, and residential construction activities.
 - Vegetation communities are relatively young and comprised of deciduous communities north of the river and conifer plantation communities south of the river.
 - The river is classified as having a cool/warmwater thermal regime and supports primarily a warmwater fish community. The spring restricted activity timing window associated with the above noted species for the Southern Region is March 15 to July 15 of any given year.
 - The bridge provides potential Barn Swallow nesting habitat, although no nests were observed.
 - One threatened species (Blanding's Turtle) has the potential to use this reach of the Muskoka River and adjacent wetland features.
 - One special concern species (Snapping Turtle) was noted in the form of a predated nest, however they are not protected and the area is not considered significant wildlife habitat.
- Potential impacts on the natural environment will increase as the size of the bridge increases and if the road moves farther from its current location
- As the impacts increase, additional permits and authorizations will be required

- AMICK Consultants completed a Stage 1 Archaeological Assessment of the study area
- The study area was identified as a property that exhibits potential to yield archaeological deposits of cultural heritage value or interest
- All hard surfaced areas have no or low archaeological potential
- Stage 2 property assessment utilizing test pits at 5 m intervals is required for areas proposed for landscape alterations in areas identified as having archaeological potential

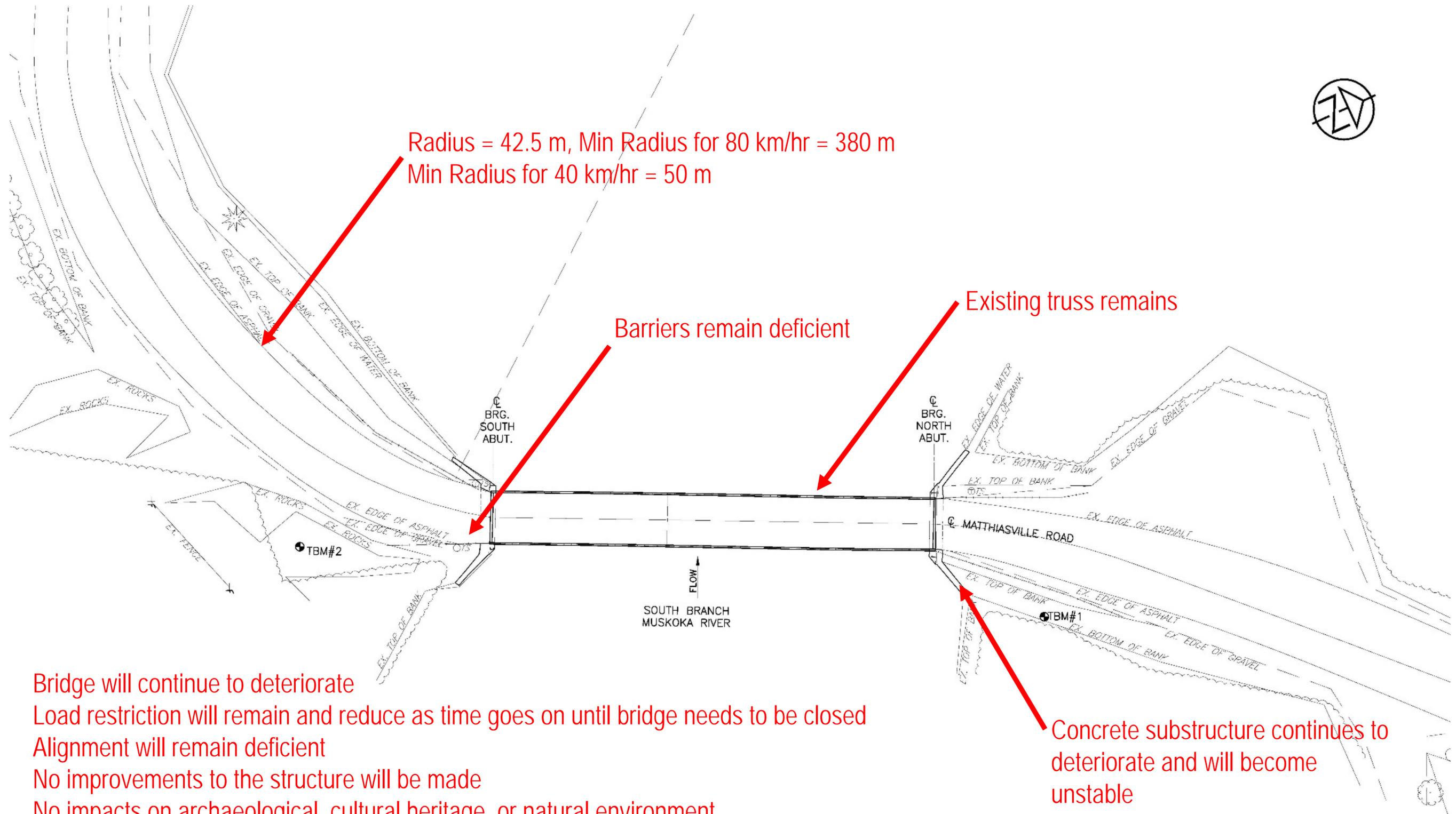


- Alt A: Do Nothing
 - maintain existing conditions with no improvements
- Alt B: Rehabilitate Existing Bridge
 - repair areas of deterioration
 - concrete abutments & wingwalls
 - steel stringers
 - replace deficient elements
 - asphalt wearing surface
 - barriers
 - repaint bridge
 - improve geometric deficiencies through reduced speed limits and additional signage
 - load restriction will remain
- Alt C1: Replace with Single Lane Bridge
 - replace both substructure and superstructure
 - replace with single span, single lane bridge
 - improve geometric deficiencies through reduced speed limits and additional signage
 - potential to add pedestrian walkway
- Alt C2 Replace with Two Lane Bridge
 - replace both substructure and superstructure
 - replace with single span, two lane bridge
 - removes constriction
 - road alignment deficiencies improved through reduced speed limits and additional signage

Bridge Location

Existing water crossing location is optimized to minimize the bridge span. Relocation of the water crossing will require property acquisition, extensive disturbance to the natural environment, and significant financial cost. As such, replacement options have been considered at existing location.

