

THE CORPORATION OF THE CITY OF SARNIA
People Serving People

ENGINEERING DEPARTMENT

OPEN SESSION REPORT

TO: Mayor Bradley and Members of Sarnia City Council

FROM: J.P. André Morin, P.Eng., City Engineer
Kevin Edwards, Manager of Planning

DATE: June 23, 2014

SUBJECT: Cull Drain Pedestrian Bridge – Status Update

Recommendation:

It is recommended:

1. That Sarnia City Council receive this report for information purposes and directs staff to refer the rehabilitation/replacement of the Cull Drain Bridge to the 2015 Budget process, pending the outcome of further research and input into the Old Lakeshore Road right-of-way.

Background:

In May 2014, Council received an information update report from staff on the Cull Drain Pedestrian Bridge. It was indicated in this report that staff would work to gather the final details such as a heritage status report and access agreements with adjacent landowners, as well as finalizing cost estimates and reviewing possible funding opportunities. Staff was also to hold a follow-up public meeting with affected Bright's Grove residents, prior to presentation of a final report to Council.

Comments:

Engineering Staff has finalized the Engineering consultant reports and Planning Staff along with the Heritage Committee has completed the evaluation and in-house heritage impact assessment of the Bridge and also prepared a document outlining recommended content for a full Heritage Impact Assessment if Council were to choose the option of municipal designation under the Ontario Heritage Act. A staff led public meeting was held on June 4, 2014.

The following list of documents is provided with this report for Council's consideration and review:

Appendix 1: Internal Review of the Cull Drain Bridge

Appendix 2 - Evaluation of the Cull Drain Bridge

Appendix 3 - In-house Heritage Impact Assessment of the Cull Drain Bridge

Appendix 4 - Recommended contents of a Heritage Impact Assessment

HERITAGE STATUS EVALUATION

Appendix 1 of this report provides a historical background to the bridge and its surrounding area. A description is also provided of the construction of the bridge within its historical context.

With the assistance of the Sarnia Heritage Committee, Planning staff:

- Determined the history of the bridge;
- Evaluated the bridge within the context of relevant legislation and policies, i.e. Official Plan Policies, Ontario Heritage Act, the Planning Act, the Provincial Policy Statement and the Ontario Heritage Bridge Guidelines (Appendix 2 attached);
- Organized an open forum to generate discussion and input from the public, other agencies and interest groups;
- Completed an in-house Heritage Impact Assessment (HIA) to assess and review the potential cultural heritage significance of the bridge and recommend an overall approach pertaining to the future of the bridge (Appendix 3 attached);
- Provided the Terms of Reference for a Heritage Impact Assessment (HIA) (Appendix 4 attached); and
- In conjunction with the staff of the Engineering Department, determined possible funding avenues that can be accessed to implement the recommendation made by the HIA

One point of note is that the naming of the bridge has been questioned as to whether it is Perch Creek Bridge or Cull Drain Bridge and this matter is addressed in the attached review (Appendix 1).

The Planning Staff internal review for Heritage status concludes that this structure may be considered for municipal designation under the Ontario Heritage Act. Council is not being asked to make a decision at this time with respect to further pursuit of the Heritage status. Staff will outline all options and implications for Council's consideration in the report planned for late fall 2014.

ENGINEERING STRUCTURAL EVALUATION AND COST ESTIMATES

The Engineering Department finalized a preliminary engineering review completed by MIG Engineering in October 2012 (attached). The report provided three alternatives and cost estimates as follows:

Alternatives	Cost Estimates
Remove the existing structure	\$51,000 (excluding HST)
Rehabilitate the existing structure	\$411,000 (excluding HST)
Replace with a new structure	\$243,000 (excluding HST)

This preliminary report did not take into account the 'Heritage' value on the repair project but simply to repair/replace the deteriorated components of the structure to make the structure passible with an additional 25 year life cycle.

At the initial public meeting held in June 2013, attendees representing the heritage concerns felt the costs presented were not accurate or sufficient, as the consultant had little experience with 'Heritage' structures and the use of 'Heritage' preservation methods. As such, Staff followed the City's procurement policy and also consulted with the Heritage Committee and BM Ross and Associates, a consultant with extensive 'Heritage' experience, was engaged to complete a rehabilitation study for this structure using 'Heritage' preservation methods. A full copy of the B.M. Ross report is attached. The B.M. Ross report provided the following cost estimates:

Alternatives	Cost Estimates
Rehabilitate the existing structure	\$552,700 (excluding HST)
Replace the top chord (within 5-10 years)	\$80,000 (excluding HST)
Sandblast and repaint entire structure	\$400,000 (excluding HST)
TOTAL	\$1,032,700 (excluding HST)

JUNE 4, 2014 PUBLIC MEETING

A public meeting was held on June 4, 2014 to share a summary of the information that had been gathered, and to solicit public comment and input into a report that had been planned for the June 30, 2014 meeting of Council to present Council with options and seek Council's direction on the rehabilitation/replacement of the bridge. Approximately 130 residents were in attendance, comment sheets were provided and a number were completed and returned to staff. Staff has also been receiving and will continue to receive comments to the engineering@sarnia.ca e-mail address.

Comments received and the majority of the attendees at the public meeting, generally agree that they would like to see the bridge reopened to allow access across the creek, through replacement or rehabilitation of the existing bridge. A contingent is passionate about the restoration of the existing structure. Finally, the majority are in agreement that access across the Old Lakeshore Road Right-of-Way needs to be addressed or resolved and/or a link established to provide legal and proper access to Lambert Road.

OUTSTANDING INFORMATION AND FURTHER INVESTIGATION

Staff has not been able to secure access agreements with adjacent landowners and discussions are on-going to establish a link between the Old Lakeshore Road Right-of-Way and Lambert Road as shown on the attached drawing.

On April 11, 2006, Council received a report from the Director of Community Services respecting the Road Allowance between Mike Weir Park and Perch Creek (Cull Drain) Bridge (Old Lakeshore Road Right-of-Way) and passed a resolution to support the efforts of the Waterfront Access Committee and staff to reaffirm ownership and access to the lands included in the Old Lakeshore Road Right-of-Way (ROW). A copy of the 2006 report is attached.

Unfortunately, this 2006 resolution was not pursued and the ROW remains as an unmaintained and non-designated path. In recent months, Engineering staff have met with the majority of the homeowners within the area of the Old Lakeshore Road ROW, and have reviewed the erosion issues and obstacles within the ROW. The review determined that walking in this area is severely obstructed and hazardous in areas of erosion.

