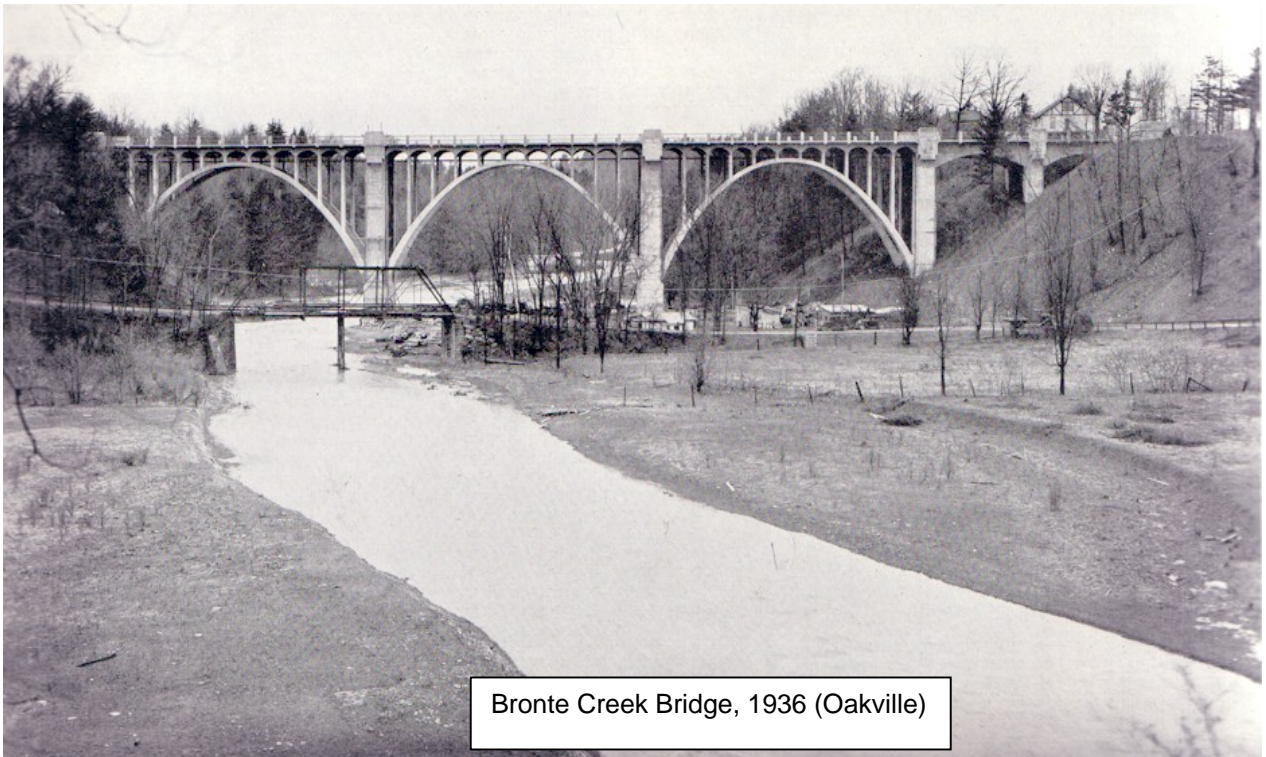


Ministry of Transportation

# ONTARIO HERITAGE BRIDGE GUIDELINES

*FOR PROVINCIALY OWNED BRIDGES*



Bronte Creek Bridge, 1936 (Oakville)



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## 1.0 Purpose

The Ontario Heritage Bridge Guidelines (OHBG) are designed to provide direction on the conservation of **provincially** owned heritage road bridges by:

- Establishing a process for their identification, evaluation and listing at an early stage of the planning process,
- Identifying conservation options to be considered when planning for any rehabilitation, widening or replacement that may be required,
- Identifying the methods and principles for defining heritage values and assessing project alternatives in the Environmental Assessment process, and
- Ensuring the management of heritage bridges conforms to the provisions of the Ontario Heritage Act (OHA), the Environmental Assessment Act and its regulations, as well as Ontario Regulation 104/97.

The Guidelines are intended to be used by:

- Ministry of Transportation (MTO) staff, including engineers and planners
- MTO consultants, including engineering and heritage consultants
- Municipal Heritage Committees and other heritage stakeholders, concerned with the conservation of heritage bridges.

The OHBG provide a clear process for identifying heritage road bridges in a systematic and comprehensive fashion during the early phases of any planning and design work, where the proposed undertaking may affect a road bridge. At this time, the Guidelines are not intended to be used for culverts, since the unique features of culverts are not captured in the current scoring system.

### 1.1 Introduction

In 1983, the Ministry of Transportation (MTO)<sup>1</sup> and the Ministry of Culture (MCL)<sup>2</sup> established a Heritage Road Bridges Policy and Ontario Heritage Bridge Guidelines (OHBG). The current document revises and continues the applicability of the OHBG for bridges under provincial ownership. Previous versions of the OHBG are superseded as of the publication date of this document.

Bridges are important parts of our engineering and architectural heritage. Perhaps more than any other type of structure built by man, they exhibit major historical change and innovation in the development and use of materials, in

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<sup>1</sup> Formerly the Ministry of Transportation and Communications

<sup>2</sup> Formerly the Ministry of Citizenship and Culture

design, and in construction methods. They can be viewed as important elements and make a positive contribution to their surroundings. In some cases, they are rare survivors of an important bridge type or are revered because of their age, historical associations or other publicly perceived values.

Many bridges, through sensitive rehabilitation, can continue to serve traffic in an efficient and cost-effective way, while retaining their appearance and heritage attributes. Where bridges can no longer serve their original purpose, they may sometimes be adaptively re-used as recreational resources or tourist attractions. For all these reasons, heritage bridges are worth conserving.

The Guidelines commence with an overview of legislative requirements for bridges in Ontario and the relationship between the Ministry of Transportation and Ministry of Culture under these Guidelines. The process for identifying, evaluating and listing bridges of cultural heritage value, conservation options and the management of heritage bridges is then presented. The Ontario Heritage Bridge List is provided in Appendix A.

These Guidelines do not supersede any legislation, regulation or order in council developed by the Ministry of Culture (e.g. Standards and Guidelines for Provincial Heritage Properties and Standards and Guidelines for Consulting Archaeologists).

Retaining the appearance of bridges is of value as articulated in The Canadian Highway Bridge Design Code (CAN/CSA-S6-06), Clause 1.4.2.8, which states:

“In the design and the rehabilitation of structures, consideration shall be given to the appearance of the finished structure and its compatibility with the surroundings. Wherever possible, the appearance of a structure shall be such that it will be generally perceived as an enhancement to its surroundings.”

In addition to compatibility with its surroundings, when rehabilitating or replacing a heritage bridge, the design is to reflect or draw upon the heritage attributes outlined by the heritage evaluation documentation.

Where a bridge is known to be Listed, its status must be considered in the environmental assessment process as outlined in Section 4.3.2 of the Class Environmental Assessment Process for Transportation Facilities. Due regard should be given to the heritage attributes of the Listed bridge and its associated landscape by considering the various conservation options described in these Guidelines. Similar regard should be given to structures that may be eligible to be Listed as described in Section 3.0-2.

## 2.0 Legislative Requirements and Heritage Bridges

The Ministry of Transportation is bound by several pieces of legislation when undertaking a project or activity that involves a bridge (40 years old or older):

- The provincial interest in cultural heritage and its conservation is expressed in the *Ontario Heritage Act*, which provides the legislative framework for heritage conservation in Ontario. The Act is administered by the Ministry of Culture. Part III.1 of the Act specifically enables the Minister of Culture to develop standards and guidelines for provincially owned properties that have cultural heritage value or interest.
- The conservation of cultural heritage resources is also identified as a matter of provincial interest under the Planning Act and the Provincial Policy Statement.
- The *Environmental Assessment Act* provides for the protection, conservation and wise management of Ontario's environment. The Act defines "environment" in a broad sense that includes natural, social, cultural, economic and built components. This broad definition of the environment makes the assessment of the impact of undertakings on cultural heritage resources part of the standard environmental assessment process in Ontario (improvements to bridges are considered undertakings).
- The *Public Transportation and Highway Improvement Act*, Ontario Regulation 104/97 addresses the design, construction and maintenance of bridges.

The provincial interest in cultural heritage is further expressed through Ontario's participation in the Historic Places Initiative, a federal-provincial-territorial partnership with the objective of encouraging heritage conservation across Canada.

