Cambridge Municipal Heritage Advisory Committee
No. 04 – 22

AGENDA

Thursday, April 21, 2022
7:00 p.m. via Zoom

Meeting Called to Order

Disclosure of Interest

Presentations

Annie Veilleux, Senior Cultural Heritage Specialist, and Laura Wickett, Project Manager, ASI- East Galt Cultural Heritage Landscape

Heidy Schopf, Built Heritage and Cultural Landscape Team Lead, and Matt Galloway, Senior Structural Engineer, Wood PLC – Black Bridge Strategic Conservation Plan

Delegations

Vanessa Hicks, Heritage Planner and Dave Aston, Vice- President, MHBC Planning – 211-215 Queen Street

Approval of March 17, 2022 Municipal Heritage Advisory Committee Minutes

THAT the Minutes of the March 17, 2022 meeting of the Municipal Heritage Advisory Committee be considered for errors and omissions and be adopted.

Should you wish to delegate regarding an item on this agenda, please register via email at planning@cambridge.ca by 12 noon of the day prior to the meeting. Be advised that only one person can delegate at a time and additional people cannot be invited to join due to technical limitations. Thank you.
Agenda Items:

1. **Blackbridge Road Bridge Strategic Conservation Plan**
   
   **THAT** the report Blackbridge Road Bridge Strategic Conservation Plan be received;
   Road Bridge as prepared by Wood Environment & Infrastructure Solutions, dated December 15, 2021.

2. **To request comments on the Heritage Impact Assessment for 211-215 Queen St. West**
   
   **THAT** Memo 22-001 (MHAC) be received by the Municipal Heritage Advisory Committee
   AND **THAT** MHAC receive the submitted HIA and accompanying Heritage Considerations Technical Memo for Phase 2 Height Increase and provide input towards the appropriate means to support the advancement of the OPA and ZBA applications and ultimate site plan process.

Information Items

City of Cambridge Code of Conduct for Local Boards and Advisory Committees

Other Business

   a) Chair’s Comments
   b) Council Report/Comments
   c) Staff/Senior Planner - Heritage Comments

Next Meeting:

Date & Time: May 19, 2022, at 7 p.m.
Via Zoom

Close of Meeting

**THAT** the MHAC meeting does now adjourn at ______p.m.

Distribution:

MINUTES
Municipal Heritage Advisory Committee
Meeting #03 - 22
March 17, 2022
Held virtually via Zoom
7:00 p.m.

Committee Members in Attendance: Susan Brown, Nelson Cecilia, Michelle Goodridge, Mark Leclair, Kimberly Livingstone, Scott Roberts, Councillor Pam Wolf, Nancy Woodman and Chair, John Oldfield.

Regrets:

Staff in Attendance: Abraham Plunkett-Latimer, Senior Planner – Heritage, Karin Stieg-Drobig, Recording Secretary and Helly Shah, IT Support

Meeting Called to Order

The meeting of the Municipal Heritage Advisory Committee was held virtually via Microsoft Zoom and live streamed to the City of Cambridge website. John Oldfield, MHAC Chair, welcomed everyone present, introductions were made and he advised those present that in its advisory role, MHAC makes recommendations that then go to Council for a decision. The meeting was called to order at 7:00 p.m. and the meeting adjourned at 8:02 p.m.

Declarations of Interest – NIL

Presentation – NIL

Delegations:

Conrad Coutts, property owner, for Item #3 – 22-005 (MHAC) Request to Alter a Part V Designated Property – 49 Meadowcreek Lane, advised the plans have been revised as requested by the Committee at the January meeting. The garages have been reduced; shifted back and to the side. The roof has been lowered and he noted that Langdon Hall was used as inspiration to provide the design symmetry at the front of the building.

The Committee asked questions regarding the changes to the garage and roof which were clarified by the applicant and staff. The Chair thanked the delegate for taking the time to attend the meeting and for working within the guidelines of the Blair HCD.
Minutes of Previous Meeting

Moved by: Nelson Cecilia
Seconded by: Susan Brown

THAT the minutes of the February 17, 2022 meeting of the Cambridge Municipal Heritage Advisory Committee be considered for errors and omissions and be adopted.

CARRIED

Reports:

1. Request to Alter a Part V Designated Property through Demolition and Construction of a New Residential Structure – 56 Morningside Drive

Moved by: Kimberly Livingstone
Seconded by: Michelle Goodridge

THAT Report 22-003(MHAC) be received;

AND THAT the MHAC accepts the Heritage Impact Assessment submitted by SMPL Architects and dated November 24, 2021;

AND THAT the MHAC recommends that Council approve the alteration of a Part V designated heritage property through the demolition of the existing residential structure on the property municipally known as 56 Morningside Drive in the Blair Village Heritage Conservation District;

AND FURTHER THAT the MHAC recommends that Council approve the alteration of a Part V designated heritage property through the construction of a new residential structure on the property municipally known as 56 Morningside Drive in the Blair Village Heritage Conservation District substantially in accordance with the plans outlined in the Heritage Impact Assessment and in Report 22-003(MHAC).

CARRIED

2. Request to Endorse Conservation Plan – 1395 Main Street

Moved by: Michelle Goodridge
Seconded by: Nelson Cecilia

The Committee discussed the ability to do appropriate heritage maintenance on the building once it is moved to the new lot, noting that it may be problematic with the
proposed set back between the neighbouring lot. Staff noted that this can be brought forward to the developer as an item of concern so that it can be dealt with before the plans are finalized. The Committee further discussed the proposed location of the designated house, the proposed size of the lot and the recommendations proposed by the Committee when the item was first brought forward in 2019.

THAT Report 22-004(MHAC) be received;

AND THAT the Committee receives for information the conservation plan prepared to support the relocation and restoration of the stone house at 1395 Main Street by MacNaughton Hermson Britton Clarkson Planning Ltd (MHBC) dated January 6, 2022 (Attachment 2).

CARRIED

3. Request to Alter a Part V Designated Property – 49 Meadowcreek Lane

Moved by: Councillor Wolf
Seconded by: Susan Brown

THAT Report 22-005 (MHAC) - Request to Alter a Part V Designated Property – 49 Meadowcreek Lane be received;

AND THAT the Municipal Heritage Advisory Committee recommends that Council approve the alteration of the property municipally known as 49 Meadowcreek Lane by constructing a new residence substantially in accordance with the designs prepared by Fabrik Architects and dated March 7, 2022.

CARRIED

4. Request for Funding from the Designated Heritage Property Grants Program – 66 Old Mill Road

Moved by: Scott Roberts
Seconded by: Nancy Woodman

THAT Report 22-006 (MHAC) - Request for Funding from the Designated Heritage Property Grants Program – 66 Old Mill Road be received;

AND THAT the Municipal Heritage Advisory Committee recommends that the application for funding from the 2022 Operating Budget be approved by the Deputy City Manager of Community Development for the designated property municipally known as
66 Old Mill Road for $5,000 for scraping and repainting the entire structure as outlined in Report 22-006(MHAC).

CARRIED

5. Request for Funding from the Designated Heritage Property Grants Program – 8 Haddington Street

Moved by: Nancy Woodman
Seconded by: Nelson Cecilia

The Committee discussed the mortar to be used and porosity of the stone. It was noted that this is the first home to be designated in Cambridge and that this family have been excellent stewards for this home’s conservation. Staff confirmed the homeowners are having the most deteriorated areas pointed at this time. Staff will follow up with the applicant to ensure the correct materials are used. It is hoped that the proposed work will be completed by a tradesperson familiar with this type of work and that it will be inspected.

THAT Report 22-007(MHAC) – Request for Funding from the Designated Heritage Property Grants Program – 8 Haddington Street be received;

AND THAT the Municipal Heritage Advisory Committee recommends that the application for funding from the 2022 Operating Budget be approved by the Deputy City Manager of Community Development for the designated property municipally known as 8 Haddington Street to the maximum amount of $5,000 for repointing the exterior granite walls as outlined in Report 22-007(MHAC).

AND FURTHER THAT the work must be completed by November 1, 2022;

CARRIED

6. Request for Funding from the Designated Heritage Property Grants Program – 212 Queen Street East

Moved by: Michelle Goodridge
Seconded by: Nancy Woodman

The Committee thanked the homeowner for doing the right thing to preserve the heritage of this building by removing the aluminum elements and restoring the wooden elements.
THAT Report 22-008 (MHAC) - Request for Funding from the Designated Heritage Property Grants Program – 212 Queen Street East be received;

AND THAT the Municipal Heritage Advisory Committee recommends that the application for funding from the 2022 Operating Budget be approved by the Deputy City Manager of Community Development for the designated property municipally known as 212 Queen Street East for $5,000 for the replacement of 8 aluminum storm windows with custom wooden storm windows, and removing aluminum soffits and restoring wooden soffits to reveal existing wooden decorative brackets as outlined in Report 22-008 (MHAC).

AND FURTHER THAT the work must be completed by November 1, 2022;

CARRIED

7. Request for Funding from the Designated Heritage Property Grants Program – 39 Queen Street East

Moved by: Scott Roberts
Seconded by: Nelson Cecilia

THAT Report 22-009 (MHAC) - Request for Funding from the Designated Heritage Property Grants Program – 39 Queen Street East be received;

AND THAT the Municipal Heritage Advisory Committee recommends that the application for funding from the 2022 Operating Budget be approved by the Deputy City Manager of Community Development for the designated property municipally known as 39 Queen Street East for $5,000 for the replacement of the entire front verandah, including columns;

AND THAT the work must be completed by November 1, 2022;

AND FURTHER THAT the Municipal Heritage Advisory Committee endorses the use of a naturally rot-resistant wood, such as cedar, for construction in place of the existing pine.

CARRIED

Information Items: NIL

Other Business – NIL
Chair’s Comments:

John Oldfield noted he did not have any comments this month.

Council Report/ Comments:

Councillor Wolf advised that Council had a very long meeting on Tuesday that ended after 11 p.m.; with over 40 delegates. Council will reconvene on Monday next week to ask questions of staff, and consultants; to debate and make a decision on the item. Councillor Wolf also noted that she will be bringing forward a motion for a moratorium on gravel pit expansion and new licenses within the Region and should it pass, it will positively impact many heritage landscape areas.

Staff/Senior Planner- Heritage comments:

Abraham Plunkett-Latimer advised the Committee that this would be his last meeting at the City as he has accepted a position closer to where he lives. He noted that he has enjoyed working with everyone and thanked the Committee for their support during his tenure. The Committee noted they are very sorry to see him go and wished him well.

Next Meeting

Date & Time: April 21, 2022, 6:00 p.m.
Location: Virtually via Zoom

Close of Meeting

Moved by: Michelle Goodridge
Seconded by: Nelson Cecilia

THAT the Municipal Heritage Advisory Committee meeting does now adjourn at 8:02 p.m.

CARRIED

_________________________________  ____________________
John Oldfield                        Karin Stieg-Drobig
MHAC Chairperson                   Recording Secretary
Meeting Date: 04/21/2022

To: Cambridge Municipal Heritage Advisory Committee

Report Date: 04/07/2022

Report Author: Laura Waldie, CAHP, Senior Planner Heritage

Department: Development and Infrastructure

Division: Planning

Report Title: Blackbridge Road Bridge Strategic Conservation Plan

File No: R01 01

Ward No: 1 and 2

RECOMMENDATION(S)

THAT the report Blackbridge Road Bridge Strategic Conservation Plan be received;

AND THAT the MHAC accepts the Strategic Conservation Plan for the Blackbridge Road Bridge as prepared by Wood Environment & Infrastructure Solutions, dated December 15, 2021.

SUMMARY

- As part of the Blackbridge Road/Townline Road reconstruction project, the Blackbridge Road Bridge will remain in situ and will be adaptively reused as a pedestrian bridge.

- As part of the EA process, Council approved the plan to convert the existing bridge to a pedestrian bridge.

- The Strategic Conservation Plan is being presented to the MHAC as a part of the detailed design phase of the reconstruction project.
BACKGROUND

The 1916 Black Bridge, on Blackbridge Road, was recognized as a heritage structure in the late 1990s when it was included in Cambridge’s heritage inventory. Council designated the bridge under Part IV Section 29(1) of the Ontario Heritage Act through the approval of designation by-law 16-03 in 2003. The bridge has been identified as insufficient for the growing volume of vehicular traffic, and in need of periodic repairs which have been done.

The area to the east and south has been recognized as a Cultural Heritage Landscape (CHL), through Official Plan Amendment 15 in November 2016, and several individual properties have been designated or listed on the Heritage Properties Register. The bridge is included as one of the most significant features of the CHL for its design materials and its views and vistas.

In February 2020, the MHAC received the Terms of Reference – Strategic Conservation Plan for the bridge. In August 2020 MHAC received for information drawings for the location of a new bridge and conservation of the heritage bridge. These drawings were also submitted to Council. In December 2020, the MHAC accepted a HIA which stated that a Strategic Conservation Plan would be forthcoming for the protection of the bridge.

ANALYSIS

Strategic Alignment:

PLACE: To take care of, celebrate and share the great features in Cambridge that we love and mean the most to us.

Goal #3 - Arts, Culture, Heritage and Architecture

Objective 3.2 Conserve and make positive contributions to our heritage districts and buildings throughout the community.

Existing Policy/By-Law:

Ontario Heritage Act

Part IV Section 29 (1) of the Ontario Heritage Act provides municipalities the ability to designate individual properties that are shown to have cultural heritage value to a community.

Part IV Section 27 (1.2) provides the ability to include listed (non-designated) properties of cultural heritage value or interest in a municipal heritage register.
Provincial Policy Statement (2020)

Section 2.6 on Cultural Heritage and Archaeology includes: “2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.”

Cambridge Official Plan

Section 4.10.1 provides that: “A Cultural Heritage Impact Assessment shall be required for a development proposal or Community Plan that includes or is adjacent to a designated property or cultural heritage landscape, or that includes a non-designated resource of cultural heritage value or interest listed on the Municipal Heritage Register. The potential impacts could be direct, such as demolishing or altering a structure on a designated property, or indirect such as changes to the streetscape of lands adjacent to a cultural heritage resource.”

Section 4.8, Cultural Heritage Landscapes, includes: “3. The City shall require measures to conserve Cultural Heritage Landscapes in the design of development proposals. 4. The City encourages the conservation of Cultural Heritage Landscapes that are characteristic of the city or region including views, vistas and landscape features.”

Section 4.8.9 is about the Black Bridge CHL. It includes: 2.4 “Infrastructure” development, upgrades and/or improvements shall be planned and designed in such a way as to minimize impacts and be sympathetic to the Black Bridge CHL’s Character Defining Attributes and to the broader context of the area.”

Financial Impact:

The Minister of the Environment and Climate Change required the City to prepare a Strategic Conservation Plan as a result of an appeal to the Environmental Assessment process for the Blackbridge Road/Townline Road reconstruction process as one component of the design of the new bridge and conservation of the heritage bridge. The cost to convert the bridge to a pedestrian bridge is $300,000.

Public Input:

The MHAC meetings are open to the public.

Internal/External Consultation:

The Project Engineer and the Senior Planner-Heritage liaised with the consultant on the Terms of Reference for the Strategic Conservation Plan. The Architectural Conservancy of Ontario’s Cambridge and North Dumfries Branch and the Blackbridge Community Association were also consulted in the preparation of the Strategic Conservation Plan.
Comments/Analysis:

Proposed Modifications to Convert Bridge to Multi-Use Trail

The Strategic Conservation Plan has identified a number of modifications needed to convert the Blackbridge Road Bridge to a multiuse trail (Wood 2021:10). Proposed modifications include:

• Construct new concrete footings on approaches, extending to ends of wingwalls, to support new cycle height railings;
• Install new cycle height railings on existing bridge curbs and new approach footings;
• Install cover plate over expansion joint at each end of bridge. Cover plate prevents edges of joint from becoming trip hazard to pedestrians and cyclists;
• Remove steel beam guide rails on approaches; and,
• Remove vehicular signage at each end of bridge.

These modifications are required to provide safety for cyclists and pedestrians who will use the bridge after it becomes a pedestrian bridge. These modifications will not adversely affect the cultural heritage value of the bridge and any new components will be made of the same materials to blend in seamlessly with the original materials. Converting the truss bridge into a pedestrian bridge will allow the structure to continue being used in its original purpose, which was to transport people across the Speed River. Activities done from the bridge after it opened, like fishing and swimming, will be able to take place again because vehicular traffic in this location will no longer be a danger. In the sense of contextual value, the bridge will regain some of its lost cultural heritage significance.