It should be noted that neither the Township of Clearwater or the City of Sarnia has ever relinquished ownership of the Old Lakeshore Road ROW. Therefore, staff would like the opportunity to fully investigate the Old Lakeshore Road ROW to:

- establish the location of the property lines and research matters of title and ownership;
- determine the impact of asserting ownership of this land;
- determine costs to establish a proper multi-use path, including:
 - shoreline protection
 - path construction
 - on-going maintenance

This complete and proper assessment will allow staff to provide a report back to Council providing full reporting on this area prior to a decision being made to expend significant dollars to replace or rehabilitate the Cull Drain Pedestrian Bridge.

Staff's goal is to undertake this further investigative work over the next few months, and provide a full detailed report back to Council in late Fall to allow for consideration in the 2015 Budget deliberations, if Council chooses to proceed with a project in this area.

Consultation:

Engineering and Planning Department staff has continued to work collaboratively on this issue. Assistance has been sought from the Heritage Committee, engineering consultants, and relevant manufacturers and suppliers. The residents in the affected area as well as the public in general have been consulted through two public meetings and many other individual meetings on site with staff. Staff expects to continue discussions and meetings on site with impacted residents to fully investigate the Old Lakeshore Road Right-of-Way issue.

All reports and documentation relating to the Cull Drain Pedestrian Bridge have been made available for public review and comment on the City Website www.sarnia.ca under public consultation on the front page. E-mail submission will continue to be reviewed and considered by staff, until preparation of the report in the Fall of 2014.

Financial Implications:

There are no financial implications to report at this time. As previously stated, the matter should be addressed as part of the 2015 budget process.

Reviewed by:



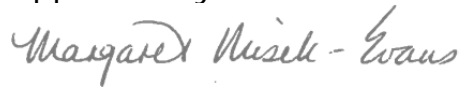
J.P. André Morin, P.Eng.
City Engineer

Reviewed by:



Kevin Edwards
Manager of Planning

Approved by:



Margaret Misek-Evans
City Manager

Report prepared by: Mike Berkvens C.E.T.- Development Manager and
Max Williams – Planner II

Attachments:

MIG Engineering report
BM Ross and Associates report
Old Lakeshore Road ROW
Report to Council dated April 11, 2006 – from the Director of Community
Services

APPENDIX 1: INTERNAL REVIEW OF THE CULL DRAIN BRIDGE

Table 1. - DESCRIPTION OF THE BRIDGE

DESCRIPTION OF THE CULL DRAIN BRIDGE	
ADDRESS /LOCATION	Located on the bank of Lake Huron, along "Old" Lakeshore Road, east of Telfer Side Road
LEGAL DESCRIPTION	Lakeshore Road, Parts of Lot 24 and 25, 9 th /Front Concession, Sarnia Township.
NEIGHBOURHOOD/COMMUNITY	Bright's Grove
HISTORICAL NAME	Cull Drain Bridge
CONSTRUCTION DATE	1910
ORIGINAL OWNER	Sarnia Township
ORIGINAL USE	Bridge along a municipal right-of-way used for all forms of transport
CURRENT USE	Closed to all traffic
ARCHITECT/BUILDER/DESIGNER	Bridge built by Jenks & Dresser bridge building company. Abutments built by Alfred Kirkpatrick of Petrolia
DESIGN/CONSTRUCTION	Bridge built by Jenks & Dresser bridge building company. Abutments built by Alfred Kirkpatrick of Petrolia
ARCHITECTURAL STYLE	Warren pony truss
ADDITIONS/ALTERATIONS	None
CRITERIA	Design/Physical, Historical/Associative & Contextual
HERITAGE STATUS	Not listed on City of Sarnia Inventory of Heritage Properties

HISTORICAL BACKGROUND

History of Cull Drain

The Cull Drain Bridge was built over the Cull Drain which was dug to drain Lake Wawanosh, a body of water and marsh that covered over 7,000 acres, that was formed behind the sand dunes along Lake Huron. Claims were made at the time that Lake Wawanosh greatly retarded the progress of the former Township and injuriously affects the health of its inhabitants. As a result, a bill (Bill No. 270) was enacted by the Crown in 1857 to authorize the draining of Lake Wawanosh in the Township of Sarnia. Then in 1859, another bill (Bill No. 170) was enacted to enable the corporation of the Town of Sarnia to purchase from the government, the land reclaimed by the draining of Lake Wawanosh and dispose of it. These actions afforded the

urban expansion of the municipality, increased the acreage of farmland and provided fertile soil for market garden and vegetable production in the area. The Drain was named after James Cull, the civil engineer in charge of draining the lake and Lake Wawanosh was named for Chief Joshua Wawanosh, hereditary Chief of the St. Clair Ojibwas', who had a dwelling on the banks of the lake before he moved to a nearby reserve. The word "Wawanosh" is a First Nations word meaning "one who sails carefully."

Prior to the construction of the Cull Drain, the natural outlet of Lake Wawanosh was the Riviere Aux Perches which left the lake at the southeasterly side and flowed in a north-easterly direction to connect with Cow Creek at Bright's Grove. When the cull drain was constructed, a portion of the former Riviere Aux Perches located in Lot 13, Front Concession, was also drained.

History of the Bridge

Archival information (Lambton County Reports) indicates that the bridge over the Cull drain was built in 1910. The plans and specifications required the erection of the steel bridge, 100 feet centre to centre in bearing by 16 feet clear roadway, across the Cull drain on the Lakeshore Road, 9th Concession of Sarnia Township. The steel work was designed according to the Government of Ontario specifications and carrying weight of 100 lbs. per square foot (in addition to its own weight and the weight of the concrete floor), and a concentrated load of 12 tons on two axles with 10 foot centres." The Reports also indicated that the steel was manufactured by the Carnegie Steel Company, which can be inferred from the rolled markings on the material itself. The Bridge is 100 feet of 1" continuous span polygonal Warren pony truss with the polygonal top chord having a "camelback style" five-slope design. The placement of the travel surface in relation to the structure makes this a pony configuration where traffic goes between parallel superstructures that are not cross-braced at the top.