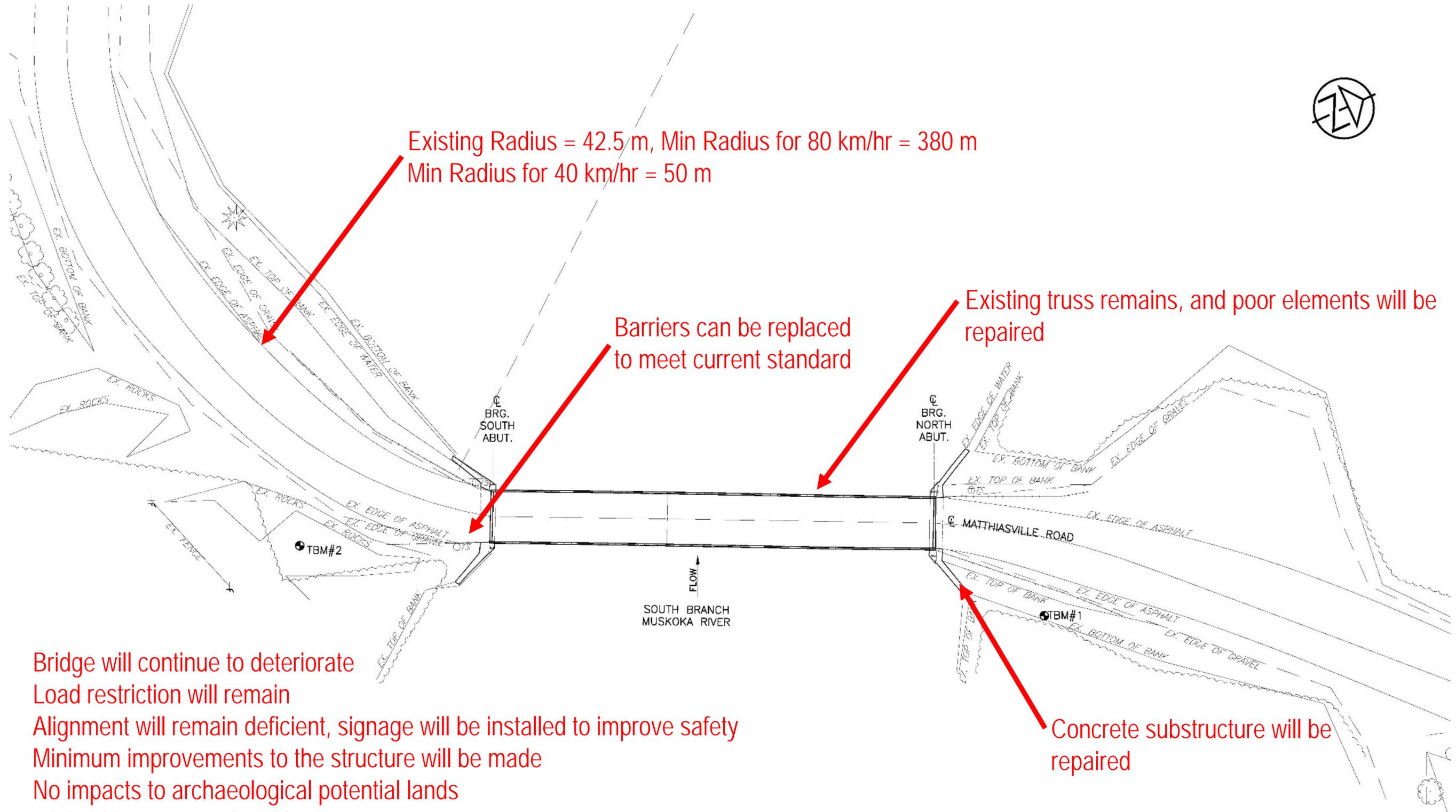
Alternative A – Do Nothing



Bridge will continue to deteriorate
Load restriction will remain and reduce as time goes on until bridge needs to be closed
Alignment will remain deficient
No improvements to the structure will be made
No impacts on archaeological, cultural heritage, or natural environment

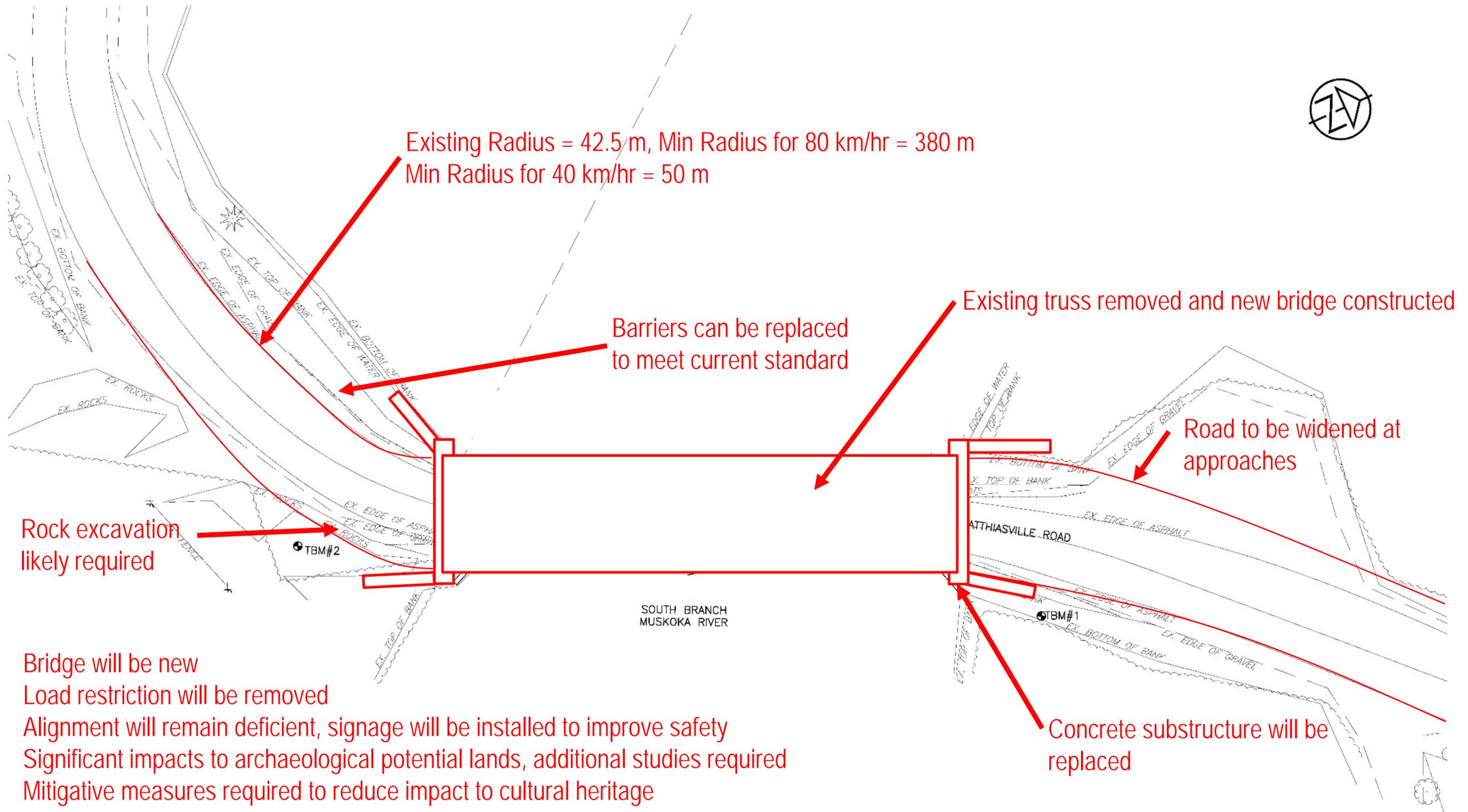
Concrete substructure continues to deteriorate and will become unstable

Alternative B – Rehabilitate the Bridge



- Bridge will continue to deteriorate
- Load restriction will remain
- Alignment will remain deficient, signage will be installed to improve safety
- Minimum improvements to the structure will be made
- No impacts to archaeological potential lands
- Minimal impact to cultural heritage
- Minimal impact to natural environment to complete substructure repairs