Therefore, heritage planning staff recommend that the MHAC accept the Strategic Conservation Plan for the Blackbridge Road Bridge and all its findings as prepared by Wood Environment & Infrastructure Solutions, dated December 15, 2021.

SIGNATURE

Prepared by:

Laura Waldie, CAHP
Senior Planner - Heritage
Departmental Approval:

Joan Jylanne, MCIP RPP
Manager of Policy Planning

ATTACHMENTS

Strategic Conservation Plan for the Black Bridge Road Bridge

Carrying Black Bridge Road over the Speed River, Lot 13 Concession 4 Beasley Lower Block, Waterloo Township, now City of Cambridge, Regional Municipality of Waterloo, Ontario

Project # IM21106003

Prepared for:
Corporation of the City of Cambridge
50 Dickson St, Cambridge, ON N1R 8S1, Canada
Strategic Conservation Plan for the Black Bridge Road Bridge

Carrying Black Bridge Road over the Speed River, Lot 13 Concession 4 Beasley Lower Block, Waterloo Township, now City of Cambridge, Regional Municipality of Waterloo, Ontario

Project: IM21106003

Prepared for:
Corporation of the City of Cambridge
50 Dickson St, Cambridge, ON N1R 8S1, Canada

Prepared by:
Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited
3450 Harvester Road,
Burlington, ON, L7N 3W5
T: 1 (416) 518 0145

17-Mar-22

Copyright and non-disclosure notice
The contents and layout of this report are subject to copyright owned by Wood (Wood Group). save to the extent that copyright has been legally assigned by us to another party or is used by Wood under license. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third-party disclaimer
Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.
Executive Summary

Wood Environment & Infrastructure Solutions (Wood) was retained by the City of Cambridge to complete a Strategic Conservation Plan (SCP) for the Black Bridge Road Bridge (Black Bridge), located approximately 200 metres west of the intersection of Townline Road and Black Bridge Road in the City of Cambridge, Ontario. Black Bridge is a single-span and five-panel Pratt through truss bridge that was constructed in 1916 to carry Black Bridge Road over the Speed River. The bridge is a protected heritage property designated under Part IV of the Ontario Heritage Act under By-law 16-03 and identified as a key component of the Black Bridge Cultural Heritage Landscape, protected through Official Plan Amendment No. 15 (City of Cambridge 2016). The focus of this SCP is on Black Bridge itself. While the greater Cultural Heritage Landscape is considered as part of the context for Black Bridge, conservation guidance provided in this report is tailored to the bridge structure.

This SCP is being undertaken to manage the change planned for the Black Bridge, including converting it from a single-lane vehicular bridge to a pedestrian structure as part of a Multi-Use Trail (MUT). Construction of a new vehicular bridge is planned to the north of Black Bridge and will involve re-aligning Black Bridge Road, improvements to Townline Road, and a new crossing at Irish Creek.

The purpose of the SCP is to ensure that the cultural heritage significance and heritage attributes of Black Bridge are conserved over the short, medium, and long-term. The SCP has been prepared in accordance with the SCP Terms of Reference (ToR) for the Black Bridge Road Bridge prepared by MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC) for the City of Cambridge in January 2020. This SCP is also informed by the Ontario Heritage Trust’s Conservation Plans for Heritage Properties (2012), the MHSTCI’s Standards and Guidelines for the Conservation of Provincial Heritage Properties (MHSTCI 2010) and Information Bulletin 2, Strategic Conservation Plans for Provincial Heritage Properties (MHSTCI 2017), and the Canada’s Historic Places (CHP) Standards and Guidelines for the Conservation of Historic Places in Canada (CHP 2010).
# Table of Contents

1.0 **Introduction** ....................................................................................................................... 1

1.1 **Scope of Work** ..................................................................................................................... 1

2.0 **Statement of Cultural Heritage Value or Interest** .......................................................... 5

2.1 **Black Bridge Road Bridge** .................................................................................................. 5

2.1.1 Statement of Cultural Heritage Value or Interest ................................................................. 5

2.1.2 Heritage Attributes .................................................................................................................. 5

3.0 **Condition Assessment – Current and Future** ................................................................. 9

3.1 **Program Needs and Bridge Use** ......................................................................................... 9

3.2 **Physical Conditions** .......................................................................................................... 9

3.2.1 Existing Conditions ................................................................................................................ 9

3.2.2 Landscape Context ............................................................................................................... 19

3.2.3 Structural Condition Survey ................................................................................................ 25

3.3 **Legislative and Policy Considerations** ........................................................................... 28

3.3.1 Planning Act .......................................................................................................................... 28

3.3.2 Provincial Policy Statement .................................................................................................. 28

3.3.3 Ontario Heritage Act ............................................................................................................ 28

3.3.4 City of Cambridge Official Plan .......................................................................................... 28

3.3.5 Official Plan Amendment No. 15: Black Bridge Cultural Heritage Landscape Site Specific Policy Area .................................................................................................................. 30

3.3.6 Approval Authority .............................................................................................................. 32

3.4 **Future Plans and Needs** .................................................................................................... 32

3.4.1 Proposed Repairs .................................................................................................................. 33

3.4.2 Proposed Modifications to Convert Bridge to Multi-Use Trail ............................................. 34

4.0 **Conservation Strategies** .................................................................................................. 35

4.1 **Conservation Treatment and Guidelines** ......................................................................... 35

4.1.1 Guidelines for Visual Relationships .................................................................................... 38

4.1.2 Guidelines for Engineering Works (Bridges) ...................................................................... 40
4.1.3 Guidelines for Materials (Steel) ................................................................. 42
4.1.4 Guidelines for Materials (Concrete) .......................................................... 42

4.2 Short-, Medium-, and Long-Term Conservation Goals ............................................. 43
4.2.1 Short Term Goals ......................................................................................... 43
4.2.2 Medium Term Goals .................................................................................... 44
4.2.3 Long Term Goals ......................................................................................... 44

5.0 Action Plan ........................................................................................................ 46

6.0 Community Engagement ..................................................................................... 49

7.0 Implementation .................................................................................................... 52

8.0 Monitoring .......................................................................................................... 53

9.0 Assessor Qualifications ....................................................................................... 54

10.0 Closure .............................................................................................................. 55

11.0 Sources .............................................................................................................. 56

LIST OF APPENDICES
Appendix A: Conservation Standards and Guidelines
Appendix B: New Bridge Design
Appendix C: Railing Options for Black Bridge
Appendix D: Assessor Qualifications
Appendix E: Limitations

LIST OF TABLES
Table 1: Existing Conditions of Bridge Elements ............................................................ 25
Table 2: Review of General Standards .......................................................................... 36
Table 3: Action Plan for Black Bridge .......................................................................... 47
Table 4: Summary of Community Engagement .............................................................. 50

LIST OF FIGURES
Figure 1: Location of the Study Area .......................................................................... 3
Figure 2: Aerial Photograph Showing the Location of the Study Area ....................................................... 4
Figure 3: Location of Heritage Attributes .............................................................................................................. 8
Figure 4: Black Bridge Cultural Heritage Landscape Context ............................................................................ 24
Project Personnel

Project Manager: Jason Stahl, P.Eng.
Cultural Heritage Specialist: Heidy Schopf, MES, CAHP
Report Preparation: Chelsea Dickinson, B.A. (R1194)
Luke Fischer, MA, CAHP
Graphics: Stephen LaBute
Report Reviewer: Heidy Schopf, MES, CAHP
Henry Cary, PhD, CAHP, RPA

Acknowledgements

Karla Barboza Acting Team Lead, Heritage, Ministry of Heritage, Sport, Tourism, and Culture Industries
Kevin DeMille Heritage Planner, Ontario Heritage Trust
Karen Scott Booth Vice President, Architectural Conservancy of Ontario, Cambridge and North Dumfries
Thomas Hetherington Chair, Black Bridge Community Association
Laura Waldie Senior Planner – Heritage, City of Cambridge
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHER</td>
<td>Cultural Heritage Evaluation Report</td>
</tr>
<tr>
<td>CHP</td>
<td>Canada’s Historic Places</td>
</tr>
<tr>
<td>CHSR</td>
<td>Cultural Heritage Screening Report</td>
</tr>
<tr>
<td>CHVI</td>
<td>Cultural Heritage Value or Interest</td>
</tr>
<tr>
<td>HIA</td>
<td>Heritage Impact Assessment</td>
</tr>
<tr>
<td>MHSTCI</td>
<td>Ministry of Heritage, Sport, Tourism and Culture Industries</td>
</tr>
<tr>
<td>OHA</td>
<td><em>Ontario Heritage Act</em></td>
</tr>
<tr>
<td>PHP</td>
<td>Provincial Heritage Property</td>
</tr>
<tr>
<td>PPS</td>
<td>Provincial Policy Statement</td>
</tr>
<tr>
<td>SCHVI</td>
<td>Statement of Cultural Heritage Value or Interest</td>
</tr>
<tr>
<td>SCP</td>
<td>Strategic Conservation Plan</td>
</tr>
</tbody>
</table>
**Glossary**

**Adjacent lands**
Those lands contiguous to a protected heritage property or as otherwise defined in the municipal official plan (PPS 2020).

**Built Heritage Resource:**
Means a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. Built heritage resources are located on property that may be designated under Parts IV or V of the *Ontario Heritage Act*, or that may be included on local, provincial, federal and/or international registers (PPS 2020).

**Conserved:**
Means the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decision maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments (PPS 2020).

**Cultural Heritage Landscape:**
Means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be
properties that have been determined to have cultural heritage value or interest under the *Ontario Heritage Act*, or have been included on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms (PPS 2020).

**Heritage Attributes:**

Means the principal features or elements that contribute to a protected heritage property’s cultural heritage value or interest, and may include the property’s built, constructed, or manufactured elements, as well as natural landforms, vegetation, water features, and its visual setting (e.g., significant views or vistas to or from a protected heritage property) (PPS 2020).

**Protected Heritage Property:**

Means property designated under Parts IV, V or VI of the *Ontario Heritage Act*, property subject to a heritage conservation easement under Parts II or IV of the *Ontario Heritage Act*; property identified by the Province and prescribed public bodies as provincial heritage property under the *Standards and Guidelines for Conservation of Provincial Heritage Properties*; property protected under federal legislation, and UNESCO World Heritage Sites (PPS 2020).

**Significant:**

In regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the *Ontario Heritage Act* (PPS 2020).
1.0 Introduction

Wood Environment & Infrastructure Solutions (Wood) was retained by the City of Cambridge to complete a Strategic Conservation Plan (SCP) for the Black Bridge Road Bridge (Black Bridge), located approximately 200 metres west of the intersection of Townline Road and Black Bridge Road in the City of Cambridge, Ontario (Figure 1 and Figure 2). Black Bridge is a single-span and five-panel Pratt through truss bridge that was constructed in 1916 to carry Black Bridge Road over the Speed River. The bridge is a protected heritage property designated under Part IV of the Ontario Heritage Act under By-law 16-03 and identified as a key component of the Black Bridge Road Bridge Cultural Heritage Landscape (CHL). The focus of this SCP is on Black Bridge itself. While the greater Cultural Heritage Landscape is considered as part of the context for Black Bridge, conservation guidance provided in this report is tailored to the bridge structure.

This SCP is being undertaken to manage the change planned for the Black Bridge, including converting it from a single-lane vehicular bridge to a pedestrian structure as part of a Multi-Use Trail (MUT). Construction of a new vehicular bridge is planned to the north of Black Bridge and will involve re-aligning Black Bridge Road, improvements to Townline Road, and a new crossing at Irish Creek.

The purpose of the SCP is to ensure that the cultural heritage significance and heritage attributes of Black Bridge are conserved over the short, medium, and long-term. The SCP has been prepared in accordance with the SCP Terms of Reference (ToR) for the Black Bridge Road Bridge prepared by MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC) for the City of Cambridge in January 2020. This SCP is also informed by the Ontario Heritage Trust’s Conservation Plans for Heritage Properties (2012), the MHSTCI’s Standards and Guidelines for the Conservation of Provincial Heritage Properties (MHSTCI 2010) and Information Bulletin 2, Strategic Conservation Plans for Provincial Heritage Properties (MHSTCI 2017), and the Canada’s Historic Places (CHP) Standards and Guidelines for the Conservation of Historic Places in Canada (CHP 2010).

1.1 Scope of Work

Wood completed the following tasks for this SCP:

- Background Review: Existing documents were reviewed and summarized to provide a comprehensive understanding of the work completed to date, and planning tools in place for the bridge.
- Information Gathering: Information gathering requests were sent to the City of Cambridge, Ontario Heritage Trust, and MHSTCI to obtain up-to-date heritage-related information about Black Bridge. The City’s Municipal Heritage Advisory Committee was also contacted to gather input for the SCP.
- Field Review: A site visit was conducted to document the bridge’s heritage attributes and existing conditions.
- Review of Condition Assessment: The results of the bridge condition assessment prepared by Wood under a separate cover (Wood 2021) was reviewed to identify structural constraints.
- Planning Considerations and Approvals: The City of Cambridge planning requirements and municipal approvals were identified for each of the short-, medium-, and long-term conservation strategies for the bridge.
- Conservation Strategy: A conservation strategy for Black Bridge was prepared using the following guidance documents:
  - Conservation Plans for Heritage Properties (Ontario Heritage Trust 2012)
• Standards and Guidelines for the Conservation of Provincial Heritage Properties (MHSTCI 2010)
• Information Bulletin 2, Strategic Conservation Plans for Provincial Heritage Properties (MHSTCI 2017)
• Standards and Guidelines for the Conservation of Historic Places in Canada (CHP 2010).

• Action Plan, Implementation and Monitoring: This SCP provides an action plan, implementation, and monitoring plan to conserve the bridge over the short, medium, and long terms.
Figure 1: Location of the Study Area
Figure 2: Aerial Photograph Showing the Location of the Study Area
2.0 Statement of Cultural Heritage Value or Interest

2.1 Black Bridge Road Bridge

2.1.1 Statement of Cultural Heritage Value or Interest

Black Bridge was designated in 2003 through City of Cambridge By-law 16-03 enabled under Part IV of the Ontario Heritage Act. The following text is taken directly from the designation By-law:

The current Black Bridge Road Bridge was constructed in 1916 but there is evidence of a wooden bridge structure on this site from as early as 1910. The Waterloo Township Minutes of July 1916 indicate that the Hamilton Bridge Works Company was awarded the contract to build a "steel superstructure bridge at Cole's Mill, near Hespeler" for $5575.00.

Historically, the Black Bridge Road was the Block Line that divided Wilson's Upper Block and Wilson's Lower Block and was a point of reference on early maps dating back to 1805.

The Black Bridge Road Bridge is a single-lane pin-jointed steel truss bridge and is typical of the bridges built in that era. It has undergone extensive repair work beginning in 1931 when the wooden deck was replaced, and most recently in 1996. Despite these repairs, the bridge has retained its original form and is the only steel bridge of its kind in Cambridge.

The heritage attribute of this property is the single-lane pin-jointed steel truss bridge in its entirety.

REASONS FOR DESIGNATION

The property was evaluated in terms of the criteria for designation in accordance to the Heritage Policies within the City of Cambridge Official Plan:

Heritage Value or Interest

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

Architectural Value or Interest

a) it is a good, representative example of a method of construction now rarely used;

b) it is a good, representative example of its architectural style of period of building;

c) it terminates a view or otherwise makes an important contribution to the urban composition or streetscape of which it forms a part

2.1.2 Heritage Attributes

Following the designation of Black Bridge in 2003, the Ontario Heritage Act was amended in 2005. Accordingly, the 2003 By-law did not include a ‘list of heritage attributes’, now a requirement when properties are designated under the Ontario Heritage Act. To address this, the Heritage Impact Assessment (HIA) completed by MHBC in 2017 included a list of heritage attributes for the structure (MHBC 2017). This list was also included in the SCP Terms of Reference developed for Black Bridge (MHBC 2019).

The list of heritage attributes for Black Bridge include:

- Alignment;
• Material (Steel);
• Crossing over Water (from concrete abutment to concrete abutment); and
• Views
  o From curve in road east to Black Bridge Road Bridge
  o From Black Bridge Road Bridge north terminating at curve in Speed River
  o From Black Bridge Road Bridge south terminating at curve in Speed River
  o From Black Bridge Road /Townline Road west to Black Bridge Road Bridge
• Steel truss construction with riveted joints;
• Abutments; and
• Single Span construction.
• It should be noted that other components of the bridge have changed over time, including the deck (between concrete abutments), which was originally wood and has been with other materials.