Every bridge project should also be assessed for archaeological impacts around the bridge (e.g. alterations or soil disturbance to surrounding ground or around the base of the bridge). As required by the Ontario Heritage Act and its regulations, all archaeological fieldwork must be undertaken by a licensed archaeologist. A licence is required to alter or remove an artefact or any other physical evidence of past human use or activity from a known land or marine archaeological site.

## **2.1 Standards and Guidelines for Provincial Heritage Properties**

In 2005 the Ontario Heritage Act was amended to include a new Part III.1, which enables the Minister of Culture, in consultation with those affected, to prepare Standards and Guidelines that:

- a) set out criteria and the process for the **identification** of provincial heritage properties; and
- b) set standards for the **protection, maintenance, use and disposal** of such properties.

The Standards and Guidelines (still under development at the time of printing the OHBG) will take the form of an Order-in-Council approved by the Lieutenant Governor in Council and will direct the conservation of cultural heritage property in provincial hands. They are intended to provide a framework to support Ontario government ministries and public bodies in their efforts to conserve and protect cultural heritage resources in their ownership or control.

Within this framework, it is MTO's responsibility to ensure the appropriate conservation and management of its heritage bridges. The Ontario Heritage Bridge Guidelines serve this function.

As a central principle, the OHA Standards and Guidelines for Provincial Heritage state: "*provincial heritage property...shall be conserved.*" It is recognized that the term "conservation" can take on many forms as described in Section 4.3.

### **2.1.1 Reference Documents**

Relevant documents associated with applicable legislation:

- Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance – Built Heritage and Cultural Heritage Landscapes (MTO, 2007)
- Environmental Guide for Built Heritage and Cultural Landscapes (MTO, 2007).
- Environmental Reference for Highway Design - Section 3.7 Cultural Heritage - Built Heritage and Cultural Landscape Environmental Reference for Design (MTO 2007).
- Environmental Reference for Highway Design – Section 3.8 Cultural Heritage – Archaeology (MTO, 2007).
- *Heritage Bridges: Identification and Assessment Guide, Ontario 1945-1965* (MTO/Waterloo Heritage Resources Centre, 2005)
- Aesthetic Guidelines for Bridges (MTO, 2004)
- Class Environmental Assessment for Provincial Transportation Facilities (MTO, 1997, amended in 2000)



- Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments (Ministry of the Environment (MOE) and Ministry of Culture and Communications, 1992);
- Heritage Road Bridges Policy (Ministry of Transportation And Communications and Ministry Of Citizenship And Culture, 1983)
- Guidelines on the Man-Made Heritage Component of Environmental Assessments (Ministry of Culture and Recreation, 1980).
- Standards and Guidelines for Provincial Heritage Properties (MCL, under development);
- Standards and Guidelines for Consulting Archaeologists (MCL, under development).

## **2.2 Relationship between the Ministry of Transportation and the Ministry of Culture for the OHBG**

The Ministry of Transportation's responsibilities as a property owner are:

- To protect the provincial interest in preserving its cultural heritage resources;
- To identify bridges of provincial importance and conserve them appropriately;
- To follow the requirements of the Ontario Heritage Act, the Environmental Assessment Act and its regulations, and any standards and guidelines for provincial property approved by cabinet under Part III.1 of the OHA.

These responsibilities are met through the application of the processes described in these Guidelines.

The Ministry of Culture will:

- Monitor and review the effectiveness of these guidelines, in consultation with MTO, in meeting the purposes for which they were developed;
- Assist MTO to develop additional guidelines as required;
- Maintain the Ontario Heritage Bridge List;
- Where appropriate, provide advisory services to MTO on the Ontario Heritage Act. In providing advice MCL may consult with its agency, the Ontario Heritage Trust;



Henley Bridge, 1939 (St. Catharines)

### **3.0 Process for Identifying, Evaluating and Listing Heritage Bridges**

The key element in the management of heritage bridges is the identification of those bridges of provincial importance in MTO's ownership at an early stage in the planning process. Whenever a bridge is slated for modification, rehabilitation, replacement, or transfer of ownership, MTO must first determine if the bridge has provincial importance and is an important resource due to its cultural heritage value.

Regulation 9/06 under the Ontario Heritage Act lists a number of criteria for determining the "cultural heritage value or interest" of a property. There are several attributes listed in Regulation 9/06 that, individually, would give a bridge heritage "value". However, MTO is taking the approach that a bridge must meet a number of criteria in combination in order to have cultural heritage value of "provincial importance". The scoring system has been developed and calibrated to reflect this; and a score of 60 or greater means that a bridge has provincial importance. Only when a bridge has provincial importance do the conservation options in the Guidelines apply.

The process for identifying, evaluating and listing potential heritage bridges begins when the Regional Structural Section (RSS) Head completes a technical evaluation of a bridge's overall function and/or condition and identifies any deficiencies with the structure. Should deficiencies be identified and remedial action is required, the RSS Head will determine whether the bridge is on the Ontario Heritage Bridge List (the "List") or is eligible for inclusion.

To begin the process for determining if a bridge is on the List or eligible to be on the List, the RSS Head will take the following steps:

1. Refer to the Ontario Heritage Bridge List (See Section 3.1 and Appendix A). If the bridge is Listed, the requirements specified in Section 4 must be followed.
2. If a bridge is not on the Ontario Heritage Bridge List, the RSS will need to verify the date of construction and determine if:
  - The structure is listed in the document: *Heritage Bridges: Identification and Assessment Guide, Ontario 1945-1965*<sup>3</sup>(List A, B or C) as a candidate structure, or;
  - The structure is over 40 years old, and has not been screened in the 1945-1965 Guide<sup>4</sup>, or;
  - The structure is locally or regionally unusual (e.g. wooden bridge in southern Ontario, through-truss bridges, etc).

**If any of the above conditions are met**, the RSS Head will initiate the preparation of a Cultural Heritage Evaluation Report (CHER) by a qualified Heritage Consultant (See Appendix C for additional details on the preparation of a Cultural Heritage Evaluation Report and the qualifications of a Heritage Consultant). The RSS Head may wish to seek help from the Regional Environmental Section/Office in having this report prepared. The evaluation process is described in Section 3.2 – Evaluation Criteria and includes the calculation of a score based on the criteria listed in Appendix B.

3. Once a bridge has been evaluated, a copy of the Cultural Heritage Evaluation Report (CHER) will be given to the MTO Heritage Bridge Committee (HBC)<sup>5</sup> for review.

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<sup>3</sup> The document *Heritage Bridges: Identification and Assessment Guide, Ontario 1945-1965* (1945-1965 Guide) acts as a screening document for structures built in the post war period. However, the candidate lists provided in that document are not exhaustive and project staff should be careful to check whether a particular structure meets the criteria set out in Appendix B. For these structures, a Cultural Heritage Evaluation Report should be also be prepared. When checking the 1945-65 Guide it is important to ensure that the bridge is listed in Appendix E (of that Guide) to ascertain that the bridge was screened and to confirm the date of construction in the Ontario Bridge Management System.

<sup>4</sup> The “40 years old” trigger for evaluation is an established practice in other jurisdictions in Canada. It is referenced in the federal Treasury Board’s Policy on Management of Real Property (1982), Cultural Heritage Process (Management Board Secretariat/Ontario Realty Corporation, 1994), the Municipal Engineers Association Class Environmental Assessment, Standards and Guidelines for Provincial Heritage Properties (MCL, draft), Environmental Guide for Built Heritage and Cultural Landscapes (MTO, 2007) and Section 3.7 Built Heritage and Cultural Landscape Environmental Reference for Design (MTO, 2007).

<sup>5</sup> MTO Heritage Bridge Committee includes a Regional Archaeologist, a Head Office Structural Engineer and a Structural Engineer and possibly an Environmental Planner from the regional offices rotating on a yearly basis.

4. The HBC will ensure that the Evaluation criteria in Appendix B have been applied consistently and as intended. If the HBC agrees with the evaluation and a bridge scores 60 or above (out of 100 possible points), the bridge is considered to have provincial importance and is therefore eligible to be placed on the Ontario Heritage Bridge List. The HBC will forward its conclusions and comments on the CHER to the RSS Head.

5. If the bridge is eligible for Listing the HBC will forward the information about the bridge to the Ministry of Culture for inclusion on the List.

See Appendix D for a flow chart outlining the process for identifying and incorporating Listed bridges in the EA and Design process.



Southampton Bridge, 1959 (Saugeen River)

### **3.1 The Ontario Heritage Bridge List**

The Ontario Heritage Bridge List is a list of bridges owned by the province and lower and upper-tier municipalities that are considered to have cultural heritage value and worthy of conservation efforts. Since 1983 about 90 bridges have been listed, of which, the province currently owns eight (See Appendix A). The Ontario Heritage Bridge List is a valuable tool that is referred to by MTO staff and its consultants when considering bridge alterations or transfer of ownership.

