Transportation AECOM

County of Simcoe

Replacement of Collingwood Street Bridge (Structure No. 000141) on Collingwood Street over the Mad River Municipal Class Environmental Assessment Study Completion Report

Prepared by:

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Project Number:

60119766

Date:

January 2012

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January 20, 2012

Julie Scruton
Project Engineer
County of Simcoe, Transportation and Engineering
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Midhurst, ON L0L 1X0

Dear Julie:

Project No: **60119766**

Regarding: **County of Simcoe**
Replacement of Collingwood Street Bridge
(Structure No. 000141)
On Collingwood Street over Mad River
Municipal Class Environmental Assessment, Schedule 'B'
Preliminary Study Report

Please find attached the above noted report for your review, decision to proceed as recommended and use in liaison with the public during the comment period.

Sincerely,
AECOM Canada Ltd.

P. Wills, P. Eng.
peter.wills@aecom.com

PW:jd
Encl.

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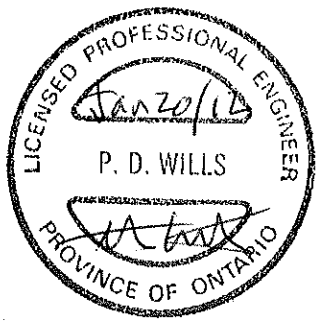

Report Reviewed By:

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Branch Manager

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1. Introduction and Background

1.1 Project Description

The County of Simcoe is considering improvements to the Collingwood Street Bridge (No. 000141) located on Collingwood Street over the Mad River 0.8 km south of Louisa Street, in the Village of Creemore, in the County of Simcoe.

The existing single lane bridge structure was constructed in 1913 and is a 4.6 metre wide, 31.1 metre single span steel truss bridge supported on reinforced concrete abutments with reinforced concrete retaining walls at each corner.

A previous bridge inspection report prepared for the County of Simcoe identified the structure as being deficient with respect to physical condition and load carrying capacity and is therefore considered functionally inadequate and should be replaced. As a result of this report, the structure has been posted with a load restriction of 5 tonnes. A copy of the most recent inspection report has been provided in Appendix A.

1.2 Municipal Class EA Process

The following describes the steps required for the Collingwood Bridge replacement project under the Municipal Class Environmental Assessment document dated October 2000 (as amended in 2007). The italicized text identifies work that has been completed.

1.2.1 Phase 1

- Identify problem or opportunity;
- Discretionary public consultation to review problem or opportunity.

A Notice of Study Commencement was published in the Creemore Echo on September 25, 2009 and on October 3, 2009. A copy of the notice has been provided in Appendix B

1.2.2 Phase 2

- Identify alternative solutions to problem or opportunity;
- Select schedule per Appendix 1 – Class EA document.

The table found in Appendix 1 indicates this project is a Schedule B as it is a reconstruction of a structure when the structure is over 40 years old, where the proposed work will alter the appearance of the structure and the cost is less than $2.2M. As such Phases 3 and 4 of the process are not required.

- Inventory natural, social and economic environment;
- Identify impact of alternative solutions on the environment and mitigating measures;
- Evaluate alternative solutions and identify recommended solution;
- Consult review agencies and public with regards to problem or opportunity and alternative solutions;
- Select preferred solution;
- Review and confirm choice of Schedule.

Project confirmed as a Schedule B.

- Notice of Completion to review agencies, the public and MOE – EA Branch (the Notice is to include the opportunity to request a Part II (Individual EA) Order from the Minister of Environment within 30 days of issue) and proceed to Phase 5.

1.2.3 Phase 3 & 4

Project confirmed as a Schedule B so these phases are not required.

1.2.4 Phase 5

- If there is no request for a Part II Order within the review period or if such request is denied, the Tender documents are to be completed based on the preferred design;
- Proceed to construction and operation;
- Monitor for environmental provisions and commitments.

2. Problem Statement

The Collingwood Street Bridge which is a single load path / non-redundant structure carries Collingwood Street over the Mad River, 800 m south of Louisa Street in the Village of Creemore, in the County of Simcoe. A single load path structure is a system of components in which the failure of a primary component or connection may result in the collapse of the structure. Single load path bridge structures are not recommended. In fact, the Canadian Highway Bridge Design Code (CHBDC) indicates in the Commentary that "it is preferable not to use single load path structures" (Clause C1.4.2.5).

The existing bridge was originally constructed in 1913 to carry a single lane of traffic over the Mad River. The structure is a 4.6m wide single 31.1 metre span steel through truss bridge with a wooden deck supported on reinforced concrete abutments and reinforced concrete cantilever retaining walls at each corner. The structure has steel beam guide rail/steel lattice barriers connected directly to the steel truss. Wooden curbs are present on each side of the structure and these extend to the ends of the deck. Steel beam guide rails are present at each corner of the bridge.

To the north, the approach roadway width varies but averages an approximately 6.5 metre wide paved surface with 1.0 metre granular shoulders. To the south, the approach roadway width also varies but averages an approximately 7.2 metre wide paved surface with asphalt gutters.

In its present condition, the structure can be said to be deficient with respect to the following:

2.1 Structure Geometry

The existing geometry and desirable minimum standards are shown in the following table. The minimum standards are based on the Geometric Design Standards for Ontario Highways and the required County of Simcoe standards.

Geometry	Existing Structure	Minimum Standard	Deficient
Lane Width	Single Lane of 3.0	Two lanes of 3.25 each	Yes
Shoulder	0.65 x2	1.30 x 2	Yes

Platform Width	4.64	9.1	Yes
Barriers	SBGR on Steel Lattice	Steel tube or concrete barriers (PL2)	Yes

2.2 Load Capacity

The structure is currently posted with a load limit of 5 tonnes, which prohibits many commercial, agricultural, emergency, and maintenance vehicles from crossing.

2.3 Approach Guide Rail

The approach guide rail does not comply with minimum length or end treatment requirements as defined by the MTO Roadside Safety Manual.

2.4 Structure Barrier System

The steel lattice panel system on the existing structure does not comply with the Canadian Highway Bridge Design Code, CAN/CSA S6-06 requirements for traffic barriers. The steel lattice panel system is connected directly to the steel truss. In the event of a collision, damage can occur to the superstructure through this connection, reducing the load capacity and potentially causing failure of the non-redundant structure.

2.5 Physical Condition

In its current condition, the structure has the following deficiencies:

- deteriorated deck asphalt;
- expansion joints at each end of structure are leaking;
- bearings at each abutment are in poor condition and not functioning;
- widespread steel coating failure;
- steel superstructure exhibits severe localized corrosion and perforations in the structural steel; and
- deteriorated concrete abutments and retaining walls.

2.6 Approach Roadways

The roadway approach to the north of the bridge does not meet the current provincial standards for vertical geometry, resulting in an unsafe condition.

The provincial standards for vertical geometry have been developed to prevent safety issues including (but not limited to): poor visibility / deficient sight lines, loss of control resulting in inability to turn or stop to prevent a collision, inadequate braking distance, etc.

2.7 Problem Statement

As noted above, the existing Collingwood Street Bridge currently has numerous deficiencies, compromising the safety of the bridge.

3. Alternative Solutions

Given the existing road system servicing the local area, there are effectively seven alternatives available to remedy the identified need. The alternatives and their advantages and disadvantages are summarized below. The associated environmental impacts are evaluated and the recommended solution determined as follows:

3.1 Options

3.1.1 Do Nothing

The "Do Nothing" option must always be considered but is seldom selected as the most appropriate option as it usually fails to satisfy the problem statement. The "Do Nothing" option leaves all conditions as they are and allows deterioration to continue unabated. The "Do Nothing" option typically defers any action to a future time.

Advantages

- minimum capital expenditure; and
- minimum disruption to environment;
- conserves a structure of heritage value;

Disadvantages

- deterioration will continue unabated resulting in potential decreases in public safety;
- increasing maintenance needs in terms of driving surface;
- the structure load capacity will diminish, ultimately requiring closure of the structure;
- certain emergency vehicles (heavier vehicles such as fire trucks) will still not be able to cross the structure;
- speed limit reduced due to sub-standard roadway approach vertical geometry;
- a closed structure would require either removal or replacement in the future, requiring another Environmental Assessment; and
- continuing safety risk associated with deficient approach guide rail and structure barriers.

3.1.2 Rehabilitate Existing Structure

The rehabilitation of the existing structure can be considered an option to remedy only some of the noted deficiencies. While some deficiencies could be addressed by completing a nominal work program, for the purposes of this assessment, this option will consider a work program designed to remedy as many of the noted deficiencies as possible while meeting code required standards. To maintain the existing one lane structure the bridge must meet the requirements of the MTO guidelines for the design of bridges on low volume roads. In addition, as the sag curve to the north of the structure is currently deficient and cannot be adjusted due to hydraulic concerns, the posted speed limit will need to be reduced to 40km/hr.

In general, the work associated with a major rehabilitation program would include:
concrete repairs to abutments and retaining walls;

- steel repairs and modifications to superstructure;
- sandblasting and recoating all steel components for environmental protection;
- replacing bearings;

- removal of wooden deck and replace with push through concrete deck;
- construction of new barriers;
- waterproofing of deck and repaving of both deck and approaches; and
- replacing approach guide rail

Advantages

- can address many of the noted deficiencies;
- new deck and barriers have full service life (75 years +);
- duration of construction shorter than the replacement option;
- improved public safety;
- conserves a structure of heritage value;

Disadvantages

- structure may still require a load limit in the future based on the condition of the remaining components;
- travelled platform would remain single lane;
- speed limit reduced due to sub-standard vertical road geometry;
- poor line of sight due to the existing bridge alignment and sag curve / road geometry (i.e. it is not always possible to see if a pedestrian or vehicle is on the bridge especially when turning from Edward Street south onto Collingwood Street). This is a safety hazard. The MTO Structural Manual that provides design requirements for bridges on low volume roads indicates that "If there are sight distance issues, a single lane bridge should not be used". Therefore, rehabilitating the existing single lane bridge does not meet the requirements of the MTO Structural Manual due to these safety concerns.
- certain emergency vehicles (e.g. large fire trucks) may not be able to cross the bridge, due to the height and width restrictions imposed by the bridge superstructure,
- structure still requires standard pedestrian sidewalk which will not fit between the existing trusses. The idea of adding the new platforms on each side of the bridge (i.e. cantilevering a sidewalk off of the side of the existing bridge) will over load the existing trusses and therefore is not an option. In addition, the new pedestrian platforms need to have access to the road on both sides of the bridge which will require new construction;
- all modifications to the trusses including replacement and reinforcement would require bolted connections, eliminating the existing riveted connections. This would result in loss of the heritage value as many riveted connections would be eliminated.
- existing structure is a single load path structure that could have a catastrophic failure if one of the trusses was damaged badly enough due to a vehicular impact. Single load path structures are gradually being replaced around the province as they are not as safe as multiple load path bridges. A multiple load path structure is defined in the CHBDC (Clause 1.3.3) as "a system of components in which the failure of any primary component or connection will not cause the structure to collapse". As noted above in Section 2, the CHBDC Commentary notes that it is preferable not to use single load path structures (Clause C1.4.2.5).
- uncertain scope of work and quantities until work is underway (typical of rehabilitation projects);
- uncertain cost estimate based on variations in work quantities; and
- service life expectancy (30 +/- years) of the remaining existing superstructure elements and substructure is less than the replacement option at which point the superstructure and substructure would need to be re-evaluated.
- represents the medium range of capital expenditure and the County would not be eligible to apply Development Charges towards the overall bridge construction costs which will make rehabilitation more costly than replacement with a two lane bridge.

3.1.3 Replace Existing Structure

Under this section entitled "Replace Existing Structure" four alternative solutions are being presented, all of which include replacing the existing bridge with a new structure. The first alternative being presented is to simply remove or demolish the existing bridge and replace it with a new structure. Additionally the following alternatives are also being presented: mounting the existing bridge's trusses on the new bridge, relocating the existing bridge and construct a new bridge at the existing location, and commemorating the existing bridge prior to demolition and replacement.

3.1.3.1 Replace Existing Bridge with New Structure

Replacement of the existing bridge would allow the County to bring the project site to current standards in all respects including safety, geometry, riding surface, drainage and load capacity, in addition to being designed to minimize disruption to the local, natural environment during construction. The possibility exists to replace the existing structure with a single lane bridge or a two lane bridge. In both cases sidewalks would be constructed.

Advantages

- improved public safety;
- emergency vehicles including heavier vehicles such as fire trucks would be able to cross the bridge;
- minimum maintenance;
- new structure with full service life (75 years +);
- improved travelled platform width; and
- no speed limit restriction due to improved vertical geometry in roadway approaches.
- replacement with a single lane bridge would be less expensive than replacing with a two lane bridge.
- replacement with a two lane bridge would be safer as oncoming traffic would not be sharing the same lane
- County is eligible to apply Development Charges which would in effect offset the County's expense and fund approximately half the bridge replacement construction costs, which ultimately makes the replacement option less expensive than the rehabilitation option;

Disadvantages

- represents high range of capital expenditure;
- waterway disturbed during construction;
- duration of construction longer than the rehabilitation option;
- replacement with a single lane bridge would not be as safe as a two lane bridge as traffic would be sharing the same lane;
- replacement with a two lane bridge would cost more than replacing with a single lane bridge;
- loss of a structure with heritage value;

3.1.3.2 Replace Existing Bridge with New and Mount Existing Bridge Trusses on New Structure

This option could address all of the deficiencies and requirements to meet the current standards, safety and MTO guide lines. In addition, it can satisfy public desire to keep the key elements of the existing bridge.

Advantages

- satisfies a public desire to preserve the key elements of old bridge;
- improved public safety;

- minimum maintenance;
- new structure with full service life (75 years +);
- improved travelled platform width; and
- no speed limit restriction due to improved vertical geometry in roadway approaches;
- maintains primary structural members of the existing bridge which are of heritage value;

Disadvantages

- represents highest range of capital expenditure;
- waterway disturbed during construction;
- duration of construction longer than the rehabilitation option;
- the key elements of the old bridge still need the rehabilitation;
- loss of the existing bridge which is of heritage value (i.e. only the trusses are maintained);

3.1.3.3 Relocate Existing Bridge and Construct New Bridge at Current Location

If there is interest in salvaging the existing bridge, it could be relocated. A suitable location would need to be found, a new substructure would need to be built, and the bridge would still require rehabilitation. However, the degree of work required to rehabilitation the structure would depend on whether the bridge, once relocated, would be intended for pedestrian only traffic or vehicle traffic.

Advantages

- satisfies a public desire to preserve an old bridge;
- conserves a structure of heritage value;

Disadvantages

- represents high range of additional capital expenditure.

3.1.3.4 Commemorate Existing Bridge and Replace with New

To keep the memory of the existing bridge for the public, a heritage commemoration involving both narrative and architectural photography could be done by the County before dismantling the existing bridge. Also a monument of the bridge could be made by the County and erected adjacent to the new bridge. Some pieces of the old bridge could be incorporated in the monument.

Advantages

1. commemorates the old bridge (i.e. provides a record of the existing bridge which had heritage value);

Disadvantages

- existing bridge is not preserved;
- loss of a structure with heritage value;

3.1.4 Close Existing Bridge to Vehicular Traffic & Leave it Open for Pedestrians Only

Closing the bridge to vehicular traffic will cause access issues for local residents, such as in time of emergency. Also, local residents will be spending more time and energy to use another route to cross the river. The alternative route could be either Caroline St. W or Sideroad 3 & 4 Nottawasaga. The additional travel distance for both routes is approximately 2.5 kilometres.

However, this option can satisfies a public desire to preserve an old bridge.

Advantages

- satisfies a public desire to preserve an old bridge;
- conserves a structure with heritage value;
- duration of construction is shorter than the replacement option;
- represents the medium range of capital expenditure.

Disadvantages

- in case of an emergency there is no fast access to the other side of the river and it may compromise the safety of local residents;
- spend more time and energy to cross the river;
- uncertain scope of work to rehabilitation the existing structure;
- County not eligible to apply Development Charges to offset costs.

3.2 Environmental Impacts

A Cultural Heritage Report was prepared by AMICK Consultants to assess the cultural significance of the structure. The study has determined that the bridge is a built feature of cultural heritage value or interest and is therefore eligible to be formally designated under section 29 of the Ontario Heritage Act. However, in their report AMICK also evaluates conservation options using the Ontario Heritage Bridge Program as a guide. The OHBP specifies eight conservations options (a through h) to be considered and addressed starting with the most favourable from a conservation perspective (retention of the existing bridge including a rehabilitation) and ending with the least favourable from a conservation perspective (full recording and documentation of the existing structure if it is to be demolished).

This evaluation of conservation options notes that the preferred option (retention of the existing bridge including a rehabilitation) "cannot address all of the identified defects and it is not considered to be a viable alternative." It also notes that the least preferred option is to demolish the bridge after completing a full recording and documentation of the existing structure. In conclusion AMICK recommends that the least preferred option should only be undertaken if none of the other options (a through g) can be undertaken. The Cultural Heritage Report is presented in Appendix C.

A Stage 1 Archaeological Study was also completed by AMICK Consultants. The study concluded that no significant archaeological resources are likely to be contained within the existing structure and associated road allowance; however, there is a high potential for archaeological resources to be found within the ground between the south abutment and the south bank of the Mad River. As such a Stage 2 physical assessment of this area is recommended prior to bridge rehabilitation or replacement works if the ground is to be disturbed between the south abutment and the south bank. The Stage 1 Archaeological Study is presented in Appendix D.

The following table identifies a variety of natural, social and commercial environments and provides brief comments as to how each of the options may impact existing and future conditions.

Table 1 Inventory of Natural / Social / Commercial Environments and Impact of Works

Environment	Do Nothing	Rehabilitation	Replacement	Close the Bridge	Comments
Agriculture • loss of farmland • loss of field access • loss of bridge access	None None None	None None Temporary	None None Temporary	None None Permanent	New wider platform for farm machinery under replace option
Residential/Commercial • safety • disruption during construction	None None	Somewhat Improved Yes	Improved Yes	Improved Minor	Fire trucks and snow ploughs cannot use the bridge as it exists now. Rehabilitation option may not be sufficient to allow fire trucks and snow ploughs to use the bridge due to geometric constraints. Duration of replacement construction expected to be longer than rehabilitation construction.
Heritage • loss of heritage features • loss of archaeological features	*None* *None*	Minor Possible	None Possible	None None	Existing bridge has been identified as having heritage value. Stage 2 archaeological assessment is required on south bank prior to construction activities if area is to be disturbed.
Recreation • loss of recreational opportunities	None	Minor	Minor	Minor	Site access closed during construction
Aesthetics • loss of aesthetic appeal	None	Improved	Improved	None	Appearance may be improved under both rehabilitation & replace options.
Community • change in tax base • effect on quality of life	None None	None Improved safety	None Improved safety	None None	Replacement will improve safety to greater extent than rehabilitation option.
Noise	None	Temporary	Temporary	Temporary	During construction
Surface Drainage	None	Improved and controlled	Improved and controlled	None	Both rehabilitation & replace options provide an opportunity to redirect drainage flow
Groundwater	None	Unchanged	Unchanged	None	
Surface Soils • sediment • erosion	None None	Mitigated Prevented	Mitigated Prevented	None None	An environmental plan to control and prevent is required for both rehabilitation & replace options

Topography	None	Minor embankment reconstruction	Major embankment reconstruction	None	Rehabilitation option requires profile adjustment and replace option requires both profile and width adjustments
Climate • impact of vegetation removal (trees) on snow accumulation • impact on air quality	None None	None None	None None	None None	Vegetation may be planted to enhance fish habitat as required by approval agencies.
Fish Habitat • loss of spawning • loss of cover • effect on water • timing of works • mitigation • compensation	None None None None None None	None None None Spr/Sum/Fall None None	None None None Spr/Sum/Fall None None	None None None None None None	No in water works
Vegetation & Wildlife • wildlife corridor	None	None	Enhanced	None	Provide south bank corridor

3.3 Alternative Solution Summary

The above information can be summarized as follows:

3.3.1 Do Nothing

The "Do Nothing" option will not address the noted need.

Any short term cost savings or reduced impacts on the local environment would be considered temporary benefits as the bridge will eventually have to be reconstructed. In either case future costs and impacts would have to be reconsidered through the EA process.

3.3.2 Rehabilitate Existing Structure

The rehabilitation option can address the majority of the noted structural deficiencies with the key exceptions being the service life. Rehabilitation does not address the geometric constraints and the reduction of the posted speed limit.

As requested by the County, (although not required in a Schedule B Class EA) we have completed a preliminary rehabilitation plan along with a preliminary construction cost estimate and life cycle costing for this alternative. The preliminary cost estimate and life cycle costing can be found in Appendix G, along with a preliminary construction cost estimate and life cycle costing for the replacement alternative. Based on our preliminary estimate the initial construction cost for the rehabilitation of the existing structure will be in the order of $970,000 excluding consulting fees. Our life cycle cost analysis, based on the MTO Structural Financial Analysis Manual using the MTO mandated discount rate of 3%, has resulted in net present value of $1,543,000 for the rehabilitated bridge. Note that these estimates are likely accurate to plus or minus 20% depending on market forces and the final design. The life cycle costing also includes a minor ($10,000) rehabilitation in ten years and a full replacement in thirty years, followed by a major rehabilitation ($50,000) in year sixty, thirty years after the full replacement. A minor rehabilitation generally includes grinding off the deteriorated asphalt, and replacing it after patching/repairing any other localized

deterioration. A major rehabilitation typically includes a full asphalt removal and replacement, scarifying the deck to replace the top 50mm of concrete with localized patching as required and repair or replacement of barriers.

The rehabilitation option does not address the safety deficiencies due to geometric constraints (single lane), poor line of sight due to the vertical geometry, the reduction of the speed limit to 40 km/hr, the lack of a safe pedestrian sidewalk and the probable remaining service life (30+/- years) of the remaining existing components.

The County would not be eligible to receive Development Charges to fund this project.

3.3.3 Replace Existing Bridge

3.3.3.1 Replace Existing Bridge with New Structure

The replacement option will address all of the noted deficiencies and the new bridge including pedestrian sidewalks, making pedestrian travel safer.

No uncertainties will remain as service life will be 75 years or more as all components will be new.

As requested by the County (although not required in a Schedule B Class EA) we have completed a preliminary construction cost estimate and life cycle costing for this alternative based on a new two lane bridge. The preliminary cost estimate and life cycle costing can be found in Appendix G, along with a preliminary construction cost estimate and life cycle costing for the rehabilitation alternative. Based on our preliminary estimate the initial construction cost for the replacement of the existing structure will be in the order of $1,470,000 excluding consulting fees. Our life cycle cost analysis, based on the MTO Structural Financial Analysis Manual using the MTO mandated discount rate of 3%, has resulted in net present value of $1,579,000 for the new bridge. As noted above, these estimates are likely accurate to plus or minus 20% depending on market forces and the final design. The life cycle costing is also includes a major ($50,000) rehabilitation in thirty years, followed by a second major rehabilitation ($50,000) in year sixty, and a full replacement in year seventy-five. A major rehabilitation typically includes an asphalt removal and replacement, scarifying the deck to replace the top 50 to 75mm of concrete with localized patching as required and repair or replacement of barriers.

While the replacement option has a higher initial capital cost than the rehabilitation option, all safety, geometric and service standards will be met and all components will be new. As well, the life cycle cost of the replacement option is practically equal to the rehabilitation option, especially considering the accuracy of the estimates.

As well, the County is eligible to apply Development Charges to fund approximately half the cost of the project, making the replacement option more cost effective than the rehabilitation option.

3.3.3.2 Replace Existing Bridge with New and Mount Existing Bridge Trusses on New Structure

As noted in the Replace Existing Structure alternative, this alternative will also address all of the noted deficiencies and provide a 75 year service life on all new components. However, the existing bridge trusses will require ongoing maintenance over that 75 year service life, but as they will not be functioning structurally it will be possible to maintain them aesthetically and safely.

The cost to mount the existing bridge trusses on the new bridge is unknown at this point as the design details would first need to be worked out. Additionally, some rehabilitation of the existing trusses will be required as well as some new overhead structural steel to connect the two trusses together. The existing overhead structural steel will not be long enough to span across a 2 lane bridge. For the purposes of comparison it is assumed that the cost of this

option would be the same as the replace bridge option plus between $150,000 and $200,000 to rehabilitate and mount the existing trusses on the new bridge.

3.3.3.3. Relocate Existing Bridge and Construct New Bridge at Current Location

Rehabilitating the existing structure will not address all of the noted deficiencies at the current location, but there may be other locations where the bridge could be erected where it would be acceptable once rehabilitated.

The cost to have a crane lift the bridge is estimated to be approximately $40,000. It is not possible to estimate the cost to relocate the bridge once lifted from its current location without knowing the new location. It may also be necessary to disassemble or partially disassemble the bridge before it can be relocated. The cost to rehabilitate the bridge may be between $450,000 and $600,000 and the cost to construct a new substructure would be between $220,000 and $350,000, depending on site conditions and intended bridge use (i.e. pedestrian or vehicular). Note that these costs do not include any associated road work and retaining walls, etc.

The total cost to relocate the bridge is estimated to be between $710,000 and $990,000, plus the cost to transport the bridge to the new location. If it is necessary to disassemble the bridge to transport it, then the total cost to relocate the bridge could be as high as $1,200,000.

The service life of the bridge would have to be assessed after it had been relocated and rehabilitated, but since the substructure would be new, a service life of 50 years or more may be possible, although periodic maintenance, such as painting the steel members, would be required.

3.3.3.4 Commemorate Existing Bridge and Replace with New

An artist or architect could be engaged to prepare a narrative of the bridge's history along with architectural photos. This alternative should be considered if the existing bridge is not rehabilitated and left in place.

3.3.4 Close Existing Bridge to Vehicular Traffic & Leave it Open for Pedestrians Only

The public feedback received indicates that the bridge should not be closed to vehicular traffic.

3.4 Alternative Solution Recommendation

After consideration of comments received through the public and approval agency consultation process, AECOM recommends that the County proceed with the planning and design of the **"Replace Existing Structure"** alternative at this site as this is the only option that will address all of the noted deficiencies. Furthermore, AECOM recommends replacing the existing structure with a new two lane bridge to match the existing road on Collingwood Street which will provide a safer geometry (i.e. eliminating the need for oncoming traffic to share a single lane). A new bridge design would include pedestrian sidewalks making pedestrian travel safer.

However, the County should also consider the possibility of relocating the existing bridge structure or mounting the existing main bridge trusses to the new bridge. Both of these alternatives add cost to the project and the relocation alternative requires a location to relocate it to and an interested party to take ownership of the existing bridge including ongoing maintenance and the initial rehabilitation. AECOM recommends that the existing bridge be commemorated at the existing location whether or not it is to be relocated or portions of the existing structure are to be mounted on the new bridge.

3.5 Public and Review Agency Consultation

Public Consultation

After preparation of the preliminary report, a notice was published in the local newspapers on October 15 and October 29, 2010, as well as on the County's website, inviting interested persons to submit comments, which were received until November 16, 2010. A copy of this notice can be found in Appendix B. A copy of all comments can be found in Appendix E.

Four letters were received from the public. Three of the letters were written to express an interest in rehabilitating the bridge instead of replacing the bridge. The reasons given for preferring to rehabilitate the existing bridge were cost, an interest in preserving local history, and concerns that a wider, two lane bridge will encourage speeding. The fourth letter was written in support of replacing the bridge, the authors commenting on public safety and particularly of how the current bridge configuration obscures the vision of drivers turning south from Edward St. and prevents those drivers from being able to see northbound traffic on the bridge before entering the intersection. The authors also write of their concern that pedestrians currently share the current bridge with vehicle traffic and that vehicle traffic on the bridge has increased recently due to the development of a new subdivision.

A petition was also submitted to the County, requesting that the bridge be declared to have historical value under the Heritage Act, protecting it from destruction and to have the bridge restored while maintaining the existing structure. A total of 182 signatures were collected, of which 104 listed addresses showing that they lived in Creemore.

Review Agency Consultation

A review agency consultation process was also initiated to gather information on the potential effects that the proposed improvements may have on the environment. A letter soliciting comment on the project was mailed to 17 review agencies, 3 First Nations and 3 utilities on May 27, 2010 as follows:

Ministry of Environment – EA Coordinator
Ministry of Environment – Environmental Assessment & Approvals Branch
Ministry of Natural Resources
Transport Canada
Environment Canada
Nottawasaga Valley Conservation Authority
Ministry of Agriculture & Food
Fisheries and Oceans
Ministry of Culture
Ministry of Citizenship and Immigration
Ministry of Municipal Affairs and Housing
Ministry of Tourism & Recreation
Ministry of Finance
Ontario Clean Water Agency
Indian and Northern Affairs – Comprehensive Claims Branch
Indian and Northern Affairs – Litigation and Management Resolution
Indian and Northern Affairs – Specific Claims Branch
Ministry of Aboriginal Affairs

First Nations

Beausoleil
Chippewas of Georgina Island
Chippewas of Mnjikaning First Nation

Utilities

Hydro One
Bell Canada
Enbridge Gas Distribution

The Ontario Ministry of Culture commented that consideration should be given to preserving the existing bridge by relocating it to another site, or if no acceptable site is available during the construction period then the bridge components should be stored until another site is found. To do this a suitable location would need to be found and an interested party would need to agree to fund the rehabilitation and relocation of the existing bridge, as well funding the construction of a new substructure and the additional cost to dismantle the existing bridge without damaging it further so that it could be rehabilitated and re-constructed at a different location.

The Nottawasaga Valley Conservation Authority (NVCA) has provided the following comments, as presented in Appendix E, based on their review of the Preliminary Study Report. They have confirmed that replacing the bridge, which was noted as the preferred solution in the Preliminary Study Report, will be acceptable to the NVCA provided that the final design of the bridge does not impact the existing flood levels either upstream or downstream of the bridge. During the detailed design period a hydraulic analysis must be completed of the existing structure and the proposed structure to confirm that the flood levels are not impacted. As well, all proposed methods to control sediment during construction and potential erosion following the completion of the project must be included. No other concerns were noted by the NVCA.

3.6 Preferred Solution Recommendation

After consideration of comments received through the public and approval agency consultation process, AECOM recommends that the County proceed with the planning and design of the **"Replace Existing Structure"** alternative at this site. Furthermore, we would recommend replacing the existing structure with a new two lane bridge to match the two lane road. If Council approves the additional cost or if other stake holders are interested in contributing to the cost of construction consideration should also be given to **mounting the existing bridge trusses on the new bridge**.

AECOM also recommends that the County contact Clearview Township and other stake holders to determine if there is any interest in relocating the existing structure to another site. If another site is available and Clearview Township and / or other stake holders are interested in contributing to the costs of the additional rehabilitation and construction costs, the existing bridge could be relocated and commemorated at its original site with a narrative and some architectural photography.

It is our recommendation that the existing bridge should be commemorated at it original site as part of the process of replacing the bridge, whether or not the existing bridge is able to be relocated or possibly stored for future relocation.

As part of the process to replace the existing bridge structure the County is also committed to complete a Phase 2 Archaeological Assessment prior to excavation, as recommended in the Stage 1 Archaeological Assessment Report that is attached in Appendix D.

4. Summary

The planning process followed, as required by the Municipal Class Environmental Assessment document (June 2000, as amended in 2007), for the proposed improvements to the site of Collingwood Street Bridge (No. 000141) and the conclusions reached have been documented in this Study Completion Report as follows:

- problem identified;
- alternative solutions identified;
- general inventory of natural, social and economic environments including relative environmental impacts and identification of mitigating measures;
- alternative solutions evaluated;
- recommended solution determined;
- public and review agencies consulted;
- preferred solution selected;
- Study Completion Report completed.

With the Study Completion Report completed, AECOM seeks direction from the County to publish a Notice of Study Completion identifying the **"Replace Existing Structure"** alternative as the preferred solution per the requirements of the document dated October 2000 (as amended in 2007). A copy of the draft notice can be found in Appendix B.

AECOM

Appendix A

Replacement of Collingwood Street Bridge (Structure No. 000141) on Collingwood Street over the Mad River
Municipal Class Environmental Assessment

- Bridge Inspection Report

Biennial Bridge Inspection Report

Collingwood St Bridge

No. 000141

Thursday, July 15, 2010

Prepared By: Engineered Management Systems Inc.

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COUNTY OF SIMCOE

engineered management systems inc.

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1. Narrative

1.1 Introduction

The inspection summarized in this report was undertaken in compliance with the requirements of the Public Transportation and Highway Improvement Act, Ontario Regulation 104/97. There is no record of a previous detailed visual inspection of this structure. The inspection was carried out on Thursday, July 15, 2010 by Mugurel Serban under the direction of M. Wallrap P. Eng. At the time of inspection it was partly cloudy with temperatures between 30 and 35 degrees celsius. This report meets or exceeds all requirements for detailed visual surveys as set out in the Ontario Structure Inspection Manual 2000, rev. 2003, 2008.

1.2 General Information

The Collingwood St bridge was built in 1913. The structure has a South-North orientation and is located on Collingwood St 0.85 km South of County Road 9 in the County of Simcoe. This Truss bridge carries 1 lane of vehicular traffic across the Mad River in 1 continuous span with a crossing length of 31.9m and a maximum clearance of 3.9m. The deck has a travelled width of 4.4m and an overall width of 4.7m.

With an AADT of 225 the crossing is very lightly used with truck volumes accounting for less than 10% of the total traffic. The speed limit at this location is 50 km/hr and there is a posted load limit of 5tonnesThe structure underwent rehabilitation in 1980, the details of which are outlined in the summary forms which accompany this document. The heritage designation is unknown. The total estimated replacement value is $2,160,407.

1.3 Observations

Each component is presented along with a discussion of any elements within that component that exhibit notable deterioration and/or a low estimated remaining service life. Thorough documentation of every element in the structure can be found in the detailed forms in section "5.7 - Element Data". At the beginning of each section the asset value contribution for each component is stated. This is simply the percentage of overall structure replacement value that the component represents. As such it gives an indication of the components' economic value in light of any deterioration it may be undergoing.

The Collingwood St bridge is comprised of the following components:

1.3.1 North Approach

The following defects were noted in the elements comprising this component: The approach consists of 24 tonnes of asphalt. In total, an estimated 35% exhibits medium general deterioration. The estimated remaining service life is 5 years. The entire component will undergo ancillary replacement.

1.3.2 South Approach

The following defects were noted in the elements comprising this component: The approach consists of 24 tonnes of asphalt. In total, an estimated 8% exhibits severe general deterioration. The estimated remaining service life is 5 years. The entire component will undergo ancillary replacement.

1.3.3 Wearing Surface

The following defects were noted in the elements comprising this component: The wearing surface consists of 25.5 tonnes of asphalt. In total, an estimated 80% exhibits severe general deterioration and requires replacement. The estimated remaining service life is 0 years.

1.3.4 Deck

The following defects were noted in the elements comprising this component: The deck consists of 20 tonnes of timber. In total, an estimated 20% exhibits light general deterioration. The estimated remaining service life is 10 years. The entire component will undergo ancillary replacement.

1. Narrative (cont.)

1.3.5 North Transverse Joint

No significant defects were noted.

1.3.6 South Transverse Joint

No significant defects were noted.

1.3.7 Sidewalk/Curb/Median

The following defects were noted in the elements comprising this component: The sidewalk/curb/median consists of 1 tonnes of timber. In total, an estimated 50% exhibits severe general deterioration and requires replacement. The estimated remaining service life is 0 years.

1.3.8 Barrier

The following defects were noted in the elements comprising this component: The centre barrier consists of 3 tonnes of steel. The entire element exhibits functional obsolescence and requires replacement. The estimated remaining service life is 1 years. The exterior barrier consists of 1.5 tonnes of composite. In total, an estimated 15% exhibits light general deterioration. The estimated remaining service life is 10 years. The entire component will undergo ancillary replacement.

1.3.9 Signage

The following defects were noted in the elements comprising this component: The signage number 3 all together constructed of steel. In total, an estimated 25% exhibits structural inadequacy. The estimated remaining service life is 0 years. The entire component will undergo ancillary replacement.

1.3.10 Truss

The following defects were noted in the elements comprising this component: The truss consists of 18.6 tonnes of steel. In total, an estimated 4% exhibits severe general deterioration. The estimated remaining service life is 1 years. The entire component will undergo ancillary replacement.

1.3.11 Floor Beams

The following defects were noted in the elements comprising this component: The floor beams consists of 6.5 tonnes of steel. In total, an estimated 25% exhibits severe general deterioration and requires replacement. The estimated remaining service life is 0 years.

1.3.12 Bracing

The following defects were noted in the elements comprising this component: The bracing consists of 0.9 tonnes of steel. The entire element exhibits severe general deterioration and requires replacement. The estimated remaining service life is 0 years.

1.3.13 North Abutment

The following defects were noted in the elements comprising this component: The abutment consists of 70 tonnes of cast-in-place concrete. In total, an estimated 69% exhibits severe general deterioration and requires replacement. The estimated remaining service life is 0 years.

1.3.14 South Abutment

The following defects were noted in the elements comprising this component: The abutment consists of 194 tonnes of cast-in-place concrete. In total, an estimated 50% exhibits severe general deterioration and requires replacement. The estimated remaining service life is 0 years.

1.3.15 North Embankment

The following defects were noted in the elements comprising this component: The embankment consists of 60 square metres of soil. In total, an estimated 10% exhibits medium general deterioration. The estimated remaining service life is 10 years. The entire component will undergo ancillary replacement.

1.3.16 South Embankment

The following defects were noted in the elements comprising this component: The embankment consists of 60 square metres of soil. In total, an estimated 10% exhibits medium general deterioration. The estimated remaining service life is 10 years. The entire component will undergo ancillary replacement.

1.3.17 Foundation

No significant defects were noted.

1.3.18 Coating

The following defects were noted in the elements comprising this component: The coating consists of 575 square metres of c other. In total, an estimated 80% exhibits severe general deterioration and requires replacement. The estimated remaining service life is 0 years.

1.3.19 Watercourse

No significant defects were noted.

1.4 Conclusions and Further Investigation

Overall the structure is in very poor condition with an aggregate condition index of 0. The major concerns at this site are the poor condition of the floor beams affecting the load carrying capacity, partial poor condition of the connecting bolts located on the underside, partial poor condition of the abutments, poor condition of the wearing surface and non CHBDC compliant barriers.

1.4.1 Rehabilitative

The structure has rehabilitative needs of $2,820,097:

South Approach Ancillary Replacement	$4,148
North Approach Ancillary Replacement	$4,148
Wearing Surface Replacement	$15,706
Deck Ancillary Replacement	$31,110
South Transverse Joint Ancillary Joint Elimination	$6,084
North Transverse Joint Ancillary Joint Elimination	$6,084

1. Narrative (cont.)

Sidewalk/Curb/Median Replacement	$2,514
Barrier - Centre Replacement	$18,478
Barrier - Exterior Ancillary Replacement	$2,514
Signage Ancillary Replacement	$2,350
Truss Ancillary Replacement	$202,531
Floor Beams Replacement	$90,079
Bracing Replacement	$8,097
South Abutment Replacement	$576,114
North Abutment Replacement	$144,359
South Embankment Ancillary Replacement	$2,423
North Embankment Ancillary Replacement	$2,423
Foundation Reinstallation	$223,007
Coating Replacement	$1,477,929

1.4.2 Maintenance

On going maintenance procedures should be part of an annual regimen. Often these operations can be carried out by municipal staff however cost estimates are provided in cases where it must be contracted out. The following program is highly recommeded at a total annual cost of $600

South Approach - Wearing Surface Pothole Repair	$300
Signage Sign Maintenance	$300

1.4.3 Further Investigation

The next biennial inspection should be scheduled no later than July, 2012. In addition, a structural evaluation and a monitoring program for deformations, settlements & movements should be carried out immediately. No further investigation is recommended at this time.