In addition to the above heritage attributes, consultation with the City of Cambridge indicated that the concrete railings located on the east and west approaches are also considered heritage attributes of the bridge. The City further identified that the concrete railings will be added to the list of heritage attributes when the designation by-law is updated.

Heritage attributes are shown in Plate 1 to Plate 5 and in Figure 3.
Plate 2: Photograph Location 1 (View from curve in road east to Black Bridge)

Plate 3: Photograph Location 2 (View from Black Bridge north terminating at curve in Speed River)

Plate 4: Photograph Location 3 (View from Black Bridge south terminating at curve in Speed River)

Plate 5: Photograph Location 4 (View from Black Bridge Road/Townline Road west to Black Bridge)
Figure 3: Location of Heritage Attributes
3.0 Condition Assessment – Current and Future

3.1 Program Needs and Bridge Use

In 2017, MHBC completed a Heritage Impact Assessment (HIA) as part of the Municipal Class Environmental Assessment for Black Bridge Road and Townline Road (MHBC 2017). The study area included the northeast part of the City of Cambridge and extended into the Township of Puslinch and included Black Bridge Road, Roszell Road, River Road and Townline Road. The assessment identified forty-one heritage resources within the cultural heritage landscape, including Black Bridge.

The preliminary impact assessment determined that there was no justifiable alternative that involved demolishing the Black Bridge. The remaining alternatives were therefore to:

1) Retain the bridge in situ and rehabilitate it as a pedestrian crossing;
2) Relocate the bridge to a location on land and used as a part of the trail network; or
3) Relocate the bridge to a location on top of the new bridge and used as a pedestrian crossing.

Following an evaluation, the alternative to retain the bridge in situ and rehabilitate as a pedestrian crossing was selected as the preferred option. The HIA recommended that any alterations or repairs undertaken to convert Black Bridge to a pedestrian bridge be documented and that original materials be retained and rehabilitated to the greatest extent possible (MHBC 2017).

From this recommendation, the City planned for the Black Bridge to be converted from a single lane vehicular bridge to part of a Multi-Use Trail and to add a new vehicular bridge to the north side of the Black Bridge.

3.2 Physical Conditions

3.2.1 Existing Conditions

Black Bridge is a single-lane 35.7 m long, single span and five panel Pratt through truss bridge constructed in steel with pin joint connections that carries Black Bridge Road over the Speed River in a general east-west direction. Its deck, abutments, and railing are concrete. The total bridge width is 4.8 m, with a deck width of 4.24 m. The bridge was originally constructed in 1916 to replace an earlier wooden covered bridge. There is extensive evidence of restoration over its 105-year history, the most notable occurring in 1996. The north, south, east, and west elevations as well as oblique views of the bridge are shown in Plate 6 to Plate 11.

Black Bridge Road is a two-lane asphalt road with no shoulders or sidewalks on the east and narrow gravel shoulders on the west. The road is generally raised above the surrounding landscape, which is a mix of low and wet and treed areas. The east and west approaches are flanked on both sides by caution signs and steel guard rails that run up to the original concrete railings. Near the northwest quadrant is a parking lot and canoe launch (Plate 12 to Plate 17).

The 1916 concrete railings are located at the northeast, northwest, and southwest corners of the bridge (Plate 18 to Plate 22). The northwest railing is the longest with four posts, followed by the northeast railing with three posts. The southwest railing has two posts. Each post is impressed with a roundel detail and has a pyramidal cap (Plate 23). The concrete railings have deteriorated, although some sections have been repaired (Plate 24). There is no concrete railing at the southeast corner of the bridge.
The through truss clearance, between the deck of the bridge and the steel portal strut and bracing is 3.1 m (Plate 25 and Plate 27). With the exception of the bottom sections, which have a brown top coat, the truss is weathered metal and the rivet heads are visible throughout (Plate 28). The steel floor beams, stringers, and bottom bracing on the underside of the bridge are painted in a grey top coat (Plate 32 and Plate 33). The bottom chord can be seen on the north and south elevation of the bridge beyond the deck surface (Plate 29). Steel pipe handrails are present along the north and south elevations (Plate 30) and the deck is made of concrete and includes curbs and drains (Plate 31).

The bridge substructure is composed of large, cast-in-place concrete abutments with wingwalls (Plate 34 to Plate 37). The abutments have undergone extensive rehabilitation, most notably in 1996 (Dillion 1996), and the wing walls appear to be original to the 1916 construction.
Plate 8: East elevation of Black Bridge  
Plate 9: West elevation of Black Bridge  
Plate 10: Southeast view of the north elevation of Black Bridge
Plate 11: Northwest view of the south elevation of Black Bridge

Plate 12: East approach to Black Bridge
Plate 13: East approach to Black Bridge showing steel guard rails and reflective safety posts

Plate 14: Northwest view of steel guard rail attached to concrete railing (circa 1916) located at the northeast side of the bridge

Plate 15: West view of steel guard rail attached to concrete railing (circa 1916) located at the northeast side of the bridge

Plate 16: West approach to Black Bridge
Plate 17: West approach to Black Bridge showing steel guard rails and reflective safety posts

Plate 18: Concrete railing on the northwest side of the bridge. Note steel barriers are reflective safety signs placed adjacent to the concrete railing

Plate 19: Concrete railing on the northwest side of the bridge
Plate 20: Detail of concrete railing on the northwest side of the bridge

Plate 21: Concrete railing (circa 1916) on the southwest side of the bridge

Plate 22: Concrete railing, steel guard rail, and steel bridge railing on the southwest side of the bridge
Plate 23: Decorative detail on the concrete railing (circa 1916)

Plate 24: Example of deterioration on the concrete railing

Plate 25: Bridge superstructure showing Pratt Truss with pin joint steel construction and concrete deck. Note expansion joint between concrete bridge deck and asphalt road surface.
Plate 26: North elevation showing Pratt Truss superstructure

Plate 27: Northwest view of the bridge truss and deck (looking towards the canoe launch)

Plate 28: Detail of pin join steel construction

Plate 29: Bottom chord of truss construction visible over the pipe hand railing.

Plate 30: Steel pipe handrail fastened to the interior of the Pratt Truss superstructure
Plate 31: Concrete curb and drain located on the bridge deck

Plate 32: Underside of the bridge showing steel floor beams, stringers, and bottom bracing.

Plate 33: Underside of the bridge showing steel floor beams, stringers, and bottom bracing. Note east abutment in distance.
3.2.2 Landscape Context

Black Bridge is set within the Black Bridge Road Bridge Cultural Heritage Landscape, a landscape defined by the Speed River and associated floodplain, transportation routes (rail line, Black Bridge Road, and public trails), and nearby heritage properties (Plate 38 to Plate 41) (Figure 4). Nearby heritage properties that are heritage attributes of the Cultural Heritage Landscape include ‘The Mill’ (4860 Townline Road; Listed on the City of Cambridge Heritage Properties Register), ‘The Mill Boarding House’ (4790 Townline Road; designated under Part IV of the Ontario Heritage Act), and ‘The Mill Manager’s House’ (4880 Townline Road; designated under Part IV of the Ontario Heritage Act). The character of the Cultural Heritage Landscape is also defined by viewsheds to and from Black Bridge, views of the landscape, and the spatial orientation of features within the landscape (Plate 42 to Plate 48).

Approaching the bridge from the east, one travels downhill from the intersection of Black Bridge Road and Townline Road to a lowland gully. The road is flanked by thick forest and residential land to the north and residential land and access to an historic mill on the south. Nearer on approach, the landscape opens on both sides of the bridge offering a view of the surrounding river and wetland. There is a wide, open view of the natural setting to the north, while the southeast bank of the river is considerably more forested.

Approaching the bridge from the west, travel is downhill on the narrow-paved road into a gully cut out of the surrounding rocky terrain for a railroad crossing. There is a small parking area and canoe launch with
interpretive sign that outlines the history of Black Bridge (Plate 49).

From the bridge are channelled views to the north and south of the naturalized river environment. There are no obstructions or evidence of modern development visible from either vantage point.
Plate 42: Northeast view of Black Bridge (left) and ‘The Mill’ (4680 Townline Road) (right) from the west bank of the Speed River

Plate 43: South view of Black Bridge from the west bank of the Speed River

Plate 44: North view of Black Bridge from the west bank of the Speed River

Plate 45: West view along Black Bridge Road looking towards Black Bridge
Plate 46: East view along Black Bridge Road looking towards Black Bridge

Plate 47: North view from Black Bridge, looking at the Speed River
Plate 48: South view from Black Bridge, looking at the Speed River

Plate 49: Interpretive sign located at the northwest side of Black Bridge
3.2.3 Structural Condition Survey

A Condition Survey Report for Black Bridge was prepared by Wood for the City of Cambridge in September 2021 (Wood 2021a) and included a visual inspection, structural evaluation, analysis of carrying capacity, and recommended appropriate remedial actions. The structural evaluation included the development of a 2D truss model and subsequent analysis using MIDAS Civil software and the carrying capacity analysis included tests for design loads/load cases, utility limit state (tension members and compression members), fatigue limit state, and serviceability limit state. The Condition Survey was completed in accordance with the Canadian Highway Bridge Design Code (CHBDC/CSA S6-19) and the 2007 MTO Guidelines for the Design of Pedestrian and Bicycle Bridges.

Overall, the Condition Survey Report found that Black Bridge has sufficient capacity to support pedestrian traffic and maintenance vehicles. Analysis determined that the remaining fatigue life of Black Bridge is approximately 39 years and minor repairs to address current defects was recommended, including: patch repairs to abutments, wingwalls, and concrete railings; sealing of cracks with epoxy; and cleaning and coating of areas on the steelwork (Wood 2021a: 10).

A 3D model was created for the bridge in January 2022 to analyse the structural integrity of the bridge. The 3D model found that wind loading may be overstressing the end diagonals of the bridge and reinforcement may be required. Material testing of the bridge will be completed in spring 2022 to establish the strength of the steel. If the steel is too weak to manage the wind load, possible rehabilitation strategies include stiffening the connection between the end floor beam and end diagonal or adding an addition truss member to connect the centre of the end diagonal to the bottom of the first vertical. The preferred option for the strengthening of the bridge will be determined following the material testing in spring 2022. It is noted that stiffening the connection between the end floor beam and end diagonal is preferred from a cultural heritage perspective since this option does not alter the steel truss, which is a heritage attribute of the bridge.

Wood further recommended modifications to convert the bridge to a Multi-Use Trail, including to replace concrete curbs, install new cycle height railing on the bridge and approaches, install a cover plate for expansion joints, and remove the existing steel beam guide rails and signage (Wood 2021a:11).

Table 1 lists the existing conditions recorded in the Condition Survey Report (Wood 2021a:1-3):

<table>
<thead>
<tr>
<th>Bridge Element</th>
<th>Existing Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Deck and Curb</td>
<td>The deck and curbs were found to be generally in good condition, with some hairline cracks and small concrete spalls observed. The sealant in front of the construction joint between deck and curb was observed to be loose in places. Ponding of water on the deck adjacent to the curb was observed at various locations.</td>
</tr>
<tr>
<td>Deck Soffit</td>
<td>The deck soffit was found to be generally in good condition. Hairline and narrow cracks with efflorescence deposits were observed on the soffit, mostly in line with the deck drains.</td>
</tr>
<tr>
<td>Deck Drains</td>
<td>The deck drains were found to be generally in good condition. Some corrosion was noted at the top of the drains where they are embedded</td>
</tr>
</tbody>
</table>
## Bridge Element

<table>
<thead>
<tr>
<th>Bridge Element</th>
<th>Existing Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steel Trusses</strong></td>
<td>The steel trusses were found generally to be in good condition. Some minor section loss to steel members and rivets was noted near the base of the truss members. The areas of section loss have been coated over, indicating no new corrosion since the last time they were coated. The coating on the steel is just on the bottom of the truss members and has a brown top coat and was found to be in good condition.</td>
</tr>
<tr>
<td><strong>Hand Railing on Bridge</strong></td>
<td>The steel handrail on the bridge consists of three horizontal rails connected back to the vertical and diagonal truss members. The handrail was found to be in fair condition. The ends of the rails are bent in places, one connection plate has become disconnected and the coating on the steel is showing deterioration.</td>
</tr>
<tr>
<td><strong>Steel Floor Beams, Stringers and Bottom Bracing</strong></td>
<td>The steel floor beams, stringers and bottom bracing were found generally to be in good condition. Small areas of corrosion were noted, mainly at the connections between the diagonal bracing and the floor beams. The coating on the steel has a grey top coat, and a white powdery deposit was observed on many of the members. This deposit may be zinc hydroxide, indicating a zinc-based coating, and the deposit would indicate some breakdown of the coating system.</td>
</tr>
<tr>
<td><strong>Expansion Joints</strong></td>
<td>The expansion joints are strip seal joints with asphaltic concrete dams. The expansion joints were found to be in good condition but are filled with debris. No leakage was observed on the abutments below the joints.</td>
</tr>
<tr>
<td><strong>Bearings</strong></td>
<td>The bearings were found to be in good condition.</td>
</tr>
<tr>
<td><strong>Approaches</strong></td>
<td>The asphalt approaches were found to be in fair condition with some transverse and longitudinal cracks and settlement at the edges of the asphalt pavement.</td>
</tr>
<tr>
<td><strong>Abutment Walls and Wingwalls</strong></td>
<td>The abutments and wingwalls are generally in fair condition. Cracks and spalls in the concrete were noted, mostly near the waterline and at locations where the subdrains from the embankments outlet. Cracks in the concrete were also noted along the lines of the anchor plates to the threadbars that tie the two wingwalls together.</td>
</tr>
<tr>
<td><strong>Concrete Railings on Approaches and Steel Beam Guide Rails</strong></td>
<td>There is a concrete two-beam railing on the northeast, northwest and southwest corners of the bridge. The concrete railing was found to be in fair condition with a spall observed on the northwest railing. There is a short length of steel beam guiderail (SBGR) with timber posts on all four corners of the bridge. The SBGRs were found to be generally in good condition.</td>
</tr>
<tr>
<td><strong>Embankments, Streams</strong></td>
<td>The bridge embankments at all four quadrants were found to be in fair condition.</td>
</tr>
</tbody>
</table>
The stream and waterway were found to be generally in good condition.
3.3 Legislative and Policy Considerations

The requirements to consider cultural heritage under the Planning Act process are found in the Provincial Policy Statement (PPS) (Government of Ontario 2020) and the Ontario Heritage Act, R.S.O. 1990, c. O.18 (Government of Ontario 1990a).

### 3.3.1 Planning Act

Development and land use on privately owned or municipally owned property in Ontario is subject to the Planning Act, R.S.O. 1990, c.P.13 (Government of Ontario 1990a). The Planning Act lays out the “ground rules” for land use planning in Ontario and includes direction for the provincial and local administration on planning matters in the province. The Planning Act also enables municipalities to develop Official Plans, which are to set goals, objectives, and policies to manage and direct local land use (Government of Ontario 1990a). Under the Planning Act, planning authorities are responsible for local planning decisions and creating local planning documents (i.e. Official Plans, Secondary Plans, and Heritage Conservation District Plans) that are consistent with the PPS and other applicable provincial legislation, such as the Ontario Heritage Act.

### 3.3.2 Provincial Policy Statement

The PPS provides policy direction on matters of provincial interest related to land use planning and development (Government of Ontario 2020:1). The PPS is applicable to the entire Province of Ontario. Under the PPS, the conservation of cultural heritage is identified as a matter of provincial interest. Section 2.6 of the PPS gives direction on the consideration of cultural heritage and archaeology (Government of Ontario 2020:31). Specifically, the following direction is given regarding built heritage resources, cultural heritage landscapes, and protected heritage properties:

> 2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

> 2.6.3 Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.

(Government of Ontario 2020)

### 3.3.3 Ontario Heritage Act

The Ontario Heritage Act, R.S.O. 1990, c. O.18, gives municipalities and the provincial government powers to protect heritage properties and archaeological sites (Government of Ontario 1990b). The Ontario Heritage Act includes two regulations for determining Cultural Heritage Value or Interest (CHVI): Ontario Regulation (O. Reg.) 9/06 and O. Reg. 10/06. O. Reg. 9/06 provides criteria to determine the CHVI of a property at a local level while O. Reg. 10/06 provides criteria to determine if a property has CHVI of provincial significance.