The "Warren Truss" design was patented in Great Britain in 1848, by James Warren and Willoughby Morzoni. It consists of longitudinal members joined only by angled cross-members, forming alternately inverted equilateral triangle-shaped spaces along its length, ensuring that no individual strut, beam, or tie is subject to bending or torsional straining forces, but only to tension or compression. These triangles can also be further subdivided (which is the case with this bridge), with those having their apexes pointing down. This bridge also has the element of a queen post truss with a horizontal top chord to achieve a longer span.

The Bridge was constructed at a total cost of \$4,428.12, which is broken down as follows:

1. The main span of the bridge was constructed at a cost of \$2500, by a Sarnia company named Jenks & Dresser. The partnership of Jenks & Dresser which built bridges in Sarnia and Port Huron was later dissolved with the Sarnia enterprise (later known as the Sarnia Bridge Company) being owned by Mr. Jenks and Mr. Norton while the Michigan end of the business being owned by Mr. Dresser and Mr. Fuller;
2. The abutments for the Bridge, was built by Alfred Kirkpatrick, a Petrolia resident, at a cost of \$1100; "A. KIRKPATRICK - August 1910" is scrawled in the cement of the northeast section of the top of the curb leading to the bridge.
3. Cement for the abutments and road deck was supplied by F. Gutteridge of Sarnia, at a cost of \$478.12;
4. To facilitate the construction of the Bridge, strips of land from Lot 24 on the east side and Lot 25 on the west side were expropriated from the properties of Angus Jamieson and James Yeates (respectively), at a total cost of \$350.00, (\$180.00 to Mr. Jamieson and \$165.00 to Mr. Yeates, plus \$5.00 legal fees). Parties involved in the arbitration to determine the cost of the lands include Robert Fleck - appointed by the landowners, James S. McLean appointed by Council and Hanna, Le Sueur and Co., - law firm.

This total expense of \$4,428.12 was partially financed by the County of Lambton, which passed a by-law (By-law No. 430 adopted on the 10th of June, 1910), to grant the sum of \$2,300.00 to assist the Township of Sarnia to build the bridge over the Cull drain.

This bridge is a superb example of an industrial archeological relic. Its riveted construction and lattice railing and 16' road width are from much earlier times at the dawn of the automobile era. Archival evidence suggests that cars stopped travelling over it for some time in the late 50's. It was not in service on St. Patrick's Day in 1973 when a violent storm scoured out much of Old Lakeshore Road between Telfer and Brigden Side Roads.

HERITAGE EVALUATION OF THE BRIDGE

1. The Ontario Heritage Bridge Guidelines (OHBG)

The Provincial guidelines were devised for provincially owned bridges 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 and Municipal Heritage Committees and other heritage stakeholders, concerned with the conservation of heritage bridges.

The evaluation and assessment criteria provided by the guidelines was used by staff and Sarnia Heritage Committee to determine the heritage value of the bridge. Our assessment is documented in Appendix 1 of this report. The total assessed value for the Cull Drain Bridge is 72 points out of a possible 100 points, which indicate that the bridge has a relatively high heritage value.

2. Ontario Heritage Act Criteria for Determining Cultural Heritage Value or Interest

The Ontario Heritage Act also provides regulations (Ontario Regulation 9/06) to be applied to evaluate the "Criteria for Determining Cultural Heritage Value or Interest" of properties in Ontario. The set of criteria are grouped into the following categories that determine the cultural heritage value or interest of a potential heritage resource in the municipality. They are:

- a) Design/Physical Value;
- b) Historical/Associative Value; and
- c) Contextual Value.

Should the potential heritage resource meet one or more of the above-mentioned criteria, it may be considered for designation under the Ontario Heritage Act.

While the criteria are prescribed for municipal designation under Part IV, Section 29 of the Ontario Heritage Act, the City of Sarnia and other municipalities uses it when assessing properties for inclusion on the municipal Register of Heritage Properties. Staff and the Members of Sarnia Heritage Committee used the following three (3) evaluation tables to determine the heritage value of the Cull Drain Bridge. In each Table, the evaluation criteria is listed on the left column while the analysis is noted on the right column if the criterion is applicable.

a) Table 2 - Design or Physical Value

This Table contains the evaluation of the Cull Drain Bridge against criteria as set out in Ontario Heritage Act Regulation 9/06.

The property has design value or physical value because it:

Ontario Heritage Act Criteria	Analysis
i. it is a rare, unique, representative or early example of a style, type, expression, material or construction method	Based on available data, the Cull Drain Bridge is one of the few remaining polygonal Warren pony truss bridges in Lambton County and the only one ever built in Sarnia. This bridge is a superb example of an industrial archeological relic.
ii. displays high degree of craftsmanship or artistic merit	The Bridge is not known to display any elements of superior materials or craftsmanship. However, bridge features of note are its riveted construction and lattice railing and 16-foot road width are from the dawn of the automobile era.
iii. demonstrates high degree of scientific or technical achievement	N/A

b) Table 3 - Historical or Associative Value

The property has historical value or associative value because it:

Ontario Heritage Act Criteria	Analysis
<p>i. direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community</p>	<p>The bridge has a direct association with the growth and development of Bright's Grove area in the early twentieth century. In particular, it linked the community with the urban area of Sarnia. As a result, it encouraged growth of the Bright's Grove community as the main summer playground for Sarnia residents.</p> <p>The subject bridge, is directly associated with the draining of Lake Wawanosh, which resulted in the reclamation of over 7,000 acres of fertile farmland used for market garden and vegetable production.</p>
<p>ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture</p>	<p>The structure is not known to meet this criterion.</p>
<p>iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community</p>	<p><u>Builder</u> The Cull Drain Bridge was constructed by the Jenks & Dresser bridge building company, which was the only steel bridge building company to be located in Sarnia. The partnership of Jenks & Dresser that built bridges in Sarnia and Port Huron was later dissolved with the Sarnia enterprise being owned by Mr. Jenks and Mr. Norton while the Michigan end of the business being owned by Mr. Dresser and Mr. Fuller.</p>

c) Table 4 - Contextual Value

The property has contextual value because it:

Ontario Heritage Act Criteria	Analysis
i. important in defining, maintaining or supporting the character of an area	The structure is not known to meet this criterion.
ii. physically, functionally, visually or historically linked to its surroundings	<p><u>Surroundings</u> The Cull Drain Bridge is the only bridge along the Old Lakeshore Road route that provided the link between the residents of the urban area of the City of Sarnia and their (former) primary summer cottage area of Bright's Grove. The two strips of lands on which the abutments of the bridge sits were expropriated from two farming families who still reside in Sarnia – the Jamieson's on the east side and the Yeates on the west side.</p>
iii. landmark	<p><u>Landmark</u> It is the only bridge along the Old Lakeshore Route and a surviving structural relic of the 1973 violent storm that washed away much of Old Lakeshore Road between Telfer and Brigden Side Roads.</p> <p>The bridge provides the only scenic view of Lake Huron from a bridge in the City. The bridge can form part of the scenic value of the recreational trail system or provide a scenic backdrop for taking photographs of the lake.</p>

SUMMARY

The Cull Drain Bridge is a rare surviving example of a Warren pony truss bridge in Lambton County and the only one within the boundary of the City of Sarnia.