2. Component Summary

			Rehabilitation Needs				
	Replacement	ERSL	None\ > 10 yrs	6 - 10 years	1 - 5years	< 1 year	Urgent
North Approach	$3,769	5			$4,148		
South Approach	$3,769	5			$4,148		
Wearing Surface	$11,213	0					$15,706
Deck	$28,269	10		$31,110			
North Transverse Joint	$12,162	10		$6,084			
South Transverse Joint	$12,162	10		$6,084			
Sidewalk/Curb/Median	$629	0					$2,514
Barrier	$15,076	1				$20,992	
Signage	$942	0					$2,350
Truss	$184,025	1				$202,531	
Floor Beams	$64,311	0					$90,079
Bracing	$6,183	0					$8,097
North Abutment	$103,061	0					$144,359
South Abutment	$411,301	0					$576,114
North Embankment	$2,356	10		$2,423			
South Embankment	$2,356	10		$2,423			
Foundation	$159,213	10		$223,007			
Coating	$1,128,763	0					$1,477,929
Watercourse	$18,375	15					
Total Replacement Cost:	**$2,167,935**	**0**	**$0**	**$271,131**	**$8,296**	**$223,523**	**$2,317,148**
					Total Rehabilitative Cost:		**$2,820,098**

3. Element Summary

			Rehabilitation Needs				
	Focus	ERSL	None\ > 10 yrs	6 - 10 years	1 - 5years	< 1 year	Urgent
South Approach	All	5			$4,148		
Slab	All	10					
Wearing Surface	All	5					
North Approach	All	5			$4,148		
Slab	All	10					
Wearing Surface	All	5					
Wearing Surface	All	0					$15,706
Top Surface	All	0					
Deck	All	10		$31,110			
Top Surface	All	10					
End Soffit	All	15					
Interior Soffit	All	15					
South Transverse Joint	All	10		$6,084			
Joint Armouring	All	10					
North Transverse Joint	All	10		$6,084			
Joint Armouring	All	10					
Sidewalk/Curb/Median	All	0					$2,514
Curb	All	0					
Barrier - Centre	All	1				$18,478	
Railing System	All	5					
Centre Posts	All	5					
Interior Railing System	All	10					
Barrier - Exterior	All	10		$2,514			
Posts	All	10					
Railing System	All	10					

3. Element Summary (cont.)

			Rehabilitation Needs				
	Focus	ERSL	None\ > 10 yrs	6 - 10 years	1 - 5years	< 1 year	Urgent
Signage	All	0					$2,350
Truss	All	1			$202,531		
Top Chords	All	10					
Bottom Chords	All	10					
Verticals	All	10					
West Diagonals	All	10					
Connections	All	1					
Diagonals	All	10					
Floor Beams	All	0					$90,079
Intermediate Floor Beams	All	0					
Bracing	All	0					$8,097
Intermediate Bracing	All	0					
South Abutment	All	0					$576,114
Abutment Wall	All	5					
Bearings	All	0					
Ballast Wall	All	5					
West Wing Wall	All	5					
East Wing Wall	All	5					
Footing	All	10					
North Abutment	All	0					$144,359
Abutment Wall	All	2					
Bearings	All	0					
Ballast Wall	All	5					
West Wing Wall	All	5					
East Wing Wall	All	5					

3. Element Summary (cont.)

			Rehabilitation Needs				
	Focus	ERSL	None\ > 10 yrs	6 - 10 years	1 - 5years	< 1 year	Urgent
South Embankment	All	10		$2,423			
Slope Protection	All	10					
North Embankment	All	10		$2,423			
Slope Protection	All	10					
Foundation	All	10		$223,007			
Coating	All	0					$1,477,929
Watercourse	All	15					
Bottom	All	15					
Upstream Section	All	15					
Downstream Section	All	15					
		0	**$0**	**$273,645**	**$210,827**	**$18,478**	**$2,317,148**
					Total Rehabilitative Cost:		**$2,820,098**

4. OSIM Reporting

4.1 Inventory Data

Structure Name	Collingwood St	Site Number	000141
Main Hwy/Road #	N/A	On ☑ Under ☐	Crossing Type: Navigable Water ☑ Non-Navig. Water ☐
Hwy/Road Name	Collingwood St		Rail ☐ Road ☐ Ped. ☐ Other ☐
Structure Location	0.85 km South of County Road 9		
Latitude	4908108	Longitude	17571070
Owner(s)	Simcoe County	Heritage Designation:	Not Cons. ☐ Cons./Not App. ☐ List/Not Desig. ☐ Desig./Not List ☐ Desig. & List ☐
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☑
MTO District	Unknown	Posted Speed	50
Old County	Unknown	AADT	225
Geographic Twp.	County of Simcoe	Inspection Route Sequence	Unknown
Structure Type	Truss	Interchange Number	Unknown
Total Deck Length	31.9 (m)	Interchange Structure Number	Unknown
Overall Str. Width	4.7 (m)	Minimum Vertical Clearance	3 (m)
Total Deck Area	149.93 (sq.m)	Special Routes:	Transit ☐ Truck ☐ School ☐ Bicycle ☐
Roadway Width	4.4 (m)	Detour Length Around Bridge	6 (km)
Skew Angle	0 (Degrees)	Direction of Structure	South-North
No. of Spans	1	Fill on Structure	0 (m)
Span Lengths	31.4 (m)		
		No. of Lanes	1
		No. of Trucks	5

4.2 Historical Data

Year Built	1913	Year of Last Major Rehab.	
Last OSIM Inspection	Unknown	Last Evaluation	Unknown
Last Enhanced OSIM Inspection	Unknown	Current Load Limit	5 (tonnes)
Enhanced Access Equipment			
Last Underwater Inspection	Unknown	Load Limit By-Law #	Not Applicable/Unknown
Last Condition Survey	Unknown	By-Law Expiry Date	Not Applicable/Unknown
Rehabilitation History	None		

4. OSIM Reporting (Cont.)

4.3 Scheduled Improvements

Regional Priority Number		Programmed Work Year	
Nature of Program Work			

4.4 Appraisal Indices

		Comments
Fatigue		
Seismic		
Scour		
Flood		
Geometrics		
Barrier		
Curb		
Load Capacity		

4. OSIM Reporting (Cont.)

4.5 Field Inspection Information

Date of Inspection	Thursday, July 15, 2010	**Type of Inspection**	☑ OSIM ☐ Enhanced OSIM
Inspector	Mugurel Serban		
Others in Party	None		
All Equipment Used	Tablet, Camera, GPS		
Weather	Partly Cloudy		
Temperature	30 to 35 C		

4.6 Additional Investigations Required

	None	Normal	Urgent	Est. Cost
Detailed Deck Condition Survey	X			
Non-Destructive Delamination Survey of Asphalt Covered Deck	X			
Concrete Substructure Condition Survey	X			
Detailed Coating Condition Survey	X			
Detailed Timber Investigation	X			
Post-Tensioned Strand Investigation	X			
Underwater Investigation	X			
Fatigue Investigation	X			
Seismic Investigation	X			
Structure Evaluation			X	
Monitoring of Deformations, Settlements and Movements			X	
Other* None	X			
Next Detailed Visual Inspection July, 2012			**Total Est. Cost**	

The major concerns at this site are the poor condition of the floor beams affecting the load carrying capacity, partial poor condition of the connecting bolts located on the underside, partial poor condition of the abutments, poor condition of the wearing surface and non CHBDC compliant barriers.

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections & rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

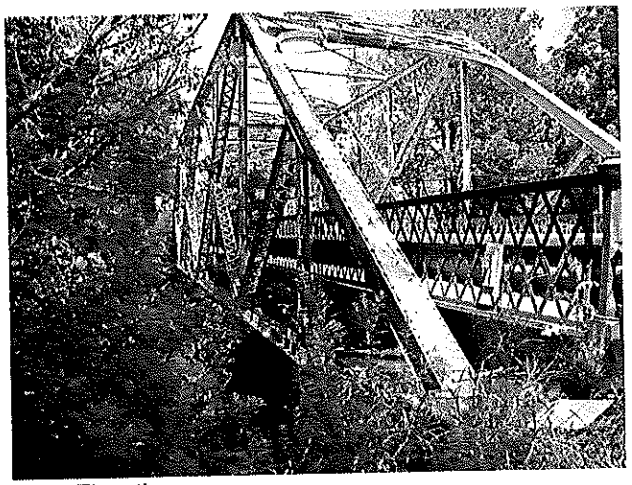
00 None
01 Lift and Swing Bridge Maintenance
02 Bridge Cleaning
03 Bridge Handrail Maintenance
04 Painting Steel Bridge Structures
05 Bridge Deck Joint Repair
06 Bridge Bearing Maintenance
07 Repair to Structural Steel
08 Repair of Bridge Concrete
09 Repair of Bridge Timber
10 Bailey bridges - Maintenance
11 Animal/Pest Control
12 Bridge Surface Repair
13 Erosion Control at Bridges
14 Concrete Sealing
15 Rout and Seal
16 Bridge Deck Drainage
17 Other

* eg. monitoring crack widths, trip hazards, issues impacting pedestrian or vehicular control

4.7 Element Data

4.7.1 Overall Structure - Structure

Element Group:	Overall Structure					Length:	N/A	
Element Name:	Structure					Width:	N/A	
Location:	Single Element					Height:	N/A	
Material:	Any					Count:	N/A	
Element Type:	Bridge					Total Quantity:	1	
Environment:	Severe					Limited Inspection	☐	
Protection System:	See Individual Elements					Performance Deficiencies	Maintenance Needs	
Condition Data:	Units	Exc.	Good	Fair	Poor			
	count	0	0.4	0.34	0.26	01	17	
Comments:	The structure is in partial poor condition and replacement is recommended. Replacement w ill also eliminate road constriction and load limitation.							
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑			
Recommended Work :	Defer to Element Level							



West Elevation.

4.7 Element Data (cont.)

4.7.2 South Approach - Approach

Element Group:	South Approach				Length:	N/A	
Element Name:	Approach				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Asphalt				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	24	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	20.16	1.92	1.92	16	17
Comments:	Wearing surface will undergo ancillary replacement.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	Ancillary Replacement	Estimated Cost: $4,148					

South Approach.

4.7 Element Data (cont.)

4.7.3 South Approach - Slab

Element Group:	South Approach					Length:	6	
Element Name:	Slab					Width:	4.4	
Location:	Single Element					Height:	0.3	
Material:	Asphalt					Count:	1	
Element Type:	Any					Total Quantity:	26.4	
Environment:	Severe					Limited Inspection	☑	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	26.4	0	0		00	00
Comments: None								
Urgency : None ☐		6-10 years ☑		1-5 years ☐		< 1 year ☐		Urgent ☐
Recommended Work : See Primary Element								

South Approach.

4.7 Element Data (cont.)

4.7.4 South Approach - Wearing Surface

Element Group:	South Approach					Length:	6	
Element Name:	Wearing Surface					Width:	4.4	
Location:	Single Element					Height:	0.08	
Material:	Asphalt					Count:	1	
Element Type:	Any					Total Quantity:	26.4	
Environment:	Severe					Limited Inspection	☐	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	22.18	2.11	2.11		16	17
Comments:	Area along the transverse joint showing combination cracking should be properly repaired. Wearing surface will undergo ancillary replacement.							
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐			
Recommended Work :	See Primary Element							

South Side. Showing cracking.

4.7 Element Data (cont.)

4.7.5 North Approach - Approach

Element Group:	North Approach				Length:	N/A	
Element Name:	Approach				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Asphalt				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	24	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	15.6	8.4	0	16	17
Comments:	Wearing surface will eventually need to be replaced.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	Ancillary Replacement	Estimated Cost: $4,148					

North Side.

4.7 Element Data (cont.)

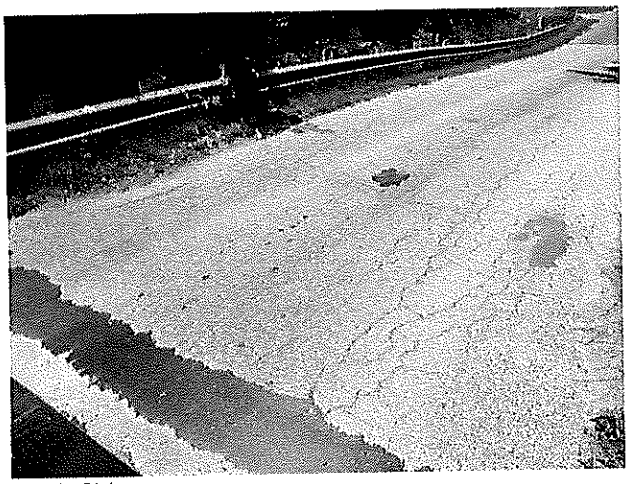
4.7.6 North Approach - Slab

Element Group:	North Approach					Length:	6	
Element Name:	Slab					Width:	4.4	
Location:	Single Element					Height:	0.3	
Material:	Asphalt					Count:	1	
Element Type:	Any					Total Quantity:	26.4	
Environment:	Severe					Limited Inspection	☑	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	26.4	0	0		00	00
Comments: None								
Urgency : None ☐		6-10 years ☑		1-5 years ☐		< 1 year ☐		Urgent ☐
Recommended Work : See Primary Element								

4.7 Element Data (cont.)

4.7.7 North Approach - Wearing Surface

Element Group:	North Approach				Length:	6	
Element Name:	Wearing Surface				Width:	4.4	
Location:	Single Element				Height:	0.08	
Material:	Asphalt				Count:	1	
Element Type:	Any				Total Quantity:	26.4	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	17.16	9.24	0	16	17
Comments:	Wearing surface will eventually need to be replaced.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						



North Side.

4.7 Element Data (cont.)

4.7.8 Wearing Surface - Wearing Surface

Element Group:	Wearing Surface				Length:	N/A	
Element Name:	Wearing Surface				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Asphalt				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	25.5	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	0	5.1	20.4	09	17
Comments:	Wearing surface is in poor condition.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	Replacement	Estimated Cost: $15,706					

Overall View.

4.7 Element Data (cont.)

4.7.9 Wearing Surface - Top Surface

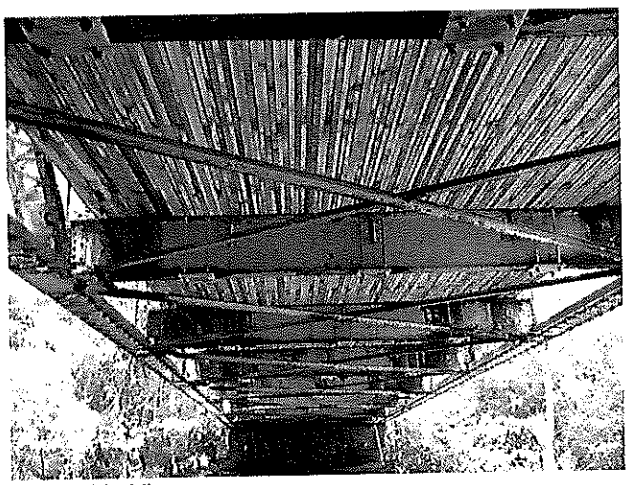
Element Group:	Wearing Surface				Length:	31.9	
Element Name:	Top Surface				Width:	4.4	
Location:	Single Element				Height:	0.08	
Material:	Asphalt				Count:	1	
Element Type:	Any				Total Quantity:	140.4	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	0	28.08	112.32	09	17
Comments:	Wearing surface is in poor condition.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	See Primary Element						

Top Surface. Showing poor condition.

4.7 Element Data (cont.)

4.7.10 Deck - Deck

Element Group:	Deck				Length:	N/A	
Element Name:	Deck				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Timber				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	20	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	20	0	0	00	00
Comments:	Taking into account the deterioration of the w earing surface the top of the deck may show some deterioration.						
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐		
Recommended Work :	Ancillary Replacement	Estimated Cost: $31,110					

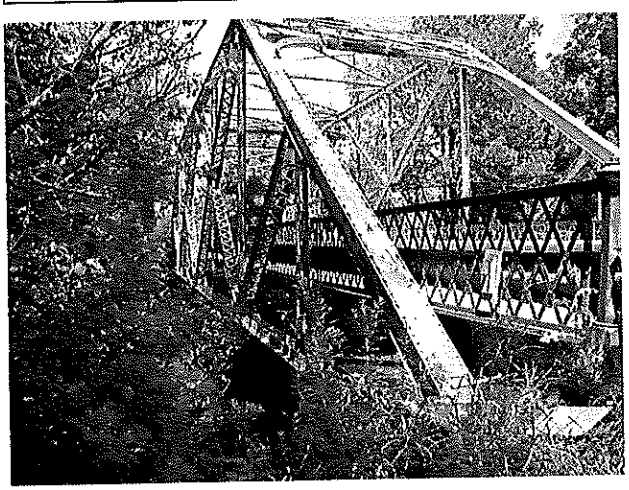


Underside View.

4.7 Element Data (cont.)

4.7.11 Deck - Top Surface

Element Group:	Deck				Length:	31.9	
Element Name:	Top Surface				Width:	4.7	
Location:	Single Element				Height:	0.2	
Material:	Timber				Count:	1	
Element Type:	Any				Total Quantity:	149.9	
Environment:	Severe				Limited Inspection	☑	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	149.9	0	0	00	00
Comments: None							
Urgency : None ☐		6-10 years ☑		1-5 years ☐		< 1 year ☐	Urgent ☐
Recommended Work : See Primary Element							



Overall View.

4.7 Element Data (cont.)

4.7.12 Deck - End Soffit

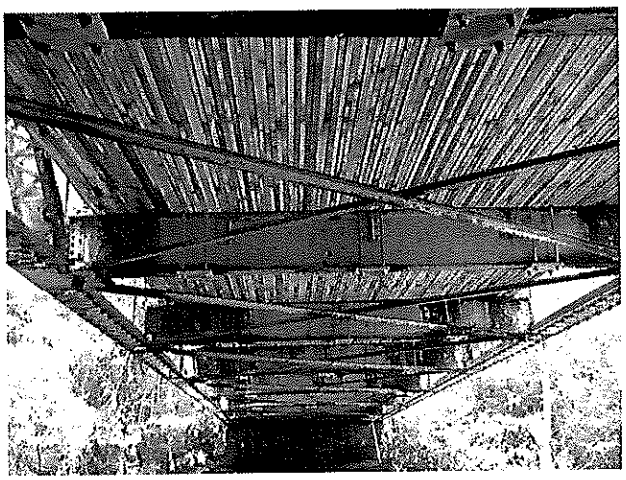
Element Group:	Deck				Length:	2.5	
Element Name:	End Soffit				Width:	4.7	
Location:	Single Element				Height:	N/A	
Material:	Timber				Count:	2	
Element Type:	Any				Total Quantity:	23.5	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	23.5	0	0	00	00
Comments: None							
Urgency : None ☑	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : See Primary Element							

South End.

4.7 Element Data (cont.)

4.7.13 Deck - Interior Soffit

Element Group:	Deck				Length:	26.9	
Element Name:	Interior Soffit				Width:	4.7	
Location:	Single Element				Height:	N/A	
Material:	Timber				Count:	1	
Element Type:	Any				Total Quantity:	126.4	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	126.4	0	0	00	00
Comments: None							
Urgency : None ☑	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : See Primary Element							



Underside View.

4.7 Element Data (cont.)

4.7.14 South Transverse Joint - Transverse Joint

Element Group:	South Transverse Joint				Length:	N/A	
Element Name:	Transverse Joint				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Any				Count:	N/A	
Element Type:	Finger Plate				Total Quantity:	4.4	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m	0	4.4	0	0	00	00

Comments: The steel plate shows light rusting and some light deterioration.

Urgency : None ☐ 6-10 years ☑ 1-5 years ☐ < 1 year ☐ Urgent ☐

Recommended Work : Ancillary Joint Elimination **Estimated Cost: $6,084**

South Side.

4.7 Element Data (cont.)

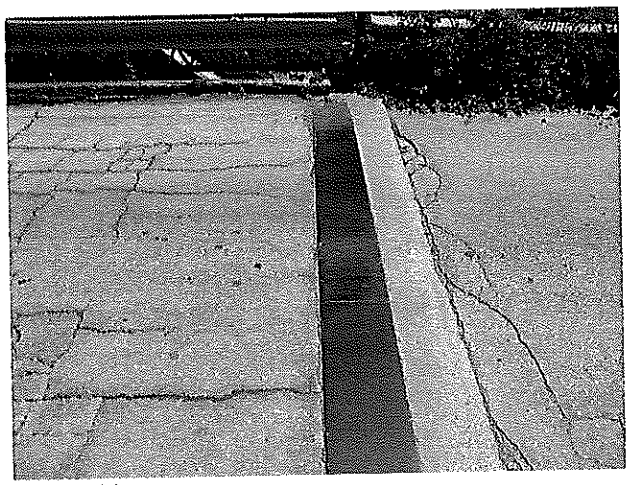
4.7.15 South Transverse Joint - Joint Armouring

Element Group:	South Transverse Joint					Length:	4.4
Element Name:	Joint Armouring					Width:	N/A
Location:	Single Element					Height:	N/A
Material:	Steel					Count:	1
Element Type:	Any					Total Quantity:	4.4
Environment:	Severe					Limited Inspection	☐
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m	0	4.4	0	0	00	00

Comments: The steel plate shows light rusting and some light deterioration.

Urgency : None ☐ 6-10 years ☑ 1-5 years ☐ < 1 year ☐ Urgent ☐

Recommended Work : See Primary Element



South Side.

4.7 Element Data (cont.)

4.7.16 North Transverse Joint - Transverse Joint

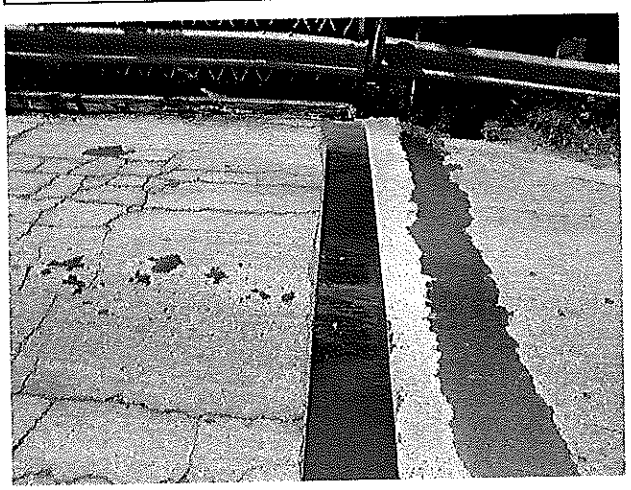
Element Group:	North Transverse Joint				Length:	N/A	
Element Name:	Transverse Joint				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Any				Count:	N/A	
Element Type:	Finger Plate				Total Quantity:	4.4	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m	0	4.4	0	0	00	00
Comments:	The steel plate shows light rusting and some light deterioration.						
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐		
Recommended Work :	Ancillary Joint Elimination	Estimated Cost: $6,084					

North Side.

4.7 Element Data (cont.)

4.7.17 North Transverse Joint - Joint Armouring

Element Group:	North Transverse Joint				Length:	4.4	
Element Name:	Joint Armouring				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Steel				Count:	1	
Element Type:	Any				Total Quantity:	4.4	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m	0	4.4	0	0	00	00
Comments:	The steel plate shows light rusting and some light deterioration.						
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						



North Side.

4.7 Element Data (cont.)

4.7.18 Sidewalk/Curb/Median - Sidewalk/Curb/Median

Element Group:	Sidewalk/Curb/Median				Length:	N/A	
Element Name:	Sidewalk/Curb/Median				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Timber				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	1	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	0	0.5	0.5	16	17
Comments:	Timber curbs show severe deterioration.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	Replacement	Estimated Cost: $2,514					

East Side.

West Side.

4.7 Element Data (cont.)

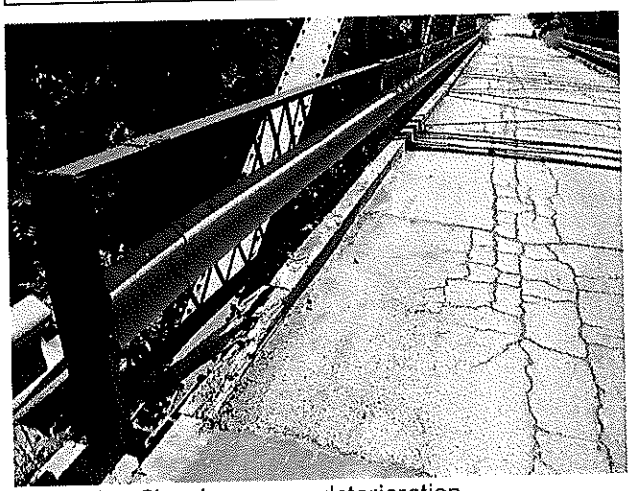
4.7.19 Sidewalk/Curb/Median - Curb

Element Group:	Sidewalk/Curb/Median				Length:	31.9	
Element Name:	Curb				Width:	0.15	
Location:	Single Element				Height:	0.15	
Material:	Timber				Count:	2	
Element Type:	Any				Total Quantity:	28.8	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	0	14.4	14.4	16	17

Comments: Timber curbs show severe deterioration.

Urgency : None ☐ 6-10 years ☐ 1-5 years ☐ < 1 year ☐ Urgent ☑

Recommended Work : See Primary Element



East Side. Showing severe deterioration.

West Side. Showing severe deterioration.

4.7 Element Data (cont.)

4.7.20 Barrier - CentreBarrier

Element Group:	Barrier				Length:	N/A	
Element Name:	CentreBarrier				Width:	N/A	
Location:	Centre				Height:	N/A	
Material:	Steel				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	3	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	0	1.5	1.5	16	17
Comments:	The barrier is not CHBDC compliant.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☑	Urgent ☐		
Recommended Work :	Replacement	Estimated Cost: $18,478					

East Side.

West Side.

4.7 Element Data (cont.)

4.7.21 Barrier - Railing System

Element Group:	Barrier				Length:	31.9	
Element Name:	Railing System				Width:	N/A	
Location:	Single Element				Height:	1	
Material:	Steel				Count:	2	
Element Type:	Any				Total Quantity:	63.8	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m	0	31.9	31.9	0	16	17
Comments:	The exterior barrier shows light to medium corrosion and is loose.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

West Side.

4.7 Element Data (cont.)

4.7.22 Barrier - Centre Posts

Element Group:	Barrier				Length:	0.1	
Element Name:	Centre Posts				Width:	0.1	
Location:	Centre				Height:	1.1	
Material:	Steel				Count:	4	
Element Type:	Any				Total Quantity:	1.6	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	0.82	0.62	0.16	01	17

Comments: There are 4 posts at the end of the truss and they are inclined, loose and showing light to medium corrosion.

Urgency : None ☐ 6-10 years ☐ 1-5 years ☑ < 1 year ☐ Urgent ☐

Recommended Work : See Primary Element

East Side.

4.7 Element Data (cont.)

4.7.23 Barrier - Interior Railing System

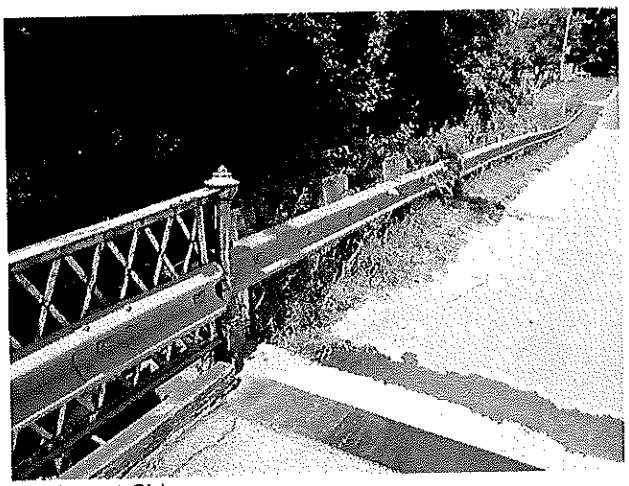
Element Group:	Barrier				Length:	31.9	
Element Name:	Interior Railing System				Width:	N/A	
Location:	Interior				Height:	0.75	
Material:	Steel				Count:	2	
Element Type:	Any				Total Quantity:	63.8	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m	0	63.8	0	0	00	00
Comments: None							
Urgency : None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : See Primary Element							

West Side.

4.7 Element Data (cont.)

4.7.24 Barrier - ExteriorBarrier

Element Group:	Barrier				Length:	N/A	
Element Name:	ExteriorBarrier				Width:	N/A	
Location:	Exterior				Height:	N/A	
Material:	Composite				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	1.5	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	1.5	0	0	00	00
Comments: None							
Urgency : None ☐		6-10 years ☑		1-5 years ☐		< 1 year ☐	Urgent ☐
Recommended Work : Ancillary Replacement				Estimated Cost: $2,514			



Northwest Side.

4.7 Element Data (cont.)

4.7.25 Barrier - Posts

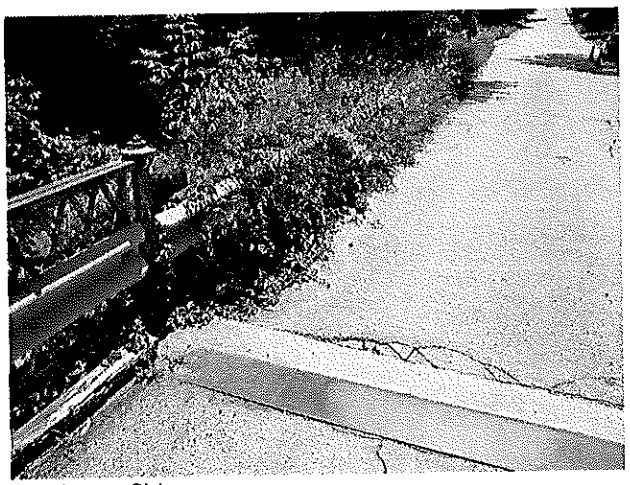
Element Group:	Barrier				Length:	0.21	
Element Name:	Posts				Width:	0.21	
Location:	Single Element				Height:	1.5	
Material:	Timber				Count:	24	
Element Type:	Any				Total Quantity:	30.2	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	30.2	0	0	00	00
Comments: None							
Urgency : None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : See Primary Element							

Northwest Side.

4.7 Element Data (cont.)

4.7.26 Barrier - Railing System

Element Group:	Barrier				Length:	6	
Element Name:	Railing System				Width:	N/A	
Location:	Single Element				Height:	0.75	
Material:	Steel				Count:	4	
Element Type:	Any				Total Quantity:	24	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m	0	24	0	0	00	00
Comments: None							
Urgency : None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : See Primary Element							



Southeast Side.

4.7 Element Data (cont.)

4.7.27 Signage - Signage

Element Group:	Signage				Length:	N/A	
Element Name:	Signage				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Steel				Count:	3	
Element Type:	Primary Element				Total Quantity:	3	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	all	0	3	0	0	16	17
Comments:	There are 2 signs indicating the load limit and just one sign indicating the existence of one lane. Single lane bridge sign should be installed at the north end.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	Ancillary Replacement	Estimated Cost: $2,350					

South Side.


South Side.

4.7 Element Data (cont.)

4.7.28 Truss - Truss

Element Group:	Truss				Length:	N/A	
Element Name:	Truss				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Steel				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	18.6	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	13.02	4.65	0.93	01	17

Comments: Steel elements show light to medium corrosion and isolated severe to very severe corrosion especially affecting the underside.

Urgency : None ☐ 6-10 years ☐ 1-5 years ☑ < 1 year ☐ Urgent ☐

Recommended Work : Ancillary Replacement Estimated Cost: $202,531

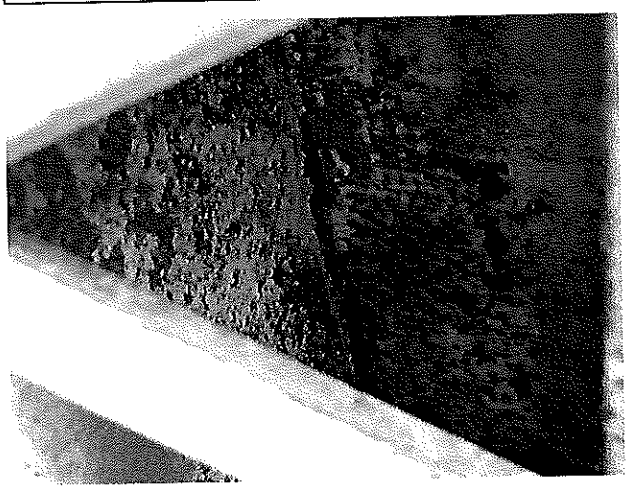
East Side.

West Side.

4.7 Element Data (cont.)

4.7.29 Truss - Top Chords

Element Group:	Truss				Length:	36.9	
Element Name:	Top Chords				Width:	0.3	
Location:	Single Element				Height:	0.22	
Material:	Steel				Count:	2	
Element Type:	Any				Total Quantity:	173.4	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	140.45	26.01	6.94	00	17
Comments:	Top chords show light to medium corrosion and isolated severe corrosion and especially around connections and on the underside.						
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						



Interior View.

Overall View.

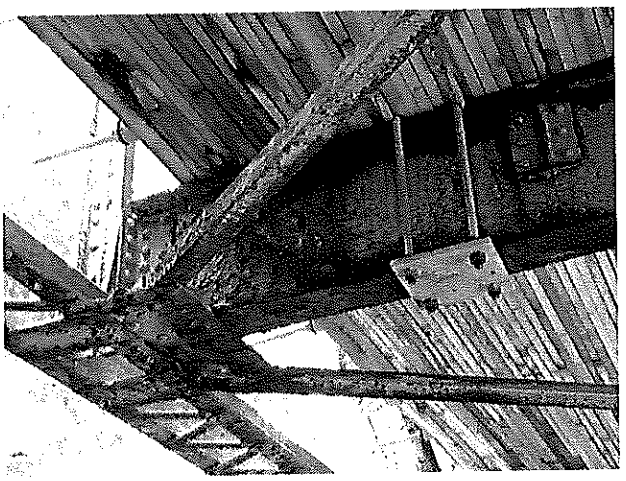
Southwest Side. Showing isolated very severe corrosion.

4.7 Element Data (cont.)

4.7.30 Truss - Bottom Chords

Element Group:	Truss				Length:	31.9	
Element Name:	Bottom Chords				Width:	0.22	
Location:	Single Element				Height:	0.17	
Material:	Steel				Count:	2	
Element Type:	Any				Total Quantity:	89.5	
Environment:	Severe				Limited Inspection	☑	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	N/A	0	72.5	13.42	3.58	00	00
Comments:	Bottom chords show light to medium corrosion on approximate half of the total surface and isolated severe corrosion and especially around connections and at the ends.						
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

Overall View.



West Side.

4.7 Element Data (cont.)

4.7.31 Truss - Verticals

Element Group:	Truss				Length:	0.06	
Element Name:	Verticals				Width:	0.13	
Location:	Single Element				Height:	5.29	
Material:	Steel				Count:	12	
Element Type:	Any				Total Quantity:	80	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	65.6	12	2.4	00	17
Comments:	Verticals show light to medium corrosion on approximate half of the total surface and isolated severe corrosion. One vertical on the east side shows light collision damage.						
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

East Side.

4.7 Element Data (cont.)

4.7.32 Truss - West Diagonals

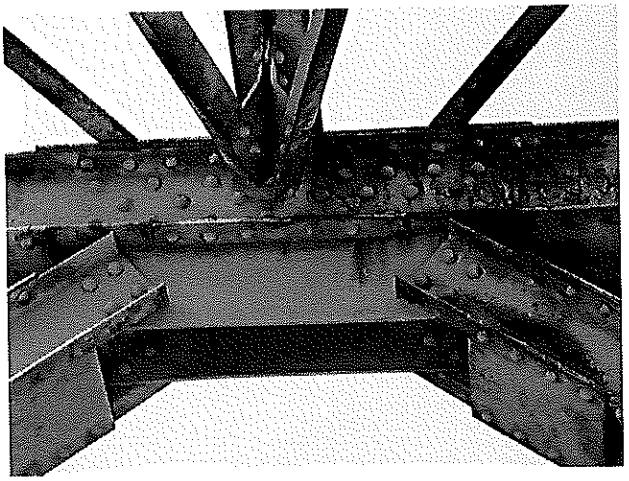
Element Group:	Truss				Length:	8.51	
Element Name:	West Diagonals				Width:	0.12	
Location:	West				Height:	0.18	
Material:	Steel				Count:	1	
Element Type:	Any				Total Quantity:	12.4	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	6.2	6.2	0	16	17
Comments:	One diagonal on the w est side show s light collision damage.						
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

Northwest Side. Showing isolated light deterioration.

4.7 Element Data (cont.)

4.7.33 Truss - Connections

Element Group:	Truss					Length:	N/A	
Element Name:	Connections					Width:	N/A	
Location:	Single Element					Height:	N/A	
Material:	High Strength Steel					Count:	36	
Element Type:	Riveted					Total Quantity:	36	
Environment:	Severe					Limited Inspection	☑	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	each	0	26.64	7.2	2.16		01	17
Comments:	Steel elements show light to medium corrosion and isolated severe corrosion of the rivets on the underside of the truss and this may affect the load carrying capacity.							
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☑	Urgent ☐			
Recommended Work :	See Primary Element							



Top Side.

Underside Surface. Showing very severe corrosion.

4.7 Element Data (cont.)

4.7.34 Truss - Diagonals

Element Group:	Truss				Length:	8.51	
Element Name:	Diagonals				Width:	0.12	
Location:	Single Element				Height:	0.18	
Material:	Steel				Count:	11	
Element Type:	Any				Total Quantity:	137	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	95.9	34.25	6.85	00	17
Comments:	The diagonals show light to medium corrosion on approximate half of the total surface and isolated severe corrosion.						
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

. Showing medium condition.

4.7 Element Data (cont.)

4.7.35 Floor Beams - Floor Beams

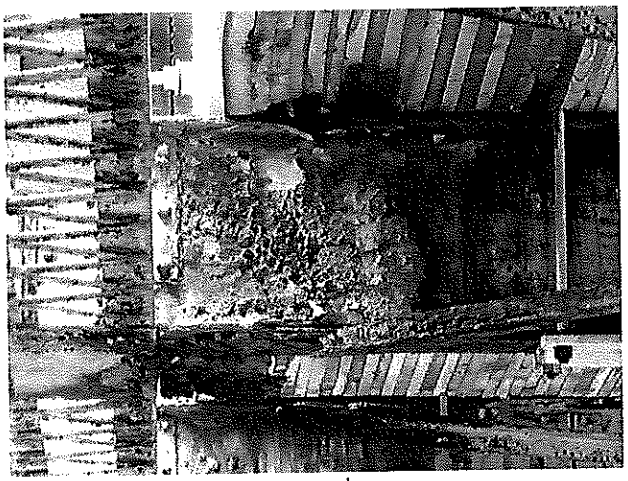
Element Group:	Floor Beams					Length:	4.7	
Element Name:	Floor Beams					Width:	0.17	
Location:	Single Element					Height:	0.51	
Material:	Steel					Count:	9	
Element Type:	Primary Element					Total Quantity:	65	
Environment:	Severe					Limited Inspection	☑	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	32.5	16.25	16.25		01	17
Comments:	The floor beams show severe to very severe corrosion concentrated at the end of the floor beams and load carrying capacity is affected. Structure evaluation is immediately required.							
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑			
Recommended Work :	Replacement	Estimated Cost: $90,079						

Underside Surface. Showing very severe corrosion.

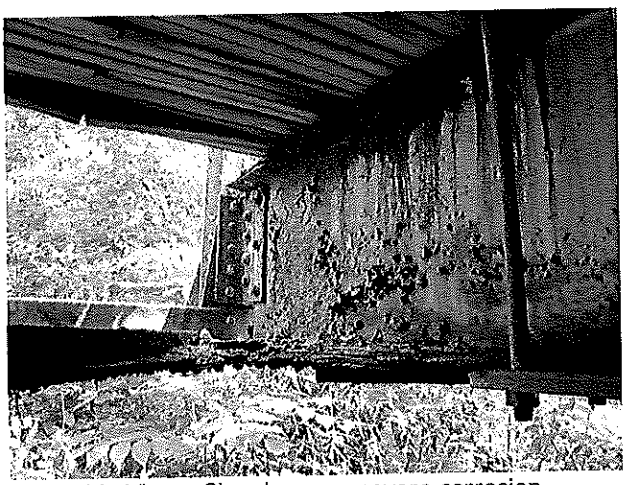
4.7 Element Data (cont.)

4.7.36 Floor Beams - Intermediate Floor Beams

Element Group:	Floor Beams				Length:	4.7	
Element Name:	Intermediate Floor Beams				Width:	0.17	
Location:	Single Element				Height:	0.51	
Material:	Steel				Count:	9	
Element Type:	Any				Total Quantity:	65	
Environment:	Severe				Limited Inspection	☑	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	32.5	16.25	16.25	01	17
Comments:	The floor beams show severe to very severe corrosion concentrated at the end of the floor beams and load carrying capacity is affected. Structure evaluation is immediately required.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	See Primary Element						

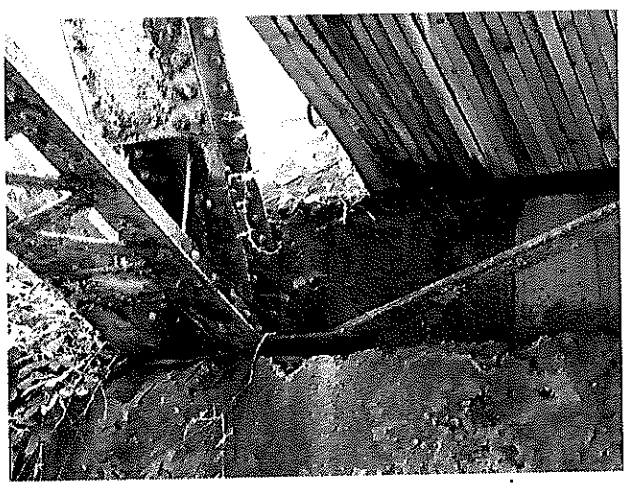


. Showing very severe corrosion.



Underside View. Showing very severe corrosion.

Underside View. Showing very severe corrosion.