### 3.3.4 City of Cambridge Official Plan

The development of the City of Cambridge is guided by the Cambridge Official Plan (Official Plan) (City of Cambridge 2018). The Official Plan contains policies for cultural heritage in Chapter 4, Cultural Heritage Resources (City of Cambridge 2018: 4.1 to 4.2 and 4.8.9). Policies relevant to this SCP include:
4.1 Objectives

g) support and require where feasible the identification, cataloguing, adaptive reuse, analysis and relocation of cultural heritage resources, and in some cases the preservation of sites containing these resources; and

h) promote the Grand River and its major tributaries, including the Speed River through Cambridge, as a nationally designated Canadian Heritage River.

4.2 Priorities for Cultural Heritage Resources

1. When development is proposed, the City will encourage the conservation of cultural heritage resources in the following order of preference:

   a) incorporation of cultural heritage resources and their surrounding context into development applications in a manner which does not conflict with the cultural heritage resource;

   b) promotion of the use of scale and design which blends harmoniously with existing cultural heritage resources when development occurs; and

   c) preservation and adaptive re-use of buildings of cultural heritage significance for compatible residential intensification and/or for other appropriate and compatible uses is encouraged.

2. Where the priority conservation actions of Policy 4.2.1 cannot be achieved, the City will implement the following measures in order of preference:

   a) promote the re-use of the resource, building, or building elements where a cultural heritage resource cannot be conserved intact;

   b) require, prior to approving a development application which would result in the destruction of a cultural heritage resource, that the proponent provide to the City architectural measured drawings, a land history, photographs and other available documentation of the cultural heritage resource in its surrounding context and, if feasible, relocate the cultural heritage resource; and

   c) promote the salvaging and reuse of building materials where a cultural heritage resource cannot be conserved intact to discourage construction materials from entering landfill sites and incorporation of building materials in the new development or redevelopment.

3. Cultural heritage resources will be preserved and enhanced, wherever possible. For these purposes, Council may:

   b) require the integration of cultural heritage resources into the design of draft plans of subdivision and other development;

   c) require the Committee of Adjustment to consider the implications of its decisions on cultural heritage resources and where feasible, provide for their protection;

   d) provide for any cultural heritage resource located within the public areas as established by this Plan to be restored, rehabilitated, used and maintained for any
purpose compatible with the existing or proposed function of such public areas in a manner that is consistent with other policies in this Plan;

f) undertake studies and formulate and implement heritage plans and programs, including consultation and cooperation with other local, Regional, Provincial and national heritage conservation agencies and organizations;

3.3.5 Official Plan Amendment No. 15: Black Bridge Cultural Heritage Landscape Site Specific Policy Area

In 2012, the City of Cambridge amended the Cambridge Official Plan to include a site-specific policy concerning the lands in and around the Black Bridge Area to form the Black Bridge Cultural Heritage Landscape (City of Cambridge 2016). OPA No. 15 is contained in Section 4.8.9 of the Cambridge Official Plan and contains the following policies:

1. Preamble: The Black Bridge CHL is an area of cultural heritage significance in which the modifications resulting from human activities can be identified and are valued by the community. The Black Bridge CHL possesses cultural associations, as well as groupings of individual heritage features, such as the built structures, open spaces, archaeological sites and natural elements that together comprise a significant heritage form, distinctive from that of its constituent elements or parts. The CHL should be conserved in such a way that the area's heritage values, attributes and integrity are retained, and the awareness, appreciation and enjoyment of the Black Bridge CHL should be promoted.

1.1 The following heritage themes provide a foundation for the Black Bridge Cultural Heritage Landscape:

   a) Settlement: Aboriginal and Early European;
   b) Community Development: Grist Mills and Saw Mills;
   c) Transportation: Road, River and Rail; and
   d) The Rivers and the Land.

1.2 The following are the key Character Defining Attributes of the Black Bridge CHL, as identified through the Black Bridge CHL Technical Study (January, 2016):

   a) The Mill, 4860 Townline Road, City of Cambridge;
   b) The Mill Races, located in City of Cambridge and Township of Puslinch;
   c) The Irish Creek Pond and Dam, Township of Puslinch;
   d) The Speed River Dam, Township of Puslinch;
   e) The Mill Manager's House, 4880 Townline Road, City of Cambridge;
   f) The Mill Boarding House, 4790 Townline Road, City of Cambridge;
   g) The Black Bridge, Black Bridge Road at the Speed River, City of Cambridge;
   h) 537 River Road, City of Cambridge;
   i) The Roszell Farm; 6542 Roszell Road, Township of Puslinch
j) Crossroads Memorial Church and Brethren in Christ Cemetery, 4614 Wellington Road, Township of Puslinch;

k) The Speed River, and the Irish Creek their valleys and floodplains, City of Cambridge and Township of Puslinch;

l) Views of the Speed River valley, from Black Bridge Road, views of the Black Bridge along the road and across the valley, and views along Townline Road from Black Bridge Road to the hill top near River Road, City of Cambridge and Township of Puslinch; and

m) Views and viewsheds associated with these Character Defining Attributes, City of Cambridge and Township of Puslinch

2. Policies: In addition to the policies and permitted uses in this Plan, the lands designated as the Black Bridge Cultural Heritage Landscape (Black Bridge CHL) as identified on Figure 67 of this Plan, are subject to the following policies:

2.1 Conservation
The Black Bridge Cultural Heritage Landscape shall be conserved.

2.2 Education and Awareness
The community is encouraged to promote continued education, awareness and interpretation of the Black Bridge CHL, as detailed in the Management Strategy contained within the Black Bridge CHL Technical Study, and through undertakings such as a coordinated signage program for the area that interprets the themes and significant features, walking or cycling tours, interpretive brochures, and digital media, as appropriate.

2.3 Cultural Heritage Impact Assessment (CHIA)
A Cultural Heritage Impact Assessment shall be required for a development proposal on all properties within, or directly adjacent to, the Black Bridge CHL in order to ensure that development is context sensitive and mitigates impacts to Character Defining Attributes. The Cultural Heritage Impact Assessment shall be undertaken in accordance with the requirements under Section 4.10 of this Plan.

Where a Cultural Heritage Impact Assessment has been undertaken in respect to a development proposal and where the development proposal has been reviewed by the Municipal Heritage Advisory Committee and approved by Council, a further Cultural Heritage Impact Assessment will not be required.

2.4 Infrastructure
“Infrastructure” development, upgrades and/or improvements shall be planned and designed in such a way as to minimize impacts and be sympathetic to the Black Bridge CHL’s Character Defining Attributes and to the broader context of the area.

2.5 Property Listing and Designation
Character Defining Attributes of the Black Bridge CHL located within the City of Cambridge shall be listed in the Municipal Register and property owners shall be encouraged to seek designation under the Part IV of the Ontario Heritage Act.
2.6 Amendments to Black Bridge CHL

The Black Bridge CHL policies, Character Defining Attributes and/or boundary may need to be amended from time to time. Amendments shall be prepared by the City of Cambridge’s Planner-Heritage and brought forward to MHAC for review. MHAC shall provide a recommendation in regards to the amendment for consideration and approval by Council. All amendments will be pursuant to the Planning Act.

(City of Cambridge 2016b; City of Cambridge 2018)

3.3.6 Approval Authority

Black Bridge is designated Part IV of the Ontario Heritage Act through By-law No. 16-03. As a municipally designated property, the approval authority for Black Bridge is the City of Cambridge (MHBC 2020:8). Section 28 of the Ontario Heritage Act authorizes municipalities to establish a Municipal Heritage Advisory Committee (MHAC) to advise Council on matters relating to the Ontario Heritage Act and the City’s Official Plan (Cambridge 2016). While the Cambridge City Council (Council) makes final decisions on all City-related matters, the Cambridge MHAC advises and assists Council on heritage matters relating to Part IV and V of the Ontario Heritage Act, development applications involving cultural heritage resources, and other related heritage matters (Cambridge 2016:2).

In Cambridge, the approval process for alterations to a municipally designated property require consultation with the MHAC. Accordingly, MHAC must be consulted where alterations to the heritage attributes of Black Bridge are proposed.

3.4 Future Plans and Needs

The HIA prepared by MHBC in 2017 determined that retention of Black Bridge in situ and rehabilitation of the bridge to serve as a pedestrian bridge was the preferred alternative for Municipal Class Environmental Assessment for Black Bridge Road and Townline Road (MHBC 2017). The Structural Condition Survey completed by Wood in 2021 included a detailed evaluation of the structural capacity of the existing heritage truss bridge (Wood 2021a). The Structural Condition Survey found that Black Bridge is currently receiving excessive traffic for a single lane load posted (bridge (Wood 2021a: 10). However, the existing bridge has sufficient capacity to support pedestrian traffic and maintenance vehicles and that no strengthening or posting of the bridge is required to covert the bridge from a vehicular crossing to a pedestrian bridge (Wood 2021a:9). These findings support MHBC’s conclusion that conversion of Black Bridge to be part of a Multi-Use Trail is the preferred alternative to conserve Black Bridge.

On November 4, 2021, an 18-wheeler transport truck struck Black Bridge while travelling east along Black Bridge Road. The collision caused structural damage to the steel truss superstructure on the west elevation, considered to be a heritage attribute. Consultation with the City of Cambridge determined that Black Bridge was damaged by vehicular traffic twice in 2016, which also resulted in damages to the portals. The collisions and resulting damages to heritage attributes highlight the need to convert Black Bridge to a pedestrian bridge since continued vehicular traffic will threaten the long-term viability of this structure.

Recommended repairs and modifications to convert Black Bridge to its new use are provided in Section 3.4.1.
3.4.1 Proposed Repairs

3.4.1.1 Repairs to Address Collision Damage

The following repairs have been proposed by Wood to address damage caused by the collision on November 4, 2021:

- Install a temporary lateral bracing system to laterally support the bridge during the removal and replacement of the bottom lateral brace at the west end of the bridge;
- Heat straighten all lateral frame members designated to remain that have deformed as a result of the collision, including gusset plates;
- Remove and replace diagonal cross bracing and vertical brace at right lateral truss frame including replacing all riveted connections with new bolted connections;
- Remove and replace bottom lateral brace including all gusset plates and all riveted connections to bottom lateral brace with new gusset plates and bolted connections;
- Remove and replace knee braces including gusset plates connected to main vertical truss members and bolted connections;
- Heat straighten main vertical truss member at deformed section near knee brace connection; and,
- Where required, new steel sections will be weathering steel, matching the existing steel section properties to repair damaged sections in a “like for like” manner.

Damaged areas of the bridge should be thoroughly photo-documented prior to any intervention and repair work should also be photo-documented. Photographs collected should be submitted to the City of Cambridge Heritage Planner and kept in a centralized place to create a record of all work performed to Black Bridge.

Wood notes that the above list of repairs are preliminary and subject to change pending review and comment from the City of Cambridge Heritage Planner.

3.4.1.2 Minor Rehabilitation

The Condition Survey Report recommended the following minor rehabilitations to address current structural defects of Black Bridge (Wood 2021:9-10):

- Remove deteriorated concrete from abutments and wingwalls and deck;
- Patch repair abutments and wingwalls and deck;
- Remove deteriorated concrete from concrete railings on approaches;
- Patch repair concrete railings on approaches;
- Seal cracks wider than 0.5mm in deck, deck soffit, abutment and wingwalls, by injecting with colour matching epoxy;
- Abrasive blast clean deck surface and apply migratory corrosion inhibitor, comprising a silane sealer and an organic corrosion inhibitor;
- Locally power tool clean corroded areas of structural steelwork and coat areas with a 3 coat (epoxy zinc/epoxy/polyurethane) system, compatible with the existing coating and with a top coat to match the colour of the existing coating; and
• Place riprap on embankments for erosion protection.

It is noted that the concrete deck is an exposed deck (i.e. it has no waterproofing) and the reinforcing bars are epoxy coated. Given the deck is 25 years old, it is expected that it has another 15 years of service life, which rises to 20 years if the MCI listed above is applied to the deck. In order to extend the lifespan of the deck even further, additional measures can be considered, for example placing a 30mm polyester concrete overlay or a 10mm thick pedestrian bridge waterproofing and asphalt wearing course system (Matacryl WS Pedestrian or equivalent). These options would be more expensive but would provide greater service life before a major rehabilitation became necessary.

3.4.2 Proposed Modifications to Convert Bridge to Multi-Use Trail

The Condition Survey Report included a list of modifications required to convert Black Bridge to a multi-use trail (Wood 2021:10). Proposed modifications include:

• Construct new concrete footings on approaches, extending to ends of wingwalls, to support new cycle height railings;
• Install new cycle height railings on existing bridge curbs and new approach footings;
• Install cover plate over expansion joint at each end of bridge. Cover plate prevents edges of joint from becoming trip hazard to pedestrians and cyclists;
• Remove steel beam guide rails on approaches; and,
• Remove vehicular signage at each end of bridge.
4.0 Conservation Strategies

Black Bridge is designated under Part IV of the Ontario Heritage Act through By-Law No. 16-03. Black Bridge is also a character defining attribute of the Black Bridge Cultural Heritage Landscape per Section 4.8 (9) of the City of Cambridge Official Plan. The strategies below consider the Statement of CHVI and heritage attributes identified as they apply to the bridge’s significance as standalone cultural heritage resource and as a key component of the greater Cultural Heritage Landscape.

The following conservation strategies provide guidance for the conservation, use, and maintenance of Black Bridge.

4.1 Conservation Treatment and Guidelines

The Standards and Guidelines for the Conservation of Historic Places in Canada (Standards and Guidelines) was reviewed to develop a conservation strategy for Black Bridge (Parks Canada 2010). The Standards and Guidelines lays out the framework for the conservation of historic places, and can be defined as “all actions or processes aimed at safeguarding the character-defining elements [heritage attributes] of an historic place to retain its heritage value and extend its physical life” (Parks Canada 2011: 15). Per the Standards and Guidelines, there are three primary conservation treatments:

**Preservation:** Involves protecting, maintaining, and stabilizing the existing form, material, and integrity of an historic place or individual component, while protecting its heritage value. Preservation should be considered as the primary treatment when, a) materials, features and spaces of the historic place are essentially intact and convey the historical significance without extensive repair or replacement, b) depiction during a particular period in its history is not appropriate, and, c) continuation or new use does not require extensive alterations or additions.

**Rehabilitation:** Involves the sensitive adaptation of an historic place or individual component for a continuing or compatible contemporary use, while protecting its heritage value. Rehabilitation should be considered as the primary treatment when, a) repair or replacement of deteriorated features is necessary, b) alterations or additions to the historic place or planned for a new or continued use, and c) depiction during a particular period in its history is not appropriate.

**Restoration:** Involves accurately revealing, recovering or representing the state of an historic place or individual component as it appeared at a particular period in its history, while protecting its heritage value. Restoration should be considered as the primary treatment when, a) an historic place’s significance during a particular period in its history significantly outweighs the potential loss of existing, non-character defining materials, features and spaces from other periods, b) substantial physical and documentary or oral evidence exists to accurately carry out the work, and, c) contemporary additions or alterations and are not planned.

(Parks Canada 2011: 17)

It is recommended that rehabilitation be used as the primary strategy for conservation of Black Bridge with preservation utilised as a secondary strategy to be employed whenever possible.

The recommendation of primary and secondary strategies has been made with the understanding that
Black Bridge will undergo an adaptive reuse as a pedestrian bridge that will be part of a Multi-Use Trail. A new bridge spanning the Speed River north of Black Bridge is proposed to accommodate vehicular traffic.

The new construction and adaptive reuse will inevitably have an impact on the existing heritage structure, surrounding cultural heritage landscape and associated cultural heritage attributes. Table 3 reviews the ‘General Standards’ contained in Section 3 of the Standards and Guidelines for the Conservation of Historic Places in Canada and identifies implementation strategies that are consistent with a primary rehabilitation strategy with a secondary strategy of preservation. The implementation strategies have been informed additionally by guidelines outlined in Chapter 4.1, 4.4, and 4.5 of the Standards and Guidelines for the Conservation of Historic Places in Canada. A complete list of the General Standards and applicable guidelines is provided in Appendix A.