Given that the Bridge met at least one of the criteria contained in Regulation 9/06, this cultural heritage resource may be considered for municipal designation under the Ontario Heritage Act. In particular, it retained a strong historical and contextual value given its association with the Old Lakeshore

Road link between the urban area of Sarnia and the development of the Bright's Grove community. It also has strong design values given its bridge type, age and historical significance to the only steel bridge building company to be located in Sarnia.

The following is a summary of the character-defining elements associated with the Cull Drain Bridge:

- Warren pony truss system;
- Polygonal top chord of a "camelback style" five-slope design;
- Its location associated with the Old Lakeshore Road link between the urban area of Sarnia and the former cottage community of Bright's Grove in the early twentieth century;
- Its association with the draining of Lake Wawanosh;
- The high level design and construction associated with the only bridge building company to be located in Sarnia; and
- Views to the Lake Huron from the bridge express its landmark value.

HERITAGE IMPACT ASSESSMENT

In early 2011, the Ministry of Tourism and Culture (MTC) indicated that bridges owned by either upper or lower-tier municipalities should be evaluated against Ontario Regulation 9/06 and not the Ministry of Transportation's Ontario Heritage Bridge Guidelines (Interim, 2008) or the Ontario Heritage Bridge Program (1991). With this in mind, the MTC recommends that a Heritage Impact Assessment is necessary for structures found to have potential heritage significance (MTC, February 2011).

While it is staff's recommendation that a comprehensive Heritage Impact Assessment be done for the Cull drain Bridge, we have completed our own in-house Heritage Impact Assessment (HIA) to assess and review the potential cultural heritage significance of the bridge and recommend an overall approach pertaining to the future of the bridge. This assessment is attached as Appendix 3 to this report.

APPENDIX 2: EVALUATION OF THE CULL DRAIN BRIDGE

The Ontario Heritage Bridge Guidelines provide a clear process for identifying heritage road bridges. The following sheet provides for the evaluation criteria of heritage bridges, their identification and assessment as provided by the guide in 2005. The Cull Drain Bridge is evaluated as follows and a total value of the assessment is provided.

Table 5 – Evaluation Criteria of Heritage Bridges

Criterion	Points	Comments	Cull Drain Bridge
A. DOCUMENTATION			
1. Builder			
a) Unknown	0	Builder or designer is totally unknown. May be revised, as more information becomes known.	
b) Known; undetermined contribution	2	Companies, engineers, builders about which there is little present information. May be revised, as more information becomes known.	The Jenks & Dresser bridge building company constructed the Cull Drain Bridge, which was the only steel bridge building company to be located in Sarnia. The partnership of Jenks & Dresser, which built bridges in Sarnia and Port Huron, was later dissolved with the Sarnia enterprise being owned by Mr. Jenks and Mr. Norton while the Michigan end of the business being owned by Mr. Dresser and Mr. Fuller.
c) Known; prolific builder or designer	4	Companies, engineers, builders responsible for large numbers of bridges utilizing standard forms or elements.	

(Continued)

Criterion	Points	Comments	Cull Drain Bridge
d) Known; unusual designer	6	Innovative companies, engineers, builders having major impacts on the development of bridge design.	
Maximum Score	2		
B. TECHNOLOGY			
2. Materials			
Timber, stone or other	8	The span in question uses materials not normally used in bridges or that have not gained favour, as well as unusual combinations of material used in superstructure, piers or abutments.	
Maximum Score	0		
3. Design/Style			
Unique	16	The only one of its kind. It may be eccentric, odd, an exaggerated version by virtue of its design (includes especially large examples), materials or construction.	
OR			
Rare Survivor of a Typical; Design or Style	16	Bridge structures that were very common at their time of construction may now be quite rare and grow increasingly rare as the majority of similar structures are demolished, changed or fall into disrepair.	The Cull Drain Bridge is one of the few remaining polygonal Warren pony truss bridges in Lambton County and the only one every built in Sarnia.
OR			

Criterion	Points	Comments	Cull Drain Bridge
Unusual	16	Included here are bridges of which only a small number may have been built and perhaps a smaller number now remain.	
Maximum Score	16		
4. Prototype			
First or Oldest Surviving Example	20	A bridge may possess a technological or design innovation or adaptation, which marks it as a first of a type, an early example or an important improvement.	The Cull Drain Bridge is one of the few remaining polygonal Warren pony truss bridges in Lambton County and the only one every built in Sarnia. It is one of the few know example of Sarnia's contribution to bridge construction.
Maximum Score	20		
5. Structural Preservation			
No material modifications	10	This example has escaped significant modification and is of importance in illustrating the original form.	The Cull Drain Bridge is in its original shape. It has not undergone any material modifications.
OR			
Sympathetic modifications	5	This example has undergone modifications aimed at preserving the original form while improving the effectiveness of the structure.	