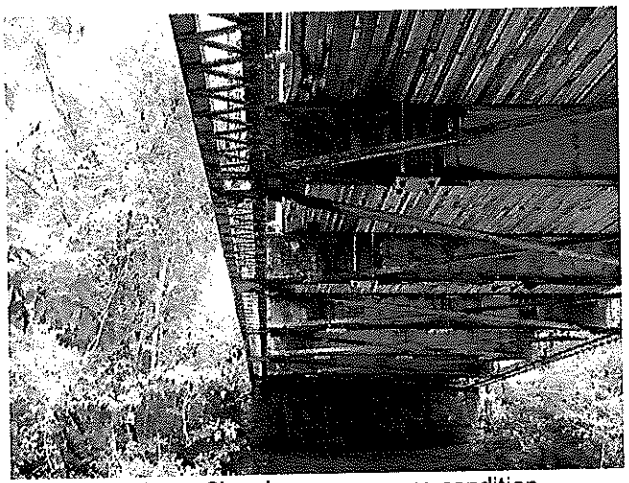


Underside View. Showing very severe corrosion.

4.7 Element Data (cont.)

4.7.37 Bracing - Bracing

Element Group:	Bracing				Length:	6.2	
Element Name:	Bracing				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Steel				Count:	16	
Element Type:	Primary Element				Total Quantity:	16	
Environment:	Severe				Limited Inspection	☑	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	each	0	0	0	16	01	17
Comments:	Bracing elements show very severe and even failure at the ends.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	Replacement	Estimated Cost: $8,097					

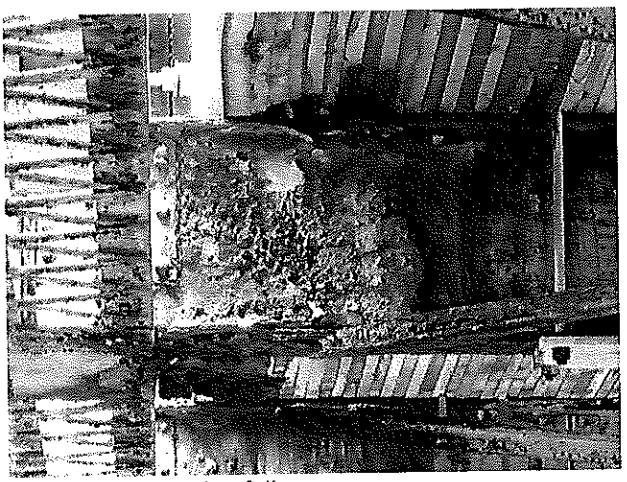


Underside View. Showing very severe condition.

4.7 Element Data (cont.)

4.7.38 Bracing - Intermediate Bracing

Element Group:	Bracing				Length:	6.2	
Element Name:	Intermediate Bracing				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Steel				Count:	16	
Element Type:	Any				Total Quantity:	16	
Environment:	Severe				Limited Inspection	☑	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	each	0	0	0	16	01	17
Comments:	Bracing elements show very severe and even failure at the ends.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	See Primary Element						

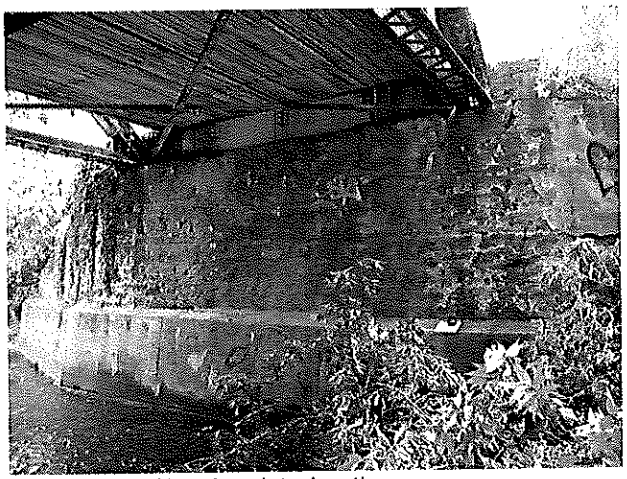


West Side. Showing failure.

4.7 Element Data (cont.)

4.7.39 South Abutment - Abutment

Element Group:	South Abutment				Length:	N/A	
Element Name:	Abutment				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Cast-In-Place Concrete				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	194	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	19.4	77.6	97	16	17
Comments:	The abutment wall is in partial poor condition and will undergo replacement as a result of bridge widening.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	Replacement	Estimated Cost: $576,114					



South Side. Showing deterioration.

4.7 Element Data (cont.)

4.7.40 South Abutment - Abutment Wall

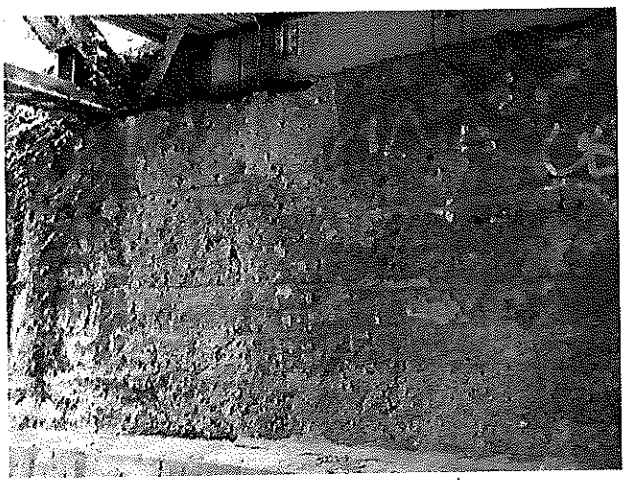
Element Group:	South Abutment					Length:	N/A	
Element Name:	Abutment Wall					Width:	6.7	
Location:	Single Element					Height:	2.2	
Material:	Cast-In-Place Concrete					Count:	1	
Element Type:	Any					Total Quantity:	14.7	
Environment:	Severe					Limited Inspection	☐	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	0	0	14.7		16	17
Comments:	The abutment w all is in poor condition.							
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐			
Recommended Work :	See Primary Element							

South Side. Showing extensive very severe scaling.

4.7 Element Data (cont.)

4.7.41 South Abutment - Bearings

Element Group:	South Abutment				Length:	N/A	
Element Name:	Bearings				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Any				Count:	2	
Element Type:	Plate				Total Quantity:	2	
Environment:	Severe				Limited Inspection	☑	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	each	0	0	0	2	05	17
Comments:	Bearings show severe to very severe corrosion.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	See Primary Element						

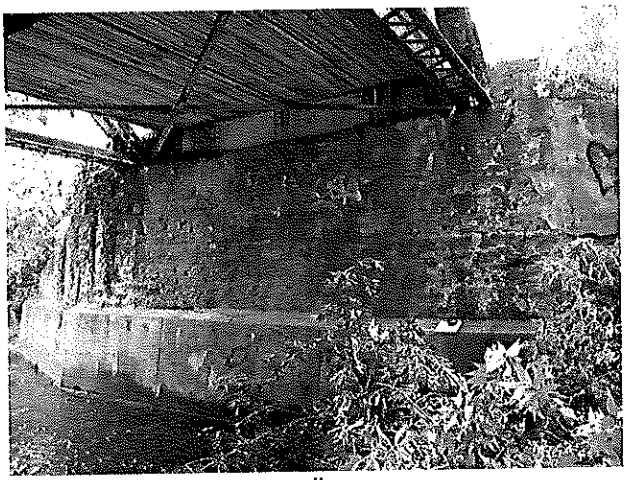


South Side. Showing very severe corrosion.

4.7 Element Data (cont.)

4.7.42 South Abutment - Ballast Wall

Element Group:	South Abutment					Length:	N/A	
Element Name:	Ballast Wall					Width:	6.7	
Location:	Single Element					Height:	0.8	
Material:	Cast-In-Place Concrete					Count:	1	
Element Type:	Any					Total Quantity:	5.4	
Environment:	Severe					Limited Inspection	☑	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	2.7	1.35	1.35		16	17
Comments:	The ballast wall shows very severe scaling.							
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐			
Recommended Work :	See Primary Element							



. Showing very severe scaling.

4.7 Element Data (cont.)

4.7.43 South Abutment - West Wing Wall

Element Group:	South Abutment				Length:	4	
Element Name:	West Wing Wall				Width:	N/A	
Location:	West				Height:	2	
Material:	Cast-In-Place Concrete				Count:	1	
Element Type:	Any				Total Quantity:	8	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	0	4	4	16	17
Comments:	The w ing w alls show very severe scaling w hich w ill further become very severe deterioration and w ill lead to loss of section.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

Southwest Side. Showing extensive very severe scaling.

4.7 Element Data (cont.)

4.7.44 South Abutment - East Wing Wall

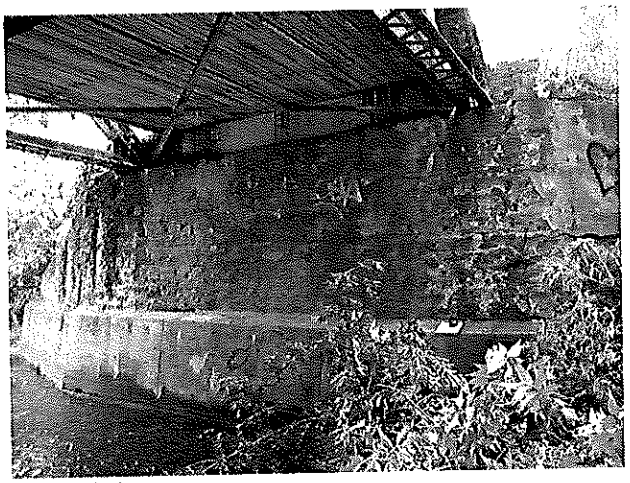
Element Group:	South Abutment					Length:	4	
Element Name:	East Wing Wall					Width:	N/A	
Location:	East					Height:	2	
Material:	Cast-In-Place Concrete					Count:	1	
Element Type:	Any					Total Quantity:	8	
Environment:	Severe					Limited Inspection	☐	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	4	2	2		16	17
Comments:	The wing walls show very severe scaling which will further become very severe deterioration and will lead to loss of section.							
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐			
Recommended Work :	See Primary Element							

Southeast Side. Showing very severe scaling.

4.7 Element Data (cont.)

4.7.45 South Abutment - Footing

Element Group:	South Abutment					Length:	N/A	
Element Name:	Footing					Width:	N/A	
Location:	Single Element					Height:	N/A	
Material:	Cast-In-Place Concrete					Count:	N/A	
Element Type:	Any					Total Quantity:	30.5	
Environment:	Severe					Limited Inspection	☐	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	26.23	3.05	1.22		00	17
Comments:	There are some isolated vertical cracks.							
Urgency :	None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work :	See Primary Element							



South End.

4.7 Element Data (cont.)

4.7.46 North Abutment - Abutment

Element Group:	North Abutment				Length:	N/A	
Element Name:	Abutment				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Cast-In-Place Concrete				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	70	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	tonnes	0	2.8	18.9	48.3	16	17
Comments:	The abutment wall is in partial poor condition and will undergo replacement as a result of bridge widening.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	Replacement	Estimated Cost: $144,359					

North Side.

4.7 Element Data (cont.)

4.7.47 North Abutment - Abutment Wall

Element Group:	North Abutment				Length:	N/A	
Element Name:	Abutment Wall				Width:	6.7	
Location:	Single Element				Height:	2.2	
Material:	Cast-In-Place Concrete				Count:	1	
Element Type:	Any				Total Quantity:	14.7	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	0	0	14.7	16	17
Comments:	The abutment w all is in poor condition show ing very severe scaling and disintegration.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

North Side. Showing poor condition.

4.7 Element Data (cont.)

4.7.48 North Abutment - Bearings

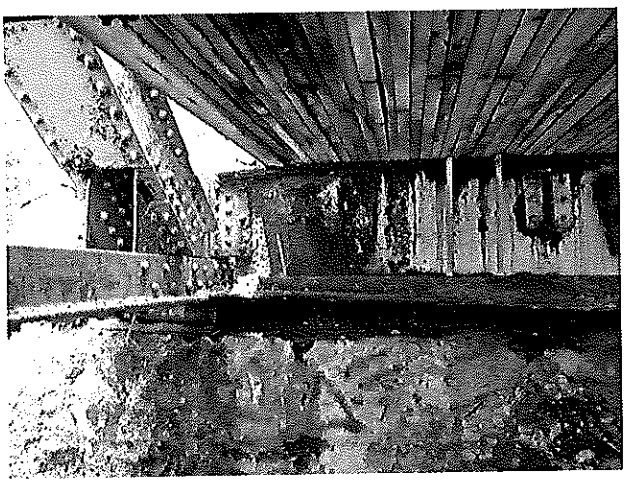
Element Group:	North Abutment				Length:	N/A	
Element Name:	Bearings				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Any				Count:	2	
Element Type:	Plate				Total Quantity:	2	
Environment:	Severe				Limited Inspection	☑	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	each	0	0	0	2	05	17
Comments:	Bearings show severe to very severe corrosion.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	See Primary Element						

Overall View. Showing severe corrosion.

4.7 Element Data (cont.)

4.7.49 North Abutment - Ballast Wall

Element Group:	North Abutment				Length:	N/A	
Element Name:	Ballast Wall				Width:	6.7	
Location:	Single Element				Height:	0.8	
Material:	Cast-In-Place Concrete				Count:	1	
Element Type:	Any				Total Quantity:	5.4	
Environment:	Severe				Limited Inspection	☑	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	2.7	1.35	1.35	16	17
Comments:	The ballast wall shows very severe scaling.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						



Overall View.

4.7 Element Data (cont.)

4.7.50 North Abutment - West Wing Wall

Element Group:	North Abutment				Length:	4	
Element Name:	West Wing Wall				Width:	N/A	
Location:	West				Height:	2	
Material:	Cast-In-Place Concrete				Count:	1	
Element Type:	Any				Total Quantity:	8	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	0	4	4	16	17
Comments:	The wing walls show very severe scaling which will further become very severe deterioration and will lead to loss of section.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

Northwest Side. Showing very severe scaling.

4.7 Element Data (cont.)

4.7.51 North Abutment - East Wing Wall

Element Group:	North Abutment				Length:	4	
Element Name:	East Wing Wall				Width:	N/A	
Location:	East				Height:	2	
Material:	Cast-In-Place Concrete				Count:	1	
Element Type:	Any				Total Quantity:	8	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	0	4	4	16	17
Comments:	The wing walls show very severe scaling which will further become very severe deterioration and will lead to loss of section.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☑	< 1 year ☐	Urgent ☐		
Recommended Work :	See Primary Element						

East Side.

4.7 Element Data (cont.)

4.7.52 South Embankment - Embankment

Element Group:	South Embankment				Length:	N/A	
Element Name:	Embankment				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Soil				Count:	1	
Element Type:	Primary Element				Total Quantity:	1	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	all	0	0.9	0.1	0	00	17
Comments: None							
Urgency : None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : Ancillary Replacement	Estimated Cost: $2,423						

Southeast Side.

4.7 Element Data (cont.)

4.7.53 South Embankment - Slope Protection

Element Group:	South Embankment				Length:	N/A	
Element Name:	Slope Protection				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Foliation				Count:	2	
Element Type:	Any				Total Quantity:	2	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	all	0	1.6	0.4	0	00	17
Comments: None							
Urgency : None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : See Primary Element							

Southwest Side.

4.7 Element Data (cont.)

4.7.54 North Embankment - Embankment

Element Group:	North Embankment				Length:	N/A	
Element Name:	Embankment				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Soil				Count:	1	
Element Type:	Primary Element				Total Quantity:	1	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	all	0	0.9	0.1	0	00	17
Comments: None							
Urgency : None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : Ancillary Replacement	Estimated Cost: $2,423						

Northeast Side.

4.7 Element Data (cont.)

4.7.55 North Embankment - Slope Protection

Element Group:	North Embankment				Length:	N/A	
Element Name:	Slope Protection				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Foliation				Count:	2	
Element Type:	Any				Total Quantity:	2	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	all	0	1.6	0.4	0	00	17
Comments: None							
Urgency : None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : See Primary Element							

Northwest Side.

4.7 Element Data (cont.)

4.7.56 Foundation - Foundation

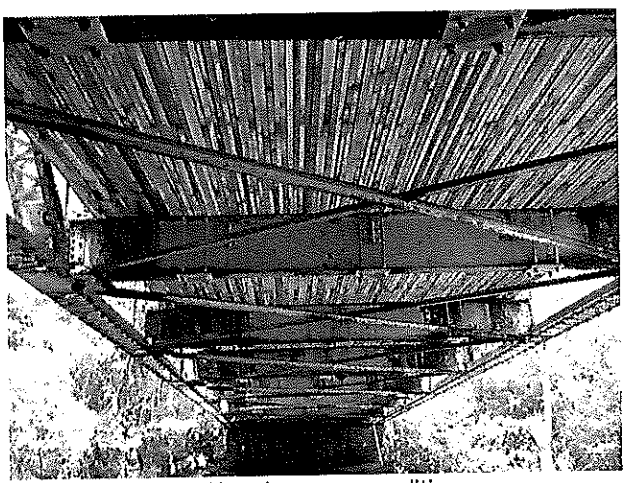
Element Group:	Foundation					Length:	N/A	
Element Name:	Foundation					Width:	N/A	
Location:	Single Element					Height:	N/A	
Material:	Steel Piles					Count:	2	
Element Type:	Primary Element					Total Quantity:	2	
Environment:	Severe					Limited Inspection	☑	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	each	0	2	0	0		00	00
Comments: None								
Urgency : None ☐	6-10 years ☑	1-5 years ☐	< 1 year ☐	Urgent ☐				
Recommended Work : Reinstallation	Estimated Cost: $223,007							

West Side.

4.7 Element Data (cont.)

4.7.57 Coating - Coating

Element Group:	Coating				Length:	N/A	
Element Name:	Coating				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	C Other				Count:	N/A	
Element Type:	Primary Element				Total Quantity:	575	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	46	69	460	16	17
Comments:	Coating is in poor condition.						
Urgency :	None ☐	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☑		
Recommended Work :	Replacement	Estimated Cost: $1,477,929					

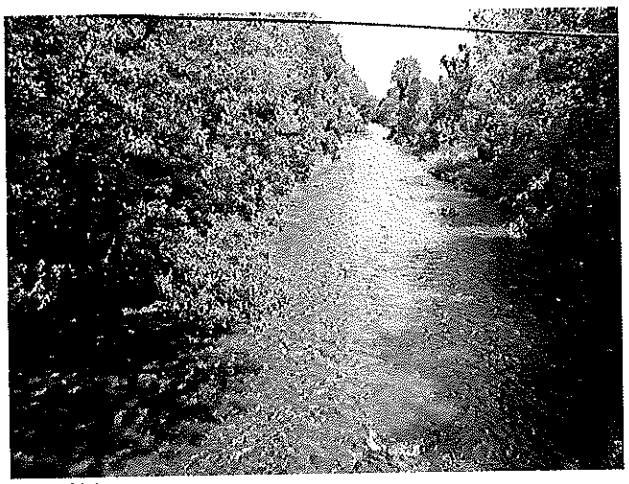


Underside View. Showing poor condition.

4.7 Element Data (cont.)

4.7.58 Watercourse - Watercourse

Element Group:	Watercourse				Length:	N/A	
Element Name:	Watercourse				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Any				Count:	1	
Element Type:	Straight				Total Quantity:	1	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	all	0	1	0	0	00	00
Comments: None							
Urgency : None ☑	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : Defer to Element Level							



East Side.

4.7 Element Data (cont.)

4.7.59 Watercourse - Bottom

Element Group:	Watercourse				Length:	N/A	
Element Name:	Bottom				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Gravel				Count:	N/A	
Element Type:	Natural				Total Quantity:	150	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	150	0	0	00	00
Comments: None							
Urgency : None ☑	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : None							

Overall View.

4.7 Element Data (cont.)

4.7.60 Watercourse - Upstream Section

Element Group:	Watercourse					Length:	N/A	
Element Name:	Upstream Section					Width:	N/A	
Location:	Single Element					Height:	N/A	
Material:	Gravel					Count:	N/A	
Element Type:	Uncontrolled					Total Quantity:	75	
Environment:	Severe					Limited Inspection	☐	
Protection System:	None						Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor			
	m2	0	75	0	0		00	00

Comments: None

Urgency : None ☑ 6-10 years ☐ 1-5 years ☐ < 1 year ☐ Urgent ☐

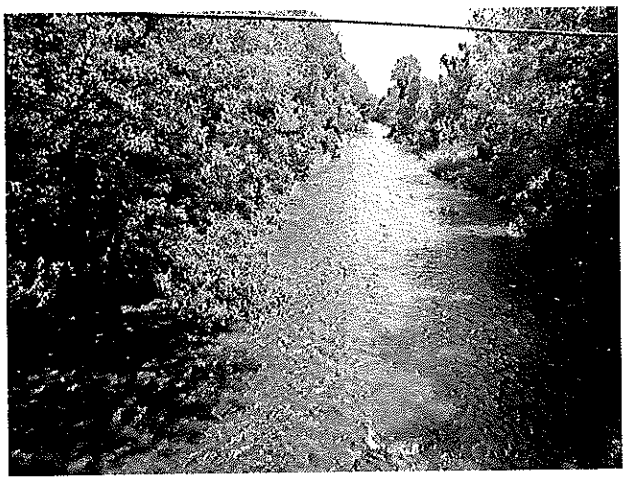
Recommended Work : None

West Side.

4.7 Element Data (cont.)

4.7.61 Watercourse - Downstream Section

Element Group:	Watercourse				Length:	N/A	
Element Name:	Downstream Section				Width:	N/A	
Location:	Single Element				Height:	N/A	
Material:	Gravel				Count:	N/A	
Element Type:	Uncontrolled				Total Quantity:	75	
Environment:	Severe				Limited Inspection	☐	
Protection System:	None					Performance Deficiencies	Maintenance Needs
Condition Data:	Units	Exc.	Good	Fair	Poor		
	m2	0	75	0	0	00	00
Comments: None							
Urgency : None ☑	6-10 years ☐	1-5 years ☐	< 1 year ☐	Urgent ☐			
Recommended Work : None							



Overall View.

5. Glossary

Abutment

A substructure unit which supports the end of the structure and retains the approach fill.

Asset

A collection of Components that are most economically and/or practically replaced, rehabilitated or maintained together under a single contract or initiative. The timing of such an initiative is weighed against the timing of treating other Assets.

Asset Value Contribution

The portion of the total replacement value attributable to a particular component.

Auxiliary Components

Any component which does not share in the load carrying capacity of the structure.

Benign

Not exposed. e.g. girders, pier caps (unless joints are leaking)

Bridge

A structure which provides a roadway or walkway for the passage of vehicles across an obstruction, gap or facility and which is greater than 3 m in span.

Chord

The upper and lower main longitudinal component in trusses or arches extending the full length of the structure.

Coating

The generic term for paint, lacquer, enamel, sealers, galvanizing, metallizing, etc.

Component

A major feature of an Asset that performs a particular function. Often in multiple occurrences.

Condition Index

See Net Asset Salvage Value (NASV).

Critical Quantity

The single quantity that defines the Element for costing purposes.

Culvert

Any bridge that is embedded in fill and is used to convey water, pedestrians or animals through it.

Deck Condition Survey

A detailed inspection of a concrete deck in accordance with The Structure Rehabilitation Manual.

Defect

An identifiable, unwanted condition that was not part of the original intent of design.

5. Glossary (cont.)

Detailed Visual Inspection

An element by element visual assessment of material defects, performance deficiencies and maintenance needs of a structure.

Deterioration

A defect that has occurred over a period of time.

Diagonals

Component which spans between the top and bottom chord of a truss or arch in a diagonal direction.

Distress

A defect produced by loading.

Element

A feature of a Component distinguished in terms of condition, material, base of measurement or unit cost of repair.

Engineer

A member or licensee of the Professional Engineers of Ontario.

Environment

An element's exposure to chloride contamination and freeze-thaw cycling

Estimated Remaining Service Life

The Remaining Service Life (RSL) is an estimate, in years, over which an element may remain in service without repair or replacement. It is assumed that the conditions to which the element has been exposed will not change significantly and is based solely on visual observation.

Estimated Remaining Service Life (ERSL)

This is an estimate, in years, as to how long an element can be expected to continue to perform satisfactorily without the predominant deficiency being addressed. In the case of a Primary Element, it is the time remaining before the element must be addressed ata Primary Element Level if nothing is done. It is based on judgment and experience and is tempered by the need to control liability of our clients. In cases where no physical testing results are available, ERSL's will tend to be more conservative. The ESRL assigned to a compoment represents the minimum ERSL assigned to any element comprising that component.

Evaluation

The determination of the load carrying capacity of structures in accordance with the requirements of the Ontario Highway Bridge Design Code or the Canadian Highway Bridge Design Code, when implemented.

Floor Beam

Transverse beams that span between trusses, arches or girders and transmit loads from the deck and stringers to the trusses, arches or girders.

Focus

At the element level, focus refers to the portion of the element in question. In most cases the focus is simply stated as "All" or, in other words, the entire element is being reported on under one designation. As elements deteriorate over time it is often desirable to differentiate between areas that are deteriorating more rapidly or differently. In other cases, elements are comprised of different materials and would be repaired differently as a result. These too should be separated and referred to by their focus. The focus of a primary element is always set to "All".

Highway

A common and public thoroughfare including street, avenue, parkway, driveway, square, place, bridge, designed and intended for, or used by, the general public for passage of vehicles, pedestrians or animals.

Lateral Bracing

Bracing which lies in the plane of the top or bottom chords or flanges and provides lateral stability and resistance to wind loads.

Maintenance

Any action which is aimed at preventing the development of defects or preventing deterioration of a structure or its components.

Masonry

Structure made up of natural stones separated by mortar joints, usually in uniform courses. Masonry in existing structures is usually in retaining walls, abutments, piers or arches.

Masonry Ashlar

Stone worked to a square shape or cut square with uniform coursing height and vertical joints staggered. The stone has a minimum course height of 200 mm set in joints with an average thickness of 10 mm or less.

Masonry Rubble

Stone masonry constructed with rough field stones or only roughly squared stones set in mortar joints with average thickness greater than 20 mm. Also any squared stone masonry in which the joints are greater than 20 mm, but less than 30 mm in thickness.

Masonry Squared Stone

Stone in natural bed thicknesses or roughly squared stones with course height less than 200 mm and joints greater than 10mm but not over 20mm.

Moderate

Exposed but element protected e.g. asphalt covered and waterproofed deck

Net Asset Salvage Value (NASV)

The current NASV of an asset is equal to its original dollar value minus the estimated cost of rehabilitating the asset back to its original condition. NASV changes continually with time, diminishing in step with the continued deterioration of the asset. It is important to recognize that whether a component such as a bridge deck is replaced or fully repaired it will still be reset to its full Asset Value Contribution. Recognition of the difference in longevity of the two startegies will be revealed by the subesquent behaviour of the post-rehabilitation performance curve. Expressed as a percentage it forms the rationale for the overall Condition Index of the asset.

Owner

An agency having jurisdiction and control over the bridge.

Performance Curve

A plot of Condition Index over time. The vertical scale represents Condition Index from 0 to 100, the horizontal scale represents time in years. The plot will reflect the Condition Index of the Asset since original construction to the present and from the present to the end of the analysis period. The impact of rehabilitative work (already carried out since construction as well as that planned for the future) will be reflected in the curve as will the anticipated subsequent performance of that Rehabilitation.

Person

An individual, board, commission, partnership or corporation, including a municipal corporation, and employees, agents, successors and assigns of any of them.

Plans

All drawings, descriptions and specifications, being parts of the contract, and all drawings and descriptions produced by the constructor for the erection of a bridge or structure, and all revisions thereto.

Portal Bracing

Overhead bracing at the ends of a through truss or arch and provides lateral stability and shear transfer between trusses.

Primary Components

The main load carrying components of the structure.

Primary Element

The elemental equivalent of the component it comprises. For example, an Abutment consists of the elements, Wngwalls, Abutment Wall, Ballast Wall, Bearings. It also has an element called "Abutment". This element is needed so that costing (which is carried out at the element level) can account for replacement of the entire component. This element is referred to as the Primary Element.

Rehabilitation

Any modification, alteration, retrofitting or improvement to a structure sub-system or to the structure which is aimed at correcting existing defects or deficiencies. May involve repair of exisiting elements or complete replacement.

5. Glossary (cont.)

Repair

Any modification, alteration, retrofitting or improvement to a component of the structure which is aimed at correcting existing defects or deficiencies.

Replacement Cost

Replacement Cost is the expenditure required to build, on a new site, or replace at an existing site, a bridge that meets all present and projected requirements of the site, community and current codes.

Replacement Value

Traditionally, Replacement Value refers to the cost in today's dollars for the identical replacement of an existing bridge. In other words, it is the value of the existing installation.

Retaining Wall

Any structure that holds back fill and is not connected to a bridge.

Secondary Components

Any component which helps to distribute loads to primary components, or carries wind loads, or stabilizes primary components.

Severe

Exposed and element not protected e.g. Exposed concrete deck, Barrier Wall

Sign Support

A metal, concrete or timber structure, including supporting brackets, service walks and mechanical devices where present, which support a luminaire, sign or traffic signal and which span or extend over a highway.

Span

The horizontal distance between adjacent supports of the superstructure of a bridge, or the longest horizontal dimension of the cross-section of a culvert or tunnel taken perpendicular to the walls.

Stringers

Stringers span between floor beams and provide the support for the deck above.

Structure

Bridge, culvert, tunnel, retaining wall or sign support.

Suspected Performance Deficiency

A Suspected Performance Deficiency should be recorded during an inspection, if an element's ability to perform its intended function is in question, and one or more performance defects exist.

Sway Bracing

Vertical bracing spanning between through trusses or arches, or outside of half-through trusses or arches and providing lateral stability and shear transfer between the trusses or arches.

5. Glossary (cont.)

Tunnel

Any bridge that is constructed through existing ground, and is used to convey highway or railway traffic through it.

Utility

Refers to a local utility such as hydro, gas, telephone etc. not part of the structure itself but rather utilizing it to provide passage. Typically carried between girders or hanging from the underside of the deck. Of significance only because the integrity of its connection to the structure impacts public safety.

Verticals

Components which span between the top and bottom chords of a truss or arch in the vertical direction.

Whisker Graphs

Simple frequency distribution charts that are intended, at a glance, to convey a comparative reference. They are shown on the Structure Summary to give the reader an immediatesense of how the bridge compares to the rest of the network based on various criteria.

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Appendix B

Replacement of Collingwood Street Bridge (Structure No. 000141) on Collingwood Street over the Mad River
Municipal Class Environmental Assessment

- Public Notices

County of Simcoe
Transportation and
Engineering
1110 Highway 26,
Midhurst, Ontario L0L 1X0

Main Line (705) 726 9300
Toll Free 1 866 893 9300
Fax (705) 727 7984
simcoe.ca

TRANSPORTATION AND ENGINEERING

NOTICE

PUBLIC COMMENT INVITED
COLLINGWOOD ST. BRIDGE. 000141 REPLACEMENT
CLASS ENVIRONMENTAL ASSESSMENT STUDY

The Study
The County of Simcoe has initiated a Class Environmental Assessment for improvements to the site of the Collingwood Street Bridge (No. 000141) located on Collingwood Street over the Mad River in Creemore, 0.8 km south of Louisa Street. The existing structure is a single lane steel through truss structure with a span length of 31.1m and a deck width of 4.6m. The existing structure has been identified as being deficient with respect to physical condition, geometric design and load carrying capacity.

The Process
This notice provides an opportunity for the public to review information gained to this point with regard to the problem statement, the alternative solutions considered, their impact on the environment, the evaluation and the technically recommended solution.

The County has considered alternatives to the stated problem for this site such as do nothing, rehabilitation of the existing bridge and replacement of the existing bridge. After a review of the alternative solutions, the County has concluded that the technically recommended solution to address the identified needs is to replace the existing bridge.

The study is being carried out in accordance with the planning and design process for Schedule 'B' projects as outlined in the *Municipal Class Environmental Assessment* (October 2000, as amended in 2007) document.

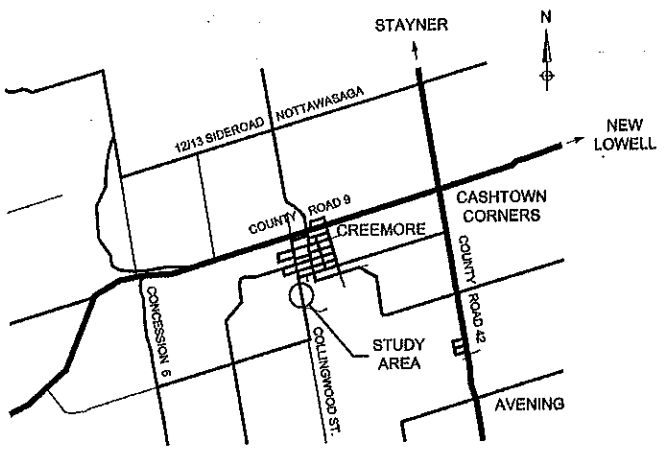
Comments Invited
The purpose of this notice is to inform the public that Phase 1 & 2 Report is on display for review at the locations noted below, for the period **September 1, 2010 to September 30, 2010**. Interested persons are encouraged to review the report and provide written comments to the County within this review period, directed to the County Clerk's Office (address below). Subject to comments received and the receipt of necessary approvals, the County of Simcoe intends to proceed with the planning, design and construction of this project.

County of Simcoe Administration Centre
1110 Highway 26
Midhurst, ON L0L 1X0
(705) 726-9300 / 1(866) 893-9300

Creemore Public Library
165 Library Street
Creemore, ON L0M 1G0
(705) 466-3011

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

This Notice first issued on **August 30, 2010.**



The map above shows the approximate location of the study area.

County of Simcoe
Transportation and
Engineering
1110 Highway 26,
Midhurst, Ontario L0L 1X0

Main Line (705) 726 9300
Toll Free 1 866 893 9300
Fax (705) 727 7984
simcoe.ca

TRANSPORTATION AND ENGINEERING

NOTICE
NOTICE OF STUDY COMPLETION
COLLINGWOOD ST. BRIDGE. 000141 REPLACEMENT
CLASS ENVIRONMENTAL ASSESSMENT STUDY

The County of Simcoe is considering improvements to the site of the Collingwood Street Bridge (No. 000141) located on Collingwood Street over the Mad River in Creemore, 0.8 km south of Louisa Street.

The map above shows the approximate location of the study area.

The existing bridge structure was constructed in 1913 and has been identified as being deficient with respect to deck width, physical condition, barrier protection, guide rail protection, and road approach geometry.

The County has concluded that the preferred solution is to replace the existing bridge.

This project is being planned under Schedule B of the Municipal Class Environmental Assessment document (October 2000, as amended in 2007). Subject to comments received and the receipt of all necessary approvals, the County intends to proceed with the design and construction of this project. The work is scheduled for completion by fall 2012.

The Municipal Class Environmental Assessment document and Study Completion Report are available for review during office hours at the following location or on-line at www.simcoe.ca:

CAO/County Clerk,
County of Simcoe
Administration Centre
1110 Highway 26
Midhurst, Ontario
L0L 1X0

Interested persons may provide written comment to the County Clerk on the proposal within 30 calendar days from the date of this Notice. If concerns regarding this project cannot be resolved through discussions with the County, any person or party may request that the Minister of Environment make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II Order), which addresses individual environment assessments. Requests must be received by the Minister at the address below within 30 calendar days of this Notice. A copy of the request must also be sent to the County Clerk at the same time as it is submitted to the Minister. If there is no request received by February 6, 2011, the Collingwood Street Bridge Replacement will proceed to design and construction as presented in the planning documentation.

Minister of Environment
135 St. Clair Avenue
12th Floor, Toronto, Ontario
M4V 1P5

This Notice issued January 7, 2011.

Further information may be obtained by contacting the following project team members:

County of Simcoe
Julie Scruton, P. Eng.
Project Engineer
1110 Highway #26
Midhurst, ON L0L 1X0
Tel: 705 726-9300
Fax: 705 727-7984
E-mail: Julie.Scruton@simcoe.ca

AECOM
Peter Wills, P. Eng.
Senior Structural Engineer, Design
10 Checkley St
Barrie, ON L4N 1W1
Tel: 1-705 721-9222
Fax: 705 734-0764
E-mail: Peter.Wills@aecom.com

County of Simcoe
Transportation and Engineering
1110 Highway 26,
Midhurst, Ontario L0L 1X0

Main Line (705) 726 9300
Toll Free 1 866 893 9300
Fax (705) 727 7984
Web: simcoe.ca

TRANSPORTATION AND ENGINEERING

April 27, 2011

File: T16 – Collingwood Street Bridge

Via Email and Fax

Ms. Millicent Dixon
Manager – Client Services Section
Environmental Assessment and Approvals Branch
Ministry of the Environment
2 St.Clair Ave West, Floor 12A
Toronto, ON M4V 1L5

Dear Millicent:

Re: County of Simcoe, Collingwood Street Bridge (Str. 000141) Environmental Assessment

We respectfully request the withdrawal of our Notice of Study Completion for the Collingwood Street Bridge (Str. 000141) Environmental Assessment so that further work can be completed.

We will be issuing an addendum to our EA Study Report and will then re-issue a new Notice of Study Completion and provide a new 30-day public review period.

Concurrently, we will also make arrangements to meet with the Part II Requestor to try to resolve their concerns with this project and possibly avoid a repeat Part II Request.

Please contact the undersigned if any further information is required.

Sincerely,

Julie Scruton, P.Eng.
Project Engineer
Transportation and Engineering
County of Simcoe

c/c Jim Hunter, County of Simcoe
Pete Wills, AECOM
Kimberley Peters, MOE

X:\TRS\T - transportation services\T16 - Bridges\000141 COLLINGWOOD STREET BRIDGE\EA REPORT\jms April 27 2011 Letter to MOE .docx

County of Simcoe
Transportation and
Engineering
1110 Highway 26,
Midhurst, Ontario L0L 1X0

Main Line (705) 726 9300
Toll Free 1 866 893 9300
Fax (705) 727 7984
simcoe.ca

TRANSPORTATION AND ENGINEERING

NOTICE
NOTICE OF STUDY COMPLETION
COLLINGWOOD ST. BRIDGE. 000141 REPLACEMENT
CLASS ENVIRONMENTAL ASSESSMENT STUDY

The County of Simcoe is considering improvements to the site of the Collingwood Street Bridge (No. 000141) located on Collingwood Street over the Mad River in Creemore, 0.8 km south of Louisa Street.

The map above shows the approximate location of the study area.

The existing bridge structure was constructed in 1913 and has been identified as being deficient with respect to deck width, physical condition, barrier protection, guide rail protection, and road approach geometry.

The County has concluded that the preferred solution is to replace the existing bridge.

This project is being planned under Schedule B of the Municipal Class Environmental Assessment document (October 2000, as amended in 2007). Subject to comments received and the receipt of all necessary approvals, the County intends to proceed with the design and construction of this project. The work is scheduled for completion by fall 2013.

The Municipal Class Environmental Assessment document and Study Completion Report are available for review during office hours at the following location or on-line at www.simcoe.ca:

CAO/County Clerk,
County of Simcoe
Administration Centre
1110 Highway 26
Midhurst, Ontario
L0L 1X0

Interested persons may provide written comment to the County Clerk on the proposal within 30 calendar days from the date of this Notice. If concerns regarding this project cannot be resolved through discussions with the County, any person or party may request that the Minister of Environment make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II Order), which addresses individual environment assessments. Requests must be received by the Minister at the address below within 30 calendar days of this Notice. A copy of the request must also be sent to the County Clerk at the same time as it is submitted to the Minister. If there is no request received by March 3, 2012, the Collingwood Street Bridge Replacement will proceed to design and construction as presented in the planning documentation.

Minister of Environment
135 St. Clair Avenue
12th Floor, Toronto, Ontario
M4V 1P5

This Notice issued February 3, 2012.

Further information may be obtained by contacting the following project team members:

County of Simcoe
Julie Scruton, P. Eng.
Project Engineer
1110 Highway #26
Midhurst, ON L0L 1X0
Tel: 705 726-9300
Fax: 705 727-7984
E-mail: Julie.Scruton@simcoe.ca

AECOM
Peter Wills, P. Eng.
Senior Structural Engineer
10 Checkley St
Barrie, ON L4N 1W1
Tel: 1-705 721-9222
Fax: 705 734-0764
E-mail: Peter.Wills@aecom.com

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Appendix C

Replacement of Collingwood Street Bridge (Structure No. 000141) on Collingwood Street over the Mad River
Municipal Class Environmental Assessment

- Cultural Heritage Report

Revised Report on the 2009
Cultural Heritage Evaluation and Heritage Impact Assessment of
Collingwood Street Bridge (Bridge #000141) over the Mad River
Village of Creemore, County of Simcoe

Submitted to

The Ontario Ministry of Culture

&

AECOM
10 Checkley St.
Barrie, ON L4N 1W1
Tel: (705) 721-9222 **Fax:** (705) 734 – 0764

Prepared by

AMICK Consultants Limited
Lakelands District
Michael B. Henry CD BA, Managing Partner
380 Talbot Street, P.O. Box 29, Port McNicoll, ON L0K 1R0
Tel: (705) 534-1546 Fax: (705) 534-7855
www.amick.ca

Archaeological Consulting License # P058
Corporate Project # 29459-P

06 May 2011

TABLE OF CONTENTS

Project Personnel

Heritage Consultant	Michael Henry
Field Reconnaissance	Marilyn Cornies Melissa Milne Michael Henry
Report Preparation	Phil Rice
Draughting	Michael Henry
Photography	

Executive Summary

This 2011 revised report describes the results of the 2009 Cultural Heritage Evaluation and Heritage Impact Study of Collingwood Street Bridge (Bridge #000141) over the Mad River, within the Collingwood Street Road Allowance, Village of Creemore, County of Simcoe, conducted by AMICK Consultants Limited. This investigation was undertaken as part of an Environmental Assessment process with respect to proposed improvements at this location. All work was conducted in conformity with the Ontario Heritage Act (RSO 2005). Originally the 2009 evaluation made use of the Ontario Heritage Bridge Guidelines for Provincially Owned Bridges (MTO 2008) and the Ontario Heritage Bridge Program (MCL 1991) as guides to the conduct and findings of this research under the advice of staff of the Ministry of Tourism and Culture. Late in 2010 MTC staff advised the proponent that they had determined that they no longer supported their former advice. They directed that the report be rewritten using O. Reg. 9/06 Criteria for Determining Cultural Heritage Value or Interest and Heritage Property Evaluation: A Guide to Listing, Researching and Evaluating Cultural Heritage Property in Ontario Communities (MCL 2006).