### Table 2: Review of General Standards

<table>
<thead>
<tr>
<th>General Standard</th>
<th>Relevance to Black Bridge</th>
</tr>
</thead>
</table>
| 1. Conserve the heritage value of an historic place. Do not remove, replace, or substantially alter its intact or repairable character defining elements. Do not move a part of an historic place if its current location is a character-defining element. | - The alignment of Black Bridge over the Speed River is a cultural heritage attribute and as such the bridge remain in situ.  
- The steel truss construction with riveted joints, abutments, and single span construction are heritage attributes of Black Bridge. These bridge components should remain in situ.  
- Regular maintenance to keep the bridge in good repair is required to avoid substantial alterations to this structure. |
| 2. Conserve changes to an historic place that, over time, have become character-defining elements in their own right | - Black Bridge has undergone restoration work in 1931 (replacement of bridge deck), 1976 (repairs to steel structure), 1984 (reinforcement of walls and stabilization of concrete), 1989 (repairs), and 1996 (reconstruction of floor system, addition of concrete deck, painting steel trusses). The steel truss construction with riveted joints and concrete abutments are heritage attributes of the structure and should be retained. Other elements, such as the concrete bridge deck, are not heritage attributes of the structure and may be rehabilitated for the purpose of the Multi-Use Trail configuration. |
| 3. Conserve heritage value by adopting an approach calling for minimal intervention. | - Heritage attributes should be conserved, including the steel truss construction with riveted joints, concrete abutments, location/alignment, and significant views to and from Black Bridge. Proposed work to convert Black Bridge to a Multi-Use Trail should not substantially alter these heritage attributes. A minimal intervention approach should be used to conserve the bridge and its contextual setting.  
- Black Bridge is set in the Black Bridge Cultural Heritage Landscape. Impacts to this contextual setting should be kept to a minimum where work is proposed to the bridge. |
| 4. Recognize each historic place as a physical record of its time, place, and use. Do not create a false sense of historical development by adding elements from other historic places or properties or by combining features of the same property that never coexisted. | - Where required, new structural elements introduced to Black Bridge to convert the bridge to a Multi-Use Trail should be distinguishable and supportive of the existing heritage attributes of the structure.  
- If significant repair is undertaken to the bridge form, or if significant new construction is to occur, this intervention must not falsify the story of the place as this would result diminished authenticity of the resource. |
<p>| 5. Find a use for an historic place that requires minimal or no change to its character-defining elements. | - Adaptive reuse of Black Bridge to a Multi-Use Trail is an appropriate future use that requires minimal change to the heritage attributes of the bridge. |</p>
<table>
<thead>
<tr>
<th>General Standard</th>
<th>Relevance to Black Bridge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6.</strong> Protect and, if necessary, stabilize an historic place until any subsequent intervention is undertaken. Protect and preserve archaeological resources in place. Where there is potential for disturbing archaeological resources, take mitigation measures to limit damage and loss of information.</td>
<td>• The structural condition survey determined that Black Bridge is in fair to good condition and that the bridge can accommodate future pedestrian and maintenance vehicle use without strengthening. The repairs identified in the condition survey report (Wood 2021) should be undertaken to stabilize the bridge and bring it to a state of good repair.</td>
</tr>
<tr>
<td><strong>7.</strong> Evaluate the existing condition of character-defining elements to determine the appropriate intervention needed. Use the gentlest means possible for any intervention. Respect heritage value when undertaking an intervention.</td>
<td>• The existing conditions of Black Bridge have been established through site investigations completed in 2021. The condition survey determined that repairs are needed and modifications are required to adapt the bridge to a future use as a Multi-Use Trail. To date, a minimal intervention approach has been used to establish the existing conditions of the bridge. • The structural condition of Black Bridge should be assessed on a bi-annual basis to create an up-to-date record of the existing conditions of the bridge. Bi-annual bridge inspections should be completed in fall and spring.</td>
</tr>
<tr>
<td><strong>8.</strong> Maintain character-defining elements on an ongoing basis. Repair character defining elements by reinforcing their materials using recognized conservation methods. Replace in kind any extensively deteriorated or missing parts of character defining elements, where there are surviving prototypes.</td>
<td>• Black Bridge should be inspected on a bi-annual basis to identify issues • Repairs identified by Wood in the Condition Survey should be completed (Wood 2020) • Routine maintenance must be carried out to conserve the heritage attributes of the bridge. • Qualified professionals should undertake maintenance and consult with heritage professionals to ensure appropriate materials and techniques are used • If replacement of bridge components is required as a last resort, the replacement should be completed ‘in kind’, using the same form, material, and detailing as the existing elements whenever possible.</td>
</tr>
<tr>
<td><strong>9.</strong> Make any intervention needed to preserve character-defining elements physically and visually compatible with the historic place and identifiable on close inspection. Document any intervention for future reference</td>
<td>• The conversion of Black Bridge from vehicular use to a Multi-Use Trail for pedestrians and maintenance vehicles will involve the construction of new concrete footings on approaches, installation of new cycle height railings, covering of expansion joints, removal of steel beam guide rails on approaches, and removal of vehicular signs at the end of each bridge. Installation of a polyester overlay on the bridge deck is also being considered. These interventions are not expected to disrupt the heritage attributes of the bridge and will be visually compatible with the original structure. • Detailed records of maintenance and repairs should be kept in order to keep an accurate record of where previous interventions have taken place.</td>
</tr>
</tbody>
</table>

**Additional Standards Related to Rehabilitation**

| **10.** Repair rather than replace character-defining elements. Where character-defining elements are too severely deteriorated to repair, and where sufficient physical evidence exists, replace them with new elements that match the forms, materials, and detailing of sound versions of the | • Replacement should use ‘in-kind’, or compatible equivalent of materials, forms, and detailing. • Qualified specialist should be involved in the selection process of replacement materials and historic documentation and physical inspection should be conducted to ensure the appropriate replacement is used. |
### General Standard

<table>
<thead>
<tr>
<th>Relevance to Black Bridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>elements. Where there is insufficient physical evidence, make the form, material and detailing of the new elements compatible with the character of the historic place.</td>
</tr>
</tbody>
</table>

#### 11. Conserve the heritage value and character-defining elements when creating any new additions to an historic place or any related new construction. Make new additions physically and visually compatible with, subordinate to, and distinguishable from the historic place.

- Bridge repairs and modifications are proposed to convert Black Bridge from a vehicular crossing to a Multi-Use Trail crossing. Heritage attributes of the bridge must be conserved and proposed modifications will be complimentary and supportive of the heritage character of the bridge.
- The view of the Speed River from the north side of Black Bridge is a heritage attribute of the bridge. A new bridge is proposed in this viewshed to divert vehicular traffic from Black Bridge. The new bridge should be designed in a manner that compliments the rural contextual setting of Black Bridge and associated Black Bridge Cultural Heritage Landscape. A sympathetic design for the new bridge may include a steel structure that references the form and materials of Black Bridge. Design finishes that are not appropriate for the new bridge include: concrete barriers, modern metal guard rails, and overhead lighting (e.g., cobra lights). The restoration of the natural setting of the Speed River and floodplains in the vicinity of the new bridge must be restored post-construction to rehabilitate the north view from Black Bridge.
- The new construction should be compatible with the existing bridge but distinguishable from it. The new bridge should not attempt to mimic the existing heritage resource in a way that detracts from the authenticity of the site. A balance should be struck between imitation and pointed contrast, thus complementing the heritage resource respectfully.
- New road configurations should be designed in a manner that detracts as little possible from the protected heritage views associated with Black Bridge (e.g., set back considerably from the current bridge approach and screened by trees appropriate to the CHL which the bridge is situated within).

#### 12. Create any new additions or related new construction so that the essential form and integrity of the historic place will not be impaired if the new work is removed in the future

- If reversible interventions such as temporary access or lay down areas are required, these should be designed and constructed in a manner that will not affect the cultural heritage attributes of the of Black Bridge and the broader Black Bridge Cultural Heritage Landscape.
- Views from and to the Black Bridge are heritage attributes of the structure, as such new construction within these view sheds should be sympathetic, compatible, and subordinate to Black Bridge and the broader Black Bridge Cultural Heritage Landscape.

### 4.1.1 Guidelines for Visual Relationships

Visual relationships to and from Black Bridge have been identified as heritage attributes of both the bridge itself and the broader Cultural Heritage Landscape. Accordingly, the visual relationship between Black Bridge and the surrounding landscape must be conserved.

Views identified as heritage attributes of Black Bridge include:
From curve in road east to Black Bridge Road Bridge
From Black Bridge Road Bridge north terminating at curve in Speed River
From Black Bridge Road Bridge south terminating at curve in Speed River
From Black Bridge Road Bridge Road/Townline Road west to Black Bridge Road Bridge

The view north from Black Bridge looking towards the curve in the Speed River is defined by the meandering view of the natural alignment of the Speed River. The Speed River is punctuated by floodplains covered in wetland grasses. The banks of the Speed River are bordered with trees that extend from the foreground to the distant north, where the view terminates (Plate 50).

Plate 50: Protected view from Black Bridge north terminating at curve in Speed River

Section 4.1.5 of the Standards and Guidelines provides guidance on the conservation of visual relationships (Appendix A). Given that a new road alignment and bridge will be constructed north of the existing bridge, the visual relationship between Black Bridge the cultural heritage landscape on the north side of the bridge will be directly impacted. Drawings of the proposed bridge are provided in Appendix B. Accordingly, rehabilitation of this visual relationship between Black Bridge and the Speed River on the north side of the bridge is recommended.

To rehabilitate this view, new bridge should be designed in a manner that is visually compatible with Black Bridge and the greater cultural heritage landscape. Design finishes for the new bridge that are not compatible with the protected view north of Black Bridge include: modern metal guard rails, concrete barriers, chain link fencing, tall overhead lighting that may result in light pollution (i.e. cobra lighting with High Intensity Discharge fixtures), and prominent bridge signage (i.e. reflective safety signs or speed postings) within the view shed on the north side of Black Bridge. In addition, the approaches for the new bridge should retain as many trees and existing landscape elements as possible. Where removal of natural vegetation and trees is planned, post-construction landscaping should be completed to rehabilitate the
natural setting of the Speed River.

Design finishes that are appropriate for the new bridge include: a traditional structure that is constructed low to the waterline to minimize the disruption of the view to the north, simple steel barriers with a weathered steel finish or concrete barriers that reference the design on the east and west approaches of Black Bridge (Plate 18 to Plate 20), and lower lighting on the bridge deck that suits the rural setting Black Bridge. Lighting standards suggested in the Streetscape Plan & Urban Design Guidelines for Hespeler Village may serve as an example of appropriate lighting standards for the bridge deck (City of Cambridge 2013: 81).

In addition to design finishes for the new bridge, the seasonal maintenance program for the new bridge should be developed with a view to conserve the natural setting on the north side of Black Bridge. The use of salt for de-icing the bridge is discouraged as this may negatively impact the ecological health of the surrounding cultural heritage landscape.

Conservation standards that support the above rehabilitation strategy include:

6. Protecting and maintaining the features that define the visual relationships by using non-destructive methods in seasonal and cyclical tasks, such as pruning to retain sight lines. This could also include maintaining the size and massing of vegetation and built features that contribute to the overall scale of the historic place.

15 Designing a new feature when required by a new use that respects the historic visual relationships in the cultural landscape. This can include matching established proportions and densities, such as maintaining the overall ratio of open space to building mass in an urban heritage district when designing an infill building.

(Parks Canada 2010: 68-69)

4.1.2 Guidelines for Engineering Works (Bridges)

As the last standing steel Pratt Truss bridge in the City of Cambridge and the central component of the Black Bridge Cultural Heritage Landscape, the conservation of the Black Bridge is required. Heritage attributes identified for the bridge structure include the steel truss construction with riveted joints and the concrete abutments.

The truss structure with riveted joints that forms the superstructure of Black Bridge must be conserved through preservation and rehabilitation conservation. As identified in the structural condition survey, the Black Bridge superstructure is in good condition but requires repairs to address damage from the recent collision, repairs to address deterioration, and modifications to convert the bridge from a vehicular bridge to a pedestrian bridge that is part of a Multi-Use Trail.

The steel truss construction and steel hand rails of Black Bridge are heritage attributes of the bridge and must be conserved. Repairs and maintenance for the steel truss construction with riveted joints of Black Bridge should follow a “replace in kind” strategy and a general minimal intervention approach. The structural condition survey found that the steel truss was generally in good condition and that the steel hand rails were in fair condition (Wood 2021a). These elements of the bridge should be retained and kept in good repair. It is recognized, however, that the steel railings on Black Bridge do not meet current safety standards for a pedestrian bridge (Wood 2021b). Accordingly, these railings should be augmented or modified in a sympathetic manner so that Black Bridge will meet current safety standards. The current railing options under consideration are included in Appendix C.
The concrete railings on the east and west approaches of the bridge were found to be in fair condition with spall noted in the northwest concrete carrier. These concrete railings should be retained and repaired in situ. While not currently identified as a heritage attribute of the bridge, the City of Cambridge noted that these railings will be included on the list of heritage attributes for the revised designation by-law for the structure. Steel beam railings are currently installed on the interior of the concrete railings. These steel beam railings are not heritage attributes of the bridge. It is recommended that these steel beam railings are removed. If a barrier is required in this location for safety reasons, then a new barrier that is more sympathetic to the heritage attributes and rural setting of the bridge is recommended. Continuation of the proposed railing system for Black Bridge, as depicted in Appendix C, is a more sympathetic railing system for the east and west approaches of Black Bridge.

The concrete abutments of Black Bridge are heritage attributes of the structure. The condition survey determined that the abutments are in fair condition with cracks and spalling noted (Wood 2021a). The abutments and wingwalls must be repaired using materials and forms that match the original design and materials.

Section 4.4.1 of the Standards and Guidelines contains conservation guidance for constructed elements (e.g. a bridge) and Section 4.4.2 provides advice for functional arrangements. Conservation standards that support the above rehabilitation strategy include:

10. Protecting constructed elements through appropriate and regular maintenance

11. Protecting evidence of the evolution process or operation of constructed elements that contribute to the heritage value of the engineering work, including protecting patinas, soiling or debris, wear patterns and graffiti, resulting from the operation of the work or its associated machinery. For example, cleaning machinery just enough to reduce deterioration and danger to the public, rather than attempting to clean it to a “like new” condition.

13. Imposing limits on the acceptable use of constructed elements, based on their actual characteristics and capacities to protect them from damage. There is a need to balance present and anticipated usage demands with heritage value, and to avoid, if possible, any use that would damage or destroy the constructed elements.

14. Balancing the need to alter constructed elements to meet current safety codes and standards (to allow continued use) with the need to preserve the heritage value of the work’s functionality and operation.

18. Repairing deteriorated parts of constructed elements in a manner that is physically and visually compatible with the engineering work.

20. Replacing in kind extensively deteriorated or missing parts of constructed elements using physical and documentary evidence as a model for reproduction. The new work should match the old as closely as possible in form, materials and detailing, and have adequate strength.

39. Adding new features to meet health, safety or security requirements, in a manner that conserves the constructed elements and minimizes impact on the heritage value of the engineering work.

(Parks Canada 2010: 196-201)
4.1.3 Guidelines for Materials (Steel)

The weathered steel material of Black Bridge is a heritage attribute of the structure and must be retained. The condition survey noted that the steel truss is generally in good condition and the steel hand rails are in fair condition (Wood 2021a). The steel material that forms these structural elements must be preserved. Where repairs or replacements are required, a ‘like for like’ approach using weathered steel is recommended. Coating the bridge in paint or sealer is not recommended since the patina of the weathered steel communicates the age and heritage character of the bridge.

Section 4.5.5 of the Standards and Guidelines provides conservation guidance for structural metals, including steel and give direction on maintaining, repairing, and replacing metal elements. Conservation standards that support the above rehabilitation strategy include:

6. Determining the appropriate level of patina before cleaning and ensuring that his level is maintained for the entire element.

7. Cleaning painted metals using appropriate techniques and products to remove corrosion and layers of paint, if required before painting.

9. Using the gentlest cleaning methods for hard metals, such as cast iron, wrought iron and steel, to remove excessive paint build-up and corrosion.

10. Re-applying appropriate paint or coating systems after cleaning to decrease the corrosion rate of painted or coated metals.

16. Repairing metal elements by welding, soldering, patching, or splicing, using recognized conservation methods. Repair may also include the limited replacement in kind, or replacement with a compatible substitute material of extensively deteriorated or missing metal elements, where there are surviving prototypes.

18. Replacing in kind an irreparable metal element, based on documentary and physical evidence.

(Parks Canada 2010: 236-237)

4.1.4 Guidelines for Materials (Concrete)

The concrete railings on the east and west bridge approaches, concrete abutments, and concrete wingwalls are heritage attributes of Black Bridge and must be conserved. The structural condition survey noted that these bridge elements are in fair condition with spalling and cracks noted throughout. Sound concrete elements should be retained, and deteriorated areas should be repaired using a “replacement in kind” approach. Cracks and spalls should be sealed with a cementious mortar or by injecting epoxies to prevent further moisture damage. The over use of ice-clearing chemicals and road salt is discouraged since these substances may result in deterioration of the concrete bridge materials over the long term.