The Ministry of Culture maintains the Ontario Heritage Bridge List as an electronic database. It is available on the Ministry of Culture's web site and is updated periodically.

The listing process provides a systematic approach to the identification and evaluation of heritage road bridges. If a bridge is listed and it is to undergo modification, its cultural heritage value will be considered as part of the Environmental Assessment process and the conservation options described in these guidelines apply.

The Ontario Heritage Bridge List is dynamic and allows for additions or removals to be made from time to time as deemed appropriate, with mutual agreement between the Ministries of Culture and Transportation. If a bridge has been altered in a manner that has a substantial negative impact on its cultural heritage value, it may be removed from the list. There are also cases where bridges that have been demolished remain on the list for research purposes.

MTO has created a field in its own Ontario Bridge Management System to "flag" bridges that have been listed on the Ontario Heritage Bridge List because of their cultural heritage value.

There are two principle methods by which a bridge may be considered for addition to the List. They can be spot listed during or prior to the preliminary design process or when the bridge is leaving MTO's portfolio. They also can be considered through a stand-alone inventory process (such as the 1945-1965 Guide).



Montreal River Bridge, 1960 (Latchford)

*The bridge is now called the Sgt. Aubrey Cosens Memorial Bridge and has 110-metre clear span. The bridge sustained damage in 2003 in a partial collapse due to the failure of three hanger rods. The bridge was fully repaired.*

### **3.2 Evaluation Criteria**

The scoring system was developed to provide a clear and easily understood system to identify heritage bridges and assist MTO in setting priorities for the long-term management of its heritage bridges (see Appendix B). Derived from Regulation 9/06 under the Ontario Heritage Act, the scoring is divided into three main areas: Design / Physical Value, Contextual Value and Historic / Associative Value. Within these three divisions are criteria that are individually scored. To achieve the minimum score of 60 a bridge must receive scoring in all three divisions. As described in Section 3.0, a bridge that scores 60 or greater is considered a “significant” cultural heritage resource and worthy of inclusion on the Heritage Bridge List. Once a bridge is Listed, the conservation options described in these Guidelines must be applied in the management, planning and EA processes.

The score of a bridge is not a relative indicator to be used to compare Listed bridges against one another. The threshold of 60 has been determined through an extensive calibration process and is used to assess and demonstrate the unique sensitivity of a heritage structure.



Henry Street Bridge, 1940 (Whitby)

### **3.3 Nomination**

To nominate a bridge for the List, the steps outlined in Section 3.0 should be followed and a Cultural Heritage Evaluation Report completed.

#### **3.3.1 Nomination to the Canadian Register of Historic Places**

Once a bridge is Listed on the Ontario Heritage Bridge List it becomes eligible for nomination and listing on the Canadian Register of Historic Places. The Canadian Register of Historic Places, developed under the Historic Places Initiative, a federal-provincial-territorial partnership, is an online register of locally, provincially and federally recognized heritage properties from across Canada. ([www.historicplaces.ca](http://www.historicplaces.ca)).

While inclusion on the Canadian Register is recommended, it is not a requirement under the Ontario Heritage Act. Inclusion in the Canadian Register is honorific and does not place additional controls on the property. Properties owned or recognized at the provincial level will be nominated to the Canadian Register by MTO with the assistance of MCL.



Burlington Skyway, 1954 (Burlington)

### **3.4 Local Roads Boards**

Local Roads Boards (LRBs) are established under the Northern Services Board Act (former *Local Roads Boards Act*). The Ministry of Northern Development and Mines allocates funding and, in conjunction with MTO, supports the maintenance and construction of local roads in areas without municipal organization.

Bridges governed by the Northern Services Boards Act are subject to the MTO Class EA. Therefore they are also subject to the Ontario Heritage Bridge Guidelines. If MTO is responsible for the inspection, design and construction of a roadway governed by a LRB, the Ontario Heritage Bridge Guidelines will apply to the bridges on that roadway.

## **4.0 Conservation of Listed Heritage Bridges**

### **4.1 MTO Project Team Responsibilities – Structural Section**

As noted in Section 3.0, the key to identification of bridges that have cultural heritage value of “provincial importance” is the completion of a Cultural Heritage



Evaluation Report. Moreover, when making decisions relating to deficiencies with Listed heritage structures, early identification is critical. See Appendix D for a flowchart outlining the process for identifying and incorporating Listed bridges in the EA and Design process.

A flowchart summarizing the process for identifying appropriate conservation options is included in Appendix E. Once a bridge has been identified as having provincial importance, the RSS Head will consider and apply the conservation options listed in Section 4.3 in determining the various “structural” solutions required to address the structural deficiencies. These solutions often include both rehabilitation and replacement options, with the best technical solutions taken forward.

The description of the proposed undertaking, the assessment of potential impacts and recommendations based on the conservation options will be documented in the Structural Planning Report. This report will include input from the Heritage Bridge Committee, in the form of information found in the CHER document, to ensure due consideration is given for potential impacts to the heritage bridge and its associated cultural landscape are appropriately understood and mitigated when identifying design alternatives. In some circumstances, the services of a licensed archaeologist may also be required. A summary of the CHER for bridges eligible to be “Listed” is then sent to Ministry of Culture (as noted in Section 3.0). The summary includes a copy of the scoring and the Statement of Heritage Value or Interest.

The RSS Head will then inform the MTO project team of the recommended structural options that have been identified to address the structural deficiencies of the bridge. The Environmental Planner will then incorporate the RSS Head’s recommendations into the EA Terms of Reference. See section 4.2 for further details of the EA process relative to Listed bridges.

Once the EA has been completed and an overall solution has been chosen, a Transportation Environmental Study Report (TESR) is prepared. Following this, the Detail Design process begins. A Structural Design Report and a design package will then be prepared. The Structural Design Report and design package incorporates the recommended solution determined in the EA.

#### **4.2 MTO Project Team Responsibilities – Environmental Section**

Where a bridge is Listed or eligible to be Listed, its cultural heritage value must be considered as an important factor in the Environmental Assessment process. As outlined in Section 4.3.2 of the Class Environmental Assessment Process for Transportation Facilities, the EA is a balanced process. Following the recommendations of the RSS Head, the EA will consider heritage value against other factors for the various alternatives. Due regard should be given to the

heritage attributes of the Listed bridge and its associated landscape, as identified in the CHER.

The conservation options identified in the Structural Planning Report will be further refined and considered in the EA process. The project team (RSS, Environmental, P&D) will make a determination of a preferred alternative to address all deficiencies based on the results of the EA. This determination includes an assessment by a Heritage Consultant that outlines:

- Potential impacts of the preferred alternative;
- Consideration of alternatives given during Preliminary Design;
- Recommended conservation actions and / or mitigation actions to address impacts to heritage features and attributes.

The results are then articulated in the TESR with the Structural Planning Report included as an Appendix. The TESR and appended Structural Planning Report are then submitted to the Ministry of Culture as part of the normal 30-day review. (see section 3.7 of the Environmental Reference for Design, Cultural Heritage – Built Heritage and Cultural Heritage Landscapes, Technical Requirements for Environmental Impact Study and Environmental Protection/Mitigation, part of the MTO Environmental References).

A key component of the environmental assessment process is public consultation. In the case of heritage bridges, consultation should include the Ministry of Culture, municipalities, local municipal heritage committees, and heritage organizations. Consultation with heritage stakeholders is required to gather information about the bridge's cultural heritage value and appropriate conservation options strategies. The Cultural Heritage Evaluation and Structural Planning Reports, along with the Statement of Cultural Heritage Value will be part of the project documentation, which is made available to the public for review and comment.



Duchesnay Creek Bridge, 1937 (North Bay)

### **4.3 Conservation Options**

For all bridges Listed or eligible to be Listed that are subject to repair, rehabilitation or proposed for replacement, a number of conservation /mitigation options (i.e. means of managing interventions) are to be considered.

The following conservation options are regarded as appropriate in managing interventions on heritage bridges. They are arranged according to level or degree of intervention from minimum to maximum. They are to be applied in rank order such that Option 1 must be shown to be non-viable, before Option 2 can be considered and so on. Rehabilitation is preferable to replacement. Sympathetic design (see OHBG section 4.5.1), which means making new work physically and visually compatible with the heritage attributes, should be applied in all cases. Even in cases where new construction on or approaching the bridge may be required, retention of the existing structure may still be possible.

Since a bridge is a component of a larger transportation system, structural improvements may be required from time to time to ensure that the bridge remains structurally adequate and system requirements are met. Rehabilitation must result in an efficient and safe facility. The rehabilitation or replacement of

any bridge usually demands consideration of several design options irrespective of whether the bridge has cultural heritage value.