Alternative C2 – Replace with Two Lane Bridge



Rock excavation likely required

Existing Radius = 42.5 m, Min Radius for 80 km/hr = 380 m
Min Radius for 40 km/hr = 50 m

Barriers can be replaced to meet current standard

Existing truss removed and new bridge constructed

Road to be widened at approaches

Concrete substructure will be replaced

- Bridge will be new
- Load restriction will be removed
- Alignment will remain deficient, signage will be installed to improve safety
- Significant impacts to archaeological potential lands, additional studies required
- Mitigative measures required to reduce impact to cultural heritage
- Large impact to natural environment to complete substructure replacement, significant increase in footprint expected

Replacement Bridge Options



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17

- For both alternatives C1 and C2, there are various bridge types to be considered

- Concrete deck on steel girder
- Concrete deck on concrete girder
- Prefabricated truss
- Modular truss (Bailey Type)



Concrete Deck on Steel Girder – Washago ON

- Constraints

- Deck on girder structures will reduce the hydraulic opening or road will need to be raised
- Prefabricated trusses likely limited to single lane
- Modular truss will have limited ability to mitigate heritage impacts



Prefabricated Truss – Town of the Blue Mountains ON



Modular Truss – Vankoughnet ON



Heritage Truss Mounted to New Bridge – Creemore ON

Black Bridge - Assessment of Alternatives



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18

Evaluation Criteria	Alternative A Do Nothing	Alternative B Rehabilitate Existing Bridge	Alternative C1 Replace with Single Lane Bridge	Alternative C2 Replace with Two Lane Bridge
Physical Environment	<ul style="list-style-type: none"> ✗ safety of bridge will decrease over time ✗ no improvement to load carrying capacity ✗ no improvement to alignment or safety ✗ no improvement to barrier protection 	<ul style="list-style-type: none"> ✓ safety of bridge can be improved ✓ barrier protection can be upgraded to standard ✓ alignment deficiencies can be mitigated through signage and reduced speed posting ✗ no improvement to load carrying capacity ✗ shortest extension of service life 	<ul style="list-style-type: none"> ✓ increased load capacity to current standard ✓ barrier protection can be upgraded to standard ✓ alignment deficiencies can be mitigated through signage and reduced speed posting ✓ longest extension of service life ✗ bridge remains a traffic constriction 	<ul style="list-style-type: none"> ✓ increased load capacity to current standard ✓ barrier protection can be upgraded to standard ✓ alignment deficiencies can be mitigated through signage and reduced speed posting ✓ longest extension of service life ✓ removes traffic constriction
Natural Environment	<ul style="list-style-type: none"> ✓ no impacts to environment or habitat 	<ul style="list-style-type: none"> ✓ no significant impacts ✓ potential impacts can be mitigated with best practices 	<ul style="list-style-type: none"> ✗ potential for impacts in areas that may be widened beyond existing right-of-way ✗ increased review requirements from agencies 	<ul style="list-style-type: none"> ✗ greatest impacts in areas widened beyond existing right-of-way ✗ greatest impacts within watercourse to place new wider substructure ✗ greatest permit requirements
Social Environment	<ul style="list-style-type: none"> ✓ no impacts to existing abutting lands ✓ no construction delays or road closures 	<ul style="list-style-type: none"> ✓ no impacts to existing abutting lands ✓ shorter construction time and road closure 	<ul style="list-style-type: none"> ✓ no impacts to existing abutting lands ✗ longer construction time and length of road closure 	<ul style="list-style-type: none"> ✗ potential for impacts to abutting lands ✗ longest construction time and length of road closure
Cultural Heritage Environment	<ul style="list-style-type: none"> ✓ no archaeological or cultural/heritage impacts 	<ul style="list-style-type: none"> ✓ no archaeological impacts ✓ minimal impact to cultural heritage, repairs would be sympathetic to aesthetics 	<ul style="list-style-type: none"> ✗ some potential for archaeological materials should works extend beyond existing ROW or previously disturbed/constructed areas ✗ impacts to cultural heritage by removal of existing bridge ✓ additional studies to be undertaken as necessary 	<ul style="list-style-type: none"> ✗ greatest potential for archaeological materials should works extend beyond existing ROW or previously disturbed/constructed areas ✗ greatest impacts to cultural heritage by removal of existing bridge ✓ additional studies to be undertaken as necessary
Economic Environment	<ul style="list-style-type: none"> ✓ least overall construction costs ✗ greatest maintenance costs 	<ul style="list-style-type: none"> ✗ increased overall construction cost ✗ greater maintenance costs 	<ul style="list-style-type: none"> ✗ greater overall construction costs ✓ least maintenance costs 	<ul style="list-style-type: none"> ✗ greatest overall construction costs ✓ less maintenance costs

- Black Bridge Improvements
 - review/address stakeholder comments
 - identify the preferred solution for the bridge improvements
 - prepare final project file for public review
 - prepare Notice of Study Completion
 - design & implementation
- Before you leave:
 - have your questions been addressed?
 - have you signed the registry to be informed of the next phase of the study?
 - have you completed a comment sheet?

- Yvon Gravel, C.E.T.
Town of Bracebridge
1000 Taylor Court
Bracebridge, ON P1L 1R6
t: (705) 645-6319 ext 240
f: (705) 645-7525
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Bracebridge, ON P1L 0A1
t: (705) 645-7756 ext 2101
f: (705) 645-8159
e: ewilkinson@cctatham.com

BLACK BRIDGE IMPROVEMENTS

Public Consultation Centre – October 18, 2017

SIGN-IN SHEET (please print)

NAME	STREET ADDRESS	TOWN/CITY	POSTAL CODE	AFFILIATION	EMAIL
Jane Doe	1234 Example St.	Example City	A1B 2C3	resident	1234King@yahoo.com
Bob Cockburn	1545 Matthiasville Rd	BRACEBRIDGE	PIK 1X1	RESIDENT	NIL
Archie Buic	1007 Trethewey Falls Rd	Bb	PIK - 1X1	" * Councilor	
Paul Rainey	1031 RAINNEY RD	BRACEBRIDGE	PIK-1X1	RESIDENT	Paul.Rainey@utoronto.ca
Riv Turner	1019 Rainey Rd				
Laura Rainey	1019 Rainey Rd	Bracebridge	PIK 1X1	Property Owner	
Liz Rainey	1049 Rainey Rd.	Bracebridge	PIK 1X1	Property owner	terainey2@gmail.com
Ken Young	1106 Matthiasville	Bracebridge	PIK 1X1	Property owner	
Lynne Hubert	1506 Matthiasville Rd.	Bracebridge	PIK 1X1	Property owner	intigger75@hotmail.com
Brandon Scott	1506 Matthiasville Rd	Bracebridge	PIK 1X1	resident	
Steve Gilbert	1508 Germania Rd	Bracebridge	PIK 1R3		
John Sisson	5 Stonehenge	Bracebridge		Staff	
Tim Rainey	1049 RAINNEY ROAD	Bracebridge	PIK 1X1	Property owner	terainey2@gmail.com



BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET

Personal information on this form is collected under the authority of the *Environmental Assessment Act, Chap. E18, Section 7*, and will be used in the development of a Municipal Class Environmental Assessment. Questions about this collection should be directed to the Town of Bracebridge, 1000 Taylor Court, Bracebridge ON, P1L 1R6.