Criterion	Points	Comments	Cull Drain Bridge
Maximum Score	10		
C. BRIDGE AESTHETICS AND ENVIRONMENT			
6. Visual Appeal			
Design merits	8	An attractive structure due to elegant visual elements and interplay with surrounding scenic landscape.	
And/or Ornamentation/ Decoration	4	<p>Decoration or ornamentation, whether discreet or ostentatious, adds visual interest to the structure. It may appear in sculptured forms, balustrade, light standards, piers, cross members, portals, etc.</p>	<p>The pony truss design, patented by James Warren and Willoughby Monzoni of Great Britain in 1848, can be identified by the presence of many equilateral or isosceles triangles formed by the web members that connect the top and bottom chords. These triangles may also be further subdivided, which is the case here with those having their apexes pointing down. This bridge is a superb example of an industrial archeological relic. Its riveted construction and lattice railing and 16-foot road width are from the dawn of the automobile era.</p>
Maximum Score	4		

Criterion	Points	Comments	Cull Drain Bridge
7. Location			
At original location	4	Original locations are often benchmarks in the past development of a particular environment, and they often contribute to a strong sense of place.	The Cull Drain Bridge is the only bridge along the Old Lakeshore Road route that provided the link between the residents of the City of Sarnia and their (former) primary summer cottage area of Bright's Grove.
Maximum Score	4		
8. Landmark			
Physical prominence	6	A bridge may be a prominent feature in the landscape, from either the road or some other vantage point. Landmarks may be used by people as guides for moving through an area, or more simply for adding interest in the environment.	
OR			
(See Next Page)			

Public perception	6	Bridges may be perceived as landmarks in the community and have a symbolic importance rather than a purely visual or aesthetic value.	It is a surviving structural relic of the 1973 violent storm that washed away much of Old Lakeshore Road between Telfer and Brigden Side Roads. The two strips of lands on which the abutments of the bridge sits were expropriated from two farming families who still reside in Sarnia – the Jamieson's on the east side and the Yeates on the west side.
Maximum Score	6		
9. Gateway			
Entrance/exit occurrence	4	In some instances, particularly urban areas, certain bridges may assume the function of a gateway, albeit quasi, emphasizing to drivers and pedestrians that they are entering into or leaving a specific area.	
Maximum Score	0		
10. Character			
	4	A bridge, together with other buildings or structures, may contribute to a particular mood or ambiance of an area. This is more readily identifiable in certain places than others.	
Maximum Score	0		

(Continued)			
Criterion	Points	Comments	Cull Drain Bridge
D. HISTORICAL			
11. Historical Association			
Associated with a person or group	10	Associated with the life or activities of a person or group that made a significant contribution to the community, Province or nation.	
Or			
Associated with event	10	Associated with a significant event that contributed to the future activities of a community, province or nation.	The Bridge is associate with the Cull Drain that was dug to drain Lake Wawanosh, a body of water and marsh that covered over 7,000 acres of land which (it was said) greatly retard the progress of the former Township and injuriously affects the health of its inhabitants. It afforded the urban expansion of the municipality, increased the acreage of farmland and provided fertile soil for market garden and vegetable production.
Or			
Associated with theme	10	Associated with and illustrative of significant patterns of cultural, social, political, economic or industrial history.	
Or			
Associated with former bridges	10	Associated with former bridges that have served the same site or locale.	

(Continued)

Criterion	Points	Comments	Cull Drain Bridge
Maximum Score	10		
MAXIMUM TOTAL OUT OF 100 POINTS	72		

APPENDIX 3: IN-HOUSE HERITAGE IMPACT ASSESSMENT OF THE CULL DRAIN BRIDGE

Background

Staff have determined that a Heritage Impact Assessment is required because the bridge has been closed to all traffic for some time now and a decision has to be made regarding the future of the structure. The rationale for the requirement to provide the HIA arises from: the criteria outlined under Ontario Regulation 9/06 Criteria for Determining Cultural Heritage Value or Interest, Under the Ontario Heritage Act, 2006; Section 2(d) of the Planning Act; Sections 2.6.1 & 2.6.3 of the Provincial Policy Statement (2005); and Section 5.2 of the City of Sarnia's Official Plan.

The Cull Drain Bridge

While the bridge is not listed on the Ontario Heritage Bridge List, and it is not municipally listed or designated under Part IV of the Ontario Heritage Act, or listed in a heritage register, the City's Heritage Committee and planning staff have determined that it exhibits a cultural heritage value and has 'heritage potential'. It should therefore be subject to an appropriate level of heritage due diligence, that should require a Heritage Impact Assessment be completed.

While the preliminary evaluation concludes with a recommendation that the bridge be included in the City of Sarnia Registry of heritage properties, it is recommended that a full Heritage Impact Assessment (HIA) be conducted to determine the future of the bridge. Staff with the input from the Sarnia Heritage Committee conducted our own in-house Heritage Impact Assessment (HIA) of the bridge, to determine its cultural or heritage value. The assessment will highlight the heritage significance and value of the bridge, and provide recommendations for the most appropriate course of action to be taken regarding the future of the structure at this time. This report will be used to help the City make an informed decision on the future of the bridge.

Our Heritage Impact Assessment looks at the policies contained in the Provincial Policy Statement, the Ontario Heritage Act R.S.O 1990, CHAPTER O.18, Section 2(d) of the Planning Act and Section 5.2 of the City of Sarnia's Official Plan and we provide the following evaluation.

Provincial Policy Statement

The Ontario Provincial Policy Statement policy on Cultural Heritage and Archaeology in Subsection 2.6.1 states that:

"Significant built heritage resources and significant cultural heritage landscapes shall be conserved."

The policy statement provides a number of definitions that have specific meanings for use in a policy context, including a definition of built heritage resources.

Built heritage resources mean one or more buildings, structures, monuments, installations or remains associated with architectural, cultural, social, political, economic, or military history, and identified as being important to a community.

Significance is more generally defined as having a specific meaning according to the subject matter or policy context. Resources of significance are those that are valued for the important contribution they make to our understanding of the history of a place, an event, or a people.

Criteria for determining significance for the resources are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used. While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation (PPS 2005).

Accordingly, the policy statement was used to guide the scope and methodology of the cultural heritage assessment of the bridge, to assist in determining its heritage value.

Sarnia Official Plan Policy on Heritage

According to Section **5.2.1.1** of the Official Plan:

It is the policy of the City to encourage the conservation of its heritage resources, including buildings, structures, monuments or artifacts of historic and/or architectural value or interest and areas of unique, rare or effective urban composition, streetscape, landscape or archaeological value or interest; and for such purposes the City will continue to maintain an inventory of the City's heritage resources, including those properties which have been designated pursuant to the Ontario Heritage Act and those which have not, in which each such resource is appropriately described, illustrated and evaluated in terms of:

- a) the architectural and/or historic value or interest of the resource;*
- b) the contribution made by the resource to the effectiveness of the urban composition, streetscape or landscape of which it may form a part; and*
- c) the structural condition of the resource, including the need for and feasibility of undertaking its physical restoration or rehabilitation.*

The bridge can be considered a heritage structure of historic and architectural value or interest because it represents a unique and rare example of archaeological value and interest in the City. There is no other bridge of this type of construction in the City.