**The eight conservation options are:**

- 1) Retention of existing bridge with no major modifications undertaken
- 2) Restoration of missing or deteriorated elements where physical or documentary evidence (e.g. photographs or drawings) exists for their design;
- 3) Retention of existing bridge with sympathetic modification;
- 4) Retention of existing bridge with sympathetically designed new structure in proximity;
- 5) Retention of existing bridge no longer in use for vehicular purposes but adapted for a new use. For example, prohibiting vehicle or restricting truck traffic or adapting for pedestrian walkways, cycle paths, scenic viewing, etc.;
- 6) Retention of bridge as a heritage monument for viewing purposes only;
- 7) Relocation of smaller, lighter single span bridges to an appropriate new site for continued use (see 4) or adaptive re-use (see 5);
- 8) Bridge removal and replacement with a sympathetically designed structure (See Section 4.4):
  - a. Where possible, salvage elements/members of bridge for incorporation into new structure or for future conservation work or displays;
  - b. Undertake full recording and documentation of existing structure.

#### **4.4 Detailed Conditions for Conservation Option 8 - Removal or Replacement**

**Before replacement is determined to be the preferred option, at least one of the following conditions must be demonstrated in the Structural Planning Report:**

- 1) **The safety of the existing structure is compromised to the extent that rehabilitation is not a practical option.** Structural deficiencies that can be addressed through rehabilitation should not be considered under this category.
- 2) **The cost of rehabilitation is prohibitive compared to replacement.** This may be the case for a bridge that is severely deteriorated and structurally compromised. Rehabilitation costs that exceed replacement costs by approximately 10% are not considered prohibitive given the intrinsic value of preserving a heritage structure. It is also recognized that long term maintenance costs may be higher for the rehabilitated bridge, however, this fact cannot be a determining factor when considering the retention vs. replacement options.
- 3) **The bridge has been severely altered from its original form.** This would be the case for bridges where only a small part of the original structural character remains following repeated rehabilitation episodes. A cultural heritage bridge does not need to be in its original condition. Few survive without alterations on the long journey between their date of origin and today. Integrity is a question of whether the surviving physical features (heritage attributes) continue to represent or support the cultural heritage value of the bridge or its associated landscape.
- 4) **Replacement is required to meet demand requirements that are not achievable through rehabilitation or upgrading of the existing structure.** All alternatives to demolition should be considered under this category and documented. For example, has a detailed analysis of all alternative crossings been completed?

Where the decision to replace a Listed bridge has been made based on one of the above criteria, the Structural Planning Report will be reviewed by MTO Heritage Bridge Committee, and then submitted to the Ministry of Culture for review of the proposed mitigation option(s).



Little Current bridge, 1913 (Manitoulin Island)

#### **4.5 Considerations for Replacement Bridges**

If replacement is considered the preferred option, the following two mitigation options are to be applied for Listed bridges. The two options are:

- (1) Replication of the appearance of the heritage bridge in the new bridge design, with allowances for use of modern materials or use of salvaged components from the heritage bridge,
- (2) Compatible new development, where a new bridge is given a design that is sympathetic to the design qualities of the original bridge and its setting. This option would allow simplification of original design details and the use of new technologies and materials.

These options may be useful in certain circumstances under the EA process to preserve contextual values and/or design qualities of demolished structures.

Design in such cases requires a fine balance between creativity and the practicalities of cost, construction feasibility and the requirements of the Canadian Highway Bridge Design Code. When considering such design options, a cost premium of approximately 10%, relative to simple and less sympathetic options, is not considered prohibitive. The intent remains to replicate the overall character of the original structure without the need to build an exact replica. For example, where the heritage bridge has an open character with clear viewing

from both the structure and the surrounding landscape, that openness should be maintained. The same would be true for overall massing, proportions and scale.

#### **4.5.1 Sympathetic Design for Replacement Bridges**

Sympathetic Design can be accomplished in a number of facets of design and construction, whether for a rehabilitation project or construction of a new bridge. As an example, *Aesthetic Guidelines for Bridges* (MTO, 2004) identifies several areas where aesthetic considerations can be incorporated into a bridge design project. These include: Overall Design and Layout, Superstructure, Substructure, Ancillary Structures, and Grading and Landscaping. For a Listed bridge that is being replaced, its heritage attributes should be reflected in the replacement structure. It may be a new design that is compatible with the style era and character of the heritage property or a replica based on physical and documentary evidence.

To help in making decisions about such design issues, project teams should be mindful of the context, scale, massing, and materials of the original structure. Further, the overall style and character of the original should be preserved or reflected using similar materials and design elements where possible.

The value of retaining the appearance of a bridge is also articulated in *The Canadian Highway Bridge Design Code* (CAN/CSA-S6-06), Clause 1.4.2.8, which states:

“In the design and the rehabilitation of structures, consideration shall be given to the appearance of the finished structure and its compatibility with the surroundings. Wherever possible, the appearance of a structure shall be such that it will be generally perceived as an enhancement to its surroundings.”

In addition to compatibility to its surroundings, when replacing a heritage bridge, the design is to reflect or draw upon the heritage attributes outlined by the Cultural Heritage Evaluation Report.

#### **4.6 Maintaining Contextual Value**

A heritage bridge often has contextual value attached to its cultural heritage value. A bridge has contextual value because it is important in defining, maintaining or supporting the character of an area, or is physically, functionally, visually or historically linked to its surroundings, or is a landmark. In such cases, it is important to be mindful of the overall bridge setting when considering alterations to or removal of a structure.

In some instances, project work may not directly impact a structure but will have an effect on its overall landscape setting<sup>6</sup>. Consideration should be given to design options that will minimize such impacts and maintain the character of the bridge's setting.

Similarly, the context of the existing setting should be protected when replacement of a heritage bridge takes place. In designing a new, sympathetic structure, the physical setting, (e.g. scenic river crossing, natural settings including rural valleys and woodlands, historic settlement/townscapes) should be taken into account.

## 5.0 Conservation Manuals

The Standards and Guidelines for Provincial Heritage Properties (still under development at the time of printing the OHBG) state that, in general, “for identified heritage properties, ministries shall prepare a Conservation Manual to document and set out guidance with respect to cultural heritage value, appropriate uses, conservation plans, maintenance, repairs, alterations and other factors affecting the future of a property. Conservation Manuals shall also include provisions for monitoring and regular inspections to ensure the ongoing relevance of the guidance provided in the Manuals.”

At present, a conservation manual is required for bridges for which ownership will change. When a bridge is transferred out of MTO's portfolio, the Conservation Manual will be provided to the new owner. MTO will also send a copy of the Conservation Manual and Cultural Heritage Evaluation Report to the Provincial Archives, local municipal archives and Ministry of Culture. In addition, MTO shall advise the Ministry of Culture as early as possible before the bridge is removed from provincial control.

For all Listed Bridges that remain under provincial control, a Conservation Manual is not explicitly required, since it is recognized that records demonstrating MTO's compliance with Ontario Regulation 104/97 is sufficient to satisfy the requirement for a Conservation Manual. The compliance records should be supplemented by the documentary evidence of cultural heritage value, ongoing operating plans and maintenance records.

Ontario Regulation 104/97 states:

- “Every bridge shall be kept safe and in good repair”

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<sup>6</sup> Please refer to MTO 2007 Environmental Guide for Built Heritage and Cultural Landscapes and MTO 2007 (Section 3.7) Built Heritage and Cultural Landscape Environmental Reference for Design



- “The structural integrity, safety and condition of every bridge shall be determined through the performance of at least one inspection every two years under the direction of a professional engineer and in accordance with the *Ontario Structure Inspection Manual*, published by the Ministry, as it may be amended from time to time.”

MTO uses the biennial inspection information to plan for future maintenance and rehabilitation treatments that the bridge may require throughout its life. The preservation strategies used to ensure bridge safety and longevity, are well documented in MTO’s bridge management procedural documents and are also used in the Ontario Bridge Management System. Whenever alteration, modification, rehabilitation or replacement is planned for a Listed heritage bridge, the conservation options described in Section 4 of these guidelines shall apply.

Ontario Regulation 104/97 Standards For Bridges under the Public Transportation and Highway Improvement Act applies to all bridges and as a result, MTO must ensure that Listed heritage bridges are adequately maintained in between rehabilitation cycles. Maintenance is fundamental to conservation and should be undertaken to retain and preserve cultural heritage value. Listed bridges must not be allowed to deteriorate to a state where future rehabilitation becomes prohibitive.