Section 4.5.4 of the Standards and Guidelines provides conservation guidance for concrete, including direction on maintaining, repairing, and replacing concrete elements.

3. Protecting and maintaining concrete by preventing moisture penetration; maintaining proper drainage; improving water shedding, and by preventing damage due to the overuse of ice-clearing chemicals.
10. Retaining sound and repairable concrete elements that contribute to the heritage value of the historic place.

12. Repairing deteriorated concrete elements by structural reinforcement and weather protection, correcting unsafe conditions, as required, until repair work is undertaken.

14. Cleaning concrete before repair to remove contaminants, dirt, and soil, so that new concrete patches match the cleaned surface.

15. Sealing inactive cracks in concrete by pointing with a cementious mortar, or injecting epoxies to prevent moisture from entering the concrete mass.

4.2 Short-, Medium-, and Long-Term Conservation Goals

The conservation approach for Black Bridge is to use an overall rehabilitation strategy to convert the bridge from a vehicular bridge to a pedestrian bridge that is part of a larger Multi-Use Trail. The heritage attributes of the bridge, including the views, bridge structure, steel material, and concrete material will be rehabilitated and preserved using the Standards and Guidelines. The short-term, medium-term, and long-term goals for the conservation of Black Bridge are outlined below.

4.2.1 Short Term Goals

The following goals are proposed to conserve Black Bridge over the short-term:

- Complete emergency repairs to stabilize the structure and address damaged caused by vehicular collision that occurred in November 2021.
  - Repairs should use a “like for like” strategy and weathered steel must be used where structural elements need to be replaced.

- Design options for the steel railings to be added to Black Bridge should be circulated to the City of Cambridge, Architectural Conservancy Ontario (ACO) Cambridge and North Dumfries, and the Black Bridge Community Association for review and comment. The final railing design should take into account the views of the community and must be supportive and sympathetic to the heritage character of the bridge.

- Design options of the new bridge should be circulated to the City of Cambridge, Architectural Conservancy Ontario (ACO) Cambridge and North Dumfries, and the Black Bridge Community Association for review and comment. The final design of the new bridge should be sympathetic to the heritage character of Black Bridge and the rural context of the Black Bridge Cultural Heritage Landscape. Community input gathered as part of this SCP has found that a traditional structure that is constructed low to the waterline with simple weathered steel barriers or concrete barriers that reference the design on the east and west approaches of Black Bridge, and lower lighting on the bridge deck are preferred. Wood notes that approval of the final design for the new bridge rests with the City of Cambridge.

- Reports and photographs produced as part of the Black Bridge rehabilitation should be compiled and submitted to the Cambridge Archives as a single package. New reports and materials should be added to this archive as they are finalized. The purpose of creating this archive is to retain a detailed historical record of the bridge prior to its rehabilitation and document changes to its historical integrity through subsequent repairs and alterations. Materials that should be submitted
to the archives include:
  o Black Bridge Road Bridge over Speed River (Dillon 1996) (Bridge drawings S-1 to S10)
  o Heritage Impact Assessment Report, Black Bridge Road Environmental Assessment, City of Cambridge (MHBC 2017)
  o Black Bridge Inspection Report (Keystone Bridge Management Corp. 2018)
  o Black Bridge Inspection Report (Keystone Bridge Management Corp. 2020)
  o Condition Survey Report, Black Bridge Road Bridge, Cambridge, ON (Wood 2021)
  o Strategic Conservation Plan for the Black Bridge Road Bridge (Wood 2022)
  o Photographs and repair plans associated with the damage caused by the collision on November 4, 2021.

4.2.2 Medium Term Goals
The following goals are proposed to conserve Black Bridge over the medium-term:

- Carry out planned repairs to Black Bridge to address issues identified in the Structural Condition Survey prepared by Wood (2021a)
- Complete modifications to convert Black Bridge from a vehicular bridge to a pedestrian crossing that is part of a larger Multi-Use Trail. Heritage attributes must be retained including the steel truss structure with riveted joints, steel railings, concrete railings on approaches, concrete abutments and wingwalls, and identified views. Modifications to heritage attributes should be completed in accordance with the Standards and Guidelines presented in Section 4.1 and included in Appendix A. Existing bridge components that are not heritage attributes of the structure, such reflective safety signs and the steel guard rails, should be removed. If a new guard rail on the east and west bridge approaches is required for safety reasons, then continuation of the proposed railing system for Black Bridge, as depicted in Appendix C, is an acceptable approach.
- Cease operation of the bridge as a vehicular crossing once the construction of the new bridge is complete. Vehicular traffic introduces excessive stress to the structure and introduces the risk of collision-related damage. Given that three vehicular collisions have caused damage to the steel truss structure since 2016, it is recommended that vehicular traffic is ceased as soon as possible.
- Remove unnecessary road/safety signs to rehabilitate the protected views along Black Bridge Road towards Black Bridge.

4.2.3 Long Term Goals
The following goals are proposed to conserve Black Bridge over the long-term:

- Develop and install a new commemorative plaque to convey the historical significance of Black Bridge and note the conversion of the bridge from a vehicular crossing to a pedestrian crossing. The commemorative plaque should be installed near the existing plaque to minimize disruptions to the protected views.
- Develop and implement a biennial bridge inspection schedule. It is recommended that bridge
inspections be completed in spring or fall.

- Develop and implement a winter de-icing strategy that conserves the natural environment of the Speed River and the structural integrity of Black Bridge. The heavy use of road salt is not appropriate for this site.

- Carry out routine maintenance and capital repairs on an as-needed basis to keep Black Bridge in good repair.

- Regularly review and update this SCP to monitor for compliance and continually improve the plan.
5.0 Action Plan

The action plan presented below in Table 3 outlines a short-, medium-, and long-term strategy to conserve Black Bridge. The approvals required to carry out the action plan are also included in the table. These strategies adhere to the standards and guidelines included in the *Standards and Guidelines for the Conservation of Historic Places in Canada Section*, Chapter 3, 4.1, 4.4, and 4.5. These guidelines are available in Appendix A of this report. This action plan is consistent with a primary heritage conservation strategy of rehabilitation with a secondary strategy of preservation at this site.

Wood notes that the timeline presented in Table 3 is approximate and subject to change subject to the discretion of the City of Cambridge.
Develop design for Multi-locally power tool clean corroded areas of structural steelwork and coat areas with a 3 coat (epoxy zinc/epoxy/polyurethane).

<table>
<thead>
<tr>
<th>Action</th>
<th>Timeline</th>
<th>Description</th>
<th>Priority</th>
<th>Required Approvals</th>
</tr>
</thead>
</table>
| Emergency Repairs | 2022 | Repairs proposed to address damage caused by collision on November 4, 2021:  
- Install a temporary lateral bracing system to laterally support the bridge during the removal and replacement of the bottom lateral brace at the west end of the bridge;  
- Heat straighten all lateral frame members designated to remain that have deformed as a result of the collision, including gusset plates;  
- Remove and replace diagonal cross bracing and vertical brace at right lateral truss frame including replacing all riveted connections with new bolted connections;  
- Remove and replace bottom lateral brace including all gusset plates and all riveted connections to bottom lateral brace with new gusset plates and bolted connections;  
- Remove and replace knee braces including gusset plates connected to main vertical truss members and bolted connections;  
- Heat straighten main vertical truss member at deformed section near knee brace connection; and,  
- Where required, new steel sections will be weathering steel, matching the existing steel section properties to repair damaged sections in a "like for like" manner. |
| Confirm Design of Black Bridge and New Bridge | 2022 |  
- Develop design for Multi-Use Trail modifications to Black Bridge and circulate the drawings to the City of Cambridge, MHAC, Architectural Conservancy Ontario (ACO) Cambridge and North Dumfries, and the Black Bridge Community Association for review and comment.  
- Develop design for the new bridge and circulate the drawings to the City of Cambridge, MHAC, Architectural Conservancy Ontario (ACO) Cambridge and North Dumfries, and the Black Bridge Community Association for review and comment. |
| Steel Material Testing | 2022 | The 3D model created in January 2022 found that wind loading may be overstressing the end diagonals of the bridge and reinforcement may be required. Material testing of the bridge will be completed in spring 2022 to establish the strength of the steel. If the steel strength is not high enough to manage the wind load, then possible rehabilitation strategies include stiffening the connection between the end floor beam and end diagonal or adding an addition truss member to connect the centre of the end diagonal to the bottom of the first vertical. The preferred option for the strengthening of the bridge will be determined following the material testing in spring 2022. |
| Archival Record | 2022 | Reports and photographs created as part of the Black Bridge rehabilitation should be compiled and submitted to the Cambridge Archives as a single package. The purpose of submitting the materials is to create a historical record of the bridge prior to rehabilitation. Once established, new reports and materials should be added to the Black Bridge file at the archives to build and develop the historical record of the bridge. At present, materials that should be submitted to the archives include:  
- Black Bridge Road Bridge over Speed River (Dillon 1998) (Bridge drawings S-1 to S10)  
- Heritage Impact Assessment Report, Black Bridge Road Environmental Assessment, City of Cambridge (MHBC 2017)  
- Black Bridge Inspection Report (Keystone Bridge Management Corp. 2018)  
- Black Bridge Inspection Report (Keystone Bridge Management Corp. 2020)  
- Condition Survey Report, Black Bridge Road Bridge, Cambridge, ON (Wood 2021)  
- Strategic Conservation Plan for the Black Bridge Road Bridge (Wood 2022)  
- Photographs and repair plans associated with the damage caused by the collision on November 4, 2021. |
| Planned Repairs | 2023 | Planned repairs as recommended in Condition Survey Report (Wood 2021). Including, but not limited to:  
- Remove deteriorated concrete from abutments and wingwalls and deck;  
- Patch repair abutments and wingwalls and deck;  
- Remove deteriorated concrete from concrete railings on approaches;  
- Patch repair concrete railings on approaches;  
- Seal cracks wider than 0.5mm in deck, deck soffit, abutment and wingwalls, by injecting with colour matching epoxy;  
- Abrasive blast clean deck surface and apply migratory corrosion inhibitor, comprising a silane sealer and an organic corrosion inhibitor;  
- Locally power tool clean corroded areas of structural steelwork and coat areas with a 3 coat (epoxy zinc/epoxy/polyurethane) system. |

Wood notes that the above list of repairs are preliminary and subject to change pending review and comment from the City of Cambridge Heritage Planner.

Damaged areas of the bridge should be thoroughly photo-documented prior to any intervention and repair work should also be photo-documented. Photographs collected should be submitted to the City of Cambridge Heritage Planner and kept in a centralized place to create a record of all work performed to Black Bridge.

The final plan for emergency repairs must be reviewed by the City of Cambridge Heritage Planner and MHAC to confirm heritage permit requirements.

No heritage permit required if repairs are “like for like” and restore damaged heritage attributes with the same materials/design. The final plan for emergency repairs must be notified before a steel sample is taken from the bridge. A heritage permit is required for the reinforcement of the bridge since heritage attributes may be altered.

Heritage permit required to carry out the steel testing of the bridge. The City of Cambridge Heritage Planner must be notified before a steel sample is taken from the bridge.
<table>
<thead>
<tr>
<th>Action</th>
<th>Timeline</th>
<th>Description</th>
<th>Priority</th>
<th>Required Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Modifications to Convert to Multi-Use Trail</td>
<td>2023</td>
<td>• Complete modifications to convert Black Bridge from a vehicular bridge to a Multi-Use Trail (Wood 2021). Including, but not limited to:</td>
<td>Medium</td>
<td>Heritage permit required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Construct new concrete footings on approaches, extending to ends of wingwalls, to support new cycle height railings;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Install new cycle height railings on existing bridge curbs and new approach footings;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Install cover plate over expansion joint at each end of bridge. Cover plate prevents edges of joint from becoming trip hazard to pedestrians and cyclists;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Remove steel beam guide rails on approaches; and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Remove vehicular signage at each end of bridge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cease operations as a vehicular bridge</td>
<td>2023</td>
<td>Cease operations as a vehicular bridge to reduce stress on the structure and prevent future vehicular collisions.</td>
<td>Medium</td>
<td>No heritage permit required.</td>
</tr>
<tr>
<td>Remove unnecessary road/safety signs</td>
<td>2023</td>
<td>Following cessation of vehicular traffic, remove unnecessary road/safety signs to rehabilitate the rural views along Black Bridge Road</td>
<td>Medium</td>
<td>No heritage permit required.</td>
</tr>
<tr>
<td>Commemorative Plaque</td>
<td>2022-2023</td>
<td>Install a commemorative plaque in the vicinity of the bridge to communicate the heritage value of the structure</td>
<td>Low</td>
<td>Consult with the City of Cambridge Heritage Planner to confirm approval requirements</td>
</tr>
<tr>
<td>Biannual Inspections</td>
<td>Ongoing</td>
<td>Biennial inspections of Black Bridge to be completed in the spring or fall.</td>
<td>Low</td>
<td>No heritage permit required</td>
</tr>
<tr>
<td>Winter De-Icing Strategy</td>
<td>Ongoing</td>
<td>Develop a winter de-icing strategy that minimizes damage to the natural environment of the Speed River and limits potential deterioration to the steel and concrete elements of the bridge.</td>
<td>Low</td>
<td>No heritage permit required</td>
</tr>
<tr>
<td>Routine Maintenance and Capital Repairs</td>
<td>Ongoing</td>
<td>Complete routine maintenance and capital repairs on an ongoing basis.</td>
<td>Low</td>
<td>No heritage permit required if repairs are “like for like” and conserve heritage attributes. Consult with the City of Cambridge Heritage Planner to confirm heritage permit requirements.</td>
</tr>
<tr>
<td>Review and Update of SCP</td>
<td>2026-ongoing</td>
<td>Reviewed and update this SCP every five years to monitor compliance and continually improve the plan</td>
<td>Low</td>
<td>MHAC review/approval required. Consult with the City of Cambridge Heritage Planner to confirm process.</td>
</tr>
</tbody>
</table>
6.0  Community Engagement

Community engagement was completed from March to November 2021 to gather input for the Black Bridge SCP. The City of Cambridge, Ontario Heritage Trust, MHSTCI, Grand River Conservation Authority (GRCA), Black Bridge Community Association and the Architectural Conservancy of Ontario were contacted to gather information on Black Bridge and ensure that the perspectives of stakeholders are reflected in the SCP.

The results of the community engagement are presented in Table 4.
The Speed River is a designated heritage river for the past ten years. The community has been vocal and has used various planning/legal tools to conserve this bridge (and larger landscape context) for the future care of the bridge. He noted that guidance on the conservation of the bridge materials is needed.

Ms. Schopf summarized the community engagement results received and noted that the new bridge should have a traditional look and be sympathetic to Black Bridge. Ms. Schopf noted that the new bridge will alter the view north from Black Bridge, which is a protected heritage attribute of the structure. The recent damage to the bridge caused by the collision on November 4, 2021 was discussed and it came to light that the bridge was damaged by two previous collisions in 2016. Mr. Galloway and Mr. Stahl noted that some rivets were replaced by new bolts in 2016 and that these repairs were sympathetic to the bridge. Mr. Galloway and Mr. Stahl discussed the proposed repairs to the bridge and there was general agreement that a “like-for-like” approach was being used where possible.

Ms. Waldie clarified that Heritage Permits are required for Black Bridge when alterations to the heritage attributes are proposed. Routine maintenance and “like-for-like” repairs do not require a Heritage Permit but City of Cambridge Heritage Staff should be consulted to verify this approach before work to the bridge is completed.

Ms. Schopf shared mapping and photographs of Black Bridge prepared for the SCP. Ms. Waldie agreed that the locations of heritage attributes depicted in the SCP were accurate but that the concrete railings should also be included as heritage attributes. Ms. Waldie noted that the designation Bylaw will be updated to include a list of heritage attributes in the future.

Kevin DeMille, Natural Heritage Coordinator, Ontario Heritage Trust
- Email sent on March 31, 2021
- Email response received on April 6, 2021

Kevin DeMille, Natural Heritage Coordinator at the Ontario Heritage Trust, reported that the Study Area does not contain any heritage designations in those areas or on hotels/properties owned by the Trust. Mr. DeMille confirmed the property is designated under section 29 (Part IV) of the Ontario Heritage Act within the Ontario Heritage Trust’s register.