Under the municipal Class EA criteria the Collingwood Street Bridge (Bridge #000141) meets criteria of being over 40 years old and as such, the Ontario Ministry of Tourism and Culture (MTC) considers that the bridge may have cultural heritage value. Therefore, a heritage impact assessment report prepared by a qualified heritage consultant is required for this project. This report has been prepared to address this requirement. The proponent is advised that they should file this report with the MTC for the purpose of review by MTC Heritage Planning Staff. AMICK Consultants Limited was engaged by the proponent to undertake this study on November 6, 2009.

As a result of this study, it has been determined that the existing Collingwood Street Bridge (Bridge #000141) crossing the Mad River at Collingwood Street is a feature of cultural heritage value or interest based on the evaluation criteria of O. Reg. 9/06 Criteria for Determining Cultural Heritage Value or Interest. It is a heritage feature which is a non-renewable and irreplaceable historic structure. It is recommended that this bridge be refurbished and retained in place.

1.0 INTRODUCTION

This 2011 revised report describes the results of the 2009 Cultural Heritage Evaluation and Heritage Impact Assessment of Collingwood Street Bridge (Bridge #000141) over the Mad River, within the Road Allowance of Collingwood Street, Village of Creemore, County of Simcoe, conducted by AMICK Consultants Limited. This investigation was undertaken as part of an Environmental Assessment process with respect to proposed improvements at this location. All work was conducted in conformity with the Ontario Heritage Act (RSO 2005). In addition, O. Reg. 9/06 Criteria for Determining Cultural Heritage Value or Interest and Heritage Property Evaluation: A Guide to Listing, Researching and Evaluating Cultural Heritage Property in Ontario Communities (MCL 2006) were employed in the evaluation and impact assessment.

AMICK Consultants Limited was engaged by the proponent to undertake this study on November 6, 2009. All records, documentation, field notes, and photographs related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ministry of Culture on behalf of the government and citizens of Ontario.

2.0 LOCATION AND DESCRIPTION

This report describes the results of the 2009 Cultural Heritage Study of Collingwood Street Bridge (Bridge #000141) which carries Collingwood Street over the Mad River, Village of Creemore, County of Simcoe. The location of Collingwood Street Bridge (Bridge #000141) is illustrated in Figure 1 of this report.

The existing bridge is a single span riveted steel through truss structure which carries Collingwood Street over the Mad River. The existing structure is not listed on the Ontario Heritage Bridge List nor has it been designated under the Ontario Heritage Act.

The structure has been identified as being deficient with respect to structural capacity, geometry, physical condition and roadside safety. Collingwood Street Bridge (Bridge #000141) is a single-lane, riveted steel through truss structure on conventional closed abutments. The structure has an overall span length of 31.1 metres, a travel width of 4.36 m between barriers, and an overall structure width of 4.64 m. The structural trusses that carry the load of the structure form the side walls of the bridge. This configuration classifies the structure as a single load path structure which means that if the trusses were significantly damaged, it could result in total bridge failure. Single load path structures are not encouraged in Ontario for this reason. There are approach guide rails present at this site. However, the guiderails are directly tied to the load carrying members of the superstructure. The structure has been identified as being deficient with respect to structural capacity, geometry, physical condition and roadside safety.

3.0 CULTURAL HERITAGE EVALUATION

Collingwood Street Bridge (Bridge #000141) meets the Ministry of Culture (now the Ministry of Toursim and Culture - MTC) Heritage Landscape Checklist (see Appendix 2) criteria to mandate a heritage impact assessment (i.e. over 40 years old). MTC considers that Collingwood Street Bridge (Bridge #000141) may have cultural heritage value given its characteristics. Therefore, a heritage impact assessment report prepared by a qualified heritage consultant is required for this project. This report has been prepared to address this requirement. The proponent is advised that they should file this report with MTC for the purpose of review and comment by MTC Heritage Planning Staff.

In evaluating the Collingwood Street Bridge (Bridge #000141), O. Reg. 9/06 Criteria for Determining Cultural Heritage Value or Interest and Heritage Property Evaluation: A Guide to Listing, Researching and Evaluating Cultural Heritage Property in Ontario Communities (MCL 2006) have both been used. Section 3.3 of this report considers Collingwood Street Bridge (Bridge #000141) under the evaluation criteria set forth in O. Reg. 9/06.

3.1 Overview of Ontario Bridge Construction History

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

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

constructed with two vertical beams supported by one inclined beam for each and joined by a horizontal top beam. The Queen Truss Bridge could span a gap of up to one hundred and twenty (120) feet (Cuming n.d.: 35).

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

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

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

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

throughout Ontario following 1900 (Cuming n.d.: 42). The improvement in highway and bridge construction was particularly notable following the end of the First World War with massive increases in automobile traffic and the development of heavy construction machinery. (Cuming n.d.: 51-53).

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

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

Through truss construction, of which Collingwood Street Bridge (Bridge #000141) is representative, was built over larger spans or in locations where traffic loads were heavy (Cuming n.d.: 43). Steel bridges were erected in quantity throughout Ontario following 1900 (Cuming n.d.: 42). The improvement in highway and bridge construction was particularly notable following the end of the First World War with massive increases in automobile traffic and the development of heavy construction machinery. By the 1930s however, reinforced concrete construction was beginning to supplant steel bridge construction for speed of construction, durability and strength (Cuming n.d.: 51-53).

Based upon consideration of the above historic trends, Collingwood Street Bridge (Bridge #000141) appears to date to the period of roughly 1900-1930. This bridge rests on poured concrete abutments most probably built in the early twentieth century. The fact that the bridge is riveted likewise points to this period. The rural context suggests that the erection of this steel bridge was likely in response to the need for a relatively inexpensive structure to span a relatively wide channel and to carry increasingly heavier loads due to the rise in popularity of automobile transportation and mechanical farm implements. Collingwood Street Bridge has a plaque identifying the builder and the date of construction as Dumond Contractors, Brentwood, 1913.

3.2 *Heritage Legislative Requirements*

Within the Province of Ontario there are a number of legislative requirements which necessitate the consideration of potential heritage features during the planning process.

1. The provincial interest in cultural heritage and the conservation of heritage resources is articulated in the Ontario Heritage Act (RSO 2005). This legislation provides the legislative framework for the conservation of Ontario's heritage. The Ontario Heritage Act is administered by the Ontario Ministry of Tourism and Culture.
2. Heritage resource conservation is also identified as a provincial interest within the Provincial Policy Statement (2005)
3. Heritage resource conservation is also identified as a provincial interest within the Planning Act (RSO 1990a)
4. Heritage resource conservation is also identified as a provincial interest within the Environmental Assessment Act (RSO 1990b). This legislation considers cultural and built components to be integral elements of the environment. The impact of proposed undertakings to cultural heritage resources must be addressed as part of the standard environmental assessment process in the Province of Ontario.
5. The Public Transportation and Highway Improvement Act (RSO 1990c) and Ontario Regulation 104/97 addresses the design, construction and maintenance of bridges.

In partnership with other provinces, territories and the federal government, Ontario is also a participant in the Historic Places Initiative which is a national program to encourage heritage conservation across Canada.

3.3 *O. Reg. 9/06 Criteria for Determining Cultural Heritage Value or Interest*

As of January 11, 2008, there were no bridges within the entirety of Simcoe County which had been listed as a Heritage Bridge within the Ontario Heritage Bridge List maintained by MTC. The general absence of designated heritage bridges in Simcoe County on the Heritage Bridge List does not mean that there is not a single significant bridge within Simcoe County. This fact, coupled with the pace of development over the past two decades and projected ongoing development, places many potential heritage bridges under threat. Although most evidence of landscape changes can be seen in the expansion of established communities, the increase in population and commercial activities in these centres results in a greater volume of traffic on regional roads which necessitates improvements to the overall road network. The need for improvements in overland communication and shipping routes has required, and will continue to require, improvements to roadways and associated water crossings.

In evaluating Collingwood Street Bridge (Bridge #000141), O. Reg. 9/06 Criteria for Determining Cultural Heritage Value or Interest was used. The entire regulation has been reproduced as Appendix 1 of this report. The Ministry of Culture publication, Heritage Property Evaluation: A Guide to Listing, Researching and Evaluating Cultural Heritage Property in Ontario Communities (MCL 2006) was used as a guide to interpreting the application of O. Reg. 9/06.

> *"A property may be designated under section 29 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:*
>
> *1. The property has design value or physical value because it,*
> *i. is a rare, unique, representative or early example of a style, type, expression, material or construction method,*
> *ii. displays a high degree of craftsmanship or artistic merit, or*
> *iii. demonstrates a high degree of technical or scientific achievement.*
> *2. The property has historical value or associative value because it,*
> *i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,*
> *ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or*
> *iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.*
> *3. The property has contextual value because it,*
> *i. is important in defining, maintaining or supporting the character of an area,*
> *ii. is physically, functionally, visually or historically linked to its surroundings, or*
> *iii. is a landmark. O. Reg. 9/06, s. 1 (2)."*

The Collingwood Street Bridge, approaching its 100th anniversary of construction, meets the criterion for rarity (1.i.) and as a gateway feature on the edge of the urban density settlement of Creemore meets the criterion as a landmark feature (3.iii.). Further, there have been comments received from the community with respect to the proposed improvements to this crossing. One formal response supports the demolition of the bridge in order to address safety concerns and a three others support the rehabilitation of the bridge for heritage reasons. In addition, there is a petition which has been signed by 182 persons in support of retaining the bridge as a community heritage feature. The petition and the letter arguing for retention of the bridge as a heritage feature supports a third criterion for determination of cultural heritage value of the Collingwood Street Bridge because "it has direct associations with a theme, event, belief, person, activity, organization or institution that *is significant to a community*" (2.i.).

In accordance with O. Reg. 9/06 Collingwood Street Bridge (Bridge #000141) is a built feature of cultural heritage value or interest. According to the Ministry of Tourism and Culture's "Heritage Toolkit", *"Regulation 9/06 prescribes the criteria for*

determining property of cultural heritage value or interest in a municipality. The regulation requires that, to be designated, a property must meet 'one or more' of the criteria grouped into the categories of Design/Physical Value, Historical/Associative Value and Contextual Value" (MCL 2006:20). Consequently, Collingwood Street Bridge is eligible to be formally designated under section 29 of the Ontario Heritage Act.

4.0 HERITAGE IMPACT ASSESSMENT

The evaluation of Collingwood Street Bridge (Bridge #000141) employing O. Reg. 9/06 indicates that the Collingwood Street Bridge is a feature of cultural heritage value or interest under three criteria. On the basis of these results, a Heritage Impact Assessment is required. Furthermore, the age of the bridge (i.e. over 40 years of age) does indicate that this bridge requires a Heritage Impact Assessment as part of the EA.

The Ontario Heritage Bridge program is no longer in use; however, this document is helpful in considering conservation options specifically applicable to heritage bridges deemed to be of historic significance or interest (see MCL 1991: 4). The OHBP specifies eight (8) conservation options to be considered and addressed. The options are listed in the OHBP in descending order of preference with options (g) and (h) being the least preferable. The following consideration of the conservation options is presented in the same order as in the OHBP.

(a) Retention of Existing Bridge with no Major Modifications Undertaken

This option does not address the need for two lanes or eliminate the single load path configuration of the structure. Bridges serve a critical engineering function which is inextricably linked to public safety. Bridges must be able to handle traffic volumes and load stresses safely. As noted above, the existing bridge is deteriorating and structural integrity is compromised. Even after rehabilitation, the existing bridge cannot carry modern load requirements. The single lane width of the structure, lack of guiderails that function independently of the load carrying structural elements of the bridge, and the narrow shoulders on approach, all represent safety hazards inherent on the current built form.

The rehabilitated structure would be required to meet as many of the bridge code requirements and minimum standards as possible, however a rehabilitated structure would still have critical identified defects, most notably, inadequate platform width and continued operation as a single load path structure. If barriers were erected to protect the single load path elements (trusses) there will be a further reduction in the cross section platform width. This measure would render the bridge impassable to many classes of vehicles. A load limit would also be necessary for the rehabilitated bridge based on the condition of remaining components and the strength and capacity of components and abutments. Even at original design specifications, without consideration to the effects of age and deterioration, vehicle loads prescribed in the Canadian Highway Bridge Design Code are substantially higher than the load for which the bridge was designed. While

rehabilitation of the existing structure addresses the need for a restored bridge crossing, this alternative still has a limited life expectancy and will not provide a long-term solution to the problem. A rehabilitation program cannot address all of the identified defects and it is not considered to be a viable alternative.

The structure is considered to be structurally inadequate. The bases of the superstructure components, the lateral ends of the transverse floor beams, and the concrete abutments exhibit significant deterioration. The concrete abutments are severely deteriorated due to age and exposure to the elements over time. At the bottom end of the trusses at the joints with the transverse floor beams, there is heavy corrosion which has resulted in heavy scaling of the steel. Otherwise, the superstructure and deck appear to be in very good condition. The heavy corrosion at the structural joints on either side of the bridge below the deck is most likely the result of salt applications to the road surface during winter months. Unfortunately, the location of heavy corrosion is at the site of critical joints which tie the deck of the bridge to the load bearing truss structure.

Collingwood Street Bridge (Bridge #000141) is defective in a number of ways which include the following:

Load Capacity

The structure is currently posted with a posted limit of 5 tonnes. Reductions in capacity are expected in the near future as the bridge continues to deteriorate. The structure is a single load path structure which does not conform to the Canadian Highway Bridge Design Code (CHBDC) in Ontario.

Geometry

The existing geometry and the desirable minimum standards are shown in the following table. The minimum standards are based on the Geometric Design Standards for Ontario Highways.

Geometry	Existing Structure	Minimum Standard	Deficient
Lane Width	*4.36*	*3.35*	*No*
Number of Lanes	*1*	*2*	*Yes*
Side Clearance	*None*	*1.50*	*Yes*
Railing	*Steel Angles*	*Performance Level I Barrier*	*Yes*

- ***Structure Barrier System***

The railing system on the existing structure does not comply with current CHBDC requirements for traffic barriers. On the structure, the railings are connected to and form part of the structure support system classifying the bridge as having a single load path. Where single load path structures exist, the supports should be shielded from direct impact, which is not the case at this site.

Physical Condition

The structure has the following deficiencies:

- *Single load path structure, which does not conform to CHBDC in Ontario;*
- *Severe oxidization at the truss/transverse floor beam connections;*
- *Degradation of abutments through cracking and spalling from age and weathering;*
- *Poor drainage - Water flows off the deck and over sides of bridge resulting in accelerated corrosion of steel components due to salt concentration in runoff;*

The structure has an existing traffic volume (AADT) of approximately 225 vehicles per day and it is expected that this will increase over the next ten years. There is no threshold for a one-lane bridge, as the County of Simcoe requires that all bridges constructed are two-lanes. There is no remaining capacity for this structure to meet future traffic projections even in a rehabilitated condition. Collingwood Street Bridge (Bridge #000141) represents an important link in the local road infrastructure. Any restrictions on its use in the form of further load restriction or a closed structure would be seen as detrimental.

However, preservation and retention of an identified heritage feature of cultural heritage value or significance is always the preferred option. Given the restrictions inherent in the design, mitigation measures may be possible to increase safety and reduce traffic pressure at this crossing. Option (a) is the preferred option.

(b) Retention of the Existing Bridge with Sympathetic Modification

Given the inherent characteristics of the built form (i.e. steel through truss), most of the above noted deficiencies cannot be rectified with sympathetic modifications. As noted above, the addition of guide rails on the interior of the bridge to protect the single load design elements would reduce an already narrow gauge bridge to a more inadequate lane width and would render the bridge impassable to larger vehicles. Traffic volumes are already at capacity for a single lane bridge and this modification will not meet traffic requirements within even short term projections. In addition, a major drawback to attempted modification is that almost any alteration proposed to the structure to improve its functionality would impair structural integrity. This type of bridge cannot be widened which is a major factor in the shift to reinforced concrete rigid frame design bridges soon

after the introduction of concrete bridge construction. Subsequent designs allow for widening of a bridge as traffic volumes increase. This form of bridge cannot be modified in this way since the load is carried in the truss superstructure which would also require replacement to carry the additional load that an added lane would impose. Option (b) is not practical for this built form.

(c) Retention of Existing Bridge with Sympathetically Designed Structure in Proximity

This option suggests that this bridge be twinned either with another single lane structure which would accomplish the same object as widening the existing bridge or to build another bridge to take the modern loads and traffic volumes entirely. This option effectively combines the costs of bridge rehabilitation and bridge replacement. Although the principle of heritage conservation suggests that the cost of preservation should not be the determining factor in selection of a preferred alternative, this option is cost prohibitive. In addition, this alternative would necessitate a significant expansion to the existing road allowance or the development of a second road allowance resulting in additional impacts to the Mad River through the development of another crossing. However, rehabilitation in the short term may allow for continued use of the existing bridge and consideration of adding an additional structure down the road may be an option to extend the life of this crossing well into the long term.

(d) Retention of the Existing Bridge no Longer in use for Vehicular Purposes but Adapted for Pedestrian Walkways, Cycle Paths, Scenic Viewing, etc.

This option would still require rehabilitation of the bridge but has the advantage of mitigating any highway traffic safety concerns inherent in the design of the existing structure. However, we are still confronted with the environmental and financial concerns of option (c) with only a marginal reduction in cost, if any at all. This option may have more appeal were there a strong local need or demand for an adapted bridge structure in this location.

(e) Relocation of Bridge to Appropriate New Site for Continued Use (see c) or Adaptive Re-use (see d)

The inherent limitations in the structural design of the bridge discussed under options (a) & (b) suggest that movement of the bridge and re-use for vehicular traffic is untenable. Given the design characteristics of the bridge and the manner of construction, it can be dismantled and rebuilt. If a pedestrian crossing, multiple use trail, or light vehicle crossing could make use of this bridge, this would be the preferred alternative. It is recommended that this bridge be dismantled and re-used should there be no practical means of retaining this structure at its existing location. If a suitable use and/or location is not currently available, it is recommended that the bridge be dismantled and the components retained for future use as a community enhancement feature.

(f) Retention of the Bridge as a Heritage Monument for Viewing Purposes Only

This option has the same practical results as Option (c) in that an entirely new crossing and approach would have to be constructed. See also (d).

(g) Salvage of Elements/Members of Bridge for Incorporation into the New Structure of For Future Conservation Work or Displays

Given the design characteristics of the bridge and the manner of construction, it can be dismantled and rebuilt. If a pedestrian crossing, multiple use trail, or light vehicle crossing could make use of this bridge, this would be the preferred alternative. It is recommended that if this bridge cannot be maintained in its current location, this bridge should be dismantled and re-used. If a suitable use and/or location is not currently available, it is recommended that the bridge be dismantled and the components retained for future use as a community enhancement feature. Option (a) is the preferred alternative and represents the minimum level of intervention to render this crossing safe and efficient. Alternatively, the superstructure should be retained and incorporated into the design of the new structure. Consideration should be given to salvaging the superstructure of the existing bridge and widening it by replacement of the connecting members between the trusses to be fitted onto the replacement bridge. This would preserve the appearance and a significant portion of the visible elements of the original structure. It is further suggested that a plaque be affixed to the superstructure which details the date and the improvements made to this crossing, including reference to the original bridge elements incorporated into the new structure. Option (g) represents an acceptable alternative should Options (a) through (f) prove untenable.

(h) Full Recording and Documentation of Structure if it is to be Demolished

The inherent design characteristics of this style of bridge and its environmental context severely restrict viable alternatives. There is a requirement for a bridge at this location which can accommodate existing and future traffic loads in a manner that meets current safety standards for vehicular traffic. This bridge cannot be modified to achieve these requirements.

Option (h) is not the preferred option. Option (a) is the preferred option. Option (h) should only be undertaken if none of Options (a) through (g) can be undertaken.

5.0 CONCLUSIONS & RECOMMENDATIONS

Collingwood Street Bridge (Bridge #000141) is over 40 years old and in accordance with the Ontario Ministry of Culture (MCL) policy (see Appendix 3), may have cultural heritage value given its characteristics. Therefore, a heritage impact assessment report prepared by a qualified heritage consultant is required for this project. This report has been prepared to address this requirement. The proponent is advised that they should file this report with the MCL for the purpose of review by MCL Heritage Planning Staff.

The Collingwood Street Bridge, approaching its 100th anniversary of construction, meets the criterion for rarity (1.i.) and as a gateway feature on the edge of the urban density settlement of Creemore meets the criterion as a landmark feature (3.iii.). Further, there have been comments received from the community with respect to the proposed improvements to this crossing. One formal response supports the demolition of the bridge in order to address safety concerns and a three others support the rehabilitation of the bridge for heritage reasons. In addition, there is a petition which has been signed by 182 persons in support of retaining the bridge as a community heritage feature. The petition and the letter arguing for retention of the bridge as a heritage feature supports a third criterion for determination of cultural heritage value of the Collingwood Street Bridge because "it has direct associations with a theme, event, belief, person, activity, organization or institution that *is significant to a community*" (2.i.).

In accordance with O. Reg. 9/06 Collingwood Street Bridge (Bridge #000141) is a built feature of cultural heritage value or interest. According to the Ministry of Tourism and Culture's "Heritage Toolkit", *"Regulation 9/06 prescribes the criteria for determining property of cultural heritage value or interest in a municipality. The regulation requires that, to be designated, a property must meet 'one or more' of the criteria grouped into the categories of Design/Physical Value, Historical/Associative Value and Contextual Value"* (MCL 2006:20). Consequently, Collingwood Street Bridge is eligible to be formally designated under section 29 of the Ontario Heritage Act.

It is recommended that the Collingwood Street Bridge be considered for designation under the heritage Act.

The preferred alternative is to rehabilitate the existing structure and retain it in its historic location for continued use (Option a). Increasing traffic pressures may require that the bridge be twinned in the future with another structure or to eliminate vehicular traffic over it in order to ensure long term retention and enjoyment of this heritage feature. Given the design characteristics of the bridge and the manner of construction, it can be dismantled and rebuilt. If the location of the crossing cannot be moved and the bridge must be replaced at this location, dismantling, refurbishment and adaptive reuse of the bridge in another site should be considered. It is recommended that this bridge be dismantled and re-used (Option e) should retention in-situ prove impractical. If a suitable use and/or location is not available at that time, it is recommended that the bridge be

dismantled and the components retained for future use as a community enhancement feature (Option g). Option (a) is the preferred alternative and represents the minimum level of intervention to render this crossing safe and efficient. Documentation and recording of the structure prior to demolition [Option (h)] should only be undertaken if all other Options (a) through (g) cannot be undertaken.

Alternatively, the superstructure should be retained and incorporated into the design of the new structure. Consideration should be given to salvaging the superstructure of the existing bridge and widening it by replacement of the connecting members between the trusses to be fitted onto the replacement bridge. This would preserve the appearance and a significant portion of the visible elements of the original structure.

It is further suggested that a second plaque be affixed to the superstructure which details the date and the improvements made to this crossing. This information should be added for each modification to the crossing over time in order to preserve a visible record of this heritage feature in the community.

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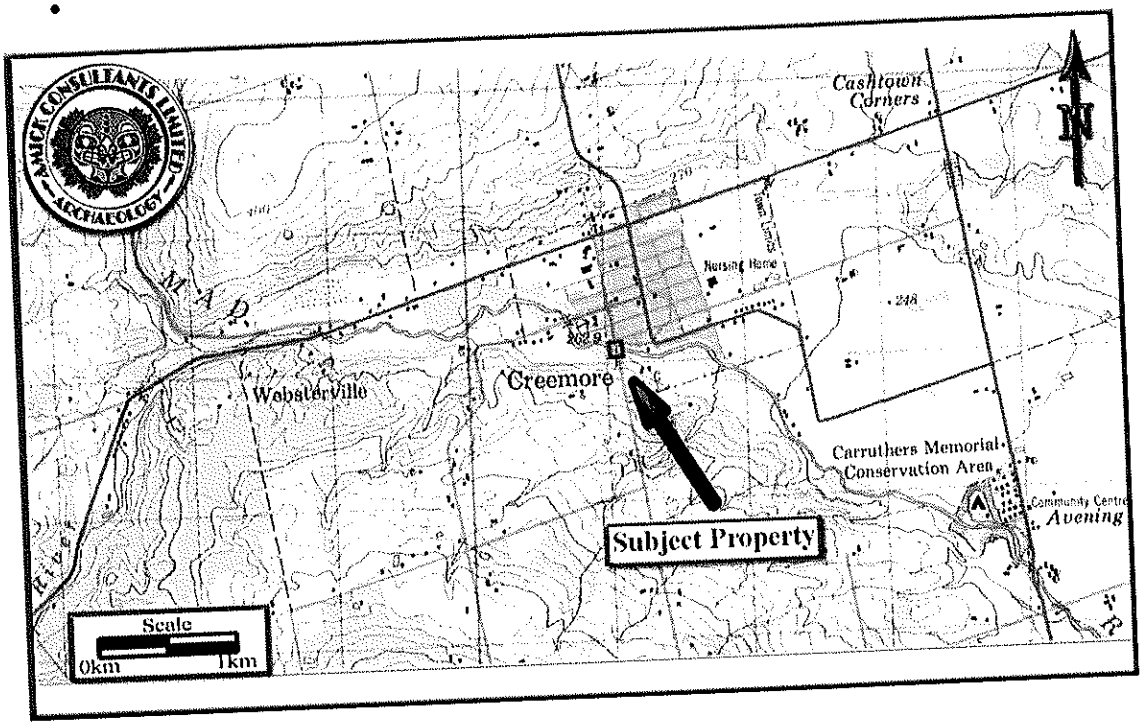

Figure 1 Location of the Subject Property

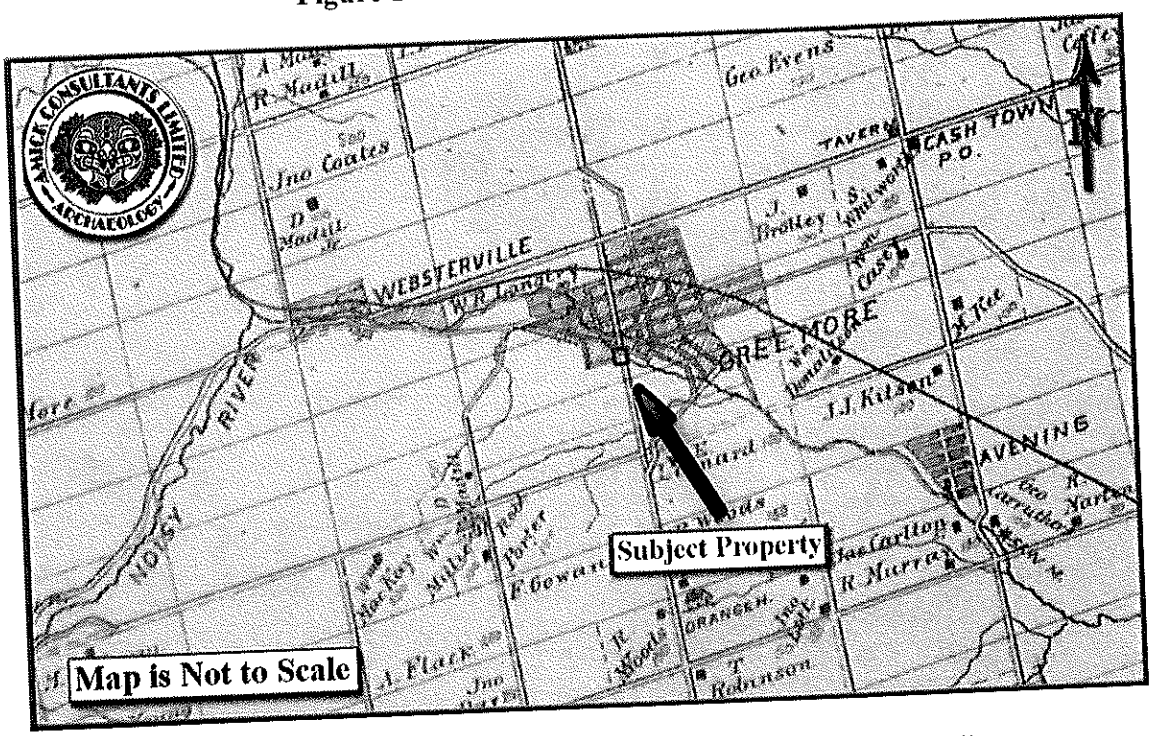

Figure 2 Segment of Historic Atlas Map (1881)

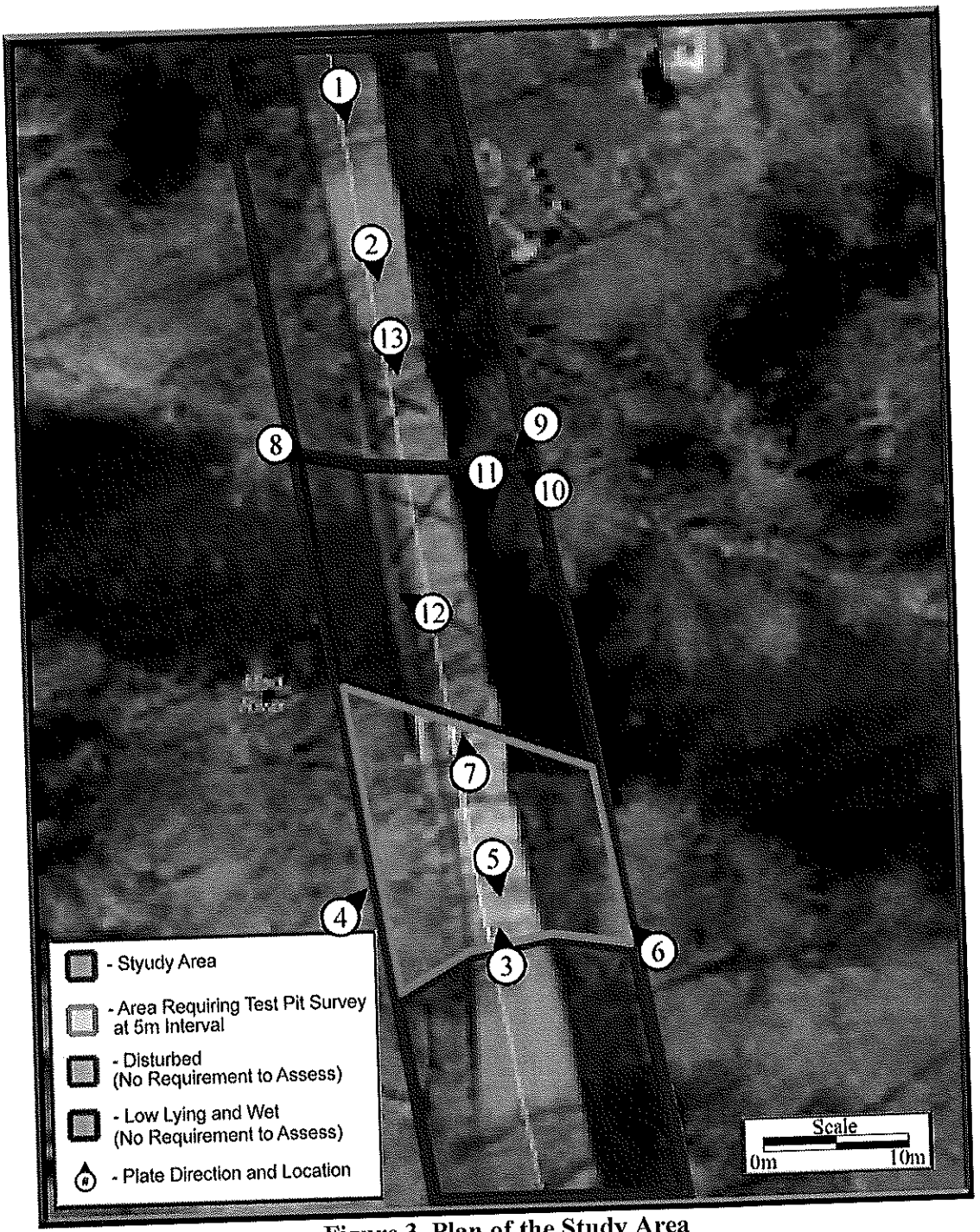

Figure 3 Plan of the Study Area

Plate 1 Collingwood Street Bridge (Bridge #000141) looking South from the North Approach

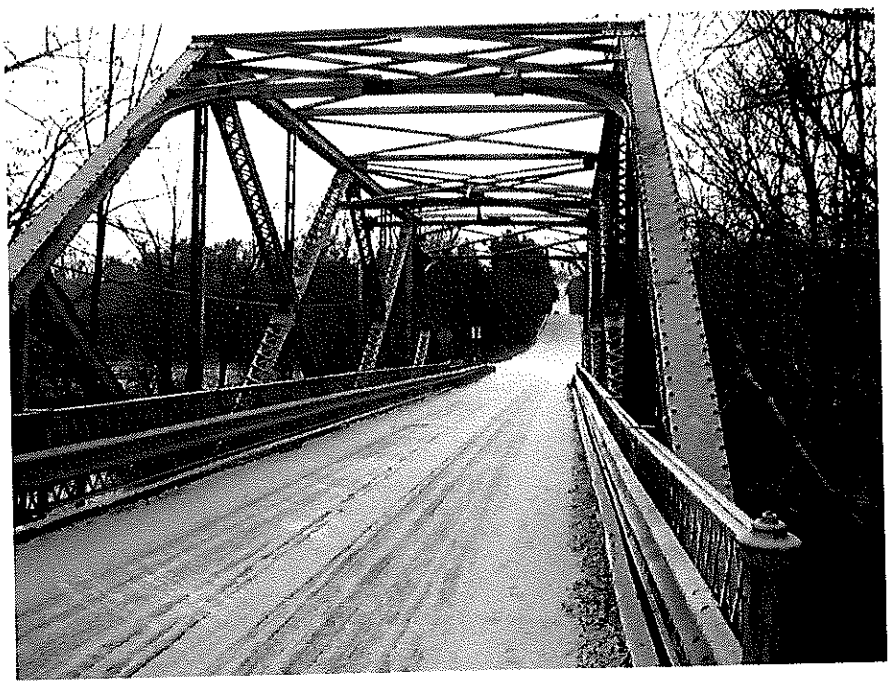

Plate 2 Collingwood Street Bridge (Bridge #000141) looking South from the North Edge of the Bridge

Plate 3 Collingwood Street Bridge (Bridge #000141) looking North from the South Edge of the Bridge

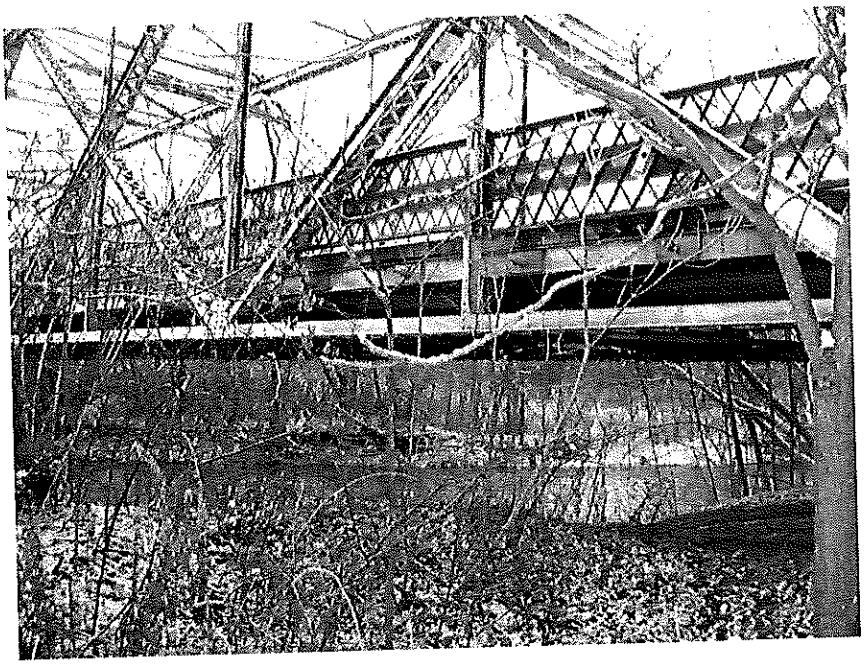

Plate 4 View from the West Side of the South Bank Abutment

Plate 5 Heavy Corrosion of Supporting Members below the Deck and Condition of the South Abutment

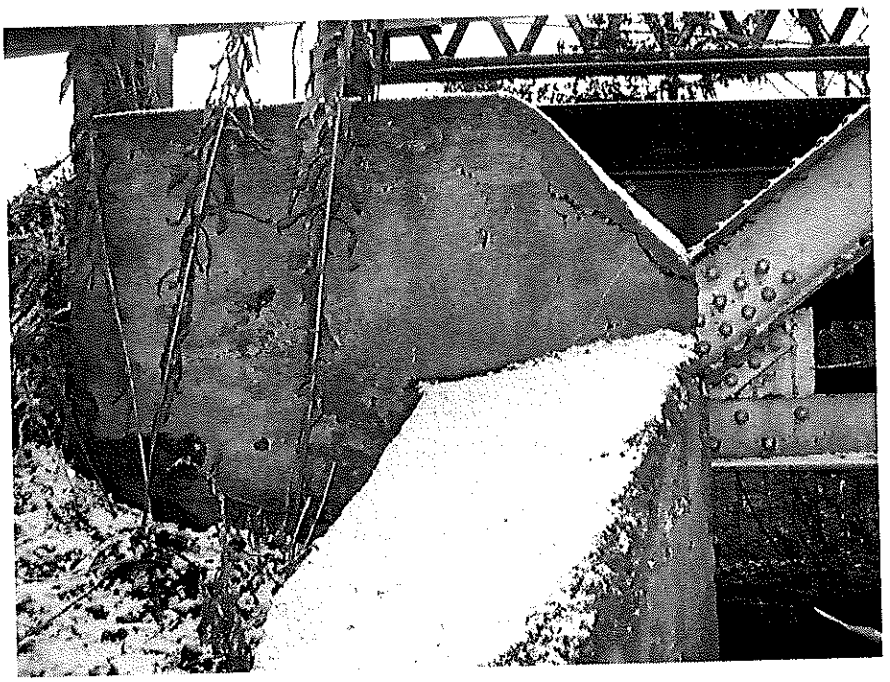

Plate 6 Abutment and Wing Wall on the East Side of Collingwood Street Bridge on the South Bank

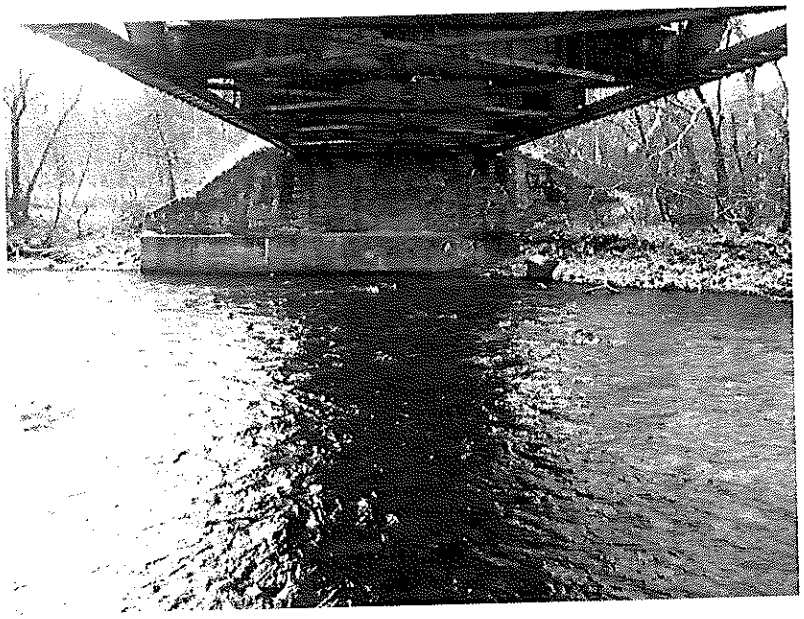

Plate 7 View to the North from the South Bank showing Corrosion of Supporting Members below the Deck and Condition of the North Bank Abutment