Pakenham Bridge (Mississippi Mills)

## **Appendix A - Ontario Heritage Bridge List**

## Appendix A1: Provincially Owned Heritage Bridges

Bridge Name	Street Address	Location	Structure Type	Construction date	Owner	Region	Type of Recognition
Caledonia	Argyle Street, Caledonia	Haldimand County	Concrete bowstring	1927	Province	Southwestern	Ontario Heritage Bridge List
Bronte Creek	QEW	Oakville (Halton)	Open spandrel concrete arch	1936	Province	Central	Ontario Heritage Bridge List
Henley	QEW	St. Catharines (Niagara)	Open spandrel concrete arch, multiple span (4)	1939	Province	Central	Ontario Heritage Bridge List
Henry Street	Henry Street	Whitby	Concrete rigid frame, double span design	1940	Province	Central	Ontario Heritage Bridge List
Sioux Narrows	South of Sioux Narrows	Sioux Narrows (Kenora)	Timber through truss	1936 (Demolished)	Province	Northwestern	Ontario Heritage Bridge List
Duchesnay Creek	Highway 17B, 2km west of North Bay	Commanda Township (Nipissing)	Timber deck truss	1937	Province	NE	Ontario Heritage Bridge List
Little Current		Little Current (Manitoulin Island)	Steel truss, swing bridge	1913	Province	NE	Ontario Heritage Bridge List
Kaministiquia River	Highway 11/17 west of Kakebeka Falls	Paipoonge Township (Thunder Bay)	Steel truss	1912 (Replaced 1975)	Province	NW	Ontario Heritage Bridge List

## Appendix A2: Municipally Owned Heritage Bridges

Bridge Name	Street Address	Location	Structure Type	Construction date	Owner	Region	Type of Recognition
Willow Street	Willow Street over the Grand River, Paris	Brant (Brant)	Wrought iron through truss	1877 (Demolished and recorded for the OHT 1988)	Municipality	Southwestern	Ontario Heritage Bridge List
Fifth Line	Galetta	West Carleton Township (Ottawa)	Concrete arch, earth filled, concrete deck	1919	Municipality	Eastern	Ontario Heritage Bridge List
Hurdman's		Ottawa (Ottawa)	Concrete arch	1906-07 (Demolished, c.1987)	Municipality	Eastern	Ontario Heritage Bridge List
Lemieux Island	River Street at Ottawa River	Ottawa (Ottawa)	Concrete arch	1916	Municipality	Eastern	Ontario Heritage Bridge List OHA designation – Part IV
Booth Street	Booth Street	Ottawa (Ottawa)	Stone arch (aqueduct)	1873	Municipality	Eastern	Ontario Heritage Bridge List
Lloyd Street	Lloyd Street	Ottawa (Ottawa)	Stone arch (aqueduct)	1873	Municipality	Eastern	Ontario Heritage Bridge List
Lett Street	Lett Street	Ottawa (Ottawa)	Stone arch (aqueduct)	1873	Municipality	Eastern	Ontario Heritage Bridge List
Pooley's Avenue	9 Fleet Street	Ottawa (Ottawa)	Stone arch	1873	Municipality	Eastern	Ontario Heritage Bridge List OHA designation – Part IV
Laurier Avenue		Ottawa	Stone arch	1873	Municipality	Eastern	Ontario Heritage Bridge List
Porters Island		Ottawa	Steel through truss	1894	Municipality	Eastern	Ontario

Bridge Name	Street Address	Location	Structure Type	Construction date	Owner	Region	Type of Recognition
		(Ottawa)					Heritage Bridge List
Cummings		Ottawa (Ottawa)	Concrete arch, 8 spans	1920	Municipality	Eastern	Ontario Heritage Bridge List
O'Connor Street	O'Connor Street at Patterson Creek	Ottawa (Ottawa)	Concrete arch	1907	Municipality	Eastern	Ontario Heritage Bridge List OHA designation – Part IV
Bank Street	Bank Street	Ottawa (Ottawa)	Concrete arch	1911-12	Municipality	Eastern	Ontario Heritage Bridge List
Billings		Ottawa (Ottawa)	Steel beam, through plate girder	1915	Municipality	Eastern	Ontario Heritage Bridge List
Pretoria		Ottawa (Ottawa)	Vertical lift	1880 (Rebuilt 1981)	Region	Eastern	Ontario Heritage Bridge List
Minto Street	King Edward Avenue across Rideau River	Ottawa (Ottawa)	Steel camelback through truss	1900	Municipality	Eastern	Ontario Heritage Bridge List OHA designation – Part IV
Mud Lake	Mud Lake	Palmerston (Frontenac)	Pin-connected steel through truss	1900	County	Eastern	Ontario Heritage Bridge List
Eden Mills Bridge	York Street, Eden Mills	Guelph-Eramosa Township (Wellington)	Concrete bowstring	1913 (Demolished 1998)	Municipality	Southwestern	Ontario Heritage Bridge List OHA designation – Part IV (designation repealed 1997)
Norval	Norval	Halton Hills (Halton)	Wrought iron continuous frame	1885 (Removed)	Regional Municipality	Central	Ontario Heritage Bridge

Bridge Name	Street Address	Location	Structure Type	Construction date	Owner	Region	Type of Recognition
			pony truss	1987)			List
Old Morton Memorial Bridge	Tweed	Tweed (Hastings)	Steel through truss, pin-connected, Warren truss	1893	County	Eastern	Ontario Heritage Bridge List
Thames River	Highway 21 south of Thamesville	Chatham-Kent	Steel through truss	1937	County	Southwestern	Ontario Heritage Bridge List
Fifth Street	Fifth Street	Chatham-Kent	Scherzer rolling lift	1931	Municipality	Southwestern	Ontario Heritage Bridge List
Prairie Siding	Former Raleigh Township	Chatham-Kent	Steel through truss and Strauss trunnion	1925 (Demolished 1984)	County	Southwestern	Ontario Heritage Bridge List
McGregor Creek Pedestrian	Formerly south of King St and east of the Fifth St Bridge	Chatham-Kent	Steel Pratt truss, swing, pin-connected	1896 (Demolished)	Municipality	Southwestern	Ontario Heritage Bridge List



## Appendix B: Evaluation Criteria

The following scoring system was developed to provide a clear and easily understood system for evaluating bridges for potential inclusion on the Heritage Bridge List. The scoring, derived from Ontario Regulation 9/06, is divided into three main areas: Design / Physical Value, Contextual Value and Historic / Associative Value. Within these three divisions are further criteria that are individually scored. For the purposes of these Guidelines, a bridge with a score of 60 or greater is considered provincially important.

Criteria	Details	Score	Comments
<b>Design / Physical Value (Total marks 50)</b>			The Score for Design/Physical Value is comprised of three elements: Functional Design, Visual Appeal and Materials.
Functional Design (Maximum score 20)	Excellent	20	Displays a high degree of technical merit or scientific achievement <u>and</u> ; <ul style="list-style-type: none"> <li>• Is one of a kind or prototype (first or earliest example of its kind), <u>or</u></li> <li>• Is exemplary for its kind (i.e. the longest, highest, etc. of its kind). Examples: Rainy Lake Causeway, reinforced concrete bridge at Massey</li> </ul>
	Very Good	16	Displays a high degree of technical merit or scientific achievement <u>and</u> ; <ul style="list-style-type: none"> <li>• Includes types in which fewer than five survive within a Region.</li> </ul>
	Fair	12	This category includes types of which fewer than five survive within a Region, regardless of degree of technical merit or scientific achievement, even if many were originally constructed.



Criteria	Details	Score	Comments
	Common	0	Of little value from a technical or scientific perspective. Many were built, many remain.
Visual Appeal (Maximum score 20)	Excellent	20	High degree of craftsmanship or stylistic merit for most of the elements of the bridge; the design elements are well balanced and overall the structure is well proportioned; modifications are sympathetic.
	Good	12	Well-proportioned bridge that has a general massing that is appropriate to the landscape in which it is situated.
	Fair	4	Structure has only one or two noteworthy elements or is severely altered from its original form.
	None	0	No noteworthy features
Materials (Maximum score 10)	Excellent	10	Provincially rare or unusual materials. Stone, wrought iron are examples of provincially rare materials.
	Very Good	8	Regionally rare or unusual materials. Wood and riveted steel are examples of regionally rare materials.
	Good	5	Unusual Combinations: this is reserved for materials that are used in combination(s) that are considered unusual or remarkable.
	Common	0	Common materials or combinations

Criteria	Details	Score	Comments
<b>Contextual Value (Total marks 25)</b>			
Landmark (Maximum score 15)	Excellent	15	Physically prominent: The bridge is highly significant physically and a primary symbol in the area. This includes 'gateway' structures. <ul style="list-style-type: none"> <li>○ It is a critical element in understanding a family of bridges within a corridor</li> </ul>
	Good	9	Locally significant: The bridge is perceived in the community as having symbolic value rather than purely visual or aesthetic value. <ul style="list-style-type: none"> <li>○ It is an important element in understanding a family of bridges within a corridor.</li> </ul>
	Fair	3	A familiar structure in the context of the area. <ul style="list-style-type: none"> <li>○ It is a contributory element in understanding a family of bridges within a corridor.</li> </ul>
	Common	0	No prominence in area
<b>Character Contribution (Maximum score 10)</b>	Excellent	10	The bridge is the critical element in defining the character of the area and is of great importance in establishing or protecting this character.
	Good	6	Maintains or contributes to the overall character of the area and is of municipal importance in establishing or protecting this character.