Rosi Zirger, Acting Heritage Advisor, Ministry of Heritage, Sport, Tourism and Culture Industries
- Email sent on March 31, 2021
- Email response received on April 9, 2021

Rosi Zirger reported that the Black Bridge Road Bridge is a municipally owned bridge and is not included on the list of Provincial Heritage Properties maintained by the MHSTCI. Ms. Zirger recommended contacting City of Cambridge planning staff to obtain up-to-date designation bylaws, Official Plan Amendments, and heritage technical studies relevant to Black Bridge. Ms. Zirger also noted that Black Bridge falls within the Black Bridge Cultural Heritage Landscape. It was further noted that the preparation of a Strategic Conservation Plan for Black Bridge is a condition for the approval of the 2017 Environmental Assessment by the Minister of the Environment and Climate Change.

Ms. Zirger identified that the MHSTCI worked with the City of Cambridge to prepare the Terms of Reference for the Strategic Conservation Plan for Black Bridge. This document was prepared by MHBC in 2020. Ms. Zirger noted that Community Engagement, including communication with the Black Bridge Community Association and Architectural Conservancy of Ontario (Cambridge) should be carried out as part of the Strategic Conservation Plan. These organizations and the Cambridge Municipal Heritage Advisory Committee (MHAC) must be provided with a draft of the Strategic Conservation for review and comment.

Karen Scott Booth
- Email sent on March 31, 2021
- Email response received April 4, 2021
- Phone conversation on April 14, 2021

- Black Bridge is a significant structure that is designated under Part IV of the Ontario Heritage Act. It is set in a broader CHL, which is formally recognized but does not have any specific protections in place (i.e. no bylaw, SCP, or planning policies/guidelines)
- An HCD Study was completed for the Black Bridge community and it was found to meet the criteria for an HCD, but the City of Cambridge elected to identify the area as a CHL instead
- The community has been vocal and has used various planning/legal tools to conserve this bridge (and larger landscape context) for the past ten years
- There is an engineering report that states that the bridge is viable and does not need to be replaced
- There are broader issues at work that may impact the community (i.e. construction of the new bridge may encourage traffic through the community, which is not welcome)
- The Speed River is a designated heritage river

- Information provided used to further Wood’s understanding of the project history, significance of Black Bridge, and site context

- Comments on design of new bridge circulated to Wood design team
- Structural viability of Black Bridge noted and retention of bridge and heritage attributes noted
- Black Bridge Community Association contacted

IM21106003 | March 2022
### Individuals/Groups Engaged

<table>
<thead>
<tr>
<th>Individual/Group</th>
<th>Method</th>
<th>Results</th>
<th>Incorporation into SCP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phil Osburn</strong></td>
<td>-Email sent on March 31, 2021</td>
<td>No response received at the time of writing. Communicated with Karen Scott Booth (Vice President ACO).</td>
<td>N/A</td>
</tr>
<tr>
<td>President, ACO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tom Hetherington</strong></td>
<td>-Email sent on March 31, 2021</td>
<td></td>
<td>-Contextual concerns related to the broader Cultural Heritage Landscape noted and incorporated into conservation guidance and inappropriate materials (i.e. chain link fence and excessive signage noted)</td>
</tr>
<tr>
<td>Chair, Black Bridge Community</td>
<td>-Email response on April 2, 2021</td>
<td></td>
<td>-Accessibility issues noted and use of a durable material for bridge deck noted. Information circulated to design team for consideration</td>
</tr>
<tr>
<td>Association (BBCA)</td>
<td>-Phone conversation on April 21, 2021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Follow up email on April 21, 2021</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Black Bridge is part of a larger CHL. Conservation guidelines/policies should be in place for the CHL in general.</td>
<td>-Question asked by TH: Why is there no Strategic Conservation Plan for the CHL? Landscape elements (i.e. mill pond and dam) are at risk because there is no conservation guidance for these resources.</td>
<td>-Chain link fencing is not appropriate at the bridge site</td>
<td>-Fencing prevents people from moving around and using trails/pathways</td>
</tr>
<tr>
<td>-New signs/safety signs should be kept to a minimum. If they are required, they should be sited or designed in a manner that does not detract from the bridge.</td>
<td>-The bridge gets heavy use from the community (walking, cycling, horseback riding, strollers, families walking) and should be accessible to everyone. Barriers to keep cars out should not limit the use of the bridge by the community.</td>
<td>-Studies related to Black Bridge have been ongoing for 10+ years. The bridge is being retained, which is good, but this long process has been draining for the community.</td>
<td>-The multi-use trail (MUT) over Black Bridge will be part of a larger 7km loop</td>
</tr>
<tr>
<td>-The rural character of the landscape surrounding the bridge is very important and should be conserved.</td>
<td>-The bridge is being retained, which is good, but this long process has been draining for the community.</td>
<td>-Interpretive/commemorative signage would be a great thing to have at this site</td>
<td>-Crushed stone or gravel may wash away. Concrete may be more appropriate for the bridge deck</td>
</tr>
<tr>
<td>-Studies related to Black Bridge have been ongoing for 10+ years. The bridge is being retained, which is good, but this long process has been draining for the community.</td>
<td></td>
<td></td>
<td>-Black Bridge needs a coat of paint. Sections have a historical/rusted patina (good) but other parts have been painted in brown, which detracts from aesthetic of the bridge</td>
</tr>
<tr>
<td>-The multi-use trail (MUT) over Black Bridge will be part of a larger 7km loop.</td>
<td></td>
<td></td>
<td>Interpretive/commemorative signage would be a great thing to have at this site.</td>
</tr>
</tbody>
</table>
7.0 Implementation

In order to implement this Strategic Conservation Plan, the following items must be completed:

- This document must be reviewed and approved by the Cambridge MHAC. The final draft of this Strategic Conservation Plan requires adoption by Cambridge City Council.

- The City of Cambridge will ensure that relevant staff, contractors, consultants, lessees, and decision makers must be made aware of the content of the Statement of Cultural Heritage Value and the recommended conservation measures prior to decisions or actions being undertaken. Parties that should be made aware of this plan include, but are not limited to: City of Cambridge Heritage Planners, Ontario Heritage Trust, MHSTCI, ACO Cambridge and North Dumfries, and the Black Bridge Community Association.

- This document will be submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) for review and comment.

- This Strategic Conservation Plan will be placed in a permanent archive that is publicly accessible, observing security, privacy, and other requirements.
8.0 Monitoring

The actions and outcomes of this Strategic Conservation Plan will be monitored and reported on a regular basis. The following monitoring commitments are required:

- The City of Cambridge will review and update this Strategic Conservation Plan every five years to monitor compliance and continually improve this plan; and,

- The City of Cambridge will document successes or problems arising from applying this Strategic Conservation Plan. Documenting successes and issues will provide valuable information for the next iteration of this plan.
9.0 Assessor Qualifications

This report was prepared and reviewed by the undersigned, employees of Wood. Wood is one of North America’s leading engineering firms, with more than 50 years of experience in the earth and environmental consulting industry. The qualifications of the assessors involved in the preparation of this report are provided in Appendix D.
10.0 Closure

This report was prepared for the exclusive use of the City of Cambridge and is intended to provide a Strategic Conservation Plan of the Study Area. The Study Area consists of Black Bridge in the City of Cambridge, Ontario.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Wood will be required. With respect to third parties, Wood has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected during the cultural heritage assessment conducted by Wood. It is based solely a review of historical information, a property reconnaissance conducted in March 2020 and data obtained by Wood as described in this report. Except as otherwise maybe specified, Wood disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Wood after the time during which Wood conducted the cultural heritage assessment. In evaluating the Study Area, Wood has relied in good faith on information provided by other individuals noted in this report. Wood has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. Wood accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Wood makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This report is also subject to the further Standard Limitations contained in Appendix E. We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Respectfully Submitted,

Wood Environment & Infrastructure,
a Division of Wood Canada Limited

Reviewed By:

[Signature]
Heidy Schopf, MES, CAHP
Built Heritage and Cultural Heritage Landscape Team Lead

Reviewed By:

[Signature]
Henry Cary, Ph.D., CAHP, RPA
Senior Cultural Heritage Specialist
11.0 Sources

City of Cambridge


2020 Bridge Inspection Report

Keystone Bridge Management Corp

1996 Dillon Consulting Engineers Planners and Scientists
Black Bridge Road Bridge over Speed River Structural Rehabilitation General Arrangement.

Government of Ontario


McNaughton Hermsen Britton Clarkson Planning Limited (MHBC)

2017 Heritage Impact Assessment Report (Revised), Black Bridge Road Environmental Assessment, City of

2020  Terms of Reference: Strategic Conservation Plan, Black Bridge Road Bridge, Corporation of the City of Cambridge, ON. Document on file at Wood.

Parks Canada

Wood PLC (Wood)

Appendix A: Conservation Standards and Guidelines
The Standards are not presented in a hierarchical order. All standards for any given type of treatment must be considered, and applied where appropriate, to any conservation project.

**General Standards for Preservation, Rehabilitation and Restoration**

1. Conserve the *heritage value* of an *historic place*. Do not remove, replace or substantially alter its intact or repairable *character-defining elements*. Do not move a part of an historic place if its current location is a character-defining element.

2. Conserve changes to an *historic place* that, over time, have become *character-defining elements* in their own right.

3. Conserve *heritage value* by adopting an approach calling for *minimal intervention*.

4. Recognize each *historic place* as a physical record of its time, place and use. Do not create a false sense of historical development by adding elements from other historic places or other properties, or by combining features of the same property that never coexisted.

5. Find a use for an *historic place* that requires minimal or no change to its *character-defining elements*.

6. Protect and, if necessary, stabilize an *historic place* until any subsequent *intervention* is undertaken. Protect and preserve archaeological resources in place. Where there is potential for disturbing archaeological resources, take mitigation measures to limit damage and loss of information.

7. Evaluate the existing condition of *character-defining elements* to determine the appropriate *intervention* needed. Use the gentlest means possible for any intervention. Respect *heritage value* when undertaking an intervention.

8. Maintain *character-defining elements* on an ongoing basis. Repair character-defining elements by reinforcing their materials using recognized conservation methods. Replace in kind any extensively deteriorated or missing parts of character-defining elements, where there are surviving *prototypes*.

9. Make any *intervention* needed to preserve *character-defining elements* physically and visually compatible with the *historic place* and identifiable on close inspection. Document any intervention for future reference.
Additional Standards Relating to Rehabilitation

10. Repair rather than replace character-defining elements. Where character-defining elements are too severely deteriorated to repair, and where sufficient physical evidence exists, replace them with new elements that match the forms, materials and detailing of sound versions of the same elements. Where there is insufficient physical evidence, make the form, material and detailing of the new elements compatible with the character of the historic place.

11. Conserve the heritage value and character-defining elements when creating any new additions to an historic place or any related new construction. Make the new work physically and visually compatible with, subordinate to and distinguishable from the historic place.

12. Create any new additions or related new construction so that the essential form and integrity of an historic place will not be impaired if the new work is removed in the future.

Additional Standards Relating to Restoration

13. Repair rather than replace character-defining elements from the restoration period. Where character-defining elements are too severely deteriorated to repair and where sufficient physical evidence exists, replace them with new elements that match the forms, materials and detailing of sound versions of the same elements.

14. Replace missing features from the restoration period with new features whose forms, materials and detailing are based on sufficient physical, documentary and/or oral evidence.
4.1.5 VISUAL RELATIONSHIPS

These guidelines provide direction when visual relationships have been identified as a character-defining element of an historic place. They pertain to the visual relationships between an observer and a landscape or landscape feature (a viewscape) or between the relative dimensions of landscape features (scale).

A viewscape can include scenes, panoramas, vistas, visual axes and sight lines. In designed landscapes, a viewscape may have been established following the rules of pictorial composition: elements are located in the foreground, middle ground and background. A viewscape may also be the chief organizing feature when a succession of focal points is introduced to draw the pedestrian onward through a landscape.

The scale of a cultural landscape can produce emotional responses in people. Large landscapes either intimidate or inspire us, while small landscapes tend to make us feel comfortable. The texture of a given surface can also affect the perception of scale. For example, a street or courtyard covered in cobblestones or brick seems smaller than the same area covered in asphalt, a much smoother surface.

The visual relationships between elements of natural or designed landscapes, or heritage districts, can influence the user experience. For example, a tall building in a low-rise heritage district may be perceived as out of scale.

The addition of green technologies to a cultural landscape, such as wind turbines or solar panels, may affect its heritage value. While recognizing the importance of renewable energy sources, it is important to consider the visual impact these technologies may have on the cultural landscape. Visual impact assessments need to be integrated at an early stage in project planning so that potential impacts on the heritage value of the cultural landscape are clearly understood.

These guidelines provide general recommendations for the conservation of the visual relationships in a cultural landscape. Other relevant guidelines, such as Built Features and Vegetation, should be consulted when appropriate.
### General Guidelines for Preservation, Rehabilitation and Restoration

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Understanding</strong> the visual relationships and how they contribute to the heritage value of the cultural landscape.</td>
<td>Undertaking interventions without understanding their impact on the visual relationships in the cultural landscape; for example, removing vegetation that was intended to frame an important view in the historic place.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Understanding</strong> designed landscapes, and the planning principles behind the visual relationships in the cultural landscape.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Understanding</strong> the evolution of visual relationships. This could include using historic photographs or artwork to understand how the visual relationships may have changed or been lost over time.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><strong>Documenting</strong> the visual relationships in the cultural landscape, including viewscapes and their foreground, middle ground and background; landmarks, edges and skyline; prospects, both to and from the historic place; and condition, before beginning project work.</td>
<td>Undertaking interventions that affect the visual relationships without completing a survey of characteristics and conditions.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Assessing</strong> the overall condition of the visual relationships early in the planning process so that the scope of work is based on current conditions.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td><strong>Protecting</strong> and maintaining the features that define the visual relationships by using non-destructive methods in daily, seasonal and cyclical tasks, such as pruning, to retain sight lines. This could also include maintaining the size and massing of vegetation and built features that contribute to the overall scale of the historic place.</td>
<td>Allowing visual relationships to be altered by incompatible development or neglect. Using maintenance methods that alter or obscure the visual relationships in the cultural landscape, such as removing planting that reduces the perceived size of a parking lot to make winter snow removal easier.</td>
</tr>
<tr>
<td>7</td>
<td><strong>Retaining</strong> sound features that define the visual relationships in the cultural landscape, or deteriorated features that can be repaired or rejuvenated.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td><strong>Repairing</strong> or rejuvenating deteriorated parts of features that define the visual relationships using recognized conservation methods. Repair may also include the limited replacement in kind of those extensively deteriorated or missing parts of features. Repairs should match the existing work as closely as possible, both physically and visually.</td>
<td>Replacing a feature that defines the visual relationships when that feature can be repaired or rejuvenated. Using a substitute material for the replacement part that neither conveys the same appearance as the surviving parts of the feature, nor is physically and visually compatible.</td>
</tr>
</tbody>
</table>
### GENERAL GUIDELINES FOR PRESERVATION, REHABILITATION AND RESTORATION

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9</strong> <strong>Replacing</strong> in kind extensively deteriorated parts of features that define the visual relationships where there are surviving prototypes. The new work should match the old in form and detailing.</td>
<td>Replacing an entire feature that defines the visual relationships when limited replacement of deteriorated or missing parts is possible.</td>
</tr>
<tr>
<td><strong>10</strong> Documenting all interventions that affect the visual relationships and ensuring that this documentation is available to those responsible for future interventions.</td>
<td></td>
</tr>
</tbody>
</table>

### ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11</strong> <strong>Rehabilitating</strong> the visual relationships, if an evaluation of their overall condition determines that more than preservation is required.</td>
<td></td>
</tr>
<tr>
<td><strong>12</strong> <strong>Repairing</strong> or rejuvenating features that define the visual relationships, by using non-destructive methods and materials, such as regenerating vegetation that frames an important view.</td>
<td>Failing to perform necessary work, resulting in the loss of character-defining visual relationships. Replacement a feature that defines the visual relationships when repair is possible.</td>
</tr>
<tr>
<td><strong>13</strong> <strong>Replacing</strong> in kind an entire feature that is too deteriorated to repair.</td>
<td>Replacing an irreparable feature with a new feature that does not respect the visual relationships in the cultural landscape.</td>
</tr>
<tr>
<td><strong>14</strong> <strong>Replacing</strong> missing historic features by designing new features that are compatible with the visual relationships in the cultural landscape, based on physical and documentary evidence.</td>
<td>Introducing new features that are incompatible in size, scale, material, style and colour. Creating a false historical appearance because the new feature is based on insufficient physical and documentary evidence.</td>
</tr>
</tbody>
</table>

### ADDITIONS OR ALTERATIONS TO A CULTURAL LANDSCAPE

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>15</strong> <strong>Designing</strong> a new feature when required by a new use that respects the historic visual relationships in the cultural landscape. This can include matching established proportions and densities, such as maintaining the overall ratio of open space to building mass in an urban heritage district when designing an infill building.</td>
<td>Introducing a new feature that alters or obscures the visual relationships in the cultural landscape, such as constructing a new building as a focal point, when a character-defining vista was traditionally terminated by the sky.</td>
</tr>
</tbody>
</table>
### ADDITIONAL GUIDELINES FOR RESTORATION PROJECTS

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>16  Repairing or rejuvenating a deteriorated or declining feature that defines the visual relationships from the restoration period using a minimal intervention approach.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replacing an entire feature that defines the visual relationships from the restoration period when repair or rejuvenation is possible. Using a substitute material for a replacement part that neither conveys the same appearance of the surviving features from the restoration period, nor is physically or visually compatible.</td>
</tr>
<tr>
<td>17  Replacing in kind an entire feature that defines the visual relationships from the restoration period when that feature is too deteriorated to repair, using the same configuration and design details. The new work should be well documented to guide future research and treatment.</td>
<td>Removing an irreparable feature from the restoration period and not replacing it, or replacing it with a new feature that does not respect the visual relationships in the cultural landscape.</td>
</tr>
</tbody>
</table>

### REMOVING EXISTING FEATURES FROM OTHER PERIODS

| 18  Removing or altering non character-defining features from periods other than the chosen restoration period. | Failing to remove non character-defining features from another period that confuse the visual relationships of the chosen restoration period. |

### RECREATING MISSING FEATURES FROM THE RESTORATION PERIOD

| 19  Recreating a missing feature important to the visual relationships that existed during the restoration period, based on physical, documentary and oral evidence. | Introducing a feature that was part of the original design, but was never actually built, or a feature that was thought to have existed during the restoration period, but for which there is insufficient documentation. |
These guidelines provide direction when the constructed elements of an engineering work are identified as character-defining elements of an historic place.