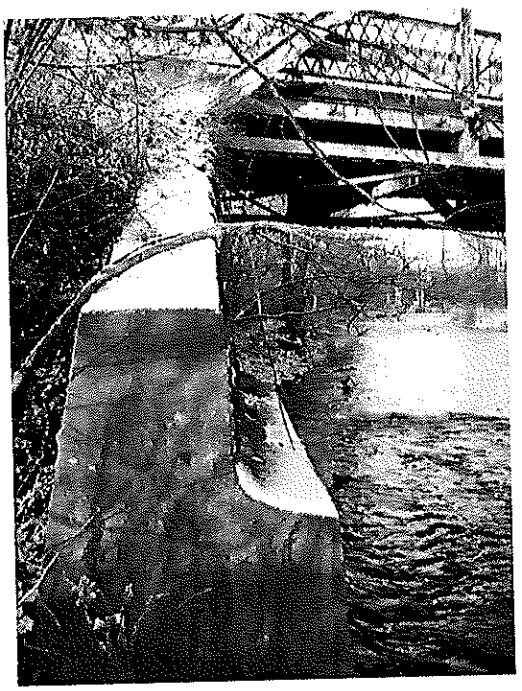

Plate 8 Abutment and Wing Wall on the West Side of Collingwood Street Bridge on the North Bank

Plate 9 Wing Wall on the East Side of Collingwood Street Bridge on the North Bank

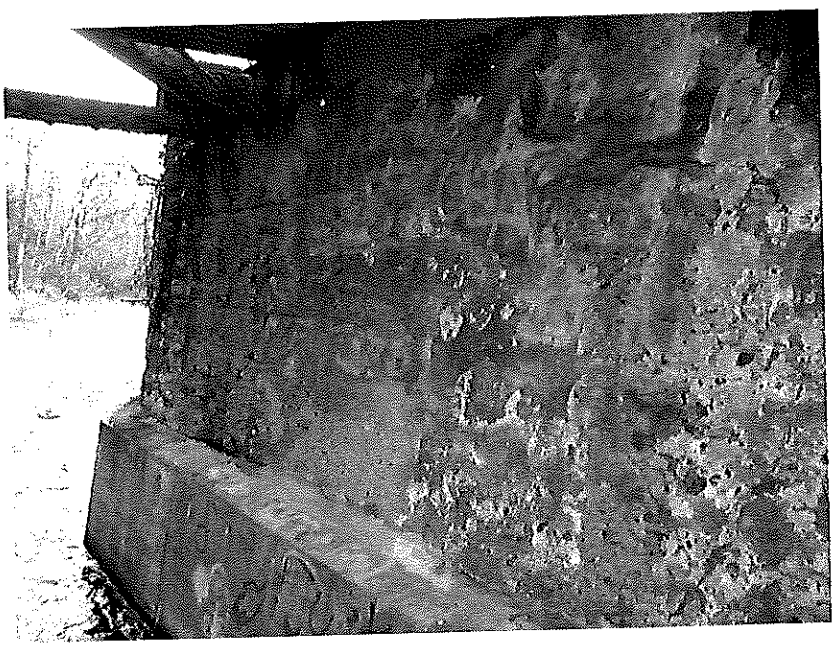

Plate 10 North Bank Abutment of Collingwood Street Bridge

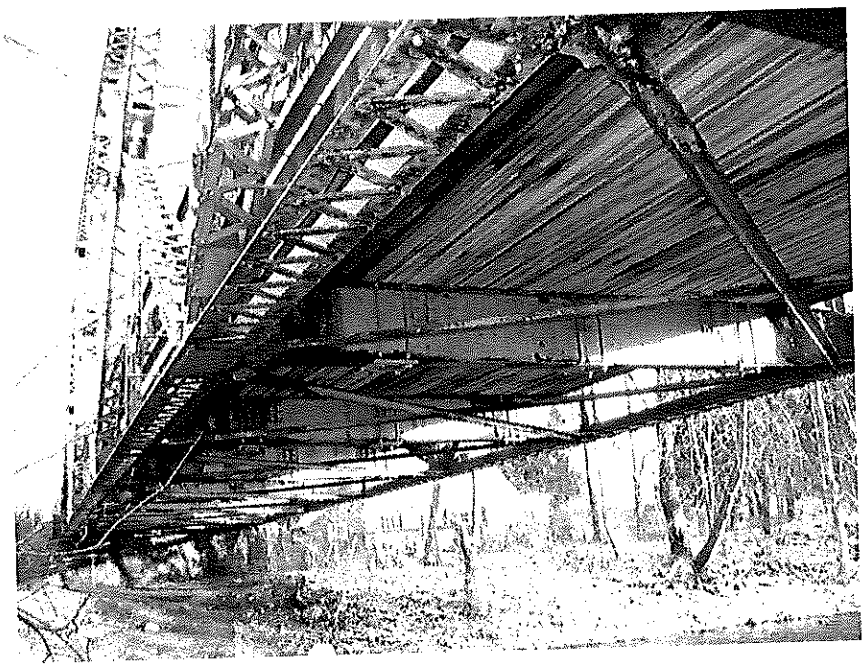

Plate 11 Oblique View from Northeast to Southwest below the Deck of the Collingwood Street Bridge showing Heavy Corrosion of Supporting Members

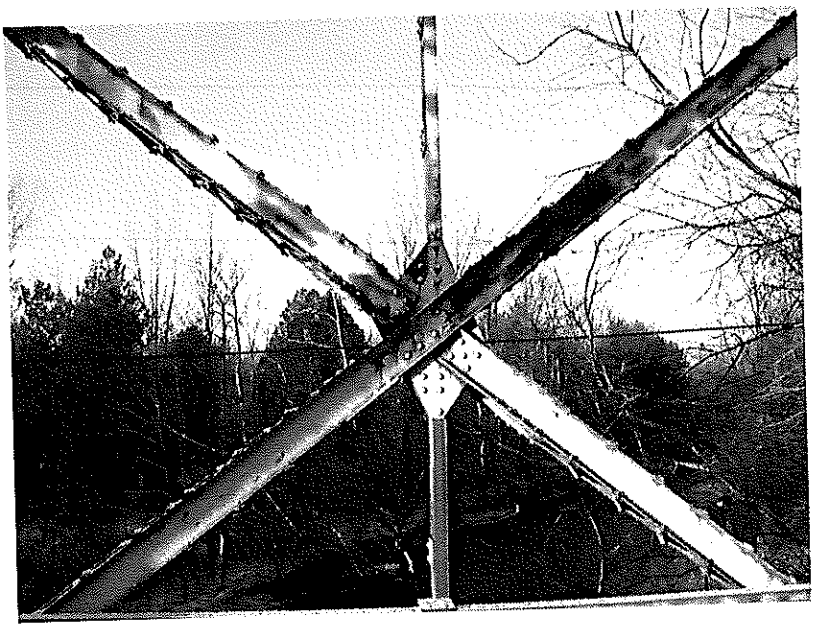

Plate 12 View to the West from the Midpoint Centreline of the Collingwood Street Bridge Showing Superstructure Detail and Corrosion

Plate 13 View of the Pattern of Construction of the Superstructure to the South from the North Edge of Collingwood Street Bridge

Appendix 1

Ontario Heritage Act – O. Reg 9/06

CRITERIA FOR DETERMINING CULTURAL HERITAGE VALUE OR INTEREST

Consolidation Period: From January 25, 2006 to the e-Laws currency date.

No amendments.

This is the English version of a bilingual regulation.

Criteria

1. (1) The criteria set out in subsection (2) are prescribed for the purposes of clause 29 (1) (a) of the Act. O. Reg. 9/06, s. 1 (1).

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

1. The property has design value or physical value because it,
   - i. is a rare, unique, representative or early example of a style, type, expression, material or construction method,
   - ii. displays a high degree of craftsmanship or artistic merit, or
   - iii. demonstrates a high degree of technical or scientific achievement.
2. The property has historical value or associative value because it,
   - i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,
   - ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or
   - iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.
3. The property has contextual value because it,
   - i. is important in defining, maintaining or supporting the character of an area,
   - ii. is physically, functionally, visually or historically linked to its surroundings, or
   - iii. is a landmark. O. Reg. 9/06, s. 1 (2).

Transition

2. This Regulation does not apply in respect of a property if notice of intention to designate it was given under subsection 29 (1.1) of the Act on or before January 24, 2006. O. Reg. 9/06, s. 2.

Appendix 2

Ministry of Culture Heritage Landscape Checklist

Screening for Impacts to Built Heritage and Cultural Heritage Landscapes

This check list will help identify potential cultural heritage resources, determine how important they are and indicate whether a cultural heritage impact assessment is needed.

Step 1 – Screening Potential Resources		
YES	NO	**Built heritage resources**
	✠	Does the property contain any built structures, such as:
	✠	▪ Residential structures (e.g. house, apartment building, trap line shelter)
	✠	▪ Agricultural (e.g. barns, outbuildings, silos, windmills)
✠		▪ Industrial (e.g. factories, complexes)
		▪ Engineering works (e.g. bridges, roads, water/sewer systems)
		Cultural heritage landscapes
YES	NO	Does the property contain landscapes such as:
	✠	▪ Burial sites and/or cemeteries
	✠	▪ Parks
	✠	▪ Quarries or mining operations
	✠	▪ Canals
✠	❑	▪ Other human-made alterations to the natural landscape

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

- Note: If you answer "yes" to any of the questions in Step 2, a heritage impact assessment is required.

Step 3 – Screening for Potential Impacts		
YES	**NO**	
✠		**Destruction** of any, or part of any, significant heritage attribute or feature.
✠		**Alteration** that is not sympathetic, or is incompatible, with the historic fabric or appearance.
	✠	**Shadows** created that alter the appearance of a heritage attribute or change the visibility of a natural feature or 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.
	✠	**Land disturbances** such as a change in grade that alters soils and drainage patterns that adversely affect an archaeological resource.

Appendix 3

Public Comments on the Proposed Improvements to the Collingwood Street Bridge (Bridge #000141)

AECOM

Appendix D

Replacement of Collingwood Street Bridge (Structure No. 000141) on Collingwood Street over the Mad River
Municipal Class Environmental Assessment

- Archaeological Report

1.0 PROJECT REPORT COVER PAGE

Licensee Information:

Licensee:	Michael B. Henry CD BA CAHP
Archaeology Licence:	P058
Contact Information:	AMICK Consultants Limited Lakelands District Office 380 Talbot Street, P.O. Box 29 Port McNicoll, ON L0K 1R0 Phone: (705) 534-1546 Fax: (705) 534-7855 Email: mhenry@amick.ca www.amick.ca

Project Information:

Corporate Project Number:	29458-P
MCL Project Number:	P058-532-2009
Investigation Type:	Stage 1 Archaeological Background Research
Project Name:	Collingwood Street Bridge Municipal Class EA Mad River Crossing
Project Location:	Collingwood Street, Village of Creemore (Geographic Township of Nottawasaga) County of Simcoe

Approval Authority Information:

File Number:	N/A

Reporting Information:

Site Record/Update Forms:	N/A
Date of Report Filing:	July 7, 2010

2.0 EXECUTIVE SUMMARY

This report describes the results of the 2009 Stage 1 Archaeological Background Research of Collingwood Street Bridge over the Mad River, Collingwood Street, Village of Creemore (Geographic Township of Nottawasaga), County of Simcoe, conducted by AMICK Consultants Limited. This study was conducted under Archaeological Consulting License #P058 issued to Michael Henry by the Minister of Culture for the Province of Ontario. This assessment was undertaken in order to address the requirements of a Municipal Class EA. All work was conducted in conformity with Ontario Ministry of Culture (MCL) draft Standards and Guidelines for Consultant Archaeologists (MCL 2009) and the Ontario Heritage Act (RSO 2005).

Proposed improvements to the crossing of the Mad River at Collingwood Street, triggered a Municipal Class EA. As a component study of the EA, an archaeological assessment is required. AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Research study of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork on November 6, 2009. The study area was subject to reconnaissance and photographic documentation on December 4, 2009. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by MCL on behalf of the government and citizens of Ontario.

As a result of the reconnaissance and photographic documentation of the existing crossing, it has been determined that the potential for the existing structure and affected road allowance to contain significant archaeological resources is remote and there is no requirement for a Stage 2 physical assessment of these areas. However, ground situated between the south bank abutment and the south bank of the Mad River may be undisturbed or only partially disturbed and the potential for archaeological resources to be found in this area remains high. Consequently, it is recommended that Stage 2 Physical Assessment of this area be completed in advance of any measures to either rehabilitate or to replace the existing structure.

3.0 TABLE OF CONTENTS

LIST OF PLATES

4.0 PROJECT PERSONNEL

Consulting Archaeologist
Michael Henry (MCL Professional Archaeologist Licence# P058)

Project Archaeologist
Marilyn Cornies (MCL Professional Archaeologist Licence# P038)

Field Assistant
Melissa Milne

Report Preparation
Michael Henry

Draughting
Phil Rice

Photography
Marilyn Cornies

5. PROJECT BACKGROUND

5.1 Development Context

This report describes the results of the 2009 Stage 1 Archaeological Background Research of Collingwood Street Bridge over the Mad River Collingwood Street, Village of Creemore (Geographic Township of Nottawasaga), County of Simcoe, conducted by AMICK Consultants Limited. This study was conducted under Archaeological Consulting License #P058 issued to Michael Henry by the Minister of Culture for the Province of Ontario. This assessment was undertaken in order to address the requirements of a Municipal Class EA. All work was conducted in conformity with Ontario Ministry of Culture (MCL) draft Standards and Guidelines for Consultant Archaeologists (MCL 2009) and the Ontario Heritage Act (RSO 2005).

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

(OMCzCR 1993)

The evaluation of potential for heritage resources is further elaborated Section 5.3 of the Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments (1992) prepared by the Ontario Ministry of Culture and Communications (MCC) and the Ontario Ministry of Environment (MOE):

"Generally, lands affected by project development should be classified by the proponent as having high, medium or low potential for the discovery of heritage resources. Since heritage resources are not uniformly distributed across the landscape, not all project areas will exhibit the same likelihood of finding heritage resources. Potential is based on the following geographical and historical factors which may have influenced previous use and settlement of an area:

- *Distance from historic transportation routes.*
- *Distance from sources of water (rivers, lakes, streams, creeks, springs, marshes, swamps, relict creek beds).*
- *Ability of the terrain to accommodate human settlement. This includes topography, soils and access to plant, animal and mineral resources.*
- *Documentation of existing heritage resource sites in the affected area and region. Known resources in the affected area, such as architectural features, cultural landscapes or registered archaeological sites, can be evaluated for possible heritage significance by using the evaluation criteria outlined in Section 5.5 of this guideline.*
- *Historical context of the region encompassing the affected area.*
- *Description of previous land uses of the affected area, including nature and extent of previous development disturbances."*

(MCC & MOE 1992: 6)

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

> *"Archaeological resources not previously documented may also be present in the affected area. If the alternative areas being considered, or the preferred alternative selected, exhibit either high or medium potential for the discovery of archaeological remains an archaeological assessment will be required."* (MCC & MOE 1992: 6-7)

> *"When potential is confirmed for any of the property, the archaeological assessment requirement will apply to the entire parcel of land (excluding any extensively disturbed areas or specific areas determined to be of low potential by the consultant archaeologist)"*
>
> (MCL 2005: 15)

AMICK Consultants Limited was engaged by the proponent to undertake this assessment, and was granted permission to carry out archaeological fieldwork on the study area on November 6, 2009. The proposed alternatives were subject to reconnaissance and photographic documentation on November 15, 2008. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ministry of Culture on behalf of the government and citizens of Ontario.

5.2 Historical Context

As part of the present study, background research was conducted in order to determine if any archaeological resources had been formerly documented within or in close proximity to the study area and if these same resources might be subject to impacts from the proposed undertaking. This data was also collected in order to assist in the assessment of the archaeological potential of the study area and in order to establish the significance of any resources which might be encountered during the conduct of the present study. The requisite data was collected from the Heritage & Libraries Branch, Heritage Operations Unit, Ontario Ministry of Culture (MCL) and the corporate research library of AMICK Consultants Limited.

TABLE 1 Cultural Chronology for South-Central Ontario

Period		Group	Date Range	Traits
Palaeo-Indian		Fluted Point	9500-8500 B.C.	Big game hunters.
		Hi-Lo	8500-7500 B.C.	Small nomadic groups.
Archaic	Early		8000-6000 B.C	Hunter-gatherers.
	Middle	Laurentian	6000-200 B.C.	Territorial divisions arise.
	Late	Lamoka	2500-1700 B.C.	Ground stone tools appear.
		Broadpoint	1800-1400 B.C.	
		Crawford Knoll	1500-500 B.C.	
		Glacial Kame	c.a. 1000 B.C.	Elaborate burial practices.
Woodland	Early	Meadowood	1000-400 B.C.	Introduction of pottery.
		Red Ochre	1000-500 B.C.	
	Middle	Point Peninsula	400 B.C.-500 A.D.	Long distance trade.
		Princess Point	500-800 A.D.	Horticulture.
	Late	Pickering	800-1300 A.D.	Villages and agriculture.
		Uren	1300-1350 A.D.	Larger villages.
		Middleport	1300-1400 A.D.	
		Huron	1400-1650 A.D.	Warfare
Historic	Early	Odawa, Ojibwa	1700-1875 A.D.	Social displacement.
	Late	Euro-Canadian	1785 A.D.+	European settlement.

The Archaeological Sites Database indicates that there are no previously documented sites within the study area or within 2 kilometres of the study area. However, it must be noted that this is based on the assumption of the accuracy of information compiled from numerous researchers using different methodologies over many years. AMICK Consultants Limited assumes no responsibility for the accuracy of site descriptions, interpretations such as cultural affiliation, or location information derived from the Archaeological Sites Database administered by the Ontario Ministry of Culture. In addition, it must also be noted that the lack of formerly documented sites does not indicate that there are no sites present as the documentation of any archaeological site is contingent upon prior research having been conducted within the study area.

5.2.1 First Nations Occupation

A summary of registered and/or known archaeological sites within a 2-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by the Ontario Ministry of Culture. As a result it was determined that five (5) archaeological sites relating directly to First Nations habitation/activity had been formally documented within the immediate vicinity of the study area. The sites in close proximity to the study area are outlined in Table 1 below:

Table 2 Registered First Nations Archaeological Sites

Site Name	Borden #	Site Type	Cultural Affiliation
Rhodes	BbHa-5	Campsite/Ossuary	Late Woodland
Sidey-MacKay	BbHa-6	Village	Late Woodland
Melville	BbHa-7	Village	Late Woodland
Grose	BcHa-9	Campsite/Burial	Late Woodland
Hisey	BcHa-10	Campsite	Late Woodland

5.2.2 Euro-Canadian Settlement

A summary of registered and/or known archaeological sites within a 2-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by the Ontario Ministry of Culture. As a result it was determined that no (0) archaeological sites relating directly to Euro-Canadian habitation/activity had been formally documented within the immediate vicinity of the study area.

The existing crossing is situated within the existing Road Allowance of Collingwood Street in the Village of Creemore (Geographic Township of Nottawasaga), County of Simcoe. The "Simcoe County Supplement" in the Illustrated Atlas of the Dominion of Canada (Belden 1881) indicates that even by that date, the Mad River formed an effective southern limit to the urban density settlement of the Village of Creemore (Geographic Township of Nottawasaga) and that the crossing at this location acted as a gateway feature or entry point

to the community from the south (see Figure 1 below). The Historic Atlas Map of 1881 indicates that the road allowance and crossing were established by the time that the atlas data was compiled. This suggests that there is high potential for archaeological deposits related to Euro-Canadian settlement on the north bank of the Mad River in the vicinity of the existing crossing and for evidence of earlier crossing features.

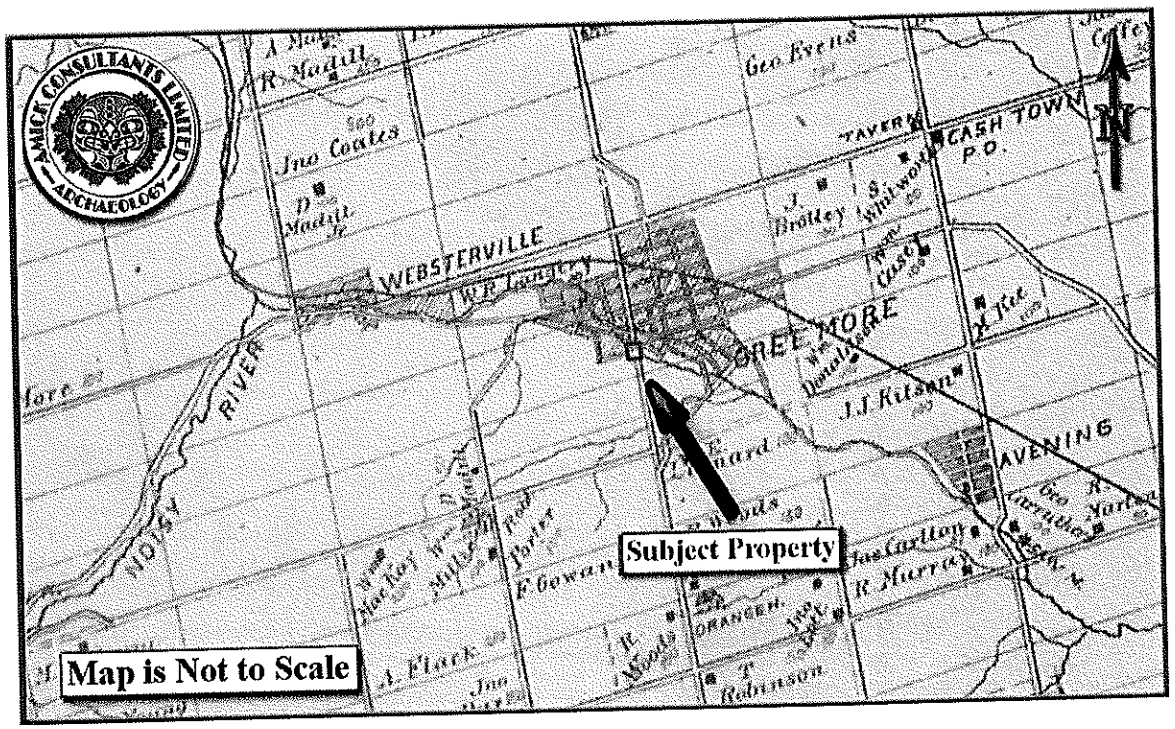

Figure 1 Segment of Historic Atlas Map for the Township of Nottawasaga (1881)

5.2.3 Overview of Ontario Bridge Construction History

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

Bridges were a necessity from the earliest days of road construction. The earliest bridges consisted of nothing more than two parallel logs stretching from one bank to the other with

logs overlying these at a right angle. These bridges could be easily and quickly replaced as they rotted or should they be swept away by flood waters or ice flows (Cuming n.d.: 32). Bridges needed to cover larger spans were constructed by early settlers based on principles employed in the construction of early houses and barns. Truss systems used in the framing of structures were employed. Two such standard bridge types emerged fairly early on: The King Truss Bridge and the Queen Truss Bridge. The King Truss was built by setting a vertical beam supported by two inclined beams midway along a horizontal beam. The King Truss Bridge could span a gap of up to sixty (60) feet. The Queen truss system was employed for wider spans. This bridge was constructed with two vertical beams supported by one inclined beam for each and joined by a horizontal top beam. The Queen Truss Bridge could span a gap of up to one hundred and twenty (120) feet (Cuming n.d.: 35).

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

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

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

Beginning in the 1880s designers began to replace wrought iron elements in bridges with steel. This marked the beginning of a transition from wrought iron to steel bridges (Cuming n.d.: 41). Several factors contributed to the rapid development and proliferation of steel bridges at the beginning of the twentieth century. Portable pneumatic tools allowed for the use of rivets on even rural sites of bridge construction and pin connections rapidly disappeared. Rivets allowed for longer and sturdier construction. New production methods

made steel as cheap as wrought iron. The concurrent developments in heavier vehicle and agricultural machinery required bridges capable of taking heavier loads which made construction of timber bridges impractical even in rural areas. "Through truss" style construction was employed over larger spans or in locations where traffic loads were heavy. Steel bridges were erected in quantity throughout Ontario following 1900 (Cuming n.d.: 42). The improvement in highway and bridge construction was particularly notable following the end of the First World War with massive increases in automobile traffic and the development of heavy construction machinery. (Cuming n.d.: 51-53).

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

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

Through truss construction, of which Collingwood Street Bridge is representative, was built over larger spans or in locations where traffic loads were heavy (Cuming n.d.: 43). Steel bridges were erected in quantity throughout Ontario following 1900 (Cuming n.d.: 42). The improvement in highway and bridge construction was particularly notable following the end of the First World War with massive increases in automobile traffic and the development of heavy construction machinery. By the 1930s however, reinforced concrete construction was beginning to supplant steel bridge construction for speed of construction, durability and strength (Cuming n.d.: 51-53).

5.2.4 Collingwood Street Bridge

Based upon consideration of the above historic trends, Collingwood Street Bridge appears to date to the period of roughly 1900-1930. This bridge rests on poured concrete abutments most probably built in the early twentieth century. The fact that the bridge is riveted likewise points to this period. The rural context suggests that the erection of this steel bridge was likely in response to the need for a relatively inexpensive structure to span a relatively wide channel and to carry increasingly heavier loads due to the rise in popularity of automobile

transportation and mechanical farm implements. The builder and date of construction for the Collingwood Street Bridge is Dumond Contractors in 1913 and was cast into the concrete abutment.

5.2.5 Summary

Background research indicates the property has high potential for significant archaeological resources of Native origins based on distance to water criteria. Background research suggests a high potential for archaeological resources of Euro-Canadian origins as the establishment of the crossing site and adjacent settlement areas dates to before 1880.

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

5.3 Archaeological Context

5.3.1 Location and Current Conditions

This report describes the results of the 2009 Stage 1 Archaeological Background Research of Collingwood Street Bridge over the Mad River Collingwood Street, Village of Creemore (Geographic Township of Nottawasaga), County of Simcoe, conducted by AMICK Consultants Limited. This study was conducted under Archaeological Consulting License #P058 issued to Michael Henry by the Minister of Culture for the Province of Ontario. This assessment was undertaken in order to address the requirements of a Municipal Class EA.

AMICK Consultants Limited was engaged by the proponent to undertake this study on November 6, 2009. Permission was granted by the proponent to enter the property and to take photographs and notes on the current property conditions for the purpose of this study. All records, documentation, field notes, and photographs related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ministry of Culture on behalf of the government and citizens of Ontario.

The location of the study area is illustrated in Figure 2 below. The study area consists of the existing crossing over the Mad River on Collingwood Street, known as Collingwood Street Bridge. A plan of the study area is included within this report as Figure 3.

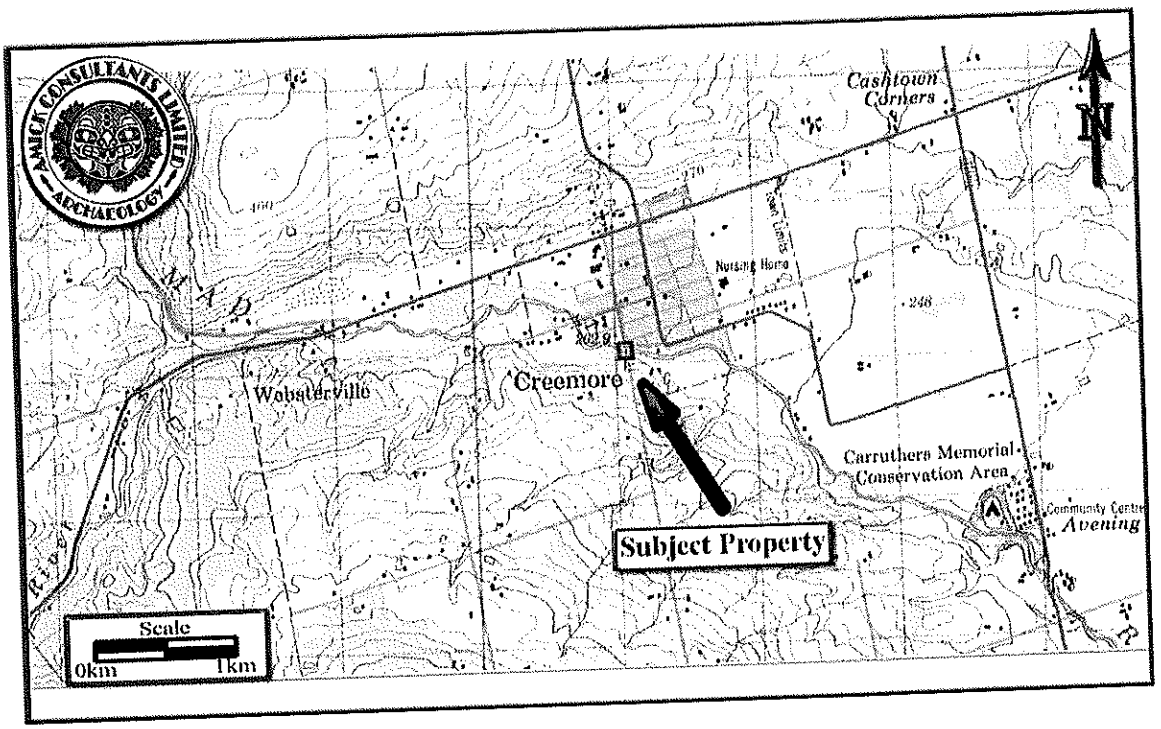

Figure 2 Location of the Study Area

The existing bridge is a single span riveted steel through truss structure which carries Collingwood Street over the Mad River. The existing structure is not listed on the Ontario Heritage Bridge List nor has it been designated under the Ontario Heritage Act. The structure has been identified as being deficient with respect to structural capacity, geometry, physical condition and roadside safety. Collingwood Street Bridge is a single-lane, riveted steel through truss structure on conventional closed abutments. The structure was likely constructed between 1900 and 1930. The existing structure has an overall span length of 31.1 m. The travel width is 4.36m between barriers and the overall structure width is 4.64 m. The structural trusses that carry the load of the structure form the side walls of the bridge. The guiderails present are anchored directly to the load bearing elements. This configuration classifies the structure as a single load path structure which means that if the trusses were significantly damaged, it could result in total bridge failure. Single load path structures are not encouraged in Ontario for this reason. The structure has been identified as being deficient with respect to structural capacity, geometry, physical condition and roadside safety.

5.3.2 Physiographic Region

The subject property is situated within the Simcoe Uplands physiographic region. The Simcoe Uplands is described as a series of broad, rolling till plains separated by steep-sided, flat-floored valleys, indicating they were islands in Lake Algonquin. The till is composed of mainly Precambrian rock, the texture of which is a gritty loam that becomes sandier toward

the north; more calcareous till occurs near Lake Simcoe and near Midland. Although the dominant soil in the uplands is a sandy loam, smaller areas near the sandy ridges of the Oro Moraine and the Hendrie forest feature extremely pervious soil areas, sometimes with dry depressions many feet in depth. The loose sandy texture of the surface soil is conducive to wind erosion when vegetation has been removed. (Chapman and Putnam 1984: 182-183).

5.3.3 Surface Water

The study area includes a crossing of the Mad River. Based on proximity to water, whereby lands within 300 metres distance to sources of potable water are deemed to have been attractive to First Nations cultures, the study area has a high potential for archaeological resources related to the history of First Nations occupation and land use in the area. No portion of the study area is situated beyond 300 metres from the Mad River.

5.4 Current Property Conditions Context

Current characteristics encountered within an archaeological research study area determine if physical assessment of specific portions of the study area will be necessary and in what manner the physical assessment should be conducted. The ground conditions and their implications for Stage 2 Physical Assessment are illustrated in Figure 3 of this report (below). Conventional assessment methodology includes pedestrian survey on ploughable lands and test pit methodology within areas that cannot be ploughed. For the purpose of determining where physical assessment is necessary and feasible, general categories of current landscape conditions have been established as archaeological conventions. These include:

5.4.1 Buildings and Structural Footprints

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

The study area contains one existing structure: Collingwood Street Bridge. The footprint of the abutments of the existing bridge on the north and south banks of the Mad River cannot be

assessed using conventional assessment methodology so long as the structures are standing. On the north bank, the abutment is situated at the water's edge of the Mad River. On the south bank the abutment is placed well back from the bank of the river and there is potential for this area, or portions of this area to represent only lightly disturbed ground where the potential for archaeological resources remains high.

5.4.2 Disturbance

Areas that have been subjected to extensive and deep land alteration that has severely damaged the integrity of archaeological resources are known as land disturbances. Examples of land disturbances are areas of "past quarrying, major landscaping, recent built and industrial uses, sewage and infrastructure development, etc." (MCL 2005: 15). Areas of disturbance which minimize archaeological potential or cannot be assessed using conventional methodologies also include roads, driveways, and parking areas made of either gravel or concrete; in-ground pools; and wells or cisterns. Utility lines are conduits which provide services such as water, natural gas, hydro, communications, sewage, and others. Areas containing below ground utilities are considered areas of disturbance, and are excluded from Stage 2 Physical Assessment. Disturbed areas are excluded from Stage 2 Physical Assessment due to no or low archaeological potential or because they are not assessable using conventional methodology.

The existing Road Allowance and the abutments associated with the existing structure are areas of deep prior disturbance and also areas which cannot be assessed using conventional assessment methodology. These areas are excluded from any potential future Stage 2 Physical Assessment.

5.4.3 Low-Lying and Wet Areas

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

The existing Collingwood Street Bridge crosses the Mad River. The Mad River itself constitutes an area which is permanently wet and cannot be assessed using conventional survey methodology. However, if land based archaeological resources were to be recovered during the Stage 2 Physical Assessment in close proximity to the banks of this waterway, an Underwater Archaeological Assessment may then be required if there is reason to believe that there is potential for significant related archaeological deposits to be found within the waterway. This area is illustrated in Figure 3 of this report.

5.4.4 Steep Slope

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

The study area does not contain land which would be characterized as steep slope.

5.4.5 Wooded Areas

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

The study area does not contain land which would be characterized as wooded.

5.4.6 Ploughable Agricultural Lands

Areas of current or former agricultural lands which have been ploughed in the past are considered ploughable agricultural lands. Ploughing these lands regularly moves the soil around, which brings covered artifacts to the surface, easily identifiable during visual inspection. Furthermore, by allowing the ploughed area to weather sufficiently through rainfall washing soil off any artifacts, the visibility of artifacts at the surface of recently worked field areas increases significantly. Pedestrian survey of ploughed agricultural lands is the preferred method of physical assessment because of the greater potential for finding evidence of archaeological resources if present.

The study area contains no ploughable land.

5.4.7 Lawn, Pasture, Meadow

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

The study area contains one existing structure: Collingwood Street Bridge. The footprint of the abutments of the existing bridge on the north and south banks of the Mad River cannot be assessed using conventional assessment methodology so long as the structures are standing. On the north bank, the abutment is situated at the water's edge of the Mad River. On the south bank the abutment is placed well back from the bank of the river and there is potential for this area, or portions of this area to represent only lightly disturbed ground where the potential for archaeological resources remains high. This area is covered in low weed vegetation and, given the very small size of this area within the road allowance, can be assessed using test pit methodology. This area should be subject to Stage 2 Physical Assessment in advance of any measures to rehabilitate or replace the existing bridge.

6. FIELD METHODS

Field reconnaissance is not required as part of a Stage 1 background research study unless there is reason to believe that portions of the study area may be excluded from physical assessment on the basis of the conditions of the property or portions thereof. As the proposed alternatives include replacing or rehabilitating the existing Collingwood Street Bridge at its present crossing location, there was reason to believe that a field reconnaissance would allow for the documentation of areas within the study area for which a physical assessment was unnecessary.

This report confirms that the entirety of the study area was subject to visual inspection, and that the fieldwork was conducted according to the archaeological fieldwork standards and guidelines, including weather and lighting conditions. The property reconnaissance was completed in adequate conditions under overcast skies. The study reconnaissance was carried out on December 4, 2009. The temperature was slightly below zero degrees Celsiuis and a thin film of fresh snow covered the ground. Although snow often acts as an impediment to determining ground conditions, in cases where structural elements or built features are clearly evident, the presence of snow in small amounts does not obscure visibility or photographic recording of such features. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Figure 3 of this report (below).

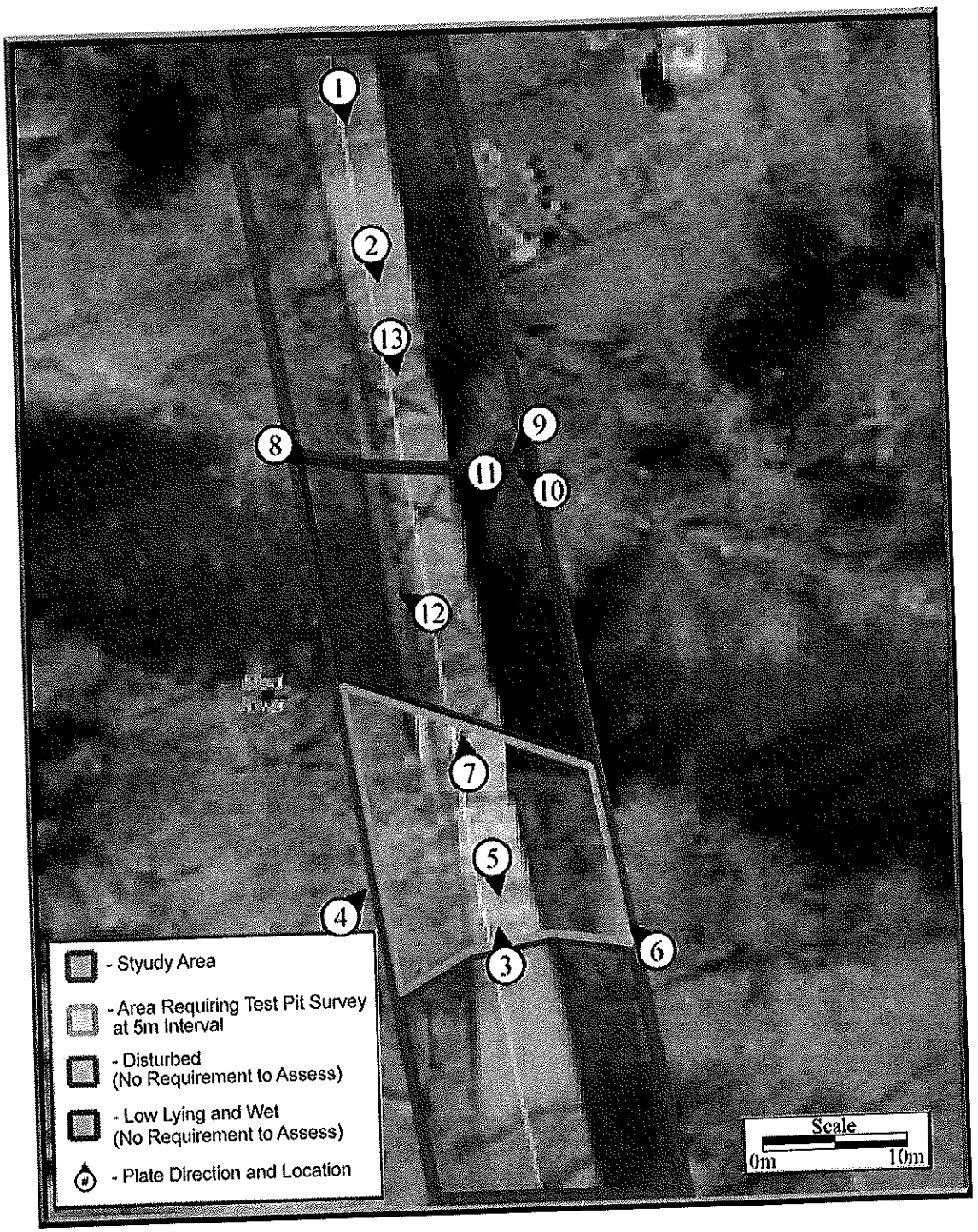

Figure 3 Aerial Photo of the Study Area

7. RECORD OF FINDS

This section of the report provides a complete overview of archaeological resources documented within the study area. This information is provided for the purposes to plan how to address archaeological concerns under legislated land use planning and development processes.

As a result of the reconnaissance of the study area, no evidence of potentially significant archaeological deposits was encountered. This does not mean that such deposits would not be found in areas determined to require Stage 2 Physical Assessment.

8. ANALYSIS AND CONCLUSIONS

As a result of the Stage 1 Background research and field reconnaissance of the study area, it has been determined that the existing bridge, and the existing road allowance approaching the existing structure from either side, have been subject to significant landscape modifications which would serve to minimize the potential for significant archaeological resources to be situated anywhere within the existing crossing and associated roadway. Between the south bank of the Mad River and the existing concrete abutment, a small area of land covered in low weed vegetation may be relatively undisturbed and should be subject to Stage 2 Physical Assessment prior to any measures taken to either rehabilitate the existing structure or to replace it. This area will require Stage 2 Physical Assessment by test pit methodology as it is a very small area which is not accessible to farm machinery as it is situated beneath the existing bridge and it is unlikely that the area has ever been subject to agricultural tillage.

9. RECOMMENDATIONS

As a result of the Stage 1 Background research and field reconnaissance of the study area, it has been determined that the existing bridge, and the existing road allowance approaching the existing structure from either side, have been subject to significant landscape modifications which would serve to minimize the potential for significant archaeological resources to be situated anywhere within the existing crossing and associated roadway.