Criteria	Details	Score	Comments
	Common	0	Character contribution is minimal.
<b>Historic / Associative Value (Maximum score 25)</b>			
Designer/Construction Firm (Maximum 15 points)	Excellent	15	Known influential designer-builder: structure demonstrates or reflects the innovative work or ideas of companies, engineers and/or builders having major impacts on the development of a community. For this item, community is broadly defined to include professional groups who have been demonstrably affected by the work in question.
	Good	9	Known prolific builder-designer: companies, engineers, and/or builders directly responsible for a large number of structures whose activities led to design or construction refinements and the establishment of standard forms.
	Fair	3	Known undetermined contribution: companies, engineers, and/or builders about who have made a limited/minor contribution to a community.
	Unknown	0	Those responsible for the design/construction are not known
Association with a Historical theme, person or event (Maximum score 10 points)	Excellent	10	Direct Association with a theme or event that is highly significant in understanding the cultural history of the nation, province or municipality.
	Good	6	Close association with a theme or event within an area
	Common	0	Limited or no association with historic themes or events.

### Appendix B1 – Blank Bridge Form

Criteria	Details	Maximum Score	Assigned Score	Comments – Provide justification for the assigned score
<b>Design/Physical Value (Total marks 50)</b>				
Functional Design (Maximum score 20)	Excellent	20		
	Very Good	16		
	Fair	12		
	Common	0		
Visual Appeal (Maximum score 20)	Excellent	20		
	Good	12		
	Fair	4		
	None	0		
Materials (Maximum score 10)	Excellent	10		
	Very Good	8		
	Good	5		
	Common	0		

Criteria	Details	Maximum Score	Assigned Score	Comments – Provide justification for the assigned score
<b>Contextual Value (Total marks 25)</b>				
Landmark (Maximum score 15)	Excellent	15		
	Good	9		
	Fair	3		
	Common	0		
Character Contribution (Maximum score 10)	Excellent	10		
	Good	6		
	Common	0		
<b>Historical Association (Maximum score 25)</b>				
Designer/Construction Firm (Maximum 15 points)	Excellent	15		
	Good	9		
	Fair	3		
	Unknown	0		

Criteria	Details	Maximum Score	Assigned Score	Comments – Provide justification for the assigned score
Association with a Historical theme, person or event (Maximum score 10 points)	Excellent	10		
	Good	6		
	Common	0		
		<b>Total</b>		

## **Appendix C - Cultural Heritage Evaluation Report**

### **C1 – General**

A **Cultural Heritage Evaluation Report** examines a property as a whole, its relationship to its surroundings, as well as its individual elements – engineering works, landscape and archaeological areas.

This report will include, but is not limited to:

- Historical Research, Site Analysis and Evaluation including Field Assessment,
- Bridge form with scoring and evaluation,
- Description of Property, Statement of Cultural Heritage Value and a description of Heritage Attributes of the cultural heritage resource (bridge, cultural heritage landscape, archaeological site, if any),
- Images and supporting documentation.

The quality of the report depends on a thorough understanding of the physical values of the property, a documentation of its history through scholarly research, and an analysis of its social context. The author of the report relies on standard historical techniques, such as site visits, public consultations, archival research, comparisons with similar properties and mapping.

The preparation of a Cultural Heritage Evaluation Report is the means by which a property is examined for its cultural heritage value. The report is the main source used by MTO and MCL to determine whether a property is of cultural heritage value. If a property is determined to be of cultural heritage value, the report serves as the foundation for the Statement of Cultural Heritage Value and a Conservation Manual for the property. The report also functions as a background document for property managers because it contains useful information about the history of the property and its individual assets.

A Cultural Heritage Evaluation Report generally contains (but is not limited to) the following:

#### **1. Historical Research, Site Analysis and Evaluation**

If the available identification and description of the importance and heritage attributes of the bridge and associated landscape are inadequate for the purposes of the Cultural Heritage Evaluation Report or heritage impact assessment, or the cultural heritage resource is newly identified, research, site survey and analysis, and evaluation are required. An explanation of the methodology used must accompany a clear statement of the conclusions

regarding the cultural heritage value and heritage attributes of the bridge and associated landscape.

## **2. Description of Property, Statement of Cultural Heritage Value or Interest and description of Heritage Attributes of the Bridge.**

The *Description of Property* describes the general character of the property and identifies those aspects of the property to which the listing applies. In addition to providing information so that the location of the property can be identified (i.e. municipal address and neighborhood if appropriate), it should outline the principal resources that form part of the Listing (in this case, a bridge) and identify any discernible boundaries. The *Description of Property* should be no longer than two or three sentences.

The *Statement of Cultural Heritage Value or Interest* should convey why the property is important, explaining cultural meanings, associations and connections the property holds for the community. This statement should reflect one of or more of the evaluation criteria. The *Statement* should provide sufficient information to explain the significance of the property but should be no longer than two or three paragraphs, explaining the core aspects of the property's cultural heritage value.

The *Description of Heritage Attributes* describes the key attributes or elements of the property that must be retained to conserve its cultural heritage value or interest. Heritage attributes are those attributes (i.e. materials, forms, location and spatial configurations) of the property, buildings and structures that contribute to the property's cultural heritage value or interest, and which should be retained to conserve that value.

For further information on this requirement, see pages 15 to 18 of MCL's *Designating Heritage Properties* (Ontario Heritage Tool Kit) - [http://www.culture.gov.on.ca/english/culdiv/heritage/Toolkit/DHP\\_Eng.pdf](http://www.culture.gov.on.ca/english/culdiv/heritage/Toolkit/DHP_Eng.pdf)

## **3. Bridge form with scoring and evaluation**

In completing the bridge form, the Heritage Consultant will include a rationale for each scoring criterion. This is to make the scoring transparent and understandable by those reviewing the report. The scoring criteria are included at Appendix B. A template for a scoring form is included in Appendix B1.

## **4. Images and supporting documentation.**



## **C2 - Example of Statement of Cultural Heritage Value or Interest and Description of Heritage Attributes**

The following examples are of bridges not owned by the province.

### **1. Middle Road Bridge, City of Mississauga (adapted from the Canadian Register of Historic Places)**

#### *Description of Property*

The **Middle Road Bridge** is located at the eastern terminus of Sherway Drive and spans the Etobicoke Creek, which acts as a boundary between the City of Mississauga and the City of Toronto.

Currently used as a pedestrian bridge, the Mississauga portion of the 4.3 metre wide and 26.1 metre long concrete truss bridge is recognized for its heritage value by City of Mississauga Bylaw 1101-86.

The City of Toronto (formerly City of Etobicoke) portion of the bridge is recognized for its heritage value by (former) City of Etobicoke Bylaw 1986-281.

#### *Statement of Cultural Heritage Value or Interest*

The heritage value of the Middle Road Bridge lies in its architectural and historical significance, and in its contextual value as an important community landmark.

Built in 1909-1910 to accommodate growing use of the Middle Road, it is the first example in Canada and second example of a reinforced concrete truss or tied arch bridge in North America. The bridge was designed by Frank Barber of Barber and Young, a prominent bridge and structural engineer from Toronto and constructed by O.L. Hicks of Humber Bay, who is recognized for his unique construction method which involved the placement of ice on concrete to slow down the setting process in order to ensure a good bond between successive pours.

Constructed on the stone abutments of a former bridge, the Middle Road Bridge is an enduring remnant of the historic Middle Road, which was a major transportation corridor connecting the former counties of York and Peel until it was surpassed by the Queen Elizabeth Way in the late 1930s. The bridge provided an important economic and social link for surrounding communities. In the early 1900s, it was used by horses, carts and cattle to cross the waterway. Later, automobiles used the bridge, although it only allowed for one lane of traffic. The bridge is now located on the edge of a quiet residential suburb. Although used only for pedestrian traffic, it continues to provide the local community with access to a commercial area on the Etobicoke side of the valley.