Please print all responses.

NAME OF RESPONDENT:

BOB COLLEBUAN

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

ADDRESS (Including Postal Code & Telephone Number):

1545 MATTHIASVILLE RD PICHI

105-645-8195

BRIDGE NEED'S TO BE REPLACED.

BC

Signature:

[Handwritten Signature]

Date:

18/10/17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

RETRACT BRIDGE 2017 & 2018.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
T : (705) 645-1156 ext. 2101
F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.

From: Penny Brinks <pennybrinks@yahoo.ca>
To: <ewilkinson@cctatham.com>
Date: 31/10/2017 12:18 PM
Subject: Black river bridge

Hi Emma

I have some questions about the reconstruction of the Black river bridge.

Unfortunately I was not able to make the meeting on the 18th, but I am curious as to the minutes of that meeting?

Our property is right after the bridge and I'm wondering when this is planning on starting? How long is it supposed to take? And how that is going to effect my driveway?

Is there going to be another meeting?

Please let me know

Thank you

Penny Brinks

Sent from cell phone

Emma Wilkinson - BlackBridge Improvements

From: Mark Kneeshaw <mkneeshaw13@gmail.com>
To: <ewilkinson@cctatham.com>
Date: 13/11/2017 2:17 PM
Subject: BlackBridge Improvements

Hello Emma Wilkinson,

Having looked over the proposal I would like to say first and foremost that there is a fundamental problem in the report when it states that the speed limit for the Matthiasville Road is 80km/hr. It is a twisty scenic road with insufficient width or safety features to allow anything close to that speed. To base the features of the bridge on that speed limit for the road, brings everything else in the proposal into question. If the bridge is changed to meet that speed limit it will only serve to create other problems and put the safety of all at risk. Speed signs should be posted on this road. There are none. 80km/hr is completely unreasonable.

As for the bridge repair/ replacement, I would say maintaining the cultural heritage and having the load restriction removed are the most important factors. This being said, I would say C1 with the Heritage Truss is likely our best option.

I would like to have a written response to this concern and I would like to be kept informed of the process of this study.

M. Kneeshaw
1380 Mathiasville Rd
Bracebridge, Ontario
P1L 1X1

mkneeshaw13@gmail.com

From: David Kneeshaw <dikneeshaw@gmail.com>
To: <ewilkinson@cctatham.com>
Date: 15/11/2017 11:05 AM
Subject: Re Matthiasville Rd., Bracebridge

Please note I received information on the bridge last week and have been away.

Irene Kneeshaw

1380 Matthiasville Rd., Bracebridge, Ont. P1L 1X1 705 645 4946

Owner

First I would like to address the speed on our road - there is no speed limit posted. The road is twisty and mostly runs next to the river. Two school busses use this road. I did discuss this with the Town Office in the spring. The speed limit should be posted and certainly not over 60 maybe even lower.

As there is little likely hood we would get a 2 lane bridge and this road has been designated on maps as a scenic road I feel that we should keep the Historic Trusses. This is a country road that is often used by walkers, bikers, photographers. I feel we should keep the historic look - this is not a highway or main road to town.

I have seen too many bridges that have been rebuilt and now look like a speedway. I spoke to the Town late last winter about the west end of the bridge where the snow plough has no where to push the snow making the corner even more of a hazard. As you are aware the south west corner is quite sharp.

I would appreciate hearing from you and would like to be informed of the process of the study.

Thank you

Irene Kneeshaw



RECEIVED NOV 23 2017

BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET

Personal information on this form is collected under the authority of the *Environmental Assessment Act, Chap. E18, Section 7*, and will be used in the development of a Municipal Class Environmental Assessment. Questions about this collection should be directed to the Town of Bracebridge, 1000 Taylor Court, Bracebridge ON, P1L 1R6.

Please print all responses.

NAME OF RESPONDENT:

Laura Rosch

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property owner

ADDRESS (Including Postal Code & Telephone Number):

1312 Matthiasville Rd

P1L 1X1

Bracebridge, ON.

Signature:

Date:

Nov 17/17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Alternative C1 - Replace w Single lane Bridge

1.) Paying attention to Heritage.
Prefabricated Truss. Preferred or Heritage Truss
Is it possible to use Heritage Truss
from Black bridge?

Ideally new C1 bridge with
original truss or replica

Note: Ambulance/Fire capability important
* Snowremoval also important.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
T : (705) 645-1156 ext. 2101
F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.



RECEIVED NOV 23 2017

BRACEBRIDGE

The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET**

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Please print all responses.

NAME OF RESPONDENT:

Christine Bib

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property owner

ADDRESS (Including Postal Code & Telephone Number):

1312 Matthiasville Rd
P1L 1X1
Bracebridge, ON.

Signature:

C. Bib

Date:

Nov 17/17.

PROBLEM STATEMENT

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Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Alternative C1 - Replace w Single Lane Bridge

1.) Paying attention to Heritage
Prefabricated Truss. Preferred or Heritage Tr
Is it possible to use heritage Truss
from Black bridge?

Ideally new C1 bridge with
original truss or replica

Note: Ambulance/Fire capability important
* Snowremoval also important.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

MAUREEN KELLY

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

PROPERTY OWNER

ADDRESS (Including Postal Code & Telephone Number):

1128 MATTHIASVILLE RD

BRACEBRIDGE ON P1L 1X1

416-937-4561 (CELL)

Signature:

Maureen Kelly

Date:

Nov 15 2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

I strongly support Option B, Rehabilitate the existing Black Bridge

Reasons - ① historic - the Black Bridge has been the defining landmark in this area + on Nathiasville Rd. since it was built. It would be a shame to lose it.

② aesthetic appeal - I love the look of the current Black Bridge + it's one of the few remaining bridges in this style

③ practicalities - the current bridge offers good line of sight to avoid cars in both directions. The fact that there is an alternative access to Nathiasville Rd at the dam end of the road means that the current one-lane bridge is adequate.

IF Option B cannot be done (my strong preference), my next choice would be Option C.I - but NOT with a two galvanized Bailey Bridge nor a modular truss Bailey Bridge - both would have very poor sight lines for traffic, +

Do you require a written response to your concerns? would not retain the cultural heritage value of the existing Black Bridge.

Yes No

Do you wish to continue to be informed of the process of the study?

Yes No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

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Bracebridge, ON P1L 0A1
T: (705) 645-1156 ext. 2101
F: (705) 645-8159
E: ewilkinson@cctatham.com

Thank you for your comments.

TO:

Emma Wilkinson
cc - Tatham + Associates



STEVENSON
MEMORIAL HOSPITAL

Fax Number: 705-645-8159

Number of Pages (including cover sheet): _____

DATE: Nov 17

STEVENSON MEMORIAL HOSPITAL
200 Fletcher Crescent, P.O. Box #4000
Alliston, Ontario L9R 1W7

LORRAINE JOHNSTON Billing # 723114
Telephone: (705) 435-6281 Ext 2341 Fax: (705) 434-5219

Re blood bridge



BRACEBRIDGE

BLACK BRIDGE IMPROVEMENTS MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA) COMMENT SHEET

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Please print all responses.