Official Plan Policy **5.2.2.2** outlines the policy of the City to preserve and enhance the City's heritage resources wherever possible and for these purposes, Council may:

- a) assess the probable impact of proposed road improvements and other public works projects on any abutting heritage resource which is included in the inventory and provide in the design of such projects for the mitigation of any negative impact;*
- b) encourage the integration of heritage resources into the design of draft plans of proposed subdivision and other development;*
- c) provide for any heritage resource located within public open space to be restored, rehabilitated, used and maintained for any purpose compatible with the existing or proposed function of such public open space and consistent with the other provisions of this Plan;*
- d) pass by-laws under the Planning Act to enable the conservation of heritage resources;*
- e) undertake studies and formulate and implement heritage plans and programs, including consultation and cooperation with other local, Provincial and national heritage conservation agencies and organizations;*
- f) promote public awareness of the City's heritage resources included in the inventory by conducting programs, publishing information or otherwise stimulating interest in such cultural heritage resources;*

The bridge fits within the context of subsection c) above because it leads to connects to public open space and if restored, it will form an integral part of the City's active trail system.

In addition, Official Plan Heritage Evaluation Criteria Policy **5.2.3** permits the City to include a bridge into its inventory, if it is determined to be of:

- a) historic value or interest; and/or*
- b) architectural value or interest.*

In addition, to determine the historic value or interest, Official Plan Policy **5.2.3.2** states:

A bridge shall be considered to have historic value or interest if the bridge has been designated by the Province to be of archaeological or historical significance pursuant to the Ontario Heritage Act or, in the opinion of the City, satisfies at least two of the following criteria or one of these criteria plus one of the criteria listed in Policy 5.2.3.3:

- a) it dates from an early period in the development of the City's communities;*

- b) it is a good, representative example of the work of an outstanding local, national or international architect, engineer, builder, designer, landscape architect, interior designer or sculptor and is well preserved;*
- c) it is associated with a person who is recognized as having made a significant contribution to the City's social, cultural, political, economic, technological or physical development or as having materially influenced the course of local, Provincial, national or international history;*
- d) it is directly associated with a historic event which is recognized as having local, Provincial, national or international importance; or*
- e) it is a well-preserved example and illustration of the City's social, cultural, political, economic or technological development history.*

In the opinion of the City staff and Sarnia Heritage Committee, the bridge satisfies more than two of the criteria listed above and more than one of the criterion listed in Policy 5.2.3.3 below:

In addition, for Architectural Value or Interest, Policy **5.2.3.3** states:

A bridge shall be considered to have architectural value or interest if, in the opinion of the City, it satisfies at least two of the following criteria or one to these criteria plus one of the criteria listed in Policy 5.2.3.2:

- a) it is a well-preserved, representative example of a method of construction now rarely used;*
- b) it is a good, well-preserved and representative example of its architectural style or period of building*
- c) it is a well-preserved and outstanding example of architectural design;*
- d) it makes an important contribution to the urban composition or streetscape of which it forms a part;*
- e) it is generally recognized as an important City landmark;*
- f) it is a well preserved example of outstanding interior design; or*
- g) it is an example of a rare or otherwise important feature of good urban design or streetscaping.*

The bridge is considered to have architectural value and interest because it satisfies more than two of the criteria listed above.

Alternatives to be Considered for Heritage Bridges as Part of the Environmental Assessment Process

After completing the evaluation of the Cull Drain Bridge, it was determined that it has cultural heritage value. The conservation options presented below are contained in the Ontario Heritage Bridge Program guidelines (1991), which is regarded as the current best practice for conserving heritage bridges in Ontario and ensures that heritage concerns, and appropriate mitigation options, are considered. The following nine conservation options are arranged according to level or degree of intervention from minimum to maximum:

- a) Retention of existing bridge and restoration of missing or deteriorated elements where physical or documentary evidence (e.g. photographs or drawings) can be used for their design;
- b) Retention of existing bridge with no major modifications undertaken;
- c) Retention of existing bridge with sympathetic modification;
- d) Retention of existing bridge with sympathetically designed new structure in proximity;
- e) Retention of existing bridge no longer in use for vehicle purposes but adapted for pedestrian walkways, cycle paths, scenic viewing etc.;
- f) Relocation of bridge to appropriate new site for continued use or adaptive re-use;
- g) Retention of bridge as heritage monument for viewing purposes only;
- h) Replacement/removal of existing bridge with salvage elements/ members of heritage bridge for incorporation into new structure or for future conservation work or displays;
- i) Replacement/removal of existing bridge with full recording and documentation of the heritage bridge.

Given that the bridge was evaluated to retain cultural heritage value under Regulation 9/06, all nine of these conservation options should be considered as part of the Cull Drain Bridge Class Environmental Assessment, which should be conducted by qualified individuals. Staff's in-house evaluation (below) will condense these mitigation options into three main options, re-use, relocation and de-commissioning.

Evaluation of Impacts

To assess the potential impacts of the undertaking, the cultural heritage resource and identified heritage attributes were considered against a range of possible impacts as outlined in the Ministry of Tourism and

Culture document entitled Screening for Impacts to Built Heritage and Cultural Heritage Landscapes (September 2010), which includes:

- Destruction of any, or part of any, significant heritage attributes or features;
- Alteration, which means a change in any manner and includes restoration, renovation, repair or disturbance;
- Shadows created that alter the appearance of a heritage attribute or change the visibility of a natural feature of plantings, such as a garden;
- Isolation of a heritage attribute from its surrounding environment, context, or a significant relationship;
- Direct or indirect obstruction of significant views or vistas from, within, or to a built and natural feature;
- 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; and
- Soil Disturbance such as a change in grade, or an alteration of the drainage pattern or excavation.

Table "A": Evaluation of the Potential Impacts of Bridge Alternatives on the Cultural Heritage Resource and Identified Heritage Attributes

	Retention of existing bridge no longer in use for vehicle purposes but adapted for pedestrian walkways, cycle paths, scenic viewing, etc.	Relocation of the bridge to an appropriate new site for continued use or adaptive re-use	Deconstruction /removal of bridge with salvage elements/ members of heritage bridge for incorporation into new structure or for future conservation work or displays
<i>Destruction, removal or relocation</i>	No impact.	Yes – impacts to the heritage resource are expected through relocation.	Yes - impacts to the heritage resource are expected through removal.
<i>Alteration</i>	Yes – a change in use would result in alterations to the heritage resource.	Yes – alterations to the resource are expected through relocation.	Yes – alterations to the resource are expected through removal.