Middle Road Bridge is an important landmark within the community. The

structure is physically prominent in its setting, and continues to be appreciated by the public. The bridge is the only remaining feature of this portion of the popular, well-travelled highway, the Middle Road.

#### *Description of Heritage Attributes*

Key heritage attributes that embody the heritage value of the bridge as an early example of reinforced concrete truss or tied arch bridge construction include its:

- massive arched compression chords, slim vertical tension members and system of counter braces
- truss joints specially designed so that members will fail in the body rather than at the joint

Key heritage attributes that embody the contextual heritage value of the bridge as an enduring remnant of the historic Middle Road and community landmark include the bridge's:

- continued cultural and economic use as a transportation link between the former Counties of Peel and York
- location on the stone abutments of a former crossing of the Etobicoke Creek
- prominent setting at the eastern terminus of Sherway Drive in view of the Queen Elizabeth Way
- continued relationship to the adjacent natural lands of the Etobicoke Creek Valley

## **2. West Montrose Covered Bridge, Township of Woolwich**

#### *Description of Property*

The West Montrose Covered Bridge is a late 19<sup>th</sup> century covered wooden bridge that spans the Grand River in the rural village of West Montrose. Connecting Hill Street, Covered Bridge Drive and Rivers Edge Drive, the bridge is just over 200 feet in length and covered with red-painted wood panelling and a gable roof.

#### *Statement of Cultural Heritage Value or Interest*

The West Montrose Covered Bridge is the only remaining covered bridge in Ontario and the second oldest surviving bridge in the Region of Waterloo. It was designed by a local contractor, John Bear, who, with his brother Benjamin, constructed the bridge in 1881 as a replacement for an earlier open bridge at the same location. Originally, the bridge was constructed solely of wood. Over the course of more than a century, a number of improvements have been necessary to maintain the function and integrity of the bridge. The bridge materials today are a mix of wood, stone, asphalt, concrete and steel, representing not only the evolution of bridge technology but also the stewardship of the township, the

region and the province. While the materials have been altered, however, the original form of the bridge designed by John Bear has been largely maintained.

The 'Kissing Bridge', as it was appropriately nicknamed due to the intimacy and privacy that the covered bridge offered its travellers, is an iconic structure. It is a prominent and recognizable feature in arguably one of the most picturesque landscapes in Ontario. It is also representative of the early history of Woolwich Township and of an earlier time in the village.

#### *Description of Heritage Attributes*

Attributes that contribute to the cultural heritage value of the bridge and which should be retained include:

- the original location of the bridge in the Village of West Montrose spanning the Grand River
- the original dimensions of the bridge, 208 feet in length and 17 feet wide
- the original truss configuration, a hybrid Queen Post – Howe timber configuration, reinforced by a recycled 1944 Bailey steel truss structure
- the central pier
- the wood exterior sheathing and interior panelling, punctuated by louvered window openings
- the shingled gable roof
- the system of illumination by decorative electric interior lamps
- views to and into the bridge from the north and south banks of the Grand River

### **C3 - Qualifications of a Heritage Consultant**

#### **Heritage Consultants – Built Heritage and Cultural Heritage Landscapes**

It may be appropriate to employ more than one specialized heritage consultant for an undertaking impacting a bridge, as it includes the structure itself, cultural heritage landscape, and maybe areas of archaeological potential.

Depending on the nature of the project, a qualified heritage expert for built heritage/cultural landscapes could include a heritage conservation architect, an architectural conservator, an architectural or landscape historian, a historic landscape architect, or a member of another discipline with specialized training in preservation/historic materials (e.g. structural or mechanical engineer specializing in heritage conservation).

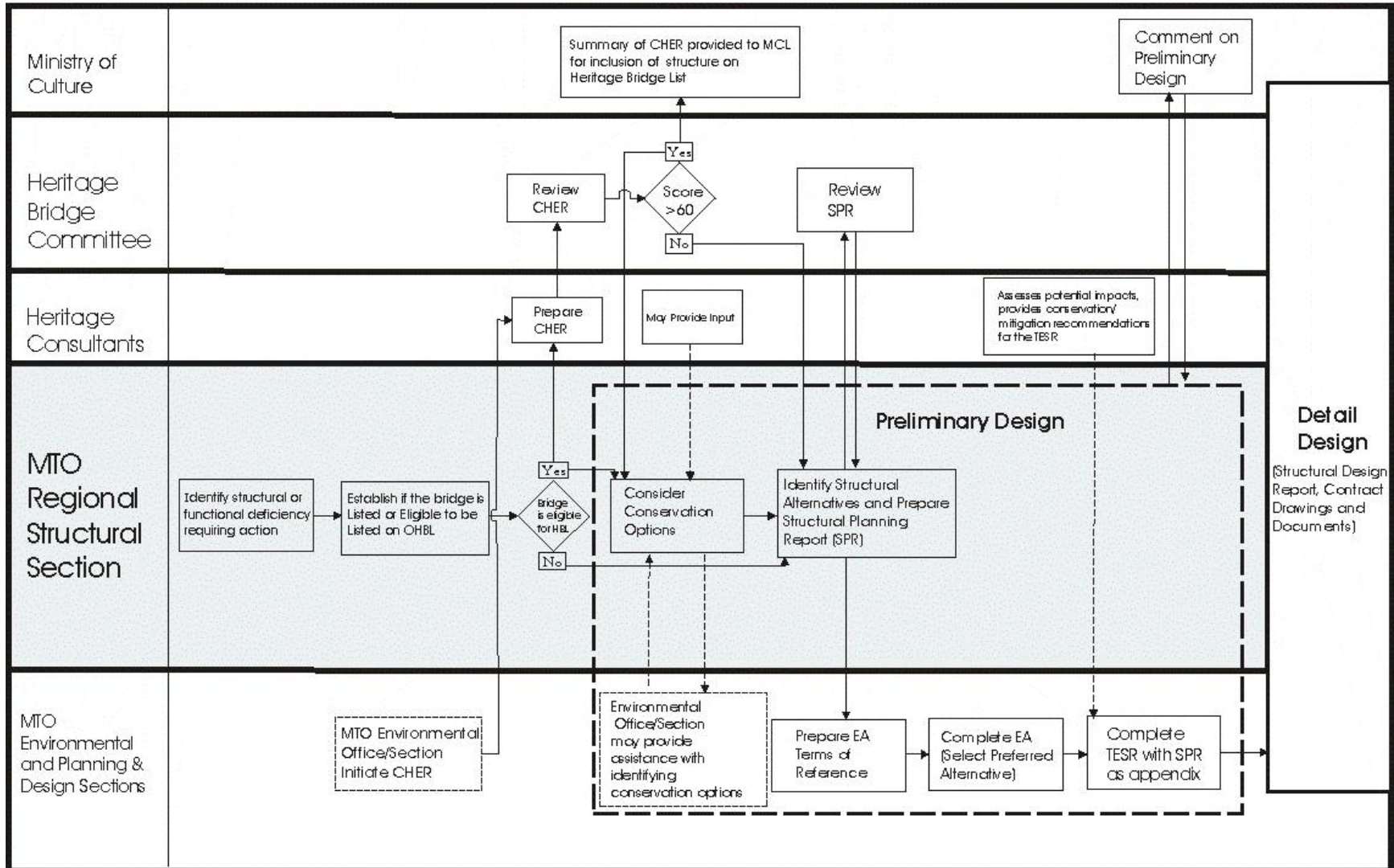
The expert should have demonstrated knowledge of the pertinent Ontario policies and procedures for cultural heritage, the Standards and Guidelines of Conservation of Historic Places in Canada, the Ontario Heritage Bridge Guidelines, and have demonstrated experience in fulfilling the requirements of an environmental assessment for built heritage and cultural landscapes. This

should include a minimum of five years experience in the heritage conservation field.

The Canadian Association of Heritage Professionals website at [www.caphc.ca](http://www.caphc.ca) offers a list of its members, which includes a variety of heritage consultants.