NAME OF RESPONDENT:

Robert + Monique Johnston

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

- Property Owner -

ADDRESS (including Postal Code & Telephone Number):

- Bracebridge property - 1110 Matthiasville Rd
Bracebridge

- Home address - 996594 - Mulmur Toronto
Townline

Mulmur C. ONT - L9V 0N2

Signature:

Date:

Nov 16/17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (i.e. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

- We prefer - Repairing the existing Black Bridge on the small branch of the Muskoka River - Matthiasville Rd
- We feel that there is value in retaining the original heritage and preserve the High Trees Bridge.

Lenaine Johnston
lorjohnston@yahoo.ca

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
T: (705) 645-1156 ext. 2101
F: (705) 645-8159
E: ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET

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Please print all responses.

NAME OF RESPONDENT:

ROBERT + LINDA QUEVILLON

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

PROPERTY OWNER

ADDRESS (Including Postal Code & Telephone Number):

1092 MATTHIASVILLE RD.

BRACEBRIDGE ON P1L1X1

705 646-1384

Signature

Date:

NOV. 12/17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

After due consideration of the concerns reflected in the EA Environmental Assessment and Study, we remain convinced that Alternative B (Rehabilitate Existing Bridge) is the only viable option. The Black Bridge is a landmark treasured by the community. It defines the Matthamville Road experience and is enjoyed by walkers, cyclists, artists, property owners and visitors. We wish to retain the original heritage and preserve a High Truss Bridge and are content with the necessary load restrictions and the courtesy required to cross a one-lane bridge.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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F: (705) 645-8159
E: ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET

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Please print all responses.

NAME OF RESPONDENT:

William + Deborah Anderson

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property Owner

ADDRESS (Including Postal Code & Telephone Number):

1160 Matthiasville Rd, Bracebridge ON.
P1L 1X1 (705) 645-3454

Signature: _____

D Anderson

Date: _____

Nov. 15 2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

- Rehabilitate Existing Bridge
- Retaining Original heritage
- Preserving the original appearance and unique character.
- People Come to Matthiasville Rd to enjoy the Scenery, walking, biking, kayaking. The bridge is very much a part of Matthiasville's heritage and history.

Do you require a written response to your concerns?

Yes No

Do you wish to continue to be informed of the process of the study?

Yes No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

Jamie Robbins

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property Owner

ADDRESS (Including Postal Code & Telephone Number):

1102 Matthiasville Rd
Bracebridge ON P1L 1X1

Signature: _____

Date: _____

14/10/17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

I would like the existing Bridge rehabilitated

This is a scenic drive road the bridge is part of the scenic adventure.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
T : (705) 645-1156 ext. 2101
F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

DOUG JOHNSTON

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

PROPERTY OWNER

ADDRESS (Including Postal Code & Telephone Number):

1031 CARLS MOUNT ROAD, BRACEBRIDGE, ON P1L 1X1
705-394-6507

PREFERENCES: REHABILITATE EXISTING BRIDGES

Signature:

Doug Johnston

Date:

NOV-12-17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

MY PREFERENCE IS TO REHABILITATE THE EXISTING BRIDGE.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
T : (705) 645-1156 ext. 2101
F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

CHRISTINE JOHNSTON

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

PROPERTY OWNER

ADDRESS (Including Postal Code & Telephone Number):

1031 CARLSMOUNT ROAD, BRACEBRIDGE, ON P1L 1X1
705-394-6507

PREFERENCE: REHABILITATE EXISTING BRIDGE

Signature:

Date:

NOV-13-17

PROBLEM STATEMENT

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Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

I would prefer to rehabilitate the existing bridge. It has great heritage value and I would be heart broken to see it go. I understand the impact of the weight restrictions that would have to remain on some emergency and municipal services.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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C. C. Tatham & Associates Ltd.
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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

Candace & Richard Poitra

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property Owner

ADDRESS (Including Postal Code & Telephone Number):

1464 Matthiasville Rd.

P1L 1X1 646-1877

Signature: *Richard L. Poitra R. Poitra*

Date: *Nov. 12/17*

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

No Bailey Bridge

Rebuild our Heritage Bridge

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

FRANK LEGERE

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

TENANT

ADDRESS (Including Postal Code & Telephone Number):

1102 MATTHIASVILLE Rd.
BRACEBRIDGE ONT. P1L 1X1

Signature: _____

Date: _____

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Rehabilitate Bridge 1

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
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BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

SHIRLEY LEGERE

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

TENANT. 1

ADDRESS (Including Postal Code & Telephone Number):

1102 MATTHIASVILLE RD.

BRACEBRIDGE ONT. P1L 1X1

Signature:

S. Legere

Date:

NOV 27/2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

I would like to see this existing bridge
rehabilitated.
to preserve original heritage

We have lived here 25+ years
have enjoyed driving in & out of this
road & seeing the beauty of it.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

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C. C. Tatham & Associates Ltd.
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Bracebridge, ON P1L 0A1
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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

Sarah Bryant

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property Owner

ADDRESS (Including Postal Code & Telephone Number):

1101 Hawn Road, Bracebridge ON. P1L 1X1
(705) 205 2145

Signature: _____

Bryant

Date: _____

Nov 15 2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Option B, rehabilitate existing bridge.

Do you require a written response to your concerns?

Yes No

Do you wish to continue to be informed of the process of the study?

Yes No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
T : (705) 645-1156 ext. 2101
F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE

BLACK BRIDGE IMPROVEMENTS MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA) COMMENT SHEET

Personal information on this form is collected under the authority of the *Environmental Assessment Act, Chap. E18, Section 7* and will be used in the development of a Municipal Class Environmental Assessment. Questions about this collection should be directed to the Town of Bracebridge, 1000 Taylor Court, Bracebridge ON, P1L 1R6.

Please print all responses.

NAME OF RESPONDENT:

LIZ & GEORGE ELDER

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

PROPERTY OWNER

ADDRESS (including Postal Code & Telephone Number):

1238 CARLSMOUNT RD.

BRACEBRIDGE, ONT.

P1L 1X1

705-645-1770

Signature

Date

NOV. 13/17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

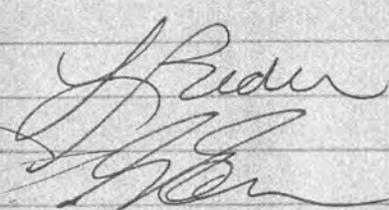
Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

B - REHABILITATE EXISTING BRIDGE

RETAIN ORIGINAL HERITAGE

LIZ ELDER

GEORGE ELDER



Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET

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Please print all responses.

NAME OF RESPONDENT:

Deanna Robbins

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property owner

ADDRESS (Including Postal Code & Telephone Number):

1102 Matthiasville Rd

Bracebridge On P1L 1X1

Signature

Deanna Robbins

Date:

Nov 14/17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

I PREFER TO REHABILITATE EXISTING BRIDGES
TO PRESERVE ORIGINAL HERITAGE

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET

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Please print all responses.

NAME OF RESPONDENT:

LYNN DRUETT

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property Owner

ADDRESS (Including Postal Code & Telephone Number):

1031 Kirkpatrick Ln
Bracebridge ON

P1L 1Y1

705 696 9407

Signature

L Druett

Date:

Nov 14 2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Option B - repair bridge but maintain
the historic integrity - Not a new
"Bridg" bridge!