Between the south bank of the Mad River and the existing concrete abutment, a small area of land covered in low weed vegetation may be relatively undisturbed and should be subject to Stage 2 Physical Assessment prior to any measures taken to either rehabilitate the existing structure or to replace it. This area will require Stage 2 Physical Assessment by test pit methodology as it is a very small area which is not accessible to farm machinery as it is situated beneath the existing bridge and it is unlikely that the area has ever been subject to agricultural tillage.

It must be noted at this time that no archaeological survey, regardless of its intensity, can entirely negate the possibility of deeply buried cultural material, notably human interments.

10. ADVICE ON COMPLIANCE WITH LEGISLATION

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

1. This report is filed with the Minister of Culture in compliance with sec. 65 (1) of the Ontario Heritage Act. The ministry reviews reports to ensure that the licensee has met the terms and conditions of the licence and archaeological resources have been identified and documented according to the standards and guidelines set by the ministry, ensuring the conservation, protection and preservation of the heritage of Ontario. It is recommended that development not proceed before receiving confirmation that the Ministry of Culture has entered the report into the provincial register of reports.

2. Should previously unknown or unassessed deeply buried archaeological resources be uncovered during development, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.

3. Any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services.

In any situation where archaeological sites of potential significance are found or for which further archaeological field work is recommended, the following additional advisory statement is required to be included in archaeological licence reports:

4. Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed, except by a person holding an archaeological licence.

With respect to the proposed undertaking, further archaeological field work is recommended and therefore, the provincial interest in archaeological resources remains pending the outcome of further study.

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2008 Ontario Heritage Bridge Guidelines for Provincially Owned Bridges. MTO, Planning and Environmental Office, Downsview.

12. STAGE 1 RECONNAISSANCE PHOTOGRAPHS

Plate 1 Collingwood Street Bridge (Bridge #000141) looking South from the North Approach

Plate 2 Collingwood Street Bridge (Bridge #000141) looking South from the North Edge of the Bridge

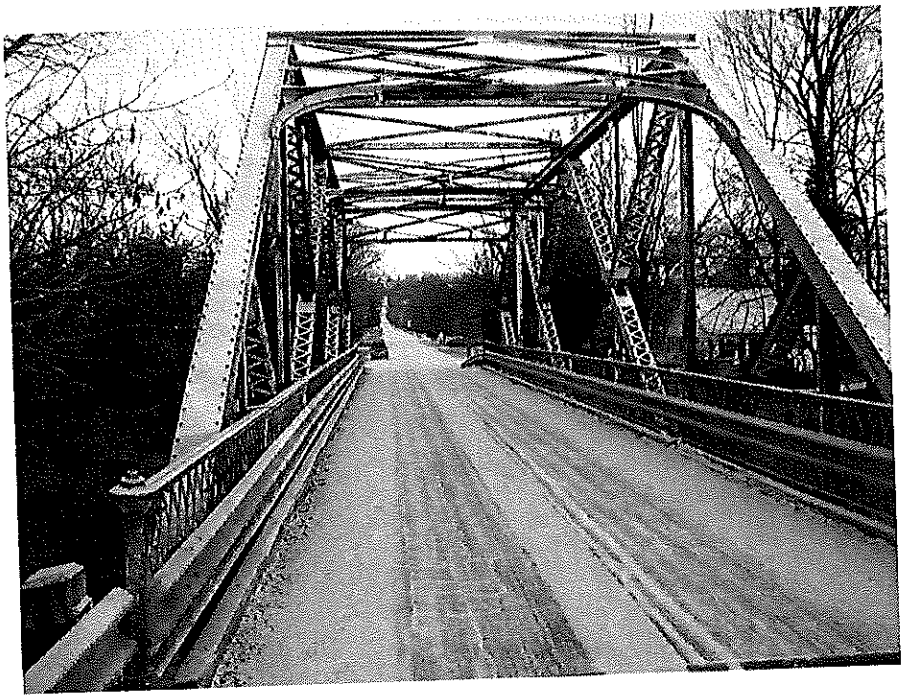

Plate 3 Collingwood Street Bridge (Bridge #000141) looking North from the South Edge of the Bridge

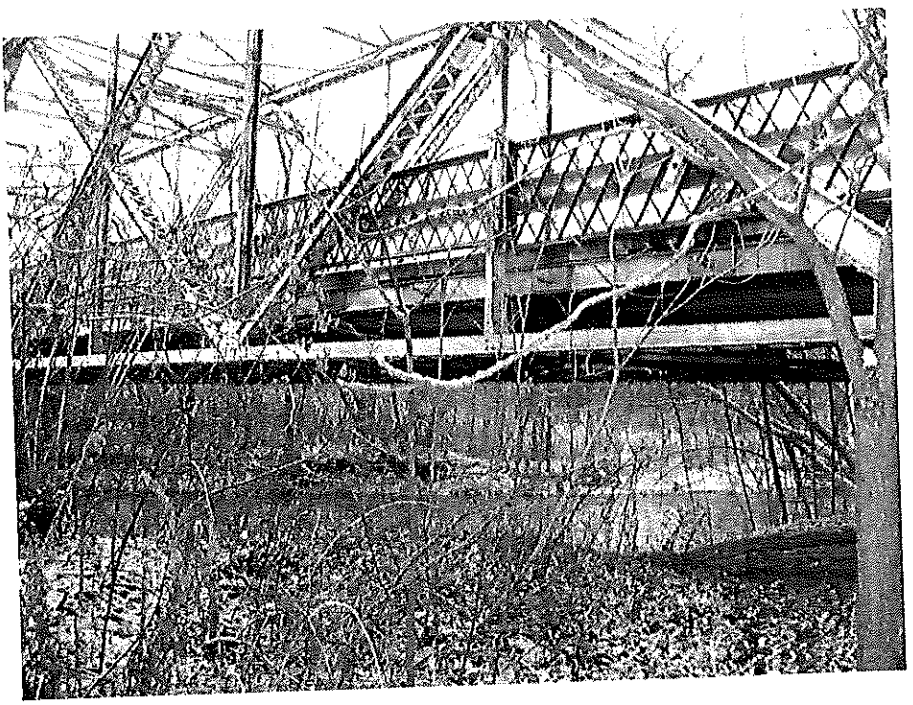

Plate 4 View from the West Side of the South Bank Abutment

Plate 5 Heavy Corrosion of Supporting Members below the Deck and Condition of the South Abutment

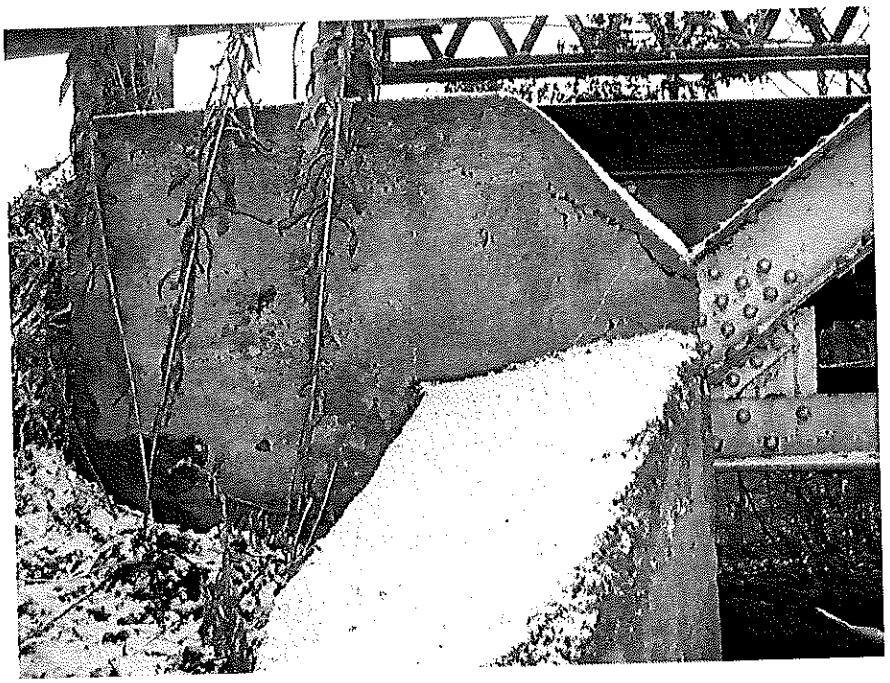

Plate 6 Abutment and Wing Wall on the East Side of Collingwood Street Bridge on the South Bank

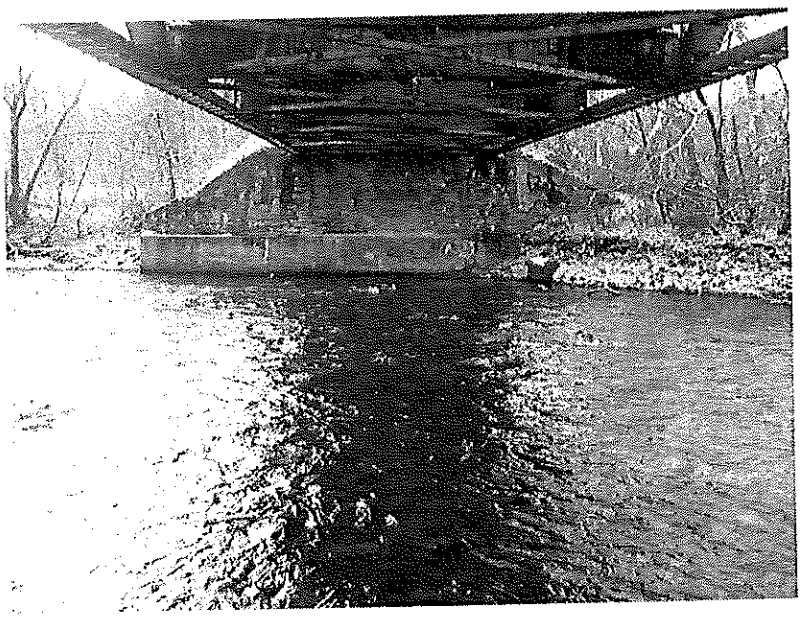

Plate 7 View to the North from the South Bank showing Corrosion of Supporting Members below the Deck and Condition of the North Bank Abutment

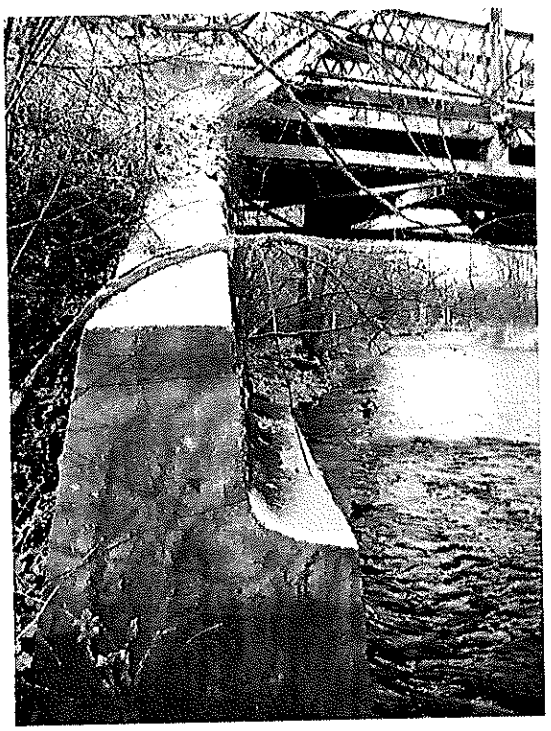

Plate 8 Abutment and Wing Wall on the West Side of Collingwood Street Bridge on the North Bank

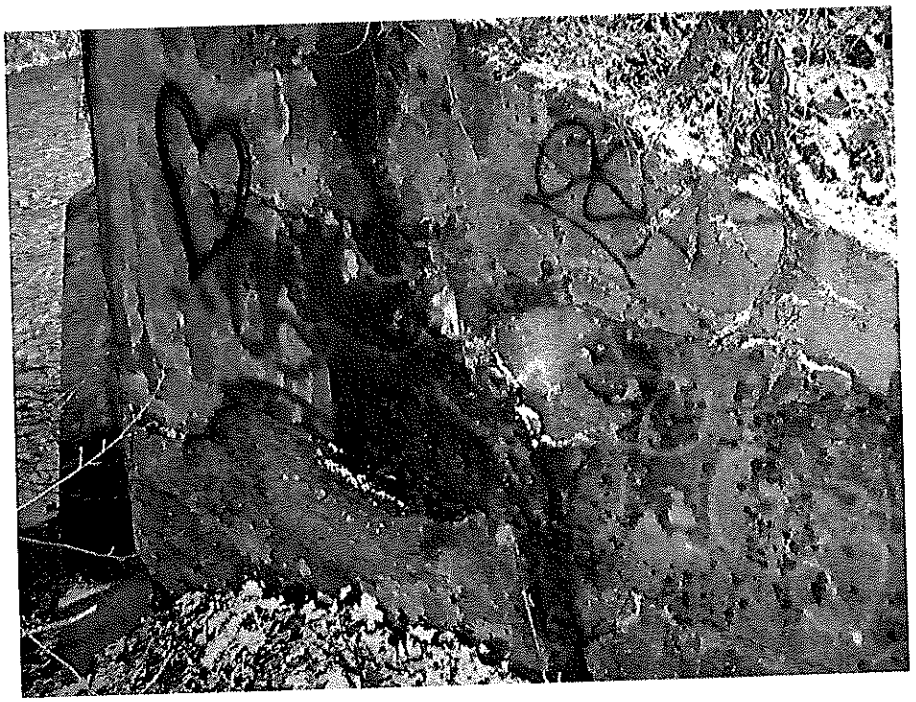

Plate 9 Wing Wall on the East Side of Collingwood Street Bridge on the North Bank

Plate 10 North Bank Abutment of Collingwood Street Bridge

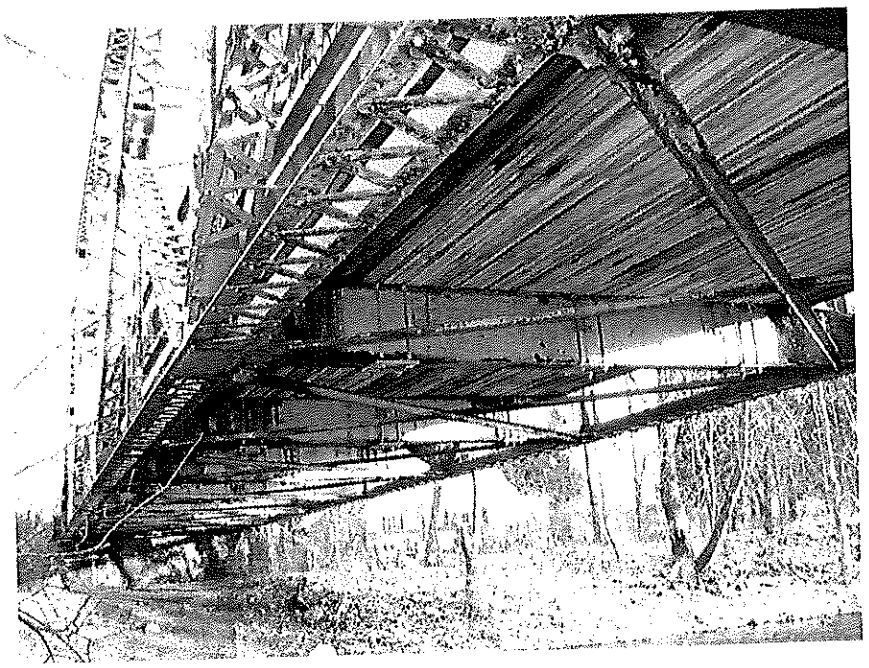

Plate 11 Oblique View from Northeast to Southwest below the Deck of the Collingwood Street Bridge showing Heavy Corrosion of Supporting Members

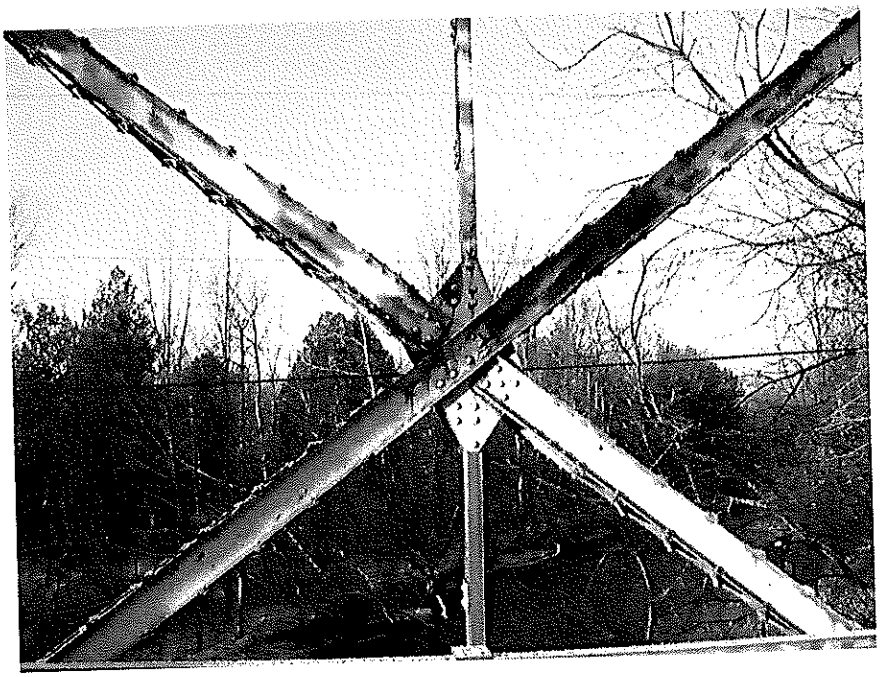

Plate 12 View to the West from the Midpoint Centreline of the Collingwood Street Bridge Showing Superstructure Detail and Corrosion

Plate 13 View of the Pattern of Construction of the Superstructure to the South from the North Edge of Collingwood Street Bridge

AECOM

Appendix E

Replacement of Collingwood Street Bridge (Structure No. 000141) on Collingwood Street over the Mad River
Municipal Class Environmental Assessment

- Public Comments
- Review Agency Comments

Wills, Peter

From: Scruton, Julie [Julie.Scruton@simcoe.ca]
Sent: November 9, 2009 9:28 AM
To: Wills, Peter
Subject: FW: Collingwood Street Bridge

Julie Scruton, P.Eng.
Project Engineer
County of Simcoe, Transportation & Engineering
1110 Highway 26, Midhurst, Ontario L0L 1X0
Phone: 705-726-9300 Ext. 1176 Fax 705-727-7984
Cell: 705-795-0787
E-mail: Julie.Scruton@simcoe.ca
simcoe.ca

From: Scruton, Julie
Sent: Monday, November 09, 2009 9:26 AM
To: 'Barry Burton'
Cc: peter.wills@simcoe.ca
Subject: RE: Collingwood Street Bridge

Barry,

Thank you for your comments. They will be noted as part of the Municipal Class Environmental Assessment process.

We are aware the Collingwood Street Bridge was built in 1913, as you have indicated. I am not familiar with the article you are referencing from the Creemore Echo. The County published a Notice of Study Commencement; however, to my knowledge there was no reference to the age of the structure.

If you could, please send a copy of the article you have referenced. I am interested in reading it.

We will keep you posted as the project progresses.

Regards,

Julie Scruton, P.Eng.
Project Engineer
County of Simcoe, Transportation & Engineering
1110 Highway 26, Midhurst, Ontario L0L 1X0
Phone: 705-726-9300 Ext. 1176 Fax 705-727-7984
Cell: 705-795-0787
E-mail: Julie.Scruton@simcoe.ca
simcoe.ca

From: Barry Burton [mailto:burtonmobile@sympatico.ca]
Sent: Sunday, November 08, 2009 8:52 PM
To: Scruton, Julie
Cc: peter.wills@simcoe.ca
Subject: Collingwood Street Bridge

County Of Simcoe
Transportation and Engineering Department
Attn: Julie Scruton
Attn: Peter Wills

I am writing as one of many concerned citzens of Creemore in regards to the future of the Collingwood Street bridge.

After reading the article in the Creemore Echo suggesting the bridge is between 70-80 years old, I took some photos of the corner stone which clearly indicates the age of the bidge to be 96 years old. (please see attached photos)

Inscription on Cornerstone
J Dumond Contractor
Brentwood
June 3 , 1913.

As you can see this bridge is another one of the historic structures that make our village one of the most unique and desired communities in the province. To remove and replace this bridge would be a detrement to Creemore and its residents.

I do realize the bridge is in need of some positive maintenance which is something we in Creemore would support, (but not its destruction).

It appears to me that the present condition of the bridge is the result of the number of trucks and commercial vehicles that exceed the 5 ton limit crossing the bridge daily. Stronger enforcement of the capacity limit on the bridge and some maintenance, would be far more economical and beneficial to all concerned.

At present time the vehicles traveling north bound from the south have to slow down to cross the bridge. The replacement of this bridge with a two lane concrete over pass would encourage drivers not to slow down but continue at an 80 KM speed while approaching two school zones less then 500 meters to the north .

I respectfully request to be kept informed about meetings and any findings of your study, so that we may review and comment on them.

I thank you in advance for your co-operation and await your response.

Barry Burton
26 Edward Street West
Creemore Ontario

--

Wills, Peter

From: Scruton, Julie [Julie.Scruton@simcoe.ca]
Sent: November 18, 2009 12:47 PM
To: Barry Burton
Cc: Wills, Peter
Subject: RE: Creemore Bridge
Attachments: Creemore Echo Bridge.pdf

Barry,

Thank you for the article; I had not been aware of this article.

I do not agree with your statement, that from this article, many residents want this bridge to stay. I have spoken with a few local residents that have expressed their desire to maintain the existing bridge if possible.

The Collingwood Street Bridge is in the County's bridge program as requiring action. The County has contracted AECOM to commence a Municipal Class Environmental Assessment (MCEA) study to define the problem and develop alternative solutions to the problem. The bridge is in a state of needing extensive repair. Alternative solutions will include various rehabilitation programs as well as replacement structures. As part of this study, a natural and cultural heritage assessment including an archaeological investigation will be completed. The NVCA will also be consulted for their input. AECOM will review the current road and bridge design guidelines / manuals to determine what safety and structural deficiencies are present. The study will also look at costing of the options as well as future maintenance requirements and life cycle costing. The study results will produce the preferred solution to be undertaken at this site.

The County is responsible for providing a safe water crossing to the traveling public.

For your information, Collingwood Street is under the Town's jurisdiction and the bridge is under the County's jurisdiction.

If you have any further questions, please let me know.

Regards,

Julie Scruton, P.Eng.
Project Engineer
County of Simcoe, Transportation & Engineering
1110 Highway 26, Midhurst, Ontario L0L 1X0
Phone: 705-726-9300 Ext. 1176 Fax 705-727-7984
Cell: 705-795-0787
E-mail: Julie.Scruton@simcoe.ca
simcoe.ca

From: Barry Burton [mailto:burtonmobile@sympatico.ca]
Sent: Wednesday, November 11, 2009 2:49 PM
To: Scruton, Julie
Subject: Creemore Bridge

Hello Julie

Thank you for your response of the other day, as you requested I am enclosing a copy of the article that appeared in the Creemore Echo on October 9, 2009

As you you can see by the ajoining article by Tim Armour, many of the residents here in Creemore want the bridge to stay.

I interpet this article as indicating that the replacement of the bridge has already been decided and only what type of structure to replace it with is the purpose of the study.

Can you please clarify this for me? Have decisions already been made to replace the bridge and what information do you hope to obtain from the study?

Also I would like to know if the Nottawasga Conservation Authority is involved or have been consulted in this study.

I thank you in advance for your co-operation and look forward to your reply.

Thanks
Barry Burton

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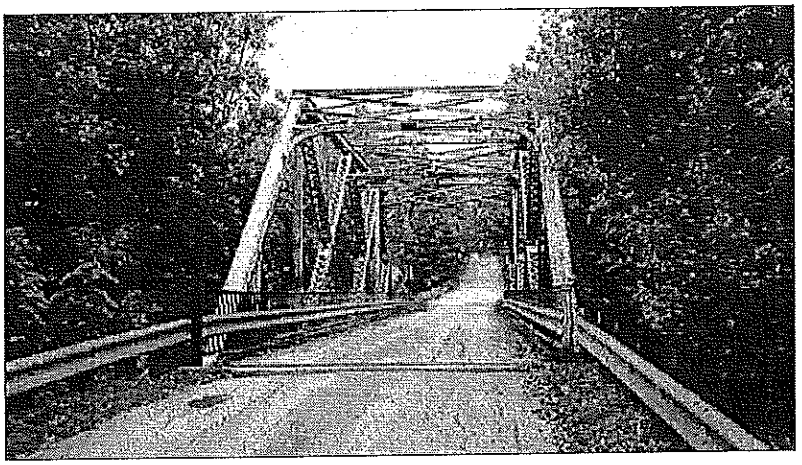


Collingwood St. bridge under review

by Craig Simpson

Based on agreements reached long before the creation of Clearview Township, the two bridges spanning the Mad River in Creemore are the responsibility of Simcoe County. Thus it is the County rather than the Township that is beginning the process to determine the future of the Collingwood Street Bridge.

An advertisement in the September 25 issue of the *Echo* announced the initiation of a Class Environmental Assessment for improvements, stating that the existing structure has been identified as "being deficient with respect to physical condition, geometric design and load carrying capacity."

"There is no safety issue here," stated Clearview Deputy Director of Public Works Steve Sage, "just the normal wear and tear experienced by all infrastructure. This bridge is probably between 70 and 80 years old, and I was actually involved in the last major repairs back in 1987-88." Sage did acknowledge that as extra precautions the County posted a 5 tonnes limit sign on the bridge this summer, and that school buses are now going around using the Caroline Street Bridge.

"We have not made any decisions and don't know what design will be chosen," said **Julie Scruton**, the County's project engineer in charge of this process. "We are considering all the options involved with both rehabilitation and replacement, including the heritage aspects of the steel truss construction." Scruton emphasized that comments from the public are welcome, and that the County will be holding a public information session sometime mid-next year. "Work will not begin until 2011 at the earliest," she declared.

A Bridge Too Far?

POET LAUREATE

Tim ARMOUR

There are two things in life that are sure things,
Just as sure as the moon wanes and waxes.
The first one is death for all earthlings,
And the second is life-sucking taxes!

On the road leading up to the graveyard,
One true thing has stood ironclad;
Five-score years or so stood as a safeguard.
It's that old iron bridge o'er the Mad.

How many loved ones have we followed
As they make that last trip o'er the river?
If it weren't for that bridge we'd be swallowed!
Just the thought makes my bones shake and shiver.

Now there's talk that the bridge needs replacement
With a new two-lane bridge of cement.
Well, I may stand accused as complacent,
But with that old bridge I'm content.

The status quo doesn't need changing.
That old bridge can stand yet awhile,
And one fact that I like as I'm aging,
Is that we go to the grave single file!

Wills, Peter

From: Scruton, Julie [Julie.Scruton@simcoe.ca]
Sent: November 17, 2010 1:37 PM
To: Wills, Peter
Subject: FW: Collingwood Street Bridge in Creemore - Public request for comments

Julie Scruton, P.Eng.
Project Engineer
County of Simcoe, Transportation & Engineering
1110 Highway 26, Midhurst, Ontario L0L 1X0
Phone: 705-726-9300 Ext. 1176 Fax 705-727-7984
Cell: 705-795-0787
E-mail: Julie.Scruton@simcoe.ca
simcoe.ca

From: Eric Jelinski [mailto:eric_jelinski@sympatico.ca]
Sent: Wednesday, November 17, 2010 10:37 AM
To: Scruton, Julie; Customer Service; Knox, Glen; Ken Ferguson; 'Mayor Deputy Alicia Savage'; Patterson, Cal R.
Cc: Barry Burton; Christopher; Thom Paterson; brent@thenewfarm.ca
Subject: Collingwood Street Bridge in Creemore - Public request for comments

Sorry for being a bit late and hopefully no quick decisions have been made yet.. Here are my comments/concerns about the proposed demolition and widening of the Collingwood street bridge.

1) As we know, Collingwood Street starts at County Road 9 at the northerly edge of Creemore and proceeds south into the countryside south of Creemore. Collingwood Street is the access for a school, an arena, a legion hall, and several blocks of single family homes all along this stretch of the road leading to the bridge.
With respect to rebuilding/widening the bridge, traffic on this street I predict will increase in number and the speed of vehicles, and a concern for safety of residents and users of amenities along Collingwood Street. I contend that it is not necessary to turn Collingwood Street into a north-south arterial road as this may be a certain motivation. There are neighborhoods of concern who would be impacted by any of this.

2) This bridge is in the order of 100 years old and appears to be in good condition as it is in use with a 5 tonne limit, albeit it is one lane. What is needed is to do those things that will ensure longevity of the structure, ie. ensure moisture drainage and painting/zinc coating and or sacrificial anodes to prevent corrosion. The road to the south is gravel and winding hilly road leading only into some small farm, and estate residential areas. There is no major industry requiring large trucks. Any large trucks that do need to do south, already have alternate routes to get south of the bridge.
I stood there for over an hour taking pictures during mid day and while there was some traffic, there was no traffic jam to get across the one-lane bridge.

3) This bridge was built using technology of the day, ie. structural steel that is riveted. This technology preceded welding and modern cast concrete structures. There are very few bridges of this type remaining and therefore another reason for preservation of the technology of the day, just like many other museum articles. This may be used as a draw for tourism for Clearview/Simcoe. This bridge in its beautiful setting makes for part of why Clearview is a beautiful place to live. A new concrete bridge could never replace what we already got.

4) We need to preserve our cash flow and live within our means. I believe there are other more important things to spend money on instead of replacing this bridge. In order to refurbish this bridge, local contractors could be employed and provide local jobs. If a new bridge is to be built, the job would be tendered and I am concerned the job may go to non local people like for example the HUB at Stayner.

I trust that my comments would be considered. Thank you very much, Eric

Eric Jelinski
11450 County Road 10

RESPONSE TO REQUEST FOR PUBLIC COMMENT
to
COUNTY OF SIMCOE
REPLACEMENT OF COLLINGWOOD STREET BRIDGE
(STRUCTURE No. 000141)
ON COLLINGWOOD STREET over MAD RIVER
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
SCHEDULE 'B'
PRELIMINARY STUDY REPORT

Submitted by: T.D. Paterson
Date submitted: November 16, 2010

Preamble

As the County of Simcoe is considering improvements to the Collingwood Street Bridge and has invited comments on the AECOM Preliminary Study Report, please consider my comments below as this project proceeds through the planning, construction and design stages.

Given that this preliminary study report recommends that the County replace the existing structure, I would ask that further consideration be given to its retention and rehabilitation on the basis that the Collingwood Street Bridge is a significant local heritage asset.

3. Alternative Solutions

While there is no question the existing structure has deficiencies that need to be addressed to improve public safety, any alternative solutions should also take into account its present day usage. This structure is no longer the southern gateway into Creemore it once was when first built. The Collingwood Street Bridge currently provides limited access northbound into Creemore from a short section of a Township of Clearview gravel road that dead ends approximately 3.6km to the south and that services less than 40 residences. The bridge also provides indirect alternative access to one other sparsely populated rural Township road, Nottawasaga Sideroad 6/7. Approximately 0.9km south of the bridge, in a steep section of sub-standard vertical road geometry, Collingwood Street drops down into a river valley spanned by a deteriorating concrete box culvert. Currently there are no plans by the Township to rehabilitate this section of Collingwood Street. Any solution for the Collingwood Street Bridge and its planned future usage should consider the state of its approach roadways.

Given the current condition of this section of roadway and the relatively low volume of traffic usage, a solution based on safely accommodating lower traffic capacities and speeds may warrant more creative, comprehensive and less expensive overall solutions than that being considered in this preliminary report.

Regardless of the final solution, the addition of a pedestrian walkway to the bridge structure would be in keeping with current emerging active transportation community planning policies.

3.1.2 Rehabilitating Existing Structure

Considering the expected usage of the structure and the condition of the approach roadways, deficiencies such as reduced speed limits and single lane access may be considered reasonable compromises considering the high costs of the replacement alternative. I would ask that more work be done to find rehabilitation solutions that increase the load carrying capacity and the extended service life.

3.1.3 Replace Existing Structure

The existing vertical geometry of the northbound approach roadway and the slower posted local speed limits of the southbound approach roadways may not support increased traffic and speeds capable over a new bridge structure.

Should the final decision be to replace the existing structure, consideration should be given to incorporating salvaged elements of the through truss superstructure into the aesthetic design of the new structure.

3.2 Environmental Impacts

The Cultural Heritage Report, while not assessing the existing bridge as culturally significant under current applicable criteria, it did acknowledge that "the bridge may yet be of great significance... to a local community".

APPENDIX C
Cultural Heritage Report

3.0 Cultural Heritage Evaluation

Given that the Ministry of Culture is developing a separate Ontario Heritage Bridge Guideline (OHBG) for municipally owned bridges, and considering that County of Simcoe funding priorities may defer this proposed project beyond the current planned 2012 start date, consideration should be given to re-evaluating the cultural heritage significance of this structure under these new municipal OHBG criteria.

4.0 HERITAGE IMPACT ASSESSMENT

While the cultural assessment resulted in the existing structure not being evaluated as a provincially significant heritage feature, the heritage assessment consultant did recommend the the structure be dismantled and retained for re-use. Conservation option (g) recommended the salvage and incorporation of the superstructure into the design of the new structure.

This recommendation should be given consideration as an alternative heritage preservation option.

Final Summary Comments

These comments above all recognize the primacy of public safety and the responsibility the County has towards efficient expenditure of limited public funds. Solutions that achieve these primary objectives should also endeavour to preserve those natural and cultural heritage assets that best reflect the heritage of communities we seek to continually renew.

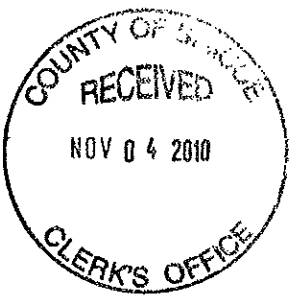
I look forward to reviewing creative solutions that combine the need to upgrade our necessary infrastructure and to serve the comprehensive community interest in which they are installed. I encourage the County and their agents and the Township to continue to consult with the the public directly affected and those interested in preserving its history.

I ask that that you keep me informed throughout the ongoing process.

T.D. Paterson
Councillor, Clearview Township
(705) 466-6321

Ron J.H.-
J.S.-

Russell & Jeanette Poste
PO Box 2005
3635 Collingwood Street South
Creemore, ON L0M 1G0



October 30, 2010

Re: Collingwood Street Bridge. 000141 Replacement

County of Simcoe Administrative Centre
Clerk's Office
1110 Highway 26
Midhurst, ON L0L 1X0

To Whom It May Concern:

We have been resident at the captioned address for the past 29 years. Based on one trip each per day, we estimate that we have crossed the subject bridge in excess of 40,000 times. We believe this makes us well qualified to comment on the practical usage of the bridge.

Issues are as follows:

1. When approaching the bridge westbound on Edward St., sightlines are impaired by foliage, the bridge structure and elevated nature of the bridge structure. A driver stopped on Edward Street, to make left hand turn onto the bridge cannot determine if a vehicle has entered the bridge northbound. Practice has been to accelerate quickly into the southbound lane of Collingwood St., then stop to determine if the bridge is clear. We have had a number of "close calls" when a northbound vehicle is exiting the bridge before we can clear the northbound lane.
2. The bridge has no pedestrian protection. It is common to encounter a pedestrian on the bridge. This is of special concern in the winter months when darkness prevents a driver from being aware of the pedestrian until their vehicle is on the bridge. Winter conditions limit the driver's ability to slow or take evasive action.
3. The bridge is at the bottom of a hill when proceeding northbound. Winter condition make it difficult to control a vehicle when another vehicle enters the bridge from Edward St. Expansion of the bridge to two lanes would remove the need to use excessive braking with potential loss of control.
4. There has been an increase in traffic on the bridge over the past 29 years. The construction of the "Purple Hills Lane" subdivision and additional new residences on Collingwood Street South has more that doubled the number of homes on the road. The improvement of Side Road 6/7 from a winter only road to an all season road also has increased traffic flow as northbound traffic on Conc. 5 South will often divert to Collingwood St in order to avoid the hillside curves on the 5th during the winter season.

We support replacement of the bridge with a two-lane structure with a pedestrian walkway separated from the road surface by a curb or barrier.

Yours truly

Russell Poste Jeanette Poste

RR1 Stayner Ont
L0M1S0
705-441-0151 cell
705-428-0659
www.ericjelinski.ca
eric_jelinski@sympatico.ca

----- Original Message -----
From: Barry Burton
To: Scruton, Julie
Sent: Tuesday, October 19, 2010 7:25 AM
Subject: Collingwood Street Bridge

Hello Julie

Thanks for your last e-mail and notification of the Bridge assesment. I have gone on the Simcoe County web site several times over the past week and cannot locate the Assesment document on the web site. Can you please forward a link or an electronic copy so that I may review this document.

I did find a copy of it at the Creemore Library but as you konw it is quite lenghthy
and needs to be reviewed in detail to grasp the understanding of it.

If there is not an electronic copy available I would be more than willing to pay a fee to obtain a copy from your office.

Please advise.
I thank you in advance for your co-operation.

Barry Burton

--

BARRY BURTON

26 Edward Street W.
Creemore, ON L0M 1G0
Home: 705-466-2718
Cell: 416-524-7764

November 12, 2010

County Of Simcoe
1110 Highway 26,
Midhurst, Ontario
L0L 1X0

ATTN: County Clerk's Office

RE: Replacement of Collingwood Street Bridge (Structure # 000141)
(Project # 6011976

I wish to make you aware that there are several residents of Creemore that wish to see the bridge restored rather than replaced.

This bridge has been such a historical part of Creemore for over 97 years . The Corner Stone foundation was set on June 3, 1913 by J. Dumond , Contractor, Brentwood. This engraved footing is still visible today. Too many of our historical structures are being demolished in the name of progress. It's time to stop such destruction and preserve the architectural structures that are such a significant part of our past.

There are several hundred graves in the Creemore Cemetary, who's departed souls have all crossed that bridge on their final journey. I am talking about the forefathers and families that built the village of Creemore into one of the greatest villages in Ontario today. Let's not forget the numerous wedding and event photographs that have taken place on this bridge.

Considering the fact that the Bridge's Centennial is less than three years away, doesn't it make more sense to restore the bridge and declare it as a historical structure and celebrate the centennial of the bridge. Just think of the celebration that could be planned around this event and the tourist dollars that could be attracted.

There is a bridge structure located on Hedge Road in Geoginia Township on the east side of Lake Simcoe that is similar to ours and it was restored and is now declared a Heritage Bridge under the Heritage Act and is properly signed indicating the same. I suggest that the county of Simcoe could do the same.

Let's look at the facts of today, there are less than forty homes south of the bridge which leads to a dead end. There is one side road 6 & 7 of Nottawasaga which runs to the west off Collingwood Street which only has 3 houses between Collingwood St. and Concession 5. All these houses can be accessed by heavy from Caroline St. / 5th Concession. The existing structure continues to allow personal vehicle traffic.

At present time the vehicles traveling north bound from the south, have to slow down to cross the bridge. The replacement of this bridge with a two lane concrete over pass would encourage drivers not to slow down but continue at an 80 km/hr speed while approaching two 40 km/hr school zones less than 500 meters to the north. Also considering the Edward Street intersection at the very north end of the bridge creates a potential hazard. To replace the bridge with a two lane concrete overpass is an accident waiting to happen.

RE: Replacement of Collingwood Street Bridge
(Structure # 000141) (Project # 6011976

We also need to look at the fact that there are several heavy trucks (over 5 tons) crossing this bridge daily. There is no need for this to happen as the areas south of the bridge can all be accessed by the Caroline Street overpass. Enforcement of the 5 ton limit is a much easier solution than replacing the bridge.

I have reviewed the assessment completed by AECOM and in their report they state the concrete footings and load bearing foundations are in structurally sound condition and if a new deck & barriers are installed the expected life would be seventy five years

I am aware of the repairs that are required to the steel superstructure and I believe these repairs could be carried out at a much lesser cost and still maintain the heritage value of the bridge.

At this time, residents of Creemore who wish to keep the existing bridge and have it restored, have signed the attached petition to present a motion in council to have the bridge declared a historical structure under the Heritage Act.

I respectfully request the County of Simcoe review their decision regarding the Collingwood Street Bridge.

Sincerely,

Barry Burton

192 Signatures

PETITION

TO the Township of Clearview and the County of Simcoe

WHEREAS the Collingwood Street Bridge built in 1913 located in the Township of Clearview, in the County of Simcoe is scheduled for destruction and replacement.

We the undersigned petition the Township of Clearview and the County Of Simcoe as follows: -

To have the bridge declared to have significant historical value under the heritage act, protecting it from destruction and to have the bridge restored while maintaining the existing structure.