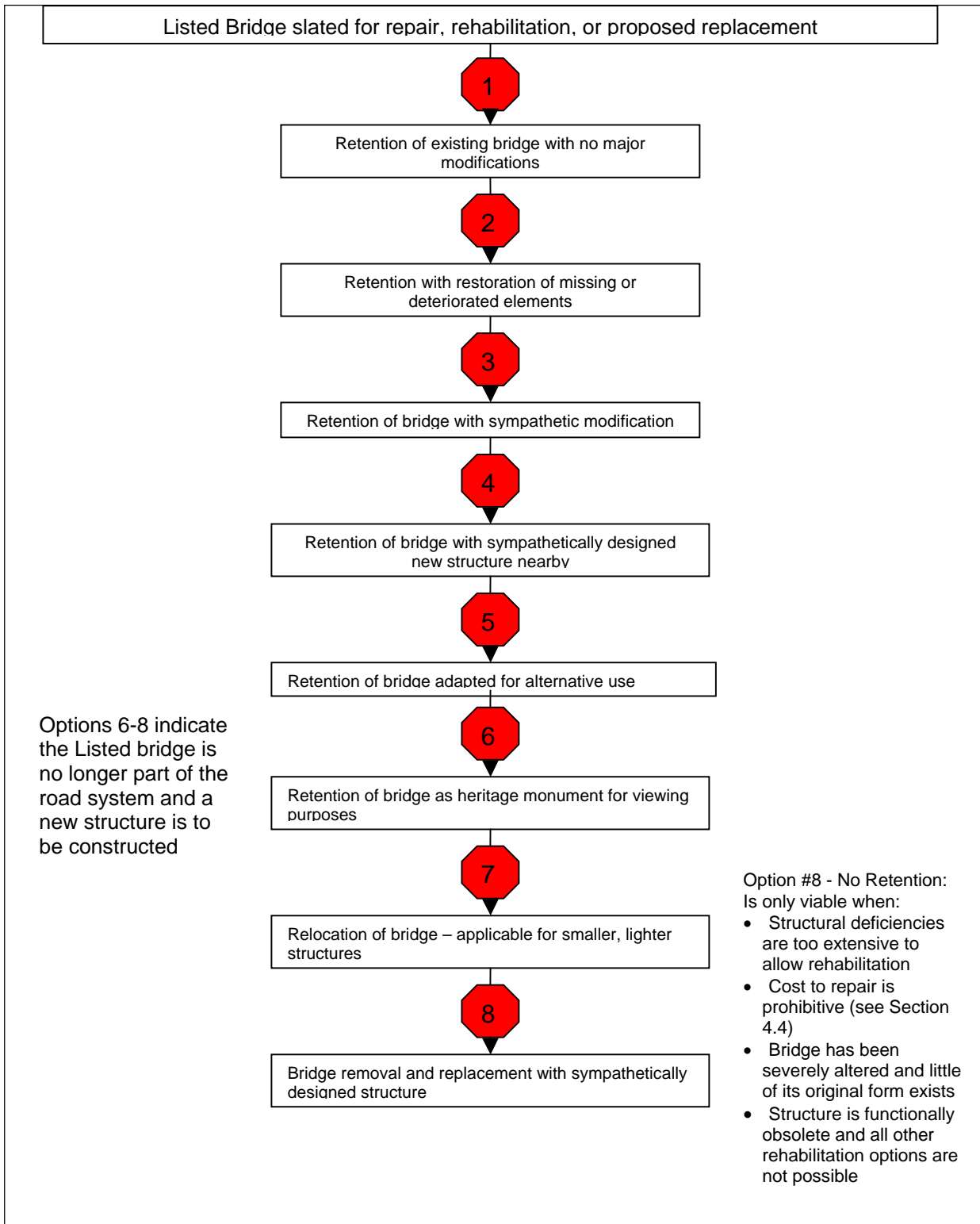
Licensed Archaeologists – See Ministry of Culture Website for qualifications.

Appendix D: Heritage Bridges in the EA and Design Process



## Appendix E

The following eight conservation options are to be considered in rank order such that Option 1 must be considered and shown to be non-viable before Option 2 can be considered and so on.



## Appendix F - Definitions

**Alter** means to change in any manner and includes to restore, renovate, repair or disturb and “alteration” has a corresponding meaning. (Ontario Heritage Act)

**Archaeological resources:** Includes artifacts, archaeological sites and marine archaeological sites. The identification and evaluation of such resources are based upon archaeological fieldwork undertaken in accordance with the Ontario Heritage Act. (Provincial Policy Statement - PPS, 2005)

Archaeological resources are often on or below ground, or form part of a cultural landscape. Their integrity can be compromised by any land use activity, including, but not limited to, site alteration, grading, soil removal, construction, shoreline stabilization, alteration to watercourses, extraction of aggregates and the clearing of woodlots or forested areas. (Ontario Heritage Tool Kit, Heritage Resources in the Land Use Planning Process. MCL, 2006)

**Areas of archaeological potential:** Areas with the likelihood to contain archaeological resources. Criteria for determining archaeological potential are established by the Province, but municipal approaches which achieve the same objective may also be used. Archaeological potential is confirmed through archaeological fieldwork undertaken in accordance with the Ontario Heritage Act. (PPS, 2005)

**Bridge:** A structure that provides a roadway or walkway for the passage of vehicles, pedestrians, or cyclists across an obstruction, gap or facility that is greater than 3 metres in span. (Canadian Highway Bridge Design Code). In the context of this guideline, this term refers to those bridge structures owned by the provincial government.

**Built heritage resources:** One or more significant buildings, structures, monuments, installations, or remains associated with architectural, cultural, social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the Ontario Heritage Act, or listed by local, provincial or federal jurisdictions. (PPS, 2005)

**Compatible development:** Development that approximates or compliments the original design. The design for a new structure is handled in such a way that it is clearly interpreted as a contemporary facility while still evoking the character of the original.

Development and site alteration may be permitted on adjacent lands to protected heritage property 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.

Mitigative measures and/or alternative development approaches may be required in order to conserve the heritage attributes of the protected heritage property affected by the adjacent development or site alteration. (PPS, 2005)

**Conservation:** All the processes of looking after a place so as to retain its cultural significance. (The Burra Charter. The Australia ICOMOS, 1999)

Conservation Manual: A management document that sets out strategy to protect the cultural heritage value of a property. It sets out what is significant about the property and what options and interventions are appropriate to retain that significance into the future.

**Conserved:** The identification, protection, use and/or management of cultural heritage and archaeological resources in such a way that their heritage values, attributes and integrity are retained. This may be addressed through a conservation plan or heritage impact assessment. (PPS, 2005)

**Cultural heritage landscape:** A defined geographical area of heritage significance which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples may include, but are not limited to, heritage conservation districts designated under the Ontario Heritage Act; and villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trailways and industrial complexes of cultural heritage value. (PPS, 2005)

**Cultural heritage value:** A property may be determined to be of cultural heritage value if it meets the following criteria (derived from The Ontario Heritage Act, Regulation 9/06):

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



- The property has *contextual value* because it:
  - is important in defining, maintaining or supporting the character of an area,
  - is physically, functionally, visually or historically linked to its surrounding, or
  - is a landmark.

Similar criteria are under development for terrestrial and marine archaeological resources.

**Listed bridge:** A bridge that has been identified as having cultural heritage importance, scored greater than 60 in the evaluation, and is worthy of conservation by inclusion on the Ontario Heritage Bridge List. Such bridges are subject to the provisions of the Ontario Heritage Bridge Guidelines.

**Maintenance:** The continuous protective care of the fabric and the setting of a place, and is to be distinguished from repair. Repair involves restoration or reconstruction. Maintenance is fundamental to conservation and should be undertaken where the fabric is of cultural heritage value and its maintenance is necessary to retain that value. (The Burra Charter, 1999)

**Reconstruction** means returning a place to a known earlier state and is distinguished from restoration by the introduction of new material into the fabric. (The Burra Charter, 1999)

**Rehabilitation:** In an engineering context, rehabilitation is defined as a modification, alteration or improvement to the existing condition of a structure or bridge subsystem that is designed to correct deficiencies for a particular design life and live load level. (Canadian Highway Bridge Design Code).

As described in the Standards and Guidelines for the Conservation of Historic Places in Canada, Parks Canada

Rehabilitation means the action or process of making possible a continuing or compatible contemporary use for a cultural heritage property, or of an individual component, through repair, alterations and/or additions, while protecting its cultural heritage value.

**Replication:** The making of an exact copy of an existing structure feature or artefact. The purpose of replication is usually to replace a missing or decayed component in order to maintain aesthetic unity and harmony.

**Restoration:** The activity in which a structure is returned to the appearance of an earlier time by removing later material and/ or by replacing missing elements and details. Restoration of missing elements must be accurate, use the same materials, and be based on physical evidence or documentary evidence such as historic photographs and drawings.

**Preservation** means maintaining the fabric of a place in its existing state and retarding deterioration. (The Burra Charter, 1999)

**Sympathetic Modification:** Means making new work physically and visually compatible with the heritage attributes of a bridge. New additions, alterations, structural reinforcements, or related new construction shall not destroy historic materials that characterize the bridge. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the cultural heritage value of the bridge and its environment.

# **Appendix G – Heritage Bridge Guidelines Development Committee**

## **Committee Members**

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