	Retention of existing bridge no longer in use for vehicle purposes but adapted for pedestrian walkways, cycle paths, scenic viewing, etc.	Relocation of the bridge to an appropriate new site for continued use or adaptive re-use	Deconstruction /removal of bridge with salvage elements/ members of heritage bridge for incorporation into new structure or for future conservation work or displays
<i>Shadows</i>	No impact	No impact.	No impact
<i>Isolation</i>	No impact	Yes – relocation of the resource will isolate it from its original context.	No impact
<i>Direct or indirect obstruction</i>	No impact	Yes – views of the lake from the bridge will be altered.	No significant impacts to the surrounding landscape are expected provided that the new bridge retains a similar scale, grade and alignment.
<i>A change in land use</i>	Yes – use of bridge for pedestrian walkways, cycle paths, scenic viewing, et cetera, would result in a change from the original use of the structure.	Yes – the adaptive re-use of the bridge for purposes other than vehicular purposes would result in a change from the original use of the structure. If the bridge remains in vehicular use, no impact is expected.	No impact
<i>Soil disturbance</i>	No impact	Yes – impacts are expected through process of removing	Yes – impacts are expected through removal of the existing bridge and the

	Retention of existing bridge no longer in use for vehicle purposes but adapted for pedestrian walkways, cycle paths, scenic viewing, etc.	Relocation of the bridge to an appropriate new site for continued use or adaptive re-use	Deconstruction /removal of bridge with salvage elements/ members of heritage bridge for incorporation into new structure or for future conservation work or displays
		the bridge from its current location.	introduction of a new structure.

Three possible strategies exist for the conservation of the heritage value of the bridge, in order of preference:

- Re-use of the structure, if feasible, through upgrading of the structure;
- Relocation of bridge; or
- Deconstruction and re-use of the materials.

Re-use of the Bridge

From a strictly cultural heritage perspective, the most attractive alternative would be to consider the potential for refurbishing of the existing structure for practical and functional reuse. Re-furbishing and re-use of the structure would not necessarily require a designation by-law to be passed or that restriction be placed on future alterations. However, a number of constraints and/or negative opinions would likely have to be over-come to achieve this objective. They include:

- The location on a right-of-way that is no longer in uses;
- The cost associated with refurbishing the structure;
- The location of the bridge relative to other developed more visible areas of the municipality;
- There may be prohibitive factors in the re-use of the bridge based on the structural condition of the structure and its conformity to Ontario Code requirements.

Relocation

If due to other project constraints (financial or otherwise), the bridge cannot be adapted for use in its present location, there is a possibility that the bridge can be moved, in whole or in part, to a new location. This alternative

would allow for the continued use of the structure, but would require that a new home for the structure be found and that costs for the move be reasonable within the scope of the project.

Deconstruction

If a suitable off-site location cannot be identified, the bridge can be deconstructed. This alternative would allow the materials to be salvaged and re-used in other ways. Possible re-use alternatives include, but are not limited to:

- the use of the abutment stones as an entrance feature to a public area owned by the municipality;
- use of material from the bridge for other landscaping features; or
- salvage of materials for re-sale through groups such as the Sarnia Habitat for Humanity Re-Store or similar entity.

Summary Statement of Cultural Heritage Value

The design value of the Cull Drain Bridge is of high significance given that it is considered to be one of the few remaining polygonal Warren pony truss bridges in Lambton County and the only one ever built in Sarnia.

The bridge retains strong contextual values resulting from its:

- landmark status within the community;
- direct association with the growth and development of Bright's Grove area in the early twentieth century;
- provided a link between the urban area of Sarnia and its main summer playground in Bright's Grove;
- encouraged growth of the Bright's Grove community; and
- is directly associated with the draining of Lake Wawanosh, which resulted in the reclamation of over 7,000 acres of fertile farmland used for market garden and vegetable production

In summary, character-defining elements associated with the Cull Drain include, but are not limited to:

- Warren pony truss system;
- Polygonal top chord of a "camelback style" five-slope design;
- Its location associated with the Old Lakeshore Road link between the urban area of Sarnia and the former cottage community of Bright's Grove in the early twentieth century;
- Its association with the draining of Lake Wawanosh;
- The high level design and construction associated with the only bridge building company to be located in Sarnia; and
- Views to the Lake Huron from the bridge express its landmark value.

Recommendations

Based on the analysis of bridge design and construction in Ontario, field investigations and application of Regulation 9/06 of the Ontario Heritage Act, the Cull Drain Bridge was determined to retain heritage value and may be considered for municipal designation under the Ontario Heritage Act. In particular, it was determined to retain strong historical and contextual values given its location at a traditional bridging point and association with the historic development of Bright's Grove, and strong design values given its bridge type, age and status as a high level bridge.

Following the evaluation of potential impacts on the heritage resource (see Table "A"), it was determined that Conservation Alternatives 1 – 3 are the preferred alternatives, given that no impacts are expected to the heritage resource and its identified heritage attributes, with Alternative 1 being the most preferred.

APPENDIX 4: RECOMMENDED CONTENTS OF THE HERITAGE IMPACT ASSESSMENT (HIA)

Heritage Impact Assessment - Terms of Reference

The Heritage Impact Assessment (HIA) is to be a study to determine the impacts to known and potential heritage resource within an area of the City proposed for redevelopment or removal. The assessment results in a report that identifies all heritage resources, provides an evaluation of the significance of the resources, outlines redevelopment or site alteration, and makes recommendations toward conservation methods and/or mitigation measures that would minimize impacts to the resource. The report will be used to help the City make informed decisions related to the identified heritage resource.

1. Background

- a. Provide a background on the purpose of the HIA by outlining why it was undertaken, by whom, and the date(s) the evaluation took place.
- b. Provide a briefly outline the methodology used to prepare the assessment.

2. Identification and Location of the Bridge

- 2.1 Provide a location plan of the bridge, including a site map and aerial photograph at an appropriate scale that indicates the context in which the bridge is situated.
- 2.2 Briefly document and describe the bridge, identifying all significant features and surrounding landscape.
- 2.3 Document and describe the context including adjacent properties, land uses, etc.
- 2.4 Document, describe, and assess the apparent physical condition, security, and critical maintenance concerns, as well as the integrity of the bridge.
- 2.5 If the structural integrity of the bridge is a concern, recommend the undertaking of a follow-up structural and engineering assessment to confirm if conservation, rehabilitation and/or restoration are feasible. Assessments must be conducted by qualified professionals with heritage bridge experience.