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET**

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Please print all responses.

NAME OF RESPONDENT:

VALERIE BIRD

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

ADDRESS (including Postal Code & Telephone Number):

1323 CARLSMOUNT RD
BRACEBRIDGE ONT
P1L 1X1

Signature:

Valerie Bird

Date:

Nov, 14, 2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (i.e. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Please repair the existing bridge.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET**

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Please print all responses.

NAME OF RESPONDENT:

Terry Higgins

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

ADDRESS (Including Postal Code & Telephone Number):

*1323 Carleton Place Rd.
Bracebridge Ont.
P1L 1X1*

Signature: _____

[Handwritten Signature]

Date: _____

Nov 14, 2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

I want you to make repairs
to the existing bridge!

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET

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Please print all responses.

NAME OF RESPONDENT:

PATRICIA ANDERSEN

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

ADDRESS (Including Postal Code & Telephone Number):

1009 ANDERSEN Rd.
BRACEBRIDGE ONT.
P1L 1X1

Signature:

Patricia Andersen

Date:

Nov. 14th / 17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (i.e. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

*Repair existing bridge because
I'm a firm supporter of keeping
our historical entities in tact.*

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

FINN MORTIENSEN

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Home Owner

ADDRESS (Including Postal Code & Telephone Number):

1031 Kirkpatrick Ln

Bracebridge On.

P1L 1Y1

705 646 9407.

Signature:



Date:

Nov 14 2017

PROBLEM STATEMENT

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Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (i.e. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Repair black bridge & restore ~~to~~
in same style as original

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

JACKY FINLAYSON

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

OWNER

ADDRESS (Including Postal Code & Telephone Number):

1317 CARLSMOUNT RD

BRACEBRIDGE, ON

P1L 1X1

705-645-3580

Signature:

Date:

NOV 15/2017

PROBLEM STATEMENT

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OPTION 3

PLEASE JUST REPAIR
EXISTING BRIDGE.
FOR MANY REASONS.

Do you require a written response to your concerns?

Yes No

Do you wish to continue to be informed of the process of the study?

Yes No

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C. C. Tatham & Associates Ltd.
8 Barron Drive
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T : (705) 645-1156 ext. 2101
F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET

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Please print all responses.

NAME OF RESPONDENT:

GREG FINLAYSON

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

OWNER

ADDRESS (Including Postal Code & Telephone Number):

1317 CARLSMOUNT RA
BRACEBRIDGE ON
P1L 1X1

Signature:

Date:

NOV 15 / 2017

PROBLEM STATEMENT

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PLAN B

REPAIR EXISTING

BRIDGE ONLY

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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E : ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

JOHN R WARD

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

PROPERTY OWNER.

ADDRESS (Including Postal Code & Telephone Number):

1025 WARD LANE DRAPER
P1L 1X1 705 646-1303

Signature:

J. Ward

Date:

NOV 13/17

PROBLEM STATEMENT

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Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

I PREFER KEEPING EXISTING BRIDGE AND REPAIR
FOR THE HISTORICAL VALUE

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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BRACEBRIDGE

The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

Gloria D Smith

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

1158 Matthiasville Rd. Property Owner

ADDRESS (Including Postal Code & Telephone Number):

1158 Matthiasville Rd.

Bracebridge Ont

P1L 1X1

Signature

GDSmith

Date:

Nov 15 2017

PROBLEM STATEMENT

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Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Rebuild original bridge, Heritage bridge.

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

GARY JACKSON

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

TENANT

ADDRESS (Including Postal Code & Telephone Number):

1131 HAWN RD RR#3 BRACEBRIDGE-ONT. P1L 1K1
705-646-9910

Signature

Gary Jackson

Date:

Nov 15/17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

My preference is to rehabilitate the
existing bridge structure

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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BRACEBRIDGE
The Heart of Muskoka

BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
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Please print all responses.

NAME OF RESPONDENT:

Thomas & Bonnie Townsends

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property Owner

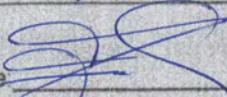
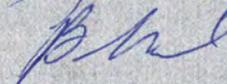
ADDRESS (Including Postal Code & Telephone Number):

1017 Carlsmount Rd w 87' frontage on
RR # 3 Matthiasville Rd.

Bracebridge on
P1L 1X1

705 646-2693

Signature


Thomas R. Townsend

Bonnie Townsends

Date:

Nov 15, 2017

PROBLEM STATEMENT

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- C-1
- Replicate historical features of existing High Truss Bridge
 - Accommodate increased load capacity
 - Allow Town snow plow access

If the budget would allow: Construct a steel clad gable truss roof w cedar shake design.
(in black)

- A cover would provide protection from the elements
- Enhance the character of the steel truss bridge

Do you require a written response to your concerns?

Yes

No

Do you wish to continue to be informed of the process of the study?

Yes

No

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F: (705) 645-8159
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Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET**

Personal information on this form is collected under the authority of the *Environmental Assessment Act, Chap. E18, Section 7*, and will be used in the development of a Municipal Class Environmental Assessment. Questions about this collection should be directed to the Town of Bracebridge, 1000 Taylor Court, Bracebridge ON, P1L 1R6.

Please print all responses.

NAME OF RESPONDENT:

TIM & LIS RAINEY

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property owner since 1968

ADDRESS (Including Postal Code & Telephone Number):

1049 RAINEY ROAD P1L1X1 705 801 6399

Elisabeth Rainey

Signature:

Tim Rainey

Date:

November 17, 2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

We believe that Alternative B to Rehabilitate the existing bridge is the best option. This "High Truss Iron Bridge" is a very unique and important landmark to our community of Black Bridge.

This bridge was rehabilitated before ~~and~~ at reasonable cost by a local company and this process should continue to preserve this special structure. This type of bridge is becoming increasingly rare and should be preserved for future generations. Our Black Bridge is special to us and to the value of our property just like the Silver Bridge in Bracebridge or the Covered Bridge.

Load restrictions are not a serious concern because the Matthiasville Bridge is an alternative entrance. We would suggest however that the Ontario Highway sign on 118 be changed back to its original wording ie. Matthiasville Rd East and Matthiasville Rd West for clarity

Do you require a written response to your concerns?

Yes

No

N.B. WE ARE STRONGLY
" OPPOSED TO ANY FORM
OF BAILEY BRIDGE." ER

Do you wish to continue to be informed of the process of the study?

Yes

No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
T : (705) 645-1156 ext. 2101
F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.



BRACEBRIDGE

The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET**

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Please print all responses.

NAME OF RESPONDENT:

Shane + Karen Hunter

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property Owner

ADDRESS (Including Postal Code & Telephone Number):

1498 Matthiasville Rd

705-641-8120 / 705-706-2898

Bracebridge, ON

P1L 1X1

Sorry thought this was where I commented

Signature:

Karen Hunter

Date:

Nov 13 / 17

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Option B Rehabilitate Existing Bridge
We love the character of this bridge
Rarely do we meet another vehicle
and have to give right away. If
we do not a big deal.

The other options do not have the
charm and character of our Black
Bridge. This area is Black Bridge
and we wish it to remain so

Do you require a written response to your concerns?