Name (printed)	Address (printed)	Signature
A Burke	Barrie, Ont	
Gordon Grant	Goderich	
[illegible]	[illegible]	
[illegible]	Creemore	
G. McMillan	BOGNOR	
[illegible]	Collingwood & Creemore	
R. Siekierko	Mulmur	
Jim Reed	Orton	
H. Croton	Anlaw	
K. Martin	Cambridge	
M. MANNING	MISSISSAUGA	
Bill Carter	Creemore	
[illegible] ANGELL	TORONTO	
B. MacIver	Mulmur	
Glen Beatty	Stouffville	
Krista Beatty	Stouffville	

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Name (printed)	Address (printed)	Signature
Brett Mcindoo	80 Churchill, Wasaga [illegible]	[illegible]
Holly Durnford	19 Elizabeth St	[illegible]
[illegible] Kramol[illegible]	Mansfield Skiways	[illegible]
Mary Dodd	(lived beside bridge) 27 Fairway Cres. W.B.	Mary Dodd
Victor Dodd	"	Victor Dodd
Tessa Boake	113 Mill St Creemore	[illegible]
S. McDonald	Dunedin	[illegible]
J. Haigh[illegible]	Lavender	[illegible]
J. Ross	Creemore	[illegible]
[illegible] Ross	Creemore	[illegible]
A. Lombard	[illegible] Collingwood St	[illegible]
M Meneley	1835 [illegible]	[illegible]
Daisy	2084 Shore Lane	[illegible]
Deanne	2084 Shore Lane	[illegible]
Bruce	2084 Shore Lane	Bruce
LORRAINE BURTON	26 EDWARD ST W Creemore	Lorraine Burton

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Name (printed)	Address (printed)	Signature
Angela Hollena	Alliston, Ont.	Angela Hollena
Katrina Lawson	Barrie, ont	
Tan Lawson	faversham	
Janet Horsnell	Hamilton, Ont.	
MALCOLM HORSNELL	HAMILTON, ONT.	
PHILIP PATRICK	HORNINGS MILLS, ON	
Rita Jonaitis	New Lowell	
[illegible]	Creemore Ont	
Richard Gladu	Creemore On.	
[illegible]	[illegible]	
[illegible]	Creemore	
[illegible]	[illegible]	
Nadene Glean	Williamsford, Ont	
Marion Gordon	211 Mary Str.	

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Name (printed)	Address (printed)	Signature
MICHAEL JONES	BARRIE	
Shelly Hackley-Jones	Barrie	S Jones
Mark Fish	Collingwood	Mark Fish
ROBIN REGIS	OAKVILLE	
Charlie	millstreet apt	
Erin Hoog	Creemore	
MICHAEL MORREY	CREEMORE	
BRAD HUTCHINSON	CREEMORE	
[illegible]	CREEMORE	
Nick Silvares	Creemore	
Jo Ayres	Creemore	

9

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Name (printed)	Address (printed)	Signature
Cheryl MacLaurin	Creemore	
Wanda Manning	"	
Michelyn	Creemore	
M St Clair	Dunlop	
KEN WRIGHT	EVERETT	
Bill Murphy	Oakville	

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Name (printed)	Address (printed)	Signature
Carol Sperandeo	141 Mill St Crmr.	[signature]
Lesley Mack	Creemore	[signature]
Laurie PILKEY	CREEMORE	[signature]
Rick Craddock	Stayner	[signature]
Bill LOUSTIN	Nottawa ...	[signature]
[illegible]	New Lowell	[signature]
Don TRAFFORD	New Lowell	[signature]
[illegible] TRAFFORD	New Lowell	[signature]
[illegible]	New Lowell	[signature]
DAVE [illegible]	RR 2 New Lowell	
Andrew [illegible]ood	Toronto	[signature]
Ashley Lesperance	114 Mill St Creemore	[signature]
Amy Purkis	5 Jardine Creemore	[signature]
Wade ELJNES	Lisle	[signature]
Sabrina MacDonald	33 Wellington Creemore	[signature]
Michael Hanson	Box 17 Bradford	[signature]
KEVIN MARTIN	1755 RATHBURN Rd	[signature]

MISS. ONT.

PETITION

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Name (printed)	Address (printed)	Signature
GLORIA DUNN	[illegible]	[signature]
[illegible]	[illegible]	[signature]
BETTY TATE	[illegible]	[signature]
DARLENE A. VOLL	512-172 EIGHTH ST. COLLINGWOOD ONT. L9Y 4T2	[signature]
E. VINK	TORONTO	[signature]
[illegible]	[illegible]	[signature]
[illegible]	[illegible]	[signature]
Suzanne Boughton	256 Birch St. Collingwood	[signature]
STEPHEN [illegible]	[illegible]	[signature]
[illegible]	[illegible]	[signature]
[illegible]	[illegible]	[signature]
[illegible]	[illegible]	[signature]
Peyton Hughson	144 Collingwood St.	[signature]
Bryce Farley	114 Mill St.	[signature]
Lynn Wood	9 Purple Hill Lane	[signature]
ARLENE ESTABROOKS	" "	[signature]
ERIC JELINSKI	11450 [illegible]	[signature]

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Name (printed)	Address (printed)	Signature
SARA Whitesides	31 Walnut	
Dorothy Shropshire	20 Wellington St W	D. Shropshire
Ruth Boake	136 Mill St.	Ruth Boake
DON BOAKE	44 GEORGE ST	
MAE BOAKE	42 FRANCIS STW.	Mae Boake
Carol Speranda	141 Mill St.	
Steve Speranda	141 Mill st.	
JOHN W BOAKE	42 FRANCIS ST W	
AUSTIN BOAKE	7637 6/7 SIDE RD.	
Markie Boake	7637 6/7 SDRd	
Amalia Acs	44 Pine Ave	
Don Boake	44 George st	
BJ Boake	44 George st.	Boake
Rita Jomaitis	6258 6TH Con.	
NANCY WINDER	RR#2 ORTON	Nancy Winder
H. ELSTON	6834 16/19 SR	
Greg Young	RR4	

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Name (printed)	Address (printed)	Signature
H. COULTER	Creemore	H Coulter
G Arsenault	Creemore	G Arsenault
H. Weatherall	Creemore	H. Weatherall
C. Rensch	Creemore	C. Rensch
M WINTON	New Lowell	M Winton
JIM [illegible]	MIDLAND	[illegible]
KIE ROAD	COLLINGWOOD	[illegible]
M. SYKES	COLLINGWOOD	M. Sykes
LYNN MILLS	Collingwood	Lynn Mills
DOREEN CAMERON	Collingwood	D. Cameron
Fran Ricketts	Collingwood	F Ricketts
Maddie Jamman	Francis	Maddie Jamman
Emily Greer	Creemore	Emily Greer
BETTY COULTER	Creemore	Betty Coulter
Janet W K	Creemore	[illegible]
[illegible]	Honeywood	[illegible]
Deborah Kohler	St. Catharines	Deborah Kohler

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Name (printed)	Address (printed)	Signature
William Cross	141	
Gerrit Meeser	2989 Airport	
Tim Kuiper	93547 Nissouri RD	
Max Kuiper	7020 2 Con	
James Canill	2 George St.	
Leanne Reed	175 Library St	
Bill George	owen Sound	
Ethan Marcus	21 Jardine Crescent	
Pam Symons	Richmond Hill	
John Wilson	40 Collingwood St.	
Liam Wilson	"	
E Wilson	"	
Sidney Wilson	"	
Tim Wilson	"	
Clare Davenport	"	
J Davenport	"	
Charlie	142 mill St	

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Name (printed)	Address (printed)	Signature
Amy Stamp	38 Jardine Cres	
Alanna Davenport	37 wellington E.	
Olivia Oake	RR2 Com IMO	
Emma McIntyre	77 Edwards st.	
	23 Jane [illegible] Cres	
M. Layte	1 Locke Ave Lomiso	
Monica Bruce	RR1 Stayner	
Jesse Bruce	RR1 Stayner	
C. Layte	1 Locke Ave Stayner	
MARY WILKINSON	5 Davis Dr Creemore	
Arie Vandersteft	Theme Park Rd Wasaga	
Tini Vandersteft	" " "	
JOHN MANTEL	Theme Park Dr Wasaga	
WILMA MANTEL	" " "	
LAURIE GEE	GLEN HURON	
[illegible]	LISLE	
[illegible]	LISLE	

Kelly Dobson

Creemore

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Name (printed)	Address (printed)	Signature
ROBERT S. McLEAN	56 Collingwood St	
M. HOLLSTEIN	56 Collingwood St.	
COLIN HUISMANS	3126 5TH CONC.	
JAMES BRUER	3437 5TH CONC.	
TOM LEMMON	3 GEORGE ST	
JOHN HILLIER	196 EDWARD E.	
Mernie J. Hill	196 EDWARD E	
DARLENE LEMMON	Creemore	
ANDREA HERRNSDORF	8 KING ST CREEMORE	
Elizabeth Laughlin	3478 Collingwood St.	
Catherine Rundell	2 Purple Hill Lane	
	79 Mayor.	
MATTHEW GLENN	289 BEECH ST.	
Erin Hickling	73 Second Ave.	
OLIVER BOTTIN	224 Melita Cir. Road	
BERNICE LYNE	HAMILTON. ON	

Wills, Peter

From: Hunter, Jim [Jim.Hunter@simcoe.ca]
Sent: August 16, 2011 3:02 PM
To: Scruton, Julie; Wills, Peter
Subject: Collingwood Street Bridge

Pete and Julie,

Thom Patterson would like to meet with Julie , myself and Yourself (Pete) to present some information

On the Collingwood Street Bridge.

He would like to meet on the morning of Friday, August 26, 2011.

Please confirm if you are available on next Friday before we commit to this meeting date.

Thanks Pete, I will look forward to hearing back from you.

Jim

James E. Hunter, M.B.A., P. Eng.,
Director, Transportation Construction,
Transportation and Engineering,
Design & Construction,
County of Simcoe,
1110 Highway 26,
Midhurst, Ontario. L0L 1X0
705 - 726 - 9300 ext 1265 FAX 705 - 727 - 7984
Cell Phone 705 - 795 - 3900

Wills, Peter

From: Councillor Thom Paterson [tpaterson@clearview.ca]
Sent: September 15, 2011 7:49 AM
To: Scruton, Julie
Cc: Hunter, Jim; Wills, Peter
Subject: Re: Collingwood Street Bridge

Julie

There will be three of us attending. We would like to show a brief presentation from a PC. Can you arrange to have a projector/screen available?

I've told the other to go to the main reception desk to get direction to the meeting room under your's or Jim's name.

Thanks again,

Thom

Sent from my iPad

On 2011-09-14, at 8:51 AM, "Scruton, Julie" <Julie.Scruton@simcoe.ca> wrote:

> Thom,
>
> We can meet with the group on Friday from 3:00 pm to 4:00 pm.
>
> I will reserve a boardroom for the meeting at the County Administration Centre in Midhurst.
>
>
> Regards,
>
> Julie Scruton, P.Eng.
> Project Engineer
> County of Simcoe, Transportation & Engineering
> 1110 Highway 26, Midhurst, Ontario L0L 1X0
> Phone: 705-726-9300 Ext. 1176 Fax 705-727-7984
> Cell: 705-795-0787
> E-mail: Julie.Scruton@simcoe.ca
> simcoe.ca
>
>
> -----Original Message-----
> From: Councillor Thom Paterson [mailto:tpaterson@clearview.ca]
> Sent: Tuesday, September 13, 2011 3:31 AM
> To: Hunter, Jim
> Cc: Scruton, Julie
> Subject: Collingwood Street Bridge
>
> Jim
>
> The group is available to meet this Thursday morning or Friday
> afternoon.
>
> Would you please confirm your availability.

>
> Thom
>
> Sent from my iPad
>
> --
> This message has been scanned for viruses and dangerous content by
> VPNetworks MailScanner1, and is believed to be clean.
>

Wills, Peter

From: Scruton, Julie [Julie.Scruton@simcoe.ca]
Sent: September 16, 2011 1:43 PM
To: Councillor Thom Paterson
Cc: Hunter, Jim; Wills, Peter
Subject: RE: Collingwood Street Bridge Meeting

Thom,

Unfortunately we are not available to meet on Tuesday September 20th.

Perhaps we can reschedule the meeting to the following week of September 26th.

Please confirm the availability with your group and let us know when they would like to meet.

Regards,

Julie Scruton, P.Eng.
Project Engineer
County of Simcoe, Transportation & Engineering
1110 Highway 26, Midhurst, Ontario L0L 1X0
Phone: 705-726-9300 Ext. 1176 Fax 705-727-7984
Cell: 705-795-0787
E-mail: Julie.Scruton@simcoe.ca
simcoe.ca

-----Original Message-----
From: Councillor Thom Paterson [mailto:tpaterson@clearview.ca]
Sent: Thursday, September 15, 2011 9:47 AM
To: Scruton, Julie; Hunter, Jim
Subject: Collingwood Street Bridge Meeting

Julie, Jim

I have been informed that John Boote, our engineering advisor from Burnco Mfg, is now unable to attend on Friday. He is available early Tuesday, September 20th, say 9:00am or later afternoon, say 3:00pm.

He sends his apologies,

Can you accommodate this change?

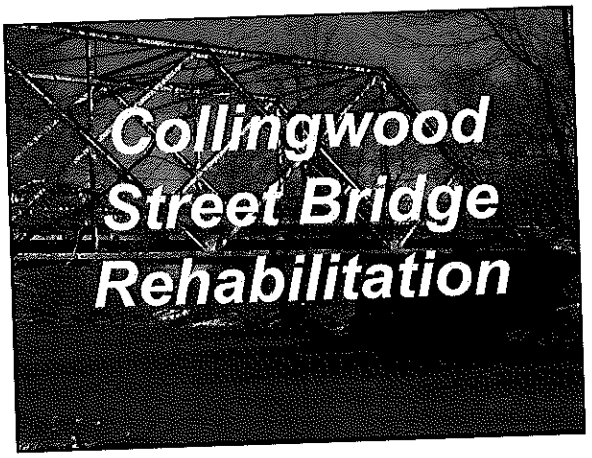
Thom

Sent from my iPad

--

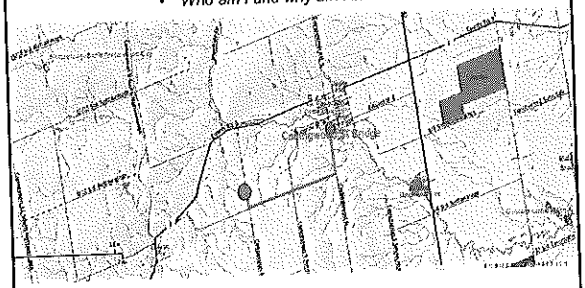
Wills, Peter

Subject:	Collingwood Street Bridge
Location:	County of Simcoe, Admin Centre - Communications Boardroom
Start:	Fri 07/10/2011 3:00 PM
End:	Fri 07/10/2011 4:30 PM
Show Time As:	Tentative
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Scruton, Julie



Collingwood Street Bridge Rehabilitation

- *Who am I and why am I involved?*



Collingwood Street Bridge Rehabilitation

John Boote, P.Eng.

Structural Engineer

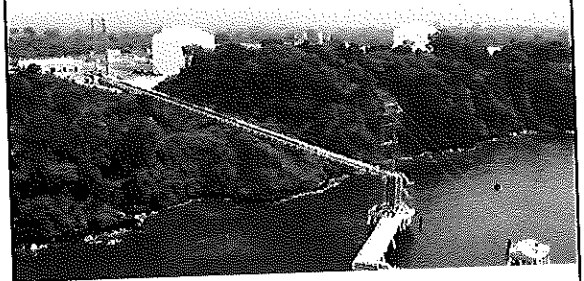
31 Years Experience in Structural Steel

General Manager, Structural Steel, Burnco Mfg. Inc

Involved in numerous Bridge Project - New and Rehabilitations

Collingwood Street Bridge Rehabilitation

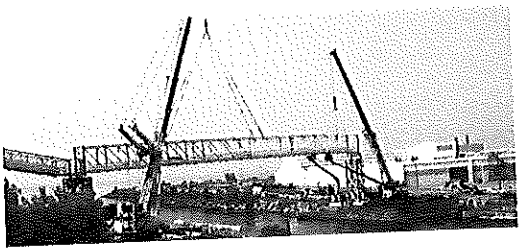
Collingwood Street Bridge Rehabilitation



Collingwood Street Bridge Rehabilitation

Collingwood Street Bridge Rehabilitation

Collingwood Street Bridge Rehabilitation

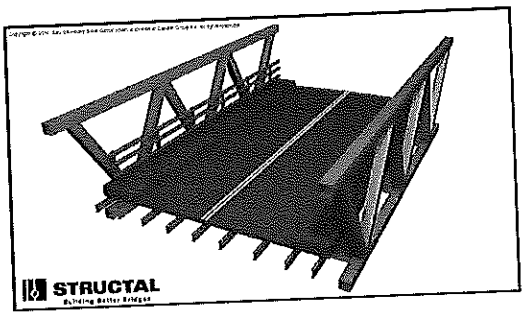


Collingwood Street Bridge Rehabilitation

Several Rehabilitation Options

One Option - Orthotropic Deck Replacement
Light weight
Durable
Rapid Installation
Cost Effective

Collingwood Street Bridge Rehabilitation

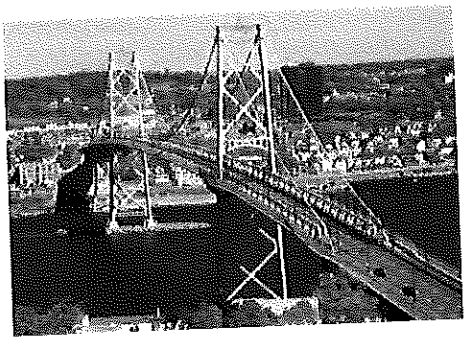


Collingwood Street Bridge Rehabilitation

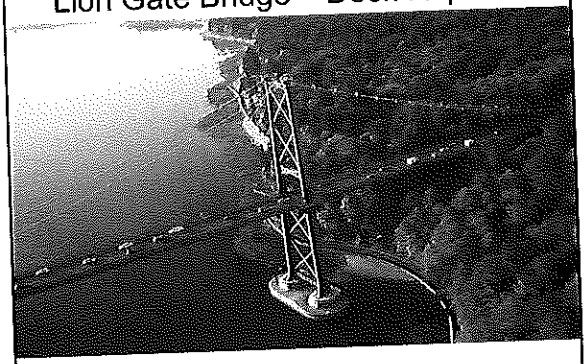
- **Cost Effective**

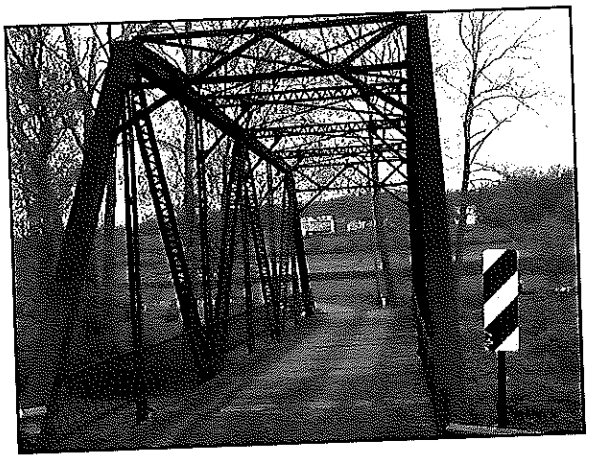
Cost Analysis	$250,000
Deck Replacement: (68'x 20' @ $125)	$ 50,000
1 Side walk: (68'x5 @ $100	$150,000
Floor Beam & Lateral Bracing Replacement: 25Ton	$ 30,000
Remove and Depose of Existing Deck	$ 50,000
Install new Deck	$100,000
Misc. Repairs/Reinforcement to Retained Structure (Trusses & Cross Braces)	$200,000
Clean & Paint Retained Trusses & Braces	$ 20,000
New Bearings	$100,000
Repairs to Abutments (Uneducated guess)	$100,000
Misc.	
Total Construction Costs	$1,050,000

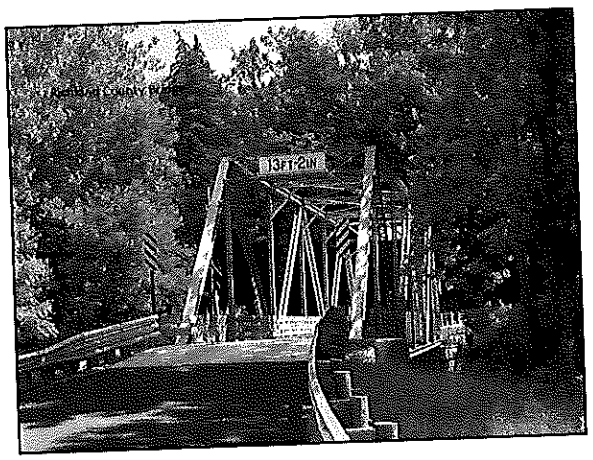
Halifax – Deck Replaced



Lion Gate Bridge – Deck Replace







Hartman Bridge

Decorative Guard Rail Options

Collingwood Street Bridge Rehabilitation

McDonald, David (Barrie)

From: Wills, Peter
Sent: Friday, June 11, 2010 3:05 PM
To: Thomas, Erica
Cc: Spacek, Holly; julie.scruton@county.simcoe.on.ca; Allen, Cathy
Subject: RE: Collingwood St Bridge

Ms. Thomas,

I appreciate your interest in the Collingwood Street Bridge project. At this time we haven't started the detail design yet and the EA has not been finalized. After the EA is completed and we receive instruction from the County with regards to the replacement or rehabilitation of the bridge we will commence detail design. If the bridge is replaced there will be a sidewalk crossing the bridge. The project is currently scheduled for construction in the spring of 2011 although this will depend on council approval after tender prices are received. Once a contractor has been awarded the project a more detailed schedule will be available.

I hope that this answers your questions. If you have any other questions please feel free to contact me.

Regards,

Pete Wills, P.Eng.
Senior Project Manager / Senior Structural Engineer, Design
D: 705.721.9222 Ext. 228
Peter.Wills@aecom.com

AECOM
10 Checkley Street, Barrie, ON L4N 1W1
T 705.721.9222 F 705.734.0764
www.aecom.com

From: Thomas, Erica [mailto:elthomas@scstc.ca]
Sent: June 10, 2010 10:55 AM
To: Wills, Peter
Cc: Spacek, Holly; julie.scruton@county.simcoe.on.ca; Allen, Cathy
Subject: Collingwood St Bridge

June 10,2010

AECOM Canada Ltd
10 Checkley St.
Barrie, Ontario
L4N 1W1

Attention: Mr Peter Wills
Senior Project Manager

RE: Municipal Class Environmental Assessment
County of Simcoe, Collingwood Street Bridge

Dear Peter Wills,

The Simcoe County Student Transportation Consortium has received your letter dated May 27th, 2010. We are currently not transporting any students over the exisiting bridge because of the decreased weight limits. The proposed new bridge is of interest to us, however, as the community south of the bridge is within the 1.6km walk distance of the elementary schools in Creemore and we are interested in learning whether the new bridge will have sidewalks for students to use for their walk to school. We are also interested in the timeline for construction as the current detour for buses to go around this bridge is considerable.

Sincerely,

Erica Thomas,

Transportation Officer,
Simcoe County Student Transportation Consortium,

566 Bryne Drive,
Barrie, Ont.
L4N 9P6

tel. (705) 733-8965 ext 106
fax. (705) 733-0198
e-mail elthomas@scstc.ca

County of Simcoe
Paramedic Services
1110 Highway 26,
Midhurst, Ontario L0L 1X0

Main Line (705) 726 9300
Toll Free 1 866 893 9300
Fax (705) 722 6601
Web: simcoe.ca

PARAMEDIC SERVICES

June 25, 2010

Mr. Peter Wills, P.Eng
Senior Project Director
AECOM Canada Ltd.
10 Checkley Street
Barrie, ON. L4N 1W1

Re: County of Simcoe, Collingwood Street Bridge
Municipal Class Environmental Assessment Comments

Dear Mr. Wills:

Thank you for your letter of May 27, 2010 regarding the above project.

While we appreciate the anticipated improvements to the site of the Collingwood Street Bridge, it would be appreciated if, during the undertaking of construction to this vital area, AECOM Canada Ltd. would remain cognizant of the fact that the County of Simcoe Paramedics Services and other allied agencies require emergency vehicles to navigate this area, and would request that you keep one lane open for this purpose.

Should you have any questions regarding the above, I remain available to discuss this with you at your convenience.

Regards,

James Besley

James Besley
Planning & Development Supervisor, Paramedic Services

JB/cw

AECOM
10 Checkley Street
Barrie, ON, Canada L4N 1W1
www.aecom.com

705 721 9222 tel
705 734 0764 fax

June 29, 2010

Mr. James Besley
Planning and Development Supervisor
County of Simcoe, Paramedic Services
1110 Highway 26,
Midhurst, Ontario L0L 1X0

Dear Mr. Besley:

Project No: 60119766 113942

Regarding: County of Simcoe, Collingwood Street Bridge
Municipal Class Environmental Assessment Comments

We have received your letter of June 25, 2010, regarding the closure of the Collingwood Street Bridge.

We understand your concerns and unfortunately given that the existing bridge is a narrow single lane bridge on a crumbling foundation, it is not possible to keep one lane open. We will however keep the construction period as short as possible to minimize the disruption of emergency vehicles.

A planned detour route will be developed in conjunction with the County for use during the construction period.

If we can be of any further assistance, please contact the undersigned.

Sincerely,
AECOM Canada Ltd.

James Wallace, P. Eng.

JW:ld
Encl.

c.c. Julie Scruton P. Eng. Project Engineer, County of Simcoe

Ministry of Aboriginal Affairs

160 Bloor St. East, 9th Floor
Toronto, ON M7A 2E6
Tel: (416) 326-4740
Fax: (416) 325-1066
www.aboriginalaffairs.gov.on.ca

Ministère des Affaires Autochtones

160, rue Bloor Est, 9e étage
Toronto ON M7A 2E6
Tél. : (416) 326-4740
Téléc. : (416) 325-1066
www.aboriginalaffairs.gov.on.ca

Ontario

Reference: 419

Peter Willis
Senior Project Manager
AECOM
10 Checkley Street
Barrie, ON, Canada
L4N 1W1

Re: County of Simcoe, Collingwood Street Bridge Municipal Class EA Comments

Dear: Mr. Wills

Thank you for your inquiry dated May 27, 2010 regarding the above noted project.

The responsibilities of the Ministry of Aboriginal Affairs (MAA) include conducting land claim and related negotiations on behalf of the Province. MAA can provide you with information about land claims that have been submitted to the Ministry, are currently in active negotiations, or are being implemented. We can also advise as to whether there is any litigation with an Aboriginal community that may be relevant to your project.

You should also be aware that many First Nations and Métis communities either have or assert rights to hunt and fish in their traditional territories. These territories often include lands and waters outside of a First Nation reserve. As well, in some instances project work may affect archaeological and burial sites. Aboriginal communities with an interest in such sites may include communities other than those in the vicinity of the proposed project.

With respect to your project, we have reviewed the brief materials you have provided, and can advise that the project appears to be located in an area where First Nations may have existing or asserted rights that could be impacted by your project. Contact information is below:

Chippewas of Rama 5884 Rama Road, Suite 200 RAMA, Ontario L0K 1T0	Chief Sharon Stinson Henry (705) 325-3611 (Fax) 325-0879 chiefofmnjikaningfirstnations@mnjikaning.ca
Chippewas of Georgina Island R.R. #2, P.O. Box 12 SUTTON WEST, Ontario L0E 1R0	Chief Donna Big Canoe (705) 437-1337 (Fax) 437-4597 dbigcanoe@georginaisland.com

Beausoleil First Nation (Christian Island) 1 O-Gema Street Christian Island, CEDAR POINT, Ontario L0K 1C0	Chief Rodney Monague Jr. (705) 247-2051 (Fax) 247-2239 rodmonaguejr@chimnissing.ca

For your information, MAA is aware of Métis communities that have asserted rights near your project. Contact information is below:

Georgian Bay Métis Council 355 Cranston Crescent, P.O. Box 4, Midland, ON L4R 4K6	Allan Vallee, *President* T: 705-526-6335 F: 705-526-7537
Métis Nation of Ontario Head Office 500 Old St. Patrick Street, Unit D Ottawa, Ontario, K1N 9G4	Métis Consultation Unit Fax: (613) 725-4225

MAA is not the approval or regulatory authority for this project. To determine what consultation with Aboriginal communities may be required, please consider the information provided in this letter in light of the legislative, regulatory and policy framework for your project. Should you have any questions, please contact the appropriate ministry.

The Government of Canada sometimes receives claims that Ontario does not receive, or with which Ontario does not become involved. For information about possible claims in the area, MAA recommends the proponent contact the following federal contacts:

Ms. Janet Townson
A/ Claims Analyst, Ontario Team
Specific Claims Branch
Indian and Northern Affairs Canada
1310-10 Wellington St.
Gatineau, QC K1A 0H4
Tel: (819) 953-4667
Fax: (819) 997-9873

Mr. Sean Darcy
Manager
Assessment and Historical Research
Indian and Northern Affairs Canada
10 Wellington St.
Gatineau, QC K1A 0H4
Tel: (819) 997-8155
Fax: (819) 997-1366

For federal information on litigation contact:

Mr. Marc-André Millaire
Litigation Team Leader for Ontario
Litigation Management and Resolutions Branch
Indian and Northern Affairs Canada
10 Wellington St.
Gatineau, QC K1A 0H4
Tel: (819) 994-1947
Fax: (819) 953-1139

Additional details about your project or changes to it that suggest impacts beyond what you have provided to date may necessitate further consideration of which Aboriginal communities should be contacted. If you think that further consideration may be required, please bring your inquiry to whatever government body oversees the regulatory process for your project.

You should also be aware that information upon which the above comments are based is subject to change. First Nation or Métis communities can make assertions at any time, and other developments can occur that might require additional communities to be notified.

Yours truly,

Heather Levecque
Manager, Consultation Unit
Aboriginal Relations and Ministry Partnerships Division

May 5, 2011

James Wallace, P.Eng.
AECOM,
10 Checkley Street
Barrie ON L4N 1W1

Dear Mr. Wallace:

Re: Collingwood Street Bridge Replacement
Class Environmental Assessment (EA)

NVCA staff has reviewed the information presented in:

- AECOM's Replacement of Collingwood Street Bridge on (Structure No.00041) on Collingwood Street over the Mad River Municipal Class Environmental Assessment Preliminary Study Report, dated August 2010, received April 12, 2011.

Ontario Regulation 172/06

The project involves replacement of the existing Collingwood Street bridge crossing over the Mad River. The proposed works are regulated pursuant to Ontario Regulation 172/06, the Authority's Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. Permit approval is required from NVCA prior to commencement of the project.

Fish Habitat and Department of Fisheries and Oceans (DFO):

Please note that NVCA has entered into a Level II Agreement with the Department of Fisheries and Oceans (DFO), which has established a streamlined approach to addressing issues pertaining to the Federal Fisheries Act. NVCA staff, in consultation with DFO staff, are responsible for co-coordinating the review of proposed works that may potentially result in the harmful alteration, disruption or destruction (HADD) of a fish habitat. The harmful alteration, disruption or destruction of fish habitat is prohibited unless authorized by DFO pursuant to Section 35(2) of the Fisheries Act. In keeping with DFO's "Policy for the Management of Fish Habitat", no authorizations are issued unless acceptable measures for habitat loss are developed and implemented by the proponent.

Review Comments

Review of this submission was based on requirements and guidelines set out in the MNR Natural Hazards Technical Guidelines and current NVCA guidelines available on our website, www.nvca.on.ca.

NOTTAWASAGA VALLEY CONSERVATION AUTHORITY Centre for Conservation
John Hix Conservation Administration Centre Tiffin Conservation Area 8195 8th Line Utopia, On L0M 1T0
Telephone: 705.424.1479 Fax: 705.424.2115 Web: www.nvca.on.ca Email: admin@nvca.on.ca

May 5, 2011
Re: Collingwood Street Bridge Replacement
Class Environmental Assessment (EA)

NVCA staff note from the EA study that the existing single lane bridge, constructed in 1913, has structural and physical deficiencies. Three options were reviewed through the EA process and include:

- Do nothing
- Rehabilitate existing structure
- Replace existing structure

Based on the assessment AECOM has recommended replacement of the existing structure as the preferred alternative. NVCA's technical staff noted the existing steel bridge has a small amount of the structure steel below the elevation of the road deck and even if flooding reaches the road deck, the steel structure will pass significant flows. Furthermore, that generally new concrete bridges have significant structure below the road deck and concrete railings prevent any conveyance of flood flows. As a result the proposed new structure should be designed (e.g. raised) to match the existing bridge's flood flow conveyance in order not to impact flooding.

On this basis, the preferred solution should be conditional on addressing the following:

- That at final design a hydraulic analysis be completed addressing the existing and proposed structure.
- The final design of the bridge be completed such that the structure does not impact existing flood levels either upstream of downstream of the bridge taking into account both the structure and side barriers.
- That while at a minimum the bridge should have the capacity to meet MTO Directive B100 the final bridge should also maintain existing depth flooding on the road or strive to improve the road such that it is flood free under Regulatory Flood conditions.
- That during the detailed design period of this project, all proposed methods to control sedimentation during construction and potential erosion following the completion of the project must be included. Erosion and sediment control will be an integral part of mitigation to prevent a HADD.

We trust that the above comments are of assistance and if you have any questions or concerns regarding the above comments please contact the undersigned or Glenn Switzer at extension 232.

Regards,

Chris Hibberd, MCIP, RPP
Director of Planning

Copy: MOE, Ms. Kimberley Peters
County of Simcoe, Ms. Julie Scruton

Ministry of the Environment

Environmental Assessment and Approvals Branch

2 St. Clair Avenue West
Floor 12A
Toronto ON M4V 1L5
Tel.: 416 314-8001
Fax: 416 314-8452

Ministère de l'Environnement

Direction des évaluations et des autorisations environnementales

2, avenue St. Clair Ouest
Étage 12A
Toronto ON M4V 1L5
Tél. : 416 314-8001
Téléc. : 416 314-8452

Ontario

ENV1283MC-2011-1100

APR 20 2011

Mr. Barry Burton
26 Edward Street West
Creemore, ON L0M 1G0

COPY

Dear Mr. Burton:

As you are aware, this Ministry had received your January 25, 2011 Part II Order request for the County of Simcoe's (County) proposed Collingwood Street Bridge Replacement (Project). I have provided below the updated status of this project.

On April 18, 2011, the Environmental Assessment and Approvals Branch (EAAB) received notice from the County that they are withdrawing their Notice of Completion to prepare further work for the Project. If the County wishes to proceed with the Project, it must demonstrate that the Class EA planning process has been followed and is clearly traceable in the Project File. This will require the Town to indicate how the appropriate steps in Phase 1 and Phase 2 of the Class EA planning process have been addressed. At that point, a new Notice of Completion will be re-issued, and a new 30-day public review period will commence.

If you have any questions regarding the requirements of the Class EA process, please contact staff at the Ministry of the Environment's Central Region Office, who may be reached at 416-326-4886. If you have any further questions regarding the Part II Order request, please contact Ms. Kim Peters of this branch at (416) 314-7754.

Thank you for your attention to this matter.

Yours sincerely,

M. Dixon
Manager, Client Services Section
Environmental Assessment and Approvals Branch

c: Julie Scruton, Project Engineer, County of Simcoe

RECEIVED

APR 27 2011

COUNTY OF SIMCOE
CORPORATE SERVICES DIVISION

Ministry of the Environment

Environmental Assessment and Approvals Branch

2 St. Clair Avenue West
Floor 12A
Toronto ON M4V 1L5
Tel.: 416 314-8001
Fax: 416 314-8452

Ministère de l'Environnement

Direction des évaluations et des autorisations environnementales

2, avenue St. Clair Ouest
Étage 12A
Toronto ON M4V 1L5
Tél. : 416 314-8001
Téléc. : 416 314-8452

Ontario

ENV1283MC-2011-1113

APR 2 0 2011

RECEIVED

APR 2 7 2011

COUNTY OF SIMCOE
CORPORATE SERVICES DIVISION

Ms. Julie Scruton, P. Eng.
Project Engineer
County of Simcoe, Transportation & Engineering
1110 Highway 26
Midhurst, ON L0L 1X0

Dear Ms. Scruton:

As you are aware, this ministry received a Part II Order request for the County of Simcoe's Collingwood Street Bridge Replacement Municipal Class EA (Project).

In follow up to your conversation with my staff, I am writing to confirm that the County of Simcoe has decided to withdraw the Notice of Completion for the Project. As you were made aware, there were a number of outstanding issues that were not addressed in the Project File, and my staff therefore concluded that the Project File is incomplete.

The documentation found in the Project File does not provide clear and complete documentation of the City's planning process. As stated in the Class EA for projects being planned as Schedule "B" projects:

> "The Project File shall be organized chronologically in such a way as to clearly demonstrate that the appropriate steps in Phases 1 and 2 have been followed and explain the following:
>
> - background to the project and earlier studies
> - the nature and extent of the problem or opportunity, to explain the source of the concern or issue and the need for a solution
> - description/inventory of the environment
> - the alternative solutions considered and the evaluation process followed to select the preferred solution
> - follow-up commitments, including and monitoring necessary
> - the public consultation program employed and how all concerns raised have been addressed.
>
> The Project File shall contain a complete record of all activities associated with the planning of the project and shall include:

- correspondence
- copies of notices, letters, bulletins, relating to public consultation
- memoranda to file explaining the proponent's rationale in the developing stages of the project
- copies of reports prepared by consultants and others."

Since the Project File lacks the necessary documentation, the Minister is not in a position to make a decision on the Part II Order request. If the County wishes to proceed with the Project, it must demonstrate that the Class EA planning process has been followed and is clearly traceable in the Project File. This will require the City to provide the documentation listed above and address how the appropriate steps in Phase 1 and Phase 2 of the Class EA planning process have been addressed. At that point, a new Notice of Completion will be re-issued, and a new 30-day public review period will commence.

If you have any questions regarding the requirements of the Class EA process, please contact staff at the ministry's Central Region Office, who may be reached at (416) 326-6700. If you have any further questions regarding the Part II Order request, please contact Kim Peters at (416) 314-7754.

Thank you for your attention to this matter.

Yours sincerely,

M. Dixon
Manager, Client Services Section
Environmental Assessment and Approvals Branch

c: Barry Burton, Part II Order Requester, Creemore, ON

County of Simcoe
Transportation and
Engineering
1110 Highway 26,
Midhurst, Ontario L0L 1X0

Main Line (705) 726 9300
Toll Free 1 866 893 9300
Fax (705) 727 7984
Web: simcoe.ca

TRANSPORTATION AND ENGINEERING

April 27, 2011

File: T16 – Collingwood Street Bridge

Via Email and Fax

Ms. Millicent Dixon
Manager – Client Services Section
Environmental Assessment and Approvals Branch
Ministry of the Environment
2 St.Clair Ave West, Floor 12A
Toronto, ON M4V 1L5

Dear Millicent:

Re: County of Simcoe, Collingwood Street Bridge (Str. 000141) Environmental Assessment

We respectfully request the withdrawal of our Notice of Study Completion for the Collingwood Street Bridge (Str. 000141) Environmental Assessment so that further work can be completed.

We will be issuing an addendum to our EA Study Report and will then re-issue a new Notice of Study Completion and provide a new 30-day public review period.

Concurrently, we will also make arrangements to meet with the Part II Requestor to try to resolve their concerns with this project and possibly avoid a repeat Part II Request.

Please contact the undersigned if any further information is required.

Sincerely,

Julie Scruton, P.Eng.
Project Engineer
Transportation and Engineering
County of Simcoe

c/c Jim Hunter, County of Simcoe
Pete Wills, AECOM
Kimberley Peters, MOE

X:\TRS\T - transportation services\T16 - Bridges\000141 COLLINGWOOD STREET BRIDGE\EA REPORT\jms April 27 2011 Letter to MOE .docx

Wills, Peter

From: Scruton, Julie [Julie.Scruton@simcoe.ca]
Sent: April 19, 2011 11:16 AM
To: Wills, Peter
Cc: Hunter, Jim
Subject: Fw: Collingwood St Bridge EA Recommendations

Pete,

Please review the email below from the MOE.

We would like to have a meeting with you to further discuss these concerns and additional investigations / engineering to supplement the EA report.

Please provide your availability for the next two weeks to meet.

Julie

From: Peters, Kimberley (ENE) [mailto:Peters.Kimberley@ontario.ca]
Sent: Tuesday, April 19, 2011 09:43 AM
To: Scruton, Julie
Subject: Collingwood St Bridge EA Recommendations

Hi Julie,

In follow up to our call yesterday, here are a few recommendations for additional work on the Collingwood St Bridge EA. These recommendations are based on our review of the Part II Order request.

Our review of the Cultural Heritage Report prepared by Amick Consultants Limited revealed that comments submitted by the Ministry of Culture and Tourism (MTC) have not been addressed. In a letter dated November 3, 2010 the MTC's Heritage Planner suggested that the heritage value of the bridge be assessed using Ontario Regulation 9/06 *Criteria for Determining Cultural Heritage Value or Interest*. Instead, the consultant has used the Ontario Heritage Bridge Program and the Ministry of Transportation's Ontario Heritage Bridge Guidelines. As expressed in the MTC letter, neither of these frameworks is appropriate for assessing the heritage value of municipally-owned bridges. The Ontario Regulation 9/06 criteria provide a broader framework for determining if the bridge is of local cultural heritage value or interest. Given that one of the concerns raised in the Part II Order request is that the bridge is indeed of historical value to the village of Creemore, the bridge should be assessed using Ontario Regulation 9/06. In addition, the letter from MTC should be included Appendix E: Public and Review Agency Comments.