3. Evaluation of Cultural Heritage Value or Interest

- 3.1 Thoroughly document and describe all heritage resources associated with the bridge and the property it sits on, including structural elements, building materials, architectural features, vistas, and potential archaeological resources.
- 3.2 Provide a chronological history of the bridge, including additions, deletions, conversions, etc.
- 3.3 Provide a history of the land use(s) to identify, describe, and evaluate the significance of any persons, groups, trends, themes, and/or events that are historically or culturally associated with the bridge.
- 3.4 Document heritage resource(s) using current photographs of each elevation, and/or measured drawings, engineering plans, and a site map at an appropriate scale. Also, include historical photos, drawings, or other archival material that is available and relevant.
- 3.5 Using Regulation 9/06 of the Ontario Heritage Act (Criteria for Determining Cultural Heritage Value or Interest), identify, describe, and evaluate the cultural heritage value or interest of the bridge as a whole, outlining in detail all significant heritage attributes and other heritage elements.
- 3.6 Provide a summary of the evaluation in the form of a table (see Appendix 1) outlining each criterion (design or physical value; historical or associative value; contextual value), the conclusion for each criterion, and a brief explanation for each conclusion.

4. Mitigation Options, Conservation Methods, and Proposed Alternatives

- 4.1 Provide mitigation measures, conservation methods, and/or alternative development options that avoid or limit the direct and indirect impacts to the bridge.
- 4.2 Evaluate the advantages and disadvantages (pros and cons) of each proposed mitigation measure/option.
- 4.3 Identify any site planning and landscaping measures that may ensure the bridges' protection and/or enhancement.
- 4.4 If relocation, removal, demolition or other significant alteration to the bridge is proposed and is supported by the heritage

consultant, provide clear rationale and justification for such recommendations.

- 4.5 If retention is recommended, outline short-term site maintenance, conservation, and critical building stabilization measures.
- 4.6 Provide recommendations for follow-up site-specific heritage strategies or plans such as a Conservation Plan, Adaptive Reuse Plan, and/or Structural/Engineering Assessment.
- 4.7 If it is determined that the bridge cannot be retained in its original location, consider providing a recommendation for relocation to a suitable location in reasonable proximity to its original siting.
- 4.8 If no mitigation option allows for the retention of the bridge in its original location or in a suitable location within reasonable proximity to its original siting, consider providing a recommendation for relocation to a more distant location.
- 4.9 Provide recommendations for advertising the sale of the bridge. For example, this could include listing the bridge on the Architectural Conservancy of Ontario (ACO) website in order to allow interested parties to propose the relocation of the bridge. Acceptable timelines and any other requirements will be determined in consultation with City staff. The link to the ACOs Historic Architectural Linking Program is provided below:

http://www.arconserv.ca/buildings_at_risk/for_sale.cfm
- 4.10 If the bridge cannot be retained or relocated, alternatives will be considered for salvage and mitigation. Only when other options can be demonstrated not to be viable will options such as reunification or symbolic conservation be considered. Detailed documentation and commemoration (e.g. a heritage interpretative plaque) may also be required. Salvage of material must also occur, and a heritage consultant may need to provide a list of materials of value to be salvaged. Materials may be required to be offered to heritage-related projects prior to exploring other salvage options.

- 4.11 An implementation schedule and reporting/monitoring system for implementation of the recommended conservation or mitigation strategies may be required.

5. Recommendations

- 5.1 Provide clear recommendations for the most appropriate course of action for the bridge.
- 5.2 Clearly state whether the bridge is worthy of heritage designation under the Ontario Heritage Act.
- 5.3 The following questions must be answered in the final recommendation of the report:
- Does the bridge meet the criteria for heritage designation under the Ontario Regulation 9/06, Ontario Heritage Act?
 - Why or why not does the subject bridge meet the criteria for heritage designation?
 - Regardless of the failure to meet criteria for heritage designation at its present location, can the structure be feasibly integrated into an alternate location?
- 5.4 Failure to provide a clear recommendation as per the significance and direction of the bridge will result in the rejection of the Heritage Impact Assessment.

6 Executive Summary

- 6.1 Provide an executive summary of the assessment findings at the beginning of the report.
- 6.2 Outline and summarize all recommendations including mitigation strategies, need for the preparation of follow-up plans such as an adaptive reuse plans and other requirements as warranted. Please rank mitigation options from most preferred to least.

7. Other Requirements

- 7.1 Provide a bibliography listing all sources used in preparing the HIA.
- 7.2 Provide proper referencing within the HIA, including images, maps, etc.
- 7.3 Provide three copies of the final HIA, and one digital copy (PDF or Word)

7.4 Provide a digital copy of all images taken or obtained for the HIA on Compact Disk.

7.5 Qualified Parties for Preparing Heritage Impact Assessments

7.5.1 The heritage impact assessment must be prepared by qualified professional with applied and demonstrated knowledge of accepted standards of heritage conservation, historical research, identification, evaluation of cultural heritage value or interest, mitigation, and the like.

7.5.2 Any heritage consultant must be a member in good standing of the Canadian Association of Heritage Professionals (CAHP).

7.6 Scope of a Conservation and Adoptive Reuse Plan

If the bridge is to be retained, a follow-up Conservation and Adaptive Reuse Plan may be recommended. Conservation and Adaptive Reuse Plans will provide:

- Preliminary recommendations for adaptive reuse;
- Critical short-term maintenance required to stabilize the structure and prevent deterioration;
- Measures to ensure interim protection of bridge during the re-furbishing/reconstruction phase;
- Restoration and replication measures required to return the bridge to a higher level of cultural heritage value or interest integrity, as required;
- Appropriate conservation principles and practices, and qualifications of contractors and trades people that should be applied;
- Longer term maintenance and conservation work intended to preserve existing heritage fabric and attributes;
- Drawings, plans, specifications sufficient to describe all works outlined in the Conservation Plan; and

Cost estimates for the various components of the plan to be used to determine sufficient monetary amounts for letters of credits or other financial securities as may be required to secure all work included in the Conservation Plan.