Yes No

Do you wish to continue to be informed of the process of the study?

Yes No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
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Thank you for your comments.



BRACEBRIDGE
The Heart of Muskoka

**BLACK BRIDGE IMPROVEMENTS
MATTHIASVILLE ROAD, NORTHEAST OF HIGHWAY 118**

**MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)
COMMENT SHEET**

Personal information on this form is collected under the authority of the *Environmental Assessment Act, Chap. E18, Section 7*, and will be used in the development of a Municipal Class Environmental Assessment. Questions about this collection should be directed to the Town of Bracebridge, 1000 Taylor Court, Bracebridge ON, P1L 1R6.

Please print all responses.

NAME OF RESPONDENT:

Wendy & Dave Lawton

REPRESENTING (Agency, Municipality, Property Owner, Tenant, etc.):

Property Owners

ADDRESS (Including Postal Code & Telephone Number):

1438 Matthiasville Rd. RR#3

Bracebridge, Ont

P1L 1X1

Phone: (705) 645-6556

Signature:

Wendy Lawton

Date:

Nov. 14, 2017

PROBLEM STATEMENT

The Town of Bracebridge has identified the need to improve the Black Bridge, which spans the South Branch of the Muskoka River. The existing bridge is considered to be deficient with respect to load capacity, physical condition, geometry, and barrier protection.

Please list below the issues in support of your preference and any specific concerns you have with any and/or all of the alternatives (ie. what do you like or dislike about each of the alternatives). Comments provided will be considered in the assessment of the noted alternatives.

Our preference: Alternative C1 - Replace with a single lane

bridge. A newly manufactured high truss bridge which replicates some of the current historical features of the Black Bridge. Retain the existing truss structure to affix to the new bridge construction, allowing the replacement bridge to have the very close appearance of the old bridge

Note: We do not want a low galvanized Bailey Bridge now we want to have the existing truss superstructure of Black Bridge attached to a Modular Truss Bailey Bridge. because of poor site lines: We do not want use to re-use deteriorated steel components

This we commemorate the existing bridge for its cultural, heritage component but have a longer extension of service life.

The other alternatives A & B are a "no-go" for extension of service life

Do you require a written response to your concerns?

Yes

No

and C2 is too costly. We do not need it. Although 80 is the speed limit no one does this speed on our curvy road - an impossibility!

Do you wish to continue to be informed of the process of the study?

Yes

No

Please drop this comment sheet in the box provided or return it to the following address via mail, e-mail, or fax by Wednesday, November 1, 2017:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
C. C. Tatham & Associates Ltd.
8 Barron Drive
Bracebridge, ON P1L 0A1
T : (705) 645-1156 ext. 2101
F : (705) 645-8159
E : ewilkinson@cctatham.com

Thank you for your comments.

Thank you for selecting the input of our community!

**APPENDIX E:
CONSULTATION – NOTICE OF STUDY COMPLETION**



Notice of Study Completion

Improvements to The Black Bridge Over the Muskoka River in The Town of Bracebridge Municipal Class Environmental Assessment Study

The Town of Bracebridge has completed a Municipal Class Environmental Assessment (Class EA) Study for the proposed improvements to the Black Bridge located on Matthiasville Road approximately 0.5 kms north of Highway 118 East (west entrance) in the Town of Bracebridge. The improvements are to replace the existing deteriorated structure with a single lane bridge, and replace the severely deteriorated abutments. The speed limit will be reduced and warning signs are to be installed to improve the safety related to the geometric conditions. Use of a sympathetic structure type is preferred to mitigate the heritage impact. The Study area is illustrated below.



The Class EA Study followed the planning process for Schedule B projects as described in the Municipal Class EA document for Municipal Roads Projects (2000), published by the Municipal Engineers Association and revised in 2007, 2011, and 2015. The findings of the Class EA process have been documented in the Project File Report.

The purpose of this notice is to advise the public and stakeholder groups that the complete Project File Report is available for review at the Town Office, and available for download on the Town website. Interested persons are encouraged to review the report and provide written comments to the Town within the 30 day review period, September 4, 2018 to October 4, 2018, directed to the project contacts below.

Owner:

Town of Bracebridge
Public Works Department
1000 Taylor Court
Bracebridge, ON P1L 1R6
Telephone: (705) 645-5264

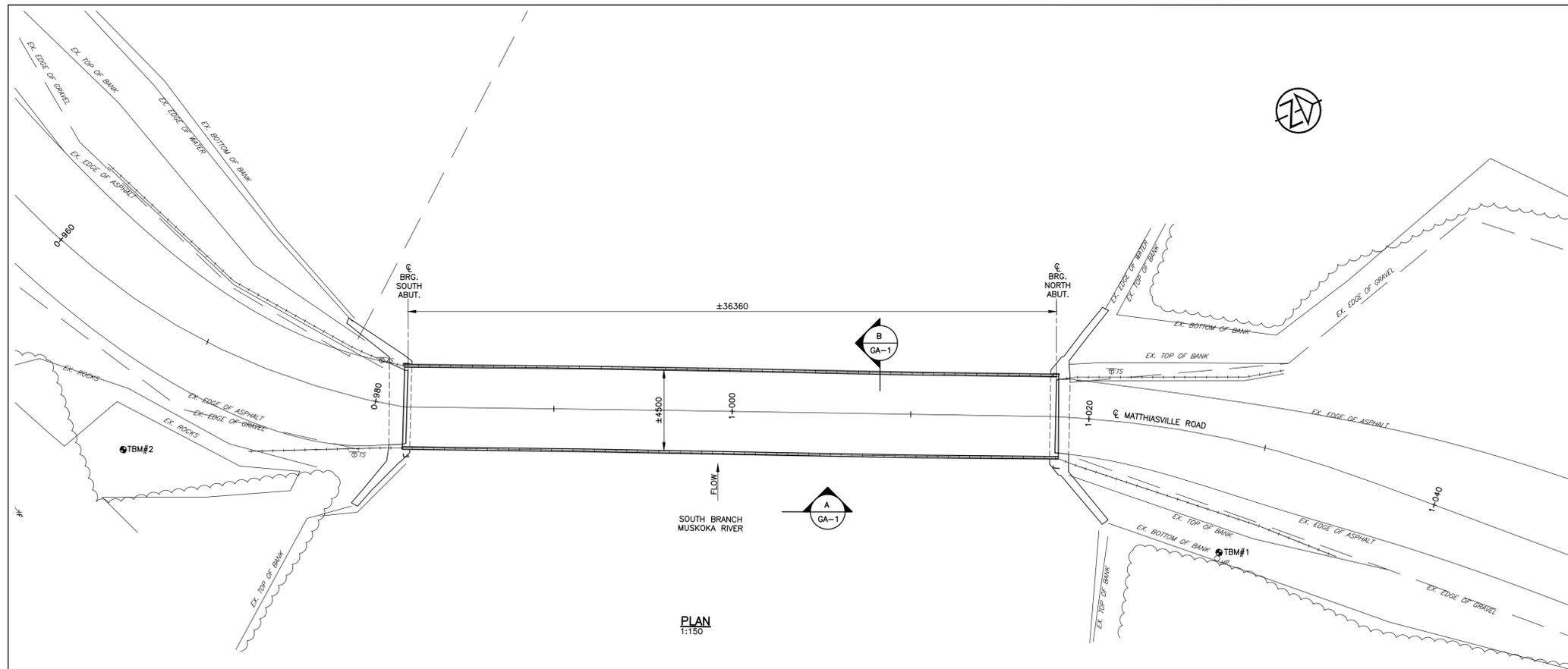
Consultant:

Emma Wilkinson, H.B.A., B.E.Sc., P.Eng.
Senior Engineer, Project Manager
C.C. Tatham & Associates Ltd.
8 Barron Drive, Bracebridge, ON P1L 0A1
Telephone: (705) 645-7756
Email: ewilkinson@cctatham.com

If concerns arise regarding this project, which cannot be resolved in discussion with the Town, you may request that the Minister of the Environment make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II Order), which addresses individual environmental assessments. Requests are to be submitted to the Minister, and copied to the Town, before the end of the review period. If there is not a request received by **October 4, 2018**, the project may proceed based on the identified preferred solution.