The Part II Order request also raises concerns about the erosion, flooding and fisheries impacts that might occur as a result of the bridge replacement. These concerns are normally reviewed by the local Conservation Authority. As per Section A.3.6 of the *Municipal Class Environmental Assessment* document, mandatory contact must be made with review agencies (including Conservation Authorities) during the EA process. For Schedule B projects, these contacts points are Phase 2 (Alternative Solutions) and when the Notice of Completion is issued. Unfortunately, the Nottawasaga Valley Conservation Authority (NVCA) has indicated that they have not had the opportunity to review the project. Given that the bridge replacement will very likely require works within the area regulated by the NVCA, comments provided by NVCA could significantly impact the choice of the preferred alternative. Therefore, further consultation with the NVCA is strongly recommended. Comments and correspondence submitted by NVCA should also be made part of the public record.

I also recommend that the County consider a wider range of alternatives. For example, the option of closing the bridge to all vehicular traffic and upgrading other existing roads and crossings was not considered. If this is not a feasible option, justification should be given as to why.

Finally, the *Municipal Class Environmental Assessment* document recommends that documentation of the planning process include commitments to be carried out prior to or during project implementation. Although the study report contains several recommendations in this regard, there is no commitment to fulfilling them. For example, the MTC and the heritage consultants recommend that options for relocating the bridge be explored, or at a minimum, that a commemorative plaque be erected. Likewise, it is recommended that a Phase 2 archaeological site assessment be conducted prior to the start of construction. Similarly, commitments to obtain any necessary permits should also be made, including clearances from MTC (i.e., review of the archaeological report) and the NVCA.

Once you have completed further work on the EA, a new Notice of Completion should be issued followed by a 30 day public review period.

Thank you, Julie, for your cooperation in reviewing the Part II Order request.

With best regards,

Kim Peters
Project Evaluator
Environmental Assessment & Approvals Branch
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, ON M4V 1L5
Tel: 416-314-7754
peters.kimberley@ontario.ca

Ministry of Tourism and Culture

Culture Services Unit
Programs and Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Tel. 416 314-7265
Fax: 416 314-7175

Ministère du Tourisme et de la Culture

Unité des services culturels
Direction des programmes et des services
401, rue Bay, Bureau 1700
Toronto ON M7A 0A7
Tél. : 416 314-7265
Téléc. : 416 314-7175

Ontario

November 3, 2010 **(by e-mail only)**

James Wallace, Structural Engineer
AECOM
10 Checkley Street
Barrie, ON L4N 1W1

Dear Mr. Wallace

Project: Collingwood St. Bridge 000141 Replacement, Schedule "B", Municipal Class EA
Location: Village of Creemore, County of Simcoe

As part of the Environmental Assessment Act process, the Ministry of Tourism and Culture (MTC) has an interest in the conservation of cultural heritage resources including:

- Archaeological resources;
- Built heritage resources; and
- Cultural heritage landscapes.

On October 26, 2010, we received the Preliminary Study Report and Cultural Heritage Evaluation and Heritage Impact Assessment Reports for the above mentioned project.

We have reviewed these reports and have the following comments:

Report on the 2009 Cultural Heritage Evaluation and Heritage Impact Assessment of Collingwood Street Bridge (Bridge #000141) over the Mad River, Village of Creemore, County of Simcoe, prepared by AMICK Consultants Limited

General Comments:

The report uses both the Ministry of Transportation's (MTO) *Ontario Heritage Bridge Guidelines* (Draft 2008) and the *Ontario Heritage Bridge Program* (1991) to assess the cultural heritage value of the bridge. As noted, MTO's guideline is meant for provincially owned bridges, and is used to identify heritage bridges of *provincial* significance. As a result, it is not an appropriate evaluation model to use when assessing a municipally owned bridge. The *Ontario Heritage Bridge Program*, while it does provide an approach for evaluating municipal bridges, was originally intended to assist in making consistent decisions regarding the allocation of funds for the rehabilitation and conservation of heritage road bridges. This program no longer exists and the document has been largely surpassed by the Municipal Class EA process. With this in mind, MTC recommends that municipalities and consultants evaluate bridges under Ontario Regulation 9/06 *Criteria for determining cultural heritage value or interest,* issued under the Ontario Heritage Act. This will lend to greater consistency across the province in the evaluation of municipally owned bridges. Ultimately MTC is concerned that the report does not speak to whether or not the bridge is of *local* cultural heritage value or interest.

Under Section 3.0 Cultural Heritage Evaluation:

A stakeholder from the community has contacted both the Ministry and the County indicating that this bridge may be of cultural heritage value. However, this section does not include whether or not the local community was engaged in the evaluation process, or if there have been any discussions within the local community about the possibility of protecting and conserving cultural heritage value of this bridge.

Under Section 5.0 Conclusions & Recommendations:

MTC is in agreement with the preferred alternative put forward in the report: "It is recommended that this bridge be dismantled and re-used (page 20)." MTC would also encourage the county to consider erecting a plaque that identifies and commemorates the cultural heritage value of the structure.

Replacement of Collingwood Street Bridge (Structure No. 000141) on Collingwood Street over the Mad River Municipal Class Environmental Assessment Preliminary Study Report prepared by AECOM.

Under Section 3.2 Environmental Impacts:

This section indicates that a Stage 1 Archaeological Assessment has been completed for this project. As of November 3, 2010 the Ministry of Tourism and Culture has not received copies of this report. The **licensed archaeologist** must send 3 hard copies of the archaeological assessment report to the Ministry of Tourism and Culture for review by an Archaeology Review Officer. The ministry will review the report to ensure that the licensed archaeologist has met the terms and conditions of his or her licence, including ministry requirements for fieldwork and reporting.

Reports are reviewed on a first in, first out basis. Note that depending on the contents of the reports, further archaeology may be required. Construction work involving ground disturbance cannot proceed until the Ministry has reviewed all reports and confirms in writing that it supports the recommendations included in the reports. Therefore, until the archaeological work is complete and the archaeological reports have been reviewed, Ministry of Tourism and Culture has outstanding concerns regarding this proposed project.

Under Section 3.4 Alternative Solution Recommendation:

The report indicates that replacement of the existing structure is the preferred solution. MTC would like to see a commitment to the recommendation made in the Cultural Heritage Evaluation and Heritage Impact Assessment report to dismantle and reuse the structure. Currently the report does not reference the recommendations of the heritage report.

I trust this information is of assistance, please do not hesitate to contact the undersigned if you have any questions.

Best regards,

Paula Kulpa
A/Heritage Planner
416.314.7137
paula.kulpa@ontario.ca

copies to: Michael B. Henry CDBA, Managing Partner
AMICK Consultants Limited

Jim Sherrat, Archaeological Review Officer
Ministry of Tourism and Culture

Peter Willis, Senior Structural Engineer
AECOM

Julie Scruton, Project Engineer
County of Simcoe

Wills, Peter

From: smackinnon@amick.ca
Sent: February 2, 2012 3:03 PM
To: Wills, Peter
Subject: Re: Collingwood Street Bridge - Cultural Heritage Assessment

Good Afternoon,

AMICK Consultants Limited confirms that a revised report on the 2009 Cultural heritage Evaluation and Heritage Impact Assessment of the Collingwood Street Bridge, dated May 6, 2011 addressed the concerns expressed in the letter from the Ministry of Tourism and Culture, dated November 3, 2010. This revised report was written in consultation with the MTC in order to insure compliance with MTC requirements.

Sincerely,
Sarah MacKinnon

AMICK Consultants Limited
Marilyn E. Cornies, Southwestern District (London) phone 519-432-4435
Michael B. Henry, Lakelands District (Port McNicoll) phone 705-534-1546
www.amick.ca

On 2012-02-02, at 2:46 PM, Wills, Peter wrote:

Hi Sarah,

Further to our discussion, I am attaching a letter from the Ministry of Tourism and Culture (MTC), dated Nov. 3, 2010, that comments on the EA Preliminary Study Report (prepared by AECOM) and the Cultural Heritage Evaluation and Heritage Impact Assessment Report prepared by AMICK.

In this letter MTC expressed concerns with the heritage evaluation process originally used in your initial report which was dated Jan. 28, 2010. Further to discussions, please confirm in writing that you have addressed the MTC's concerns with the heritage evaluation process in the revised report on the 2009 Cultural Heritage Evaluation and Heritage Impact Assessment of the Collingwood Street Bridge, dated May 6, 2011.

Thanks,

Pete Wills, P.Eng.
Senior Project Manager / Senior Structural Engineer
Planning, Development and Design
D: 705.721.9222 Ext. 228
Peter.Wills@aecom.com
AECOM
10 Checkley Street, Barrie, ON L4N 1W1
T 705.721.9222 F 705.734.0764
www.aecom.com

ITEM 5d

CLEARVIEW TOWNSHIP
Established 1994

CORPORATION OF THE
TOWNSHIP OF CLEARVIEW

DATE:	APRIL 18, 2011
MOVED BY:	
SECONDED BY:	

WHEREAS the County of Simcoe costs estimates for the reconstruction of the Collingwood Street Bridge (No. 000141) are significantly higher than those upon which the EA, Schedule B Alternative Solution Recommendation was based;

And

WHEREAS the possibility now exists to rehabilitate the existing steel truss structure to full use and life for considerably less capital expense;

THEREFORE BE IT RESOLVED that the Clearview Council, County representatives request that the County receive a delegation from a Clearview residents group to the County of Simcoe Transportation department through the Corporate Services Committee to investigate and advise regarding the feasibility of the restoration and preservation of the existing Collingwood Street Bridge in Creemore.

MOTION CARRIED ☑

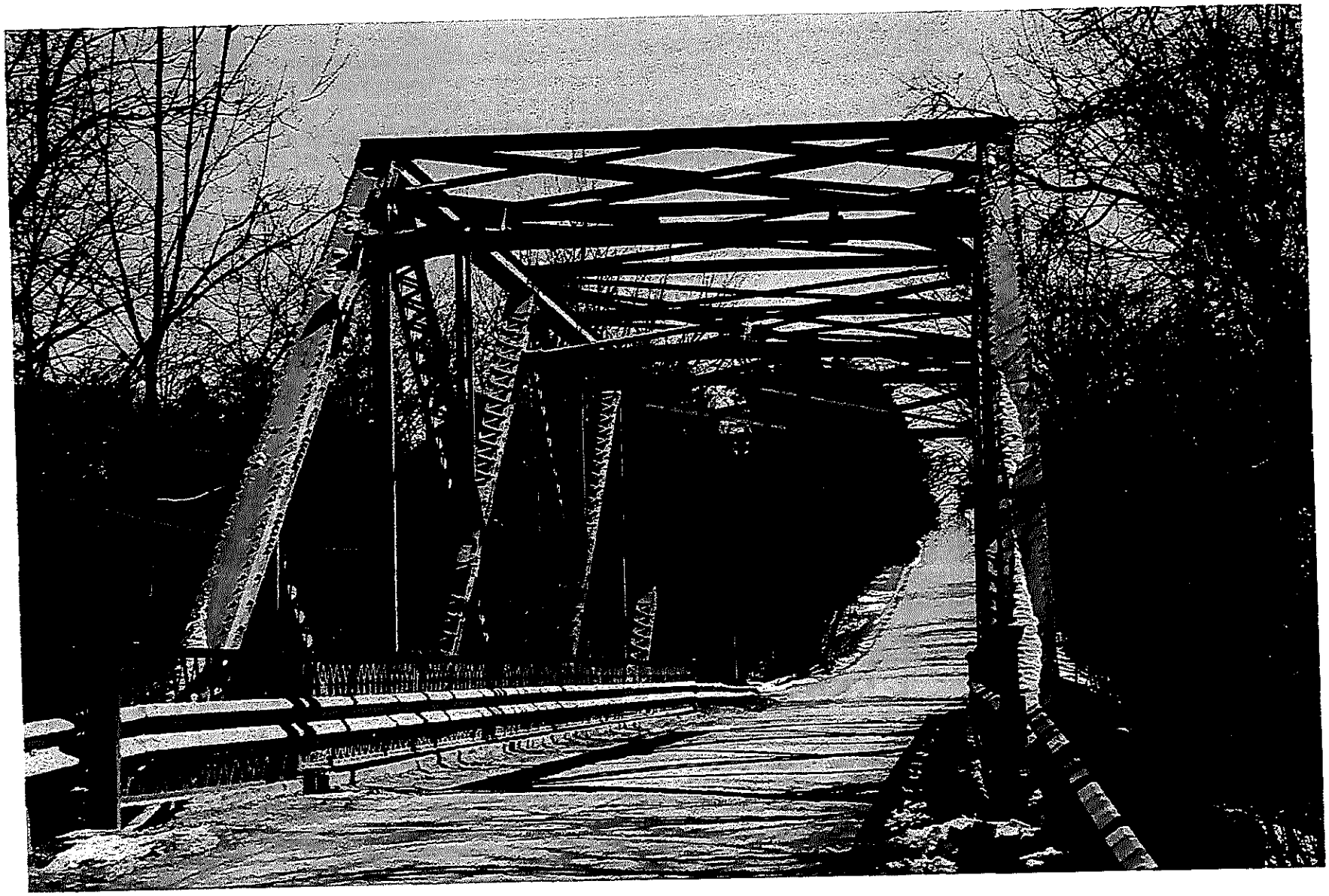
CARRIED UNANIMOUSLY ☐

MOTION LOST ☐

~~MAYOR~~ CHAIR

Collingwood Street Bridge, Creemore
DEPUTATION – Apr. 18, 2011

Bridge History
Environmental Assessment
Options
Similar Restoration Projects
Summary of Benefits

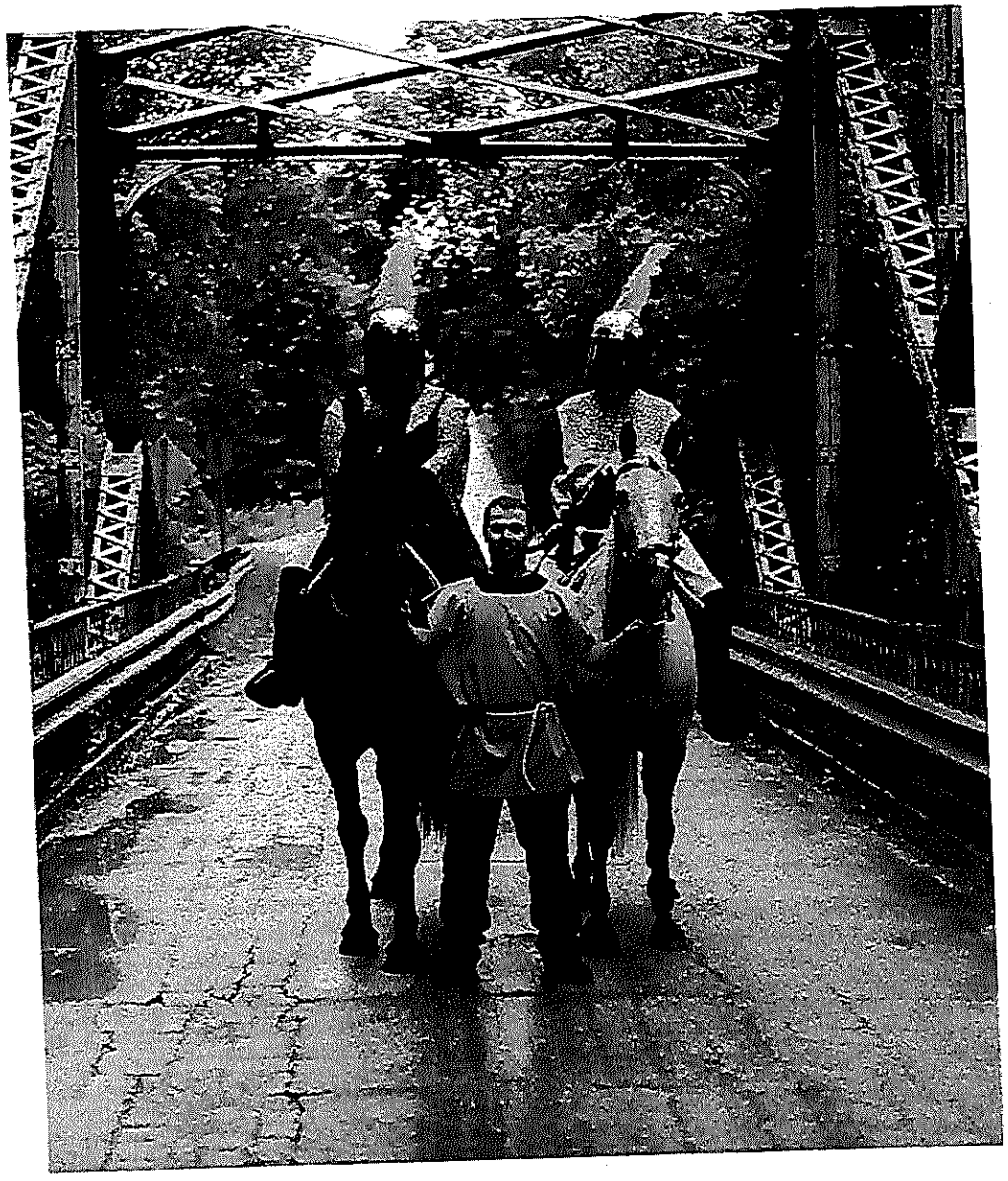


Collingwood Street Bridge

Collingwood Street Bridge

Heritage

Dates back to the middle ages*

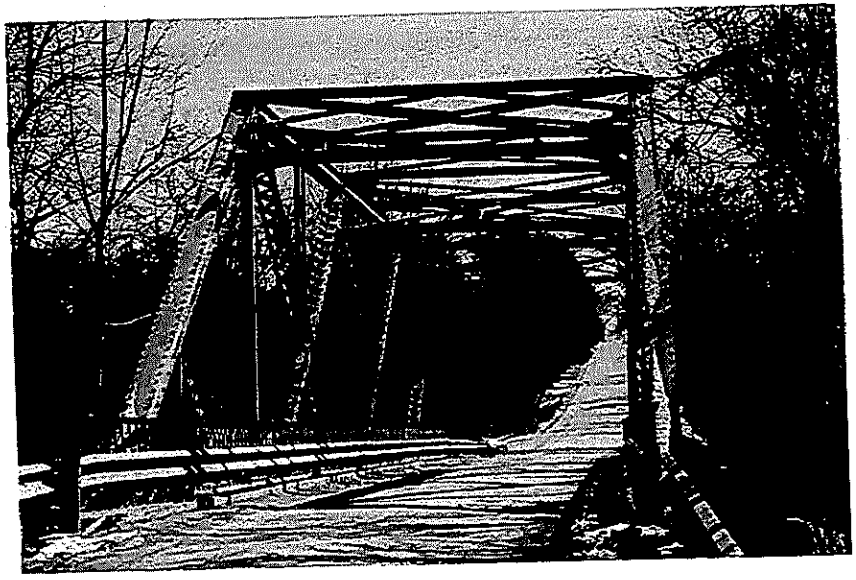


* well, 1913,... but it's old!

Collingwood Street Bridge

Heritage, 1913

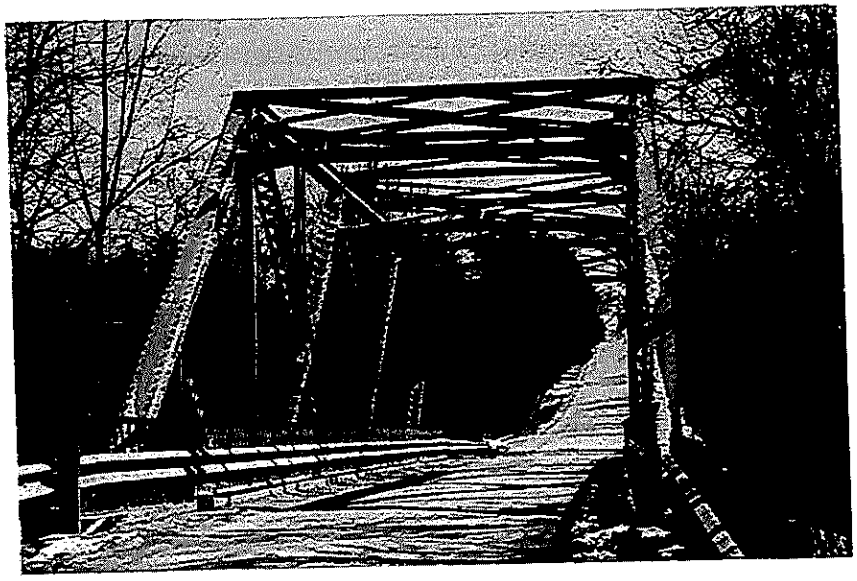
- Built by JJ Drummond of Brentwood
- Simcoe County Justice of the Peace, Businessman, Philanthropist
- Only bridge Simcoe County allowed to be named for builder
- One of few riveted truss bridges in Ontario



Collingwood Street Bridge

Bridge EA – Traffic Considerations

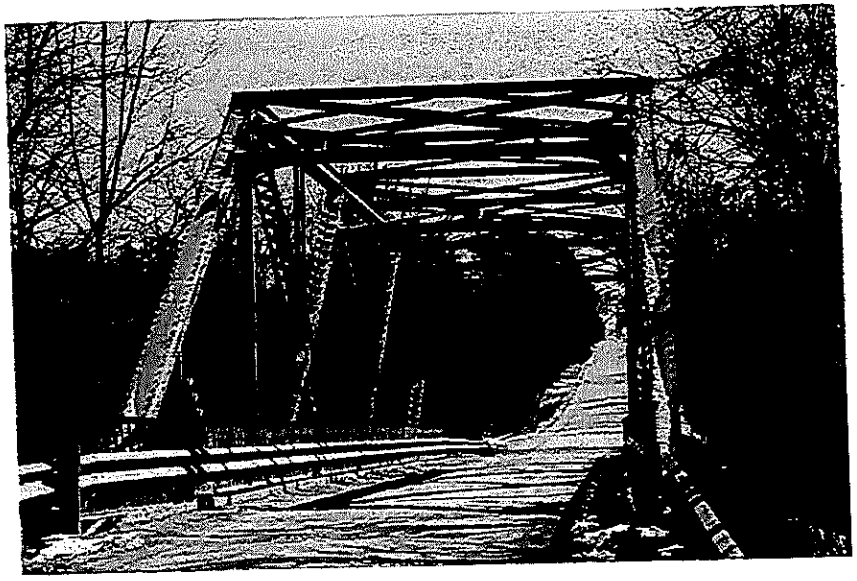
- Services 40 homes
- Alternate route available for very heavy or wide loads
- Speed limitation of 40km
    - Single lane condition
    - Vertical slope
- School zone starts after intersection
- Frequently used as walking trail to village



Collingwood Street Bridge

Bridge EA – Structure

- existing concrete foundations are stable
- bridge deck needs rehabilitation
- steel corrosion repair required
- some structural strengthening needed
- Will restore 15 ton load limit (currently downgraded to 5 ton limit)



Collingwood Street Bridge

BARRY BURTON

26 Edward Street W.
Creemore, ON L0M 1G0
Home: 705-466-2718
Cell: 416-524-7764

January 25, 2011

The Legislative Assembly Of Ontario
Minister Of Environment
135 St. Clair Ave East
12th Floor
Toronto, Ontario
M4V 1P5

ATTN: Minister Of Environment

RE: Replacement of Collingwood Street Bridge (Structure # 0001411)
(Project # 6011976) Creemore, Ontario, County Of Simcoe

I wish to make you aware that the County Of Simcoe has issued their notice of Municipal Class Environmental Assessment Document Completion Report and have advised us on their intention to replace this single lane historical bridge with a two lane concrete over pass

I wish to make you aware that there are several residents of Creemore that wish to see the bridge restored rather than replaced.

This bridge has been such a historical part of Creemore for over 97 years. The Corner Stone foundation was set on June 3, 1913 by J. Dumond , Contractor, Brentwood. This engraved footing is still visible today. Too many of our historical structures are being demolished in the name of progress. It's time to stop such destruction and preserve the architectural structures that are such a significant part of our past. J. Dumond was the only bridge contractor permitted by The County Of Simcoe to have his name attached to the structures.

This bridge is one of the few non welded cold riveted steel structures left in Ontario. It crosses the Mad River just south of where the Noisy and Mad River merge and continues on down to the Minnesing Swamp and onto the Nottawasaga River.

I believe that replacing of this bridge will cause severe damage to the existing banks and flood plain areas as a result of the new footings and foundations that would be required to build such a new structure. Not to mention the damage to the spawning waters of the several fish and wild life species that exist in and live in the waters of the Mad River.

Let's look at the facts of today, there are less than forty homes south of the bridge which leads to a dead end. There is one side road 6 & 7 of Nottawasaga which runs to the west off Collingwood Street which only has 3 houses between Collingwood St. and Concession 5. All these houses can be accessed by heavy vehicles from Caroline St. / 5th Concession. The existing structure continues to allow personal vehicle traffic.

At present time the vehicles traveling north bound from the south, have to slow down to cross the bridge. The replacement of this bridge with a two lane concrete over pass would encourage drivers not to slow down but continue at an 80 km/hr speed while approaching two 40 km/hr school zones less than 500 meters to the north. Also considering the Edward Street intersection at the very north end of the bridge creates a potential hazard. To replace the bridge with a two lane concrete overpass is an accident waiting to happen.

Collingwood Street Bridge

Over 200 signatures……

Collingwood Street Bridge

PETITION

TO the Township of Clearview and the County of Simcoe

WHEREAS the Collingwood Street Bridge built in 1913 located in the Township of Clearview, in the County of Simcoe is scheduled for destruction and replacement.

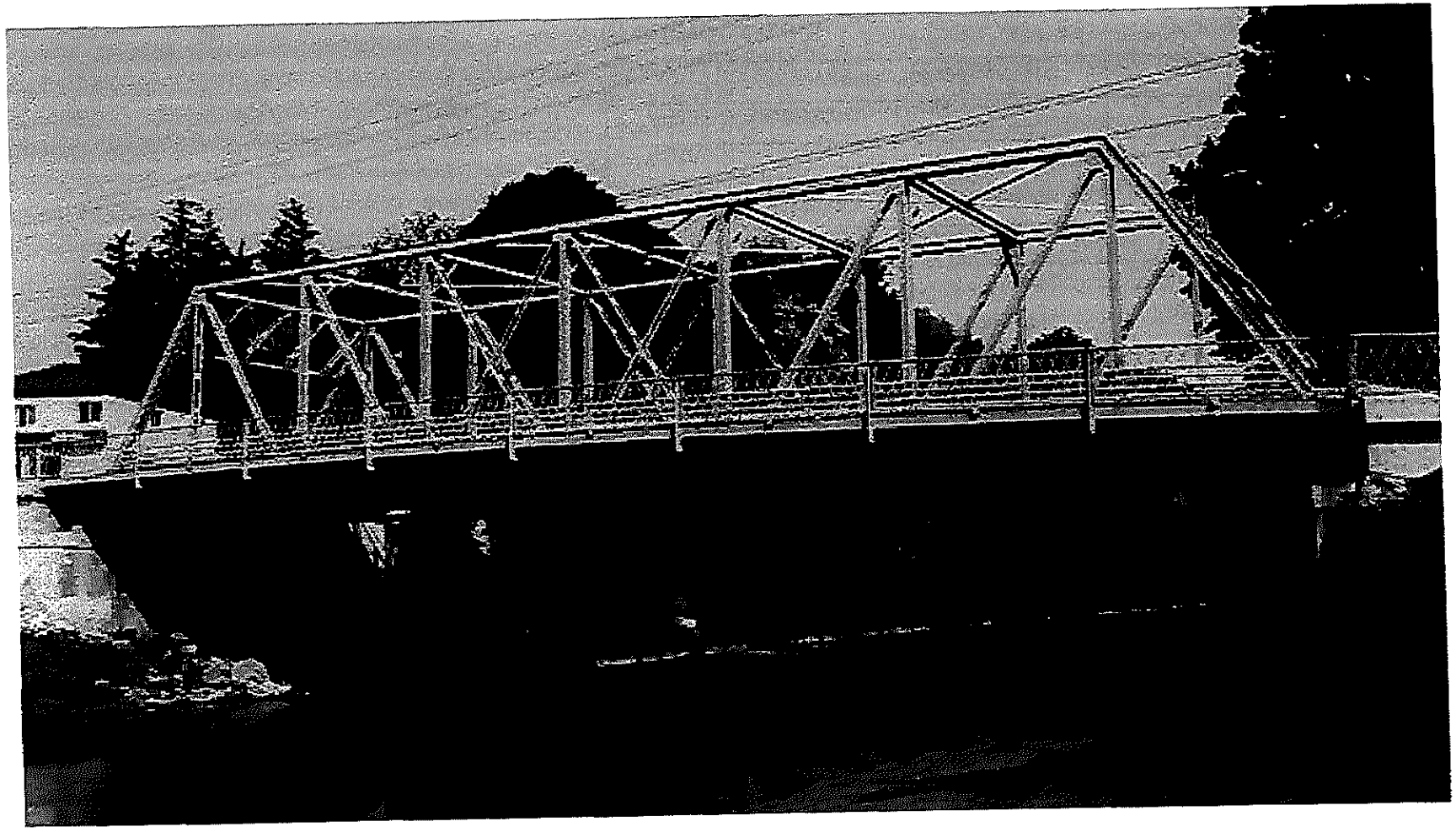
We the undersigned petition the Township of Clearview and the County Of Simcoe as follows: -

To have the bridge declared to have significant historical value under the heritage act, protecting it from destruction and to have the bridge restored while maintaining the existing structure.

Name (printed)	Address (printed)	Signature
Roger S. McLean	56 Collingwood St	
JAMES BRUCE	3437 3rd concession	
Elizabeth Laughlin	3478 Collingwood St.	

Hartman Bridge, New Hamburg, 2006

Restoration cost $1.2m / 50 year design life



Collingwood Street Bridge

Laurier Bridge, Ottawa

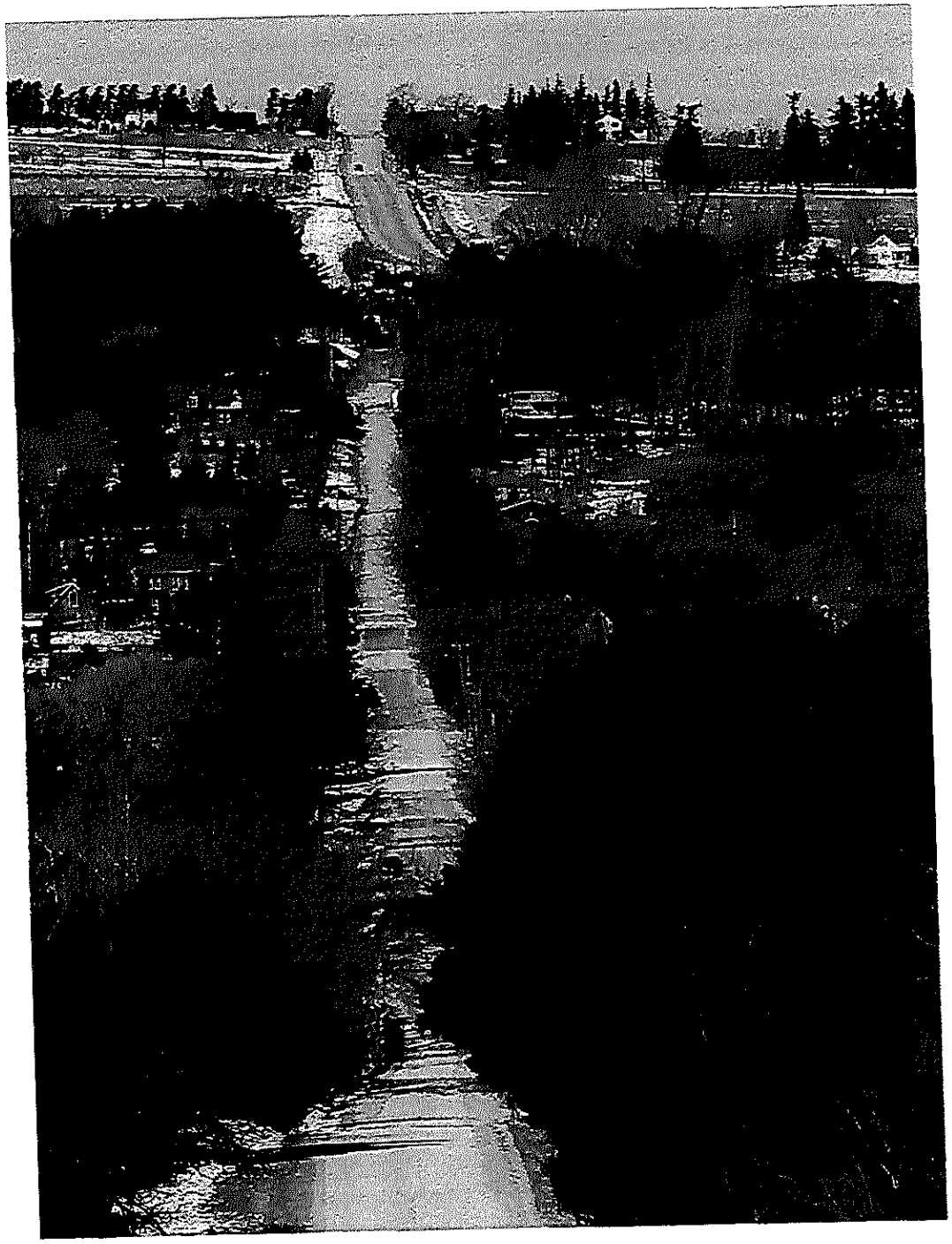
- tourism destination
- restored 2005

Collingwood Street Bridge

Summary

- Not highly travelled
- Adds to our heritage attractions
  (smallest jail, Mill Street - "one of the 10 prettiest villages"- Harrowsmith)
- Restores structural loading capacity of bridge
- Calms traffic / maintains safety at school zone
- Cost effective solution for 50 years
- Possibly restore both Collingwood St. bridges with the same budget
- Effective local community planning input
- WIN-WIN SOLUTION

Thank-you



Collingwood Street Bridge

AECOM

Appendix F

Replacement of Collingwood Street Bridge (Structure No. 000141) on Collingwood Street over the Mad River
Municipal Class Environmental Assessment

- Preliminary Cost Estimate & Life Cycle Costing for Rehabilitation & Replacement Alternatives

AECOM PROJECT NO. 60119766
COUNTY OF SIMCOE
COLLINGWOOD STREET BRIDGE
LIFE CYCLE ANALYSIS

Year	Alternative 1 Rehabilitation		Alternative 1 Comments	Alternative 2		Alternative 2 Comments
	Cost	Pres.Value		Cost	Pres.Value	
0	$971,000	$971,000	initial rehab costs	$1,470,000	$1,470,000	initial construction costs
5						
10						
15	$10,000	$6,419	minor rehab (railing repair)			
20						
25						
30	$1,770,000	$729,217	full replacement	$50,000	$20,599	major rehab
35						
40						
45						
50						
55						
60	$50,000	$8,487	major rehab	$50,000	$8,487	major rehab
65						
70				$1,770,000	$192,833	full replacement
75						
Total Present Value:		$1,715,122			$1,691,919	
Residual Value :		($171,825)			($113,388)	
Net Present Value :		**$1,543,297**			**$1,578,531**	

RESIDUAL VALUE ANALYSIS

Option	Replacement Cost	Year of Replacement (2nd Cycle)	Residual Years	Value at 50 years	Residual Value at 50 Years	Present Residual Value
1	$1,770,000	150	75	$192,833	-$1,577,167	-$171,825
2	$1,770,000	105	30	$729,217	-$1,040,783	-$113,388
3		125	50			
4		150	75			

Table 5 - Life-Cycle Cost Analysis

Notes:
Replacement cost in future of $1,770,000 includes $300,000 for engineering fees.
Net present value is based on MTO's current recommended discount rate of 3%.

August 26, 2011

AECOM PROJECT NO. 60119766
COLLINGWOOD STREET BRIDGE
COUNTY OF SIMCOE
BREAKDOWN OF PRELIMINARY COST ESTIMATE FOR
ALTERNATIVE No. 1 - REHABILITATION OF STRUCTURE

ITEM NO.	DESCRIPTION OF ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL
1	Mobilization and Demobilization	Lump	Sum	$15,000.00
2	Site Preparation	Lump	Sum	$10,000.00
3	Temporary Detour Signage	Lump	Sum	$5,000.00
4	Access to Work Area, Work Platform and Scaffolding	Lump	Sum	$50,000.00
5	Removal and Disposal of Existing Bridge Deck and Wearing Surface	Lump	Sum	$25,000.00
6	Removal and Disposal of Existing Handrail System	Lump	Sum	$5,000.00
7	Repair and Reinforcement of Truss End Diagonals	4 each	$2,000.00	$8,000.00
8	Replacement of Deteriorated Truss Bottom Chords	12 each	$4,000.00	$48,000.00
9	Replacement of Floor Beams	11 each	$6,000.00	$66,000.00
10	Replacement of Cross Bracing and Connection Plates	20 each	$3,000.00	$60,000.00
11	Fabricate, Deliver and Erect Structural Steel Stringers	10 Tonne	$6,000.00	$60,000.00
12	Jack Up Bridge at Abutments	Lump	Sum	$30,000.00
13	Replace Truss Bearings	4 each	$1,000.00	$4,000.00
14	Environmental Protection During Coating of Structural Steel	Lump	Sum	$50,000.00
15	Cleaning and Coating of Structural Steel	Lump	Sum	$100,000.00
16	Concrete in Deck and Curbs	45 m^3	$1,500.00	$67,500.00
17	Steel Box Beam Railing System	64 m	$900.00	$57,600.00
18	Dowels into Concrete	160 each	$50.00	$8,000.00
19	Concrete in Ballast Walls	6 m^3	$2,000.00	$12,000.00
20	Re-face Concrete Abutments and Wingwalls	12 m^3	$2,500.00	$30,000.00
21	Rock Protection	Lump	Sum	$10,000.00
22	Bridge Deck Waterproofing	150 m^2	$50.00	$7,500.00
23	Hot Mix Asphalt	375 Tonne	$200.00	$75,000.00
24	Retaining Walls	40 m^2	$800.00	$32,000.00
25	Miscellaneous Approach Works	Lump	Sum	$20,400.00
26	Minor Guide Rail Repairs	Lump	Sum	$5,000.00
27	Guide Rail End Treatments	4 each	$5,000.00	$20,000.00
				$881,000.00
Sub-Total				$881,000.00
Contingencies				$90,000.00
TOTAL PRELIMINARY ESTIMATED REHABILITATION COST				**$971,000.00**

*HST is not included

August 26, 2011

AECOM PROJECT NO. 60119766
COLLINGWOOD STREET BRIDGE
COUNTY OF SIMCOE
BREAKDOWN OF PRELIMINARY COST ESTIMATE FOR
ALTERNATIVE No. 5 - REPLACEMENT WITH NEW PRECAST BOX GIRDER BRIDGE

ITEM NO.	DESCRIPTION OF ITEM	ESTIMATED QUANTITY	UNIT PRICE	TOTAL
1	Mobilization and Demobilization	Lump	Sum	$35,000.00
2	Site Preparation	Lump	Sum	$20,000.00
3	Removal and Disposal of Existing Structure	Lump	Sum	$150,000.00
4	Unwatering and Siltation Control	Lump	Sum	$10,000.00
5	Provide Equipment for Driving Piles	Lump	Sum	$75,000.00
6	Steel Piles	60 m	$500.00	$30,000.00
7	Precast Concrete Box Girders	Lump	Sum	$290,000.00
8	Concrete in Deck Topping	50 m^3	$1,500.00	$75,000.00
9	Concrete in Curbs	12 m^3	$1,500.00	$18,000.00
10	Steel Box Beam Railing System	82 m	$900.00	$73,800.00
11	Concrete in Abutments	100 m^3	$1,500.00	$150,000.00
12	Concrete in Wingwalls	30 m^3	$1,500.00	$45,000.00
13	Earth Excavations For Foundations	100 m^3	$75.00	$7,500.00
14	Granular Backfill to Structure	Lump	Sum	$10,000.00
15	Waterproof Deck Top	290 m^2	$50.00	$14,500.00
16	Hot Mix Asphalt	400 Tonne	$200.00	$80,000.00
17	Retaining Walls	40 m^2	$800.00	$32,000.00
18	Rock Protection	Lump	Sum	$10,000.00
19	Miscellaneous Approach Works	Lump	Sum	$75,800.00
20	Guide Rail on Approaches	80 m	$180.00	$14,400.00
21	Guide Rail End Treatments	4 each	$5,000.00	$20,000.00
22	Allowance for Utilities	Lump	Sum	$100,000.00
	Sub-Total			$1,336,000.00
	Contingencies			$134,000.00
	TOTAL PRELIMINARY ESTIMATED REPLACEMENT COST			**$1,470,000.00**

*HST is not included