The Ministry/Minister of Environment and Climate Change
77 Wellesley St West, 11th Floor
Toronto, ON, M7A 2T5
Fax 416 314 8452

**APPENDIX F:
PREFERRED ALTERNATIVE LAYOUT SKETCH**



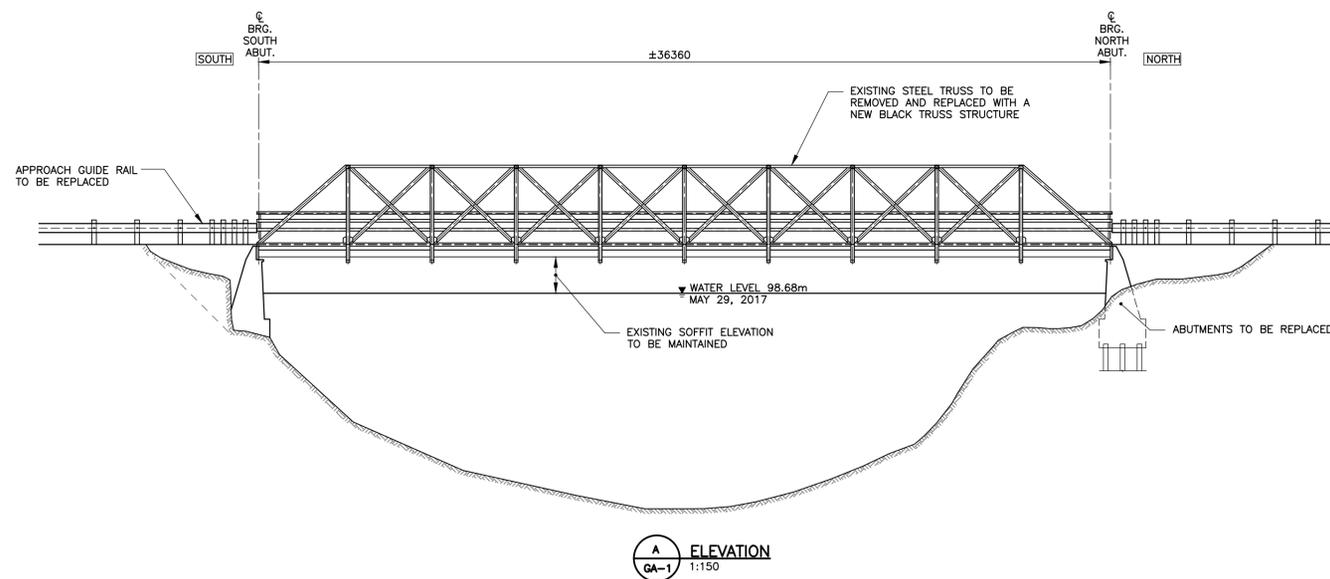
GENERAL NOTES:

1. ALL ELEVATIONS ARE IN METERS AND DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O)
2. ALL DESIGN IN ACCORDANCE WITH CAN/CSA-S6-14 (CHBDC 2014) APRIL 2016 REVISION.
3. DESIGN DRAWINGS FOR EXISTING STRUCTURE ARE LIMITED.
4. LIVE LOAD: CL-625-ONT.

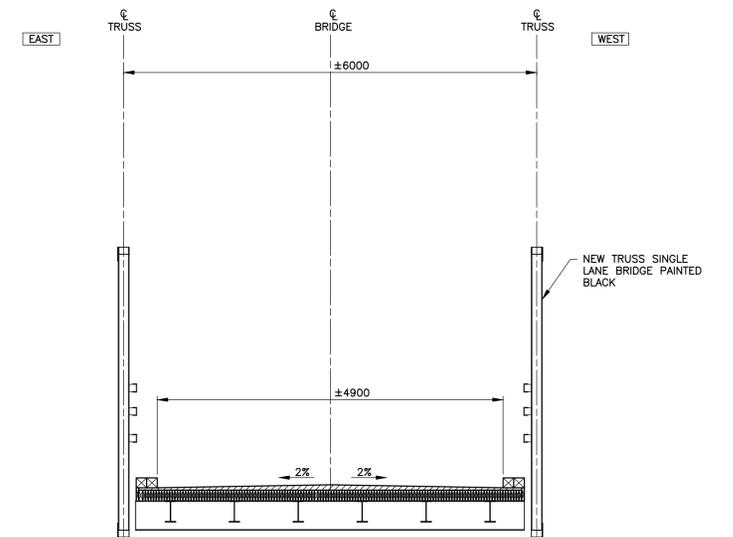
SCOPE OF REHABILITATION:

1. REMOVE EXISTING STEEL TRUSS.
2. REMOVE CONCRETE ABUTMENTS.
3. CONSTRUCT NEW SINGLE LANE BRIDGE.

PLAN
1:150



A ELEVATION
GA-1
1:150



B CROSS SECTION
GA-1
1:50

LEGEND
CONTRACT DRAWINGS
CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.
C.C. TATHAM & ASSOCIATES LTD. CLAIMS COPYRIGHT TO THIS DOCUMENT WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF C.C. TATHAM & ASSOCIATES LTD.

BENCHMARK INFORMATION
TBM#1: NAIL & WASHER IN HYDRO POLE ON EAST SIDE OF BRIDGE ON SOUTH SIDE OF MATTHIASVILLE ROAD. ELEVATION: 280.736 m.
TBM#2: CUT CROSS ON ROCK OUTCROP ON WEST SIDE OF BRIDGE, ON SOUTH SIDE OF MATTHIASVILLE ROAD. ELEVATION: 282.361 m

NO.	REVISIONS	DATE	INITIAL
1	CLASS EA PROJECT FILE	JUL/18	EKW

APPROVED
NOT FOR CONSTRUCTION



BLACK BRIDGE REHABILITATION
THE DISTRICT MUNICIPALITY OF MUSKOKA
GENERAL ARRANGEMENT

C.C. Tatham & Associates Ltd.
Consulting Engineers
Collingwood Bracebridge Orillia Barrie Ottawa
SCALE: AS SHOWN BRDG: No. 6 JOB NO. 216580-1
DESIGN: ACLM CHECKED: EKW
DRAWN: KF DATE: JUNE 2018 DWG. **GA-1**