Constructed elements are the distinct constructions that were built, erected or fabricated for the operation or use of the engineering work. Constructed elements can also be associated with the evolution of the work or with the transformation of the landscape resulting from the creation or operation of the work, which can include remnants, such as ore tailings from mining or dredging operations.

The types of constructions that can be considered constructed elements are extremely varied, including, for example:

- Structures that housed a warehouse, mill, factory, refinery, cannery or hydro-generating station;
- Landforms such as earth embankments and retaining walls of a dry ditch at a fort;
- Bridge superstructures;
- Tunnels, rock cuts and fills for a railway or highway right-of-way;
- Locks, dams and weirs of a canal system;
- Industrial machinery at a factory, or operational equipment inside a refinery, such as piping and steam tunnels;
- Ships such as paddle steamers or dredges; and,
- Ancillary equipment such as liquid or gas storage tanks, ore bins, cranes, derricks, chutes, conveyors or smokestacks at a factory.

Constructed elements offer a physical record of the work; its purpose, operation and evolution; the engineering innovation and design it embodies; and its impact on the environment. Their form, scale, massing, materials and construction type can all have heritage value, because they illustrate the purpose, operation and use of the work. Constructed elements help to illustrate and demonstrate the process, operation or activity that is, or once occurred, in the work. The condition of the constructed elements (including patina, graffiti and signs of wear) and the remnants or by-products from their operation (such as debris), can also hold value by demonstrating the evolution and function of the work in its environment.

The deteriorated heavy timber bow gantry frame of Dredge No. 4, in Dawson City, YK, was dismantled and replaced in kind with a new frame, built from new timbers sized to match the original timbers and reusing all original metal brackets and fixtures. The bow gantry, which supports the digging ladder, is a significant constructed element in the dredge’s operational design.
These guidelines focus on stationary constructed elements; that is, character-defining machinery and ancillary equipment that are fixed in place. Movable equipment and artifacts are not covered under these guidelines, although they are often indispensable in helping to explain, interpret and illustrate the distinct stages of processes that once occurred in the works.

These guidelines provide general recommendations for constructed elements of an engineering work. When the constructed element is a building or part of a building, a built feature in a cultural landscape or an archaeological resource, also refer to the corresponding guidelines when appropriate. For recommendations on specific materials that make up constructed elements, refer to the Guidelines for Materials.

Completed in 1904, the tall wood frame Clearwater Canadian Pacific Railway Water Tower in Manitoba is an excellent example of an intact railway water tower. Twelve thick timbers are set on concrete bases and are strengthened with cross-braces that support the cedar-lined water tank, which occupies the top half of the structure. The water tower retains many of the original pipes, valves and controls used in filling and using the tank. When ceasing operation at a work such as this, the character defining pipes, valves and controls should continue to be subjected to regular maintenance to prevent their deterioration.

Before beginning project work, the form, materials and condition of engineering works should be documented. Heritage recording of the Powerscourt Covered Bridge, National Historic Site of Canada in Powerscourt, QC, the only surviving bridge that uses the McCallum inflexible arch construction, included detailed measurements and a photographic record.

The Eagle Creek Cement Bridge in Saskatchewan is a good example of the nearly 90 reinforced concrete bowstring bridges that were constructed during the 1920s and 1930s as part of a comprehensive road building program in southern Saskatchewan. The graceful bowstring arches of these bridges, which blended functional engineering technology with aesthetically pleasing design, are character-defining elements. Repair or replacement of any parts of the bowstring arches should carefully designed for compatibility, matching the original form, materials and detailing of the arches.

Fully understanding the complexity and behaviour of a constructed element, such as pumps at the Kingston Dry Dock and Pumphouse can include determining its original design, purpose, operating theory, construction, operation, evolution over time, structural behaviour, structural performance over time including load history, performance under environmental loads, current condition and the deterioration mechanisms of its construction and materials.
### General Guidelines for Preservation, Rehabilitation and Restoration

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 <strong>Understanding</strong> the constructed element and how it contributes to the heritage value of the engineering work.</td>
<td></td>
</tr>
<tr>
<td>2 <strong>Understanding</strong> the construction history, theory, functional basis and design behind the constructed element.</td>
<td></td>
</tr>
<tr>
<td>3 <strong>Documenting</strong> the form, materials and condition of the constructed element before undertaking an intervention.</td>
<td><strong>Undertaking an intervention that affects a constructed element without first documenting its existing character and condition.</strong></td>
</tr>
<tr>
<td>4 <strong>Documenting</strong> the operation and maintenance of constructed elements in sufficient detail to fully understand their operational characteristics. This can include obtaining an oral history of operation procedures, recording the machinery in operation or preserving records associated with the engineering work, and making these available for future research.</td>
<td></td>
</tr>
<tr>
<td>5 <strong>Assessing</strong> the overall condition of constructed elements early in the planning process so that the scope of work is based on current conditions.</td>
<td><strong>Carrying out a level of intervention that exceeds what is required, or taking action based on assumptions or rules of thumb.</strong></td>
</tr>
<tr>
<td>6 <strong>Determining</strong> the appropriate level of investigation and analysis required to understand the overall condition of constructed elements, and analyzing the constructed elements in sufficient detail to fully understand their complexity and behaviour.</td>
<td></td>
</tr>
</tbody>
</table>
| 7 **Determining** the physical condition of constructed elements or their components, including the causes of distress, damage or deterioration through investigation, analysis, monitoring and minimally invasive or non-destructive testing techniques. | **Using highly destructive probing or sampling techniques that damage or destroy constructed elements or their components.**  
**Carrying out a repair that does not treat or address the cause of the problem.** |
| 8 **Testing** constructed elements or their components in place to determine their characteristics, provided the appropriate precautions are taken to avoid their failure or destruction. |  |
| 9 **Taking** into account the past performance and load history of constructed elements or their components when determining their present or future capacity. |  |
| 10 **Protecting** constructed elements through appropriate and regular maintenance. | **Failing to adequately maintain constructed elements on a cyclical basis, causing their components to deteriorate.** |
### General Guidelines for Preservation, Rehabilitation and Restoration

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11 Protecting</strong> evidence of the evolution process or operation of constructed elements that contribute to the heritage value of the engineering work, including protecting patinas, soiling or debris, wear patterns and graffiti, resulting from the operation of the work or its associated machinery. For example, cleaning machinery just enough to reduce deterioration and danger to the public, rather than attempting to clean it to a “like new” condition.</td>
<td></td>
</tr>
<tr>
<td><strong>12 Preserving</strong> the method of operation of an engineering work or its constructed elements that are important in defining the overall heritage value of the historic place. For example, continuing to hand-operate a canal lock gate mechanism, rather than switching to a motor.</td>
<td>Subjecting constructed elements to uses that could overload existing systems, such as installing equipment or systems that undermine the heritage value of the engineering work.</td>
</tr>
<tr>
<td><strong>13 Imposing</strong> limits on the acceptable use of constructed elements, based on their actual characteristics and capacities to protect them from damage. There is a need to balance present and anticipated usage demands with heritage value, and to avoid, if possible, any use that would damage or destroy the constructed elements.</td>
<td></td>
</tr>
<tr>
<td><strong>14 Balancing</strong> the need to alter constructed elements to meet current safety codes and standards (to allow continued use) with the need to preserve the heritage value of the work’s functionality and operation.</td>
<td></td>
</tr>
<tr>
<td><strong>15 Retaining</strong> sound constructed elements or deteriorated constructed elements of engineering works that can be repaired.</td>
<td>Replacing or rebuilding constructed elements that can be repaired.</td>
</tr>
<tr>
<td><strong>16 Stabilizing</strong> deteriorated constructed elements on an interim basis by structural reinforcement, weather protection, or correcting unsafe conditions, as required, until any additional work is undertaken.</td>
<td>Neglecting to treat known conditions that threaten the constructed elements of engineering works.</td>
</tr>
<tr>
<td><strong>17 Adapting</strong> interim stabilization interventions to the anticipated lifespan of the constructed element, so that they remain as reversible as possible.</td>
<td></td>
</tr>
<tr>
<td><strong>18 Repairing</strong> deteriorated parts of constructed elements in a manner that is physically and visually compatible with the engineering work.</td>
<td>Failing to undertake necessary repairs, resulting in the loss of constructed elements. Replacing an entire constructed element when repair or limited replacement of deteriorated or missing parts is possible.</td>
</tr>
</tbody>
</table>
### GENERAL GUIDELINES FOR PRESERVATION, REHABILITATION AND RESTORATION

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>19</strong> Protecting adjacent character-defining elements and components of constructed elements from accidental damage or exposure to damaging materials during maintenance or repair work.</td>
<td></td>
</tr>
<tr>
<td><strong>20</strong> Replacing in kind extensively deteriorated or missing parts of constructed elements using physical and documentary evidence as a model for reproduction. The new work should match the old as closely as possible in form, materials and detailing, and have adequate strength.</td>
<td>Replacing an entire constructed element when limited replacement of deteriorated and missing parts is possible.</td>
</tr>
<tr>
<td><strong>21</strong> Testing proposed interventions to establish appropriate replacement materials, quality of workmanship and methodology. This can include reviewing samples, testing products, methods or assemblies, or creating a mock-up. Testing should be carried out under the same conditions as the proposed intervention.</td>
<td></td>
</tr>
<tr>
<td><strong>22</strong> Operating and using a functioning engineering work or its constructed elements appropriately and according to applicable codes, to preserve the functional purpose of the work that is important in defining the overall heritage value of the historic place. For example, maintaining a canal route open to navigation, or reinforcing a highway bridge so that it can remain in service.</td>
<td>Ceasing to use or altering the functional purpose of a functioning work, or its constructed elements, that is important in defining the overall heritage value of the historic place. Operating and using a functioning engineering work without providing appropriate and timely maintenance, or without appropriate safety equipment, guards or training.</td>
</tr>
<tr>
<td><strong>23</strong> Documenting all interventions that affect constructed elements, and ensuring that this documentation will be available to those responsible for future interventions.</td>
<td></td>
</tr>
</tbody>
</table>

### ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>24</strong> Repairing constructed elements or their components using recognized conservation methods. Repairs might include the limited replacement in kind, or replacement with an appropriate substitute material, of irreparable or missing components, based on physical or documentary evidence.</td>
<td>Failing to undertake necessary repairs, resulting in the loss of constructed elements. Replacing or demolishing an entire constructed element, when repair and limited replacement of deteriorated or missing parts is possible.</td>
</tr>
<tr>
<td><strong>25</strong> Proof-testing repairs to reinforce constructed elements or their components in place, to confirm their actual rather than theoretical performance, provided the appropriate precautions are taken to avoid their failure or destruction.</td>
<td>Reinforcing constructed elements or their components, without verifying the effectiveness or the level of benefit achieved by the reinforcement work.</td>
</tr>
</tbody>
</table>
# ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>26</strong></td>
<td>Replacing in kind an entire constructed element that is too deteriorated to repair, using physical and documentary evidence as a model for reproduction. The new work should match the old as closely as possible in form, materials and detailing, and have adequate strength.</td>
<td>Replacing a constructed element with one that does not follow the same engineering concept as the original. For example, replacing a character-defining mass masonry retaining wall with a reinforced concrete retaining wall faced with stone.</td>
</tr>
<tr>
<td><strong>27</strong></td>
<td>Replacing missing historic features by designing and installing a new constructed element based on physical or documentary evidence, or one that is compatible in size, scale, material, style or colour.</td>
<td>Creating a false historical appearance by replacing a constructed element with one that is based on insufficient physical and documentary evidence.</td>
</tr>
</tbody>
</table>

## ADDITIONS OR ALTERATIONS TO CONSTRUCTED ELEMENTS

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>28</strong></td>
<td>Designing additions for a new use in a manner that is compatible with the constructed element and respects the heritage value of the engineering work.</td>
<td>Introducing additions to constructed elements that are incompatible with the character of the engineering or that alter the historic relationships of the work.</td>
</tr>
<tr>
<td><strong>29</strong></td>
<td>Building an addition to a constructed element that retains as many of the historic materials as possible, and ensures that the constructed elements are not obscured, damaged or destroyed, or the heritage value undermined.</td>
<td></td>
</tr>
<tr>
<td><strong>30</strong></td>
<td>Designing a new addition to a constructed element in a manner that draws a clear distinction between what is historic and what is new.</td>
<td>Duplicating the exact form, material, style and detailing of the original constructed element so that the new work appears to be part of the historic place.</td>
</tr>
<tr>
<td><strong>31</strong></td>
<td>Considering the design of an attached exterior addition in terms of its relationship to the engineering work. The design for the new work may be contemporary or refer to design motifs from the historic place. In either case, it should be compatible in terms of massing, materials and colour, yet be distinguishable from the historic place.</td>
<td>Designing and building new additions that negatively affect the heritage value of the engineering work, including its design, materials, workmanship, location or setting.</td>
</tr>
<tr>
<td><strong>32</strong></td>
<td>Placing a new addition on a non-character-defining elevation and limiting its size and scale in relation to the engineering work.</td>
<td>Designing a new addition that obscures, damages or destroys constructed elements, or undermines the heritage value of the engineering work.</td>
</tr>
<tr>
<td><strong>33</strong></td>
<td>Undertaking soil mechanics studies and limiting new excavations adjacent to constructed elements to avoid undermining the structural stability of the engineering work or adjacent historic structures. Archaeological investigations should be undertaken before any excavation to avoid damaging potential archaeological resources. Refer to the Guidelines for Archaeological Sites for additional recommendations on excavation work.</td>
<td>Carrying out excavations or re-grading that could cause constructed elements or adjacent historic structures to settle, shift or fail, or that could damage archaeological resources.</td>
</tr>
</tbody>
</table>
### ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Correcting the structural deficiencies of constructed elements when preparing for a new use in a manner that preserves their character-defining elements and the overall heritage value of the engineering work.</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Designing and installing new mechanical or electrical systems or equipment when required for the new or continued use, in a manner that minimizes adverse effects on the constructed elements.</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Adding a new structural system to a constructed element when required for the new or continued use, in a manner that does not obscure, damage or destroy character-defining elements.</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Creating a habitable space when required for the new use, in a manner that assures that character-defining elements will be preserved.</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Removing non character-defining constructed elements when required by the new use.</td>
<td>Removing, relocating and displaying non character-defining constructed elements in a new location, creating a false impression of the engineering work.</td>
</tr>
</tbody>
</table>
## ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEALTH, SAFETY AND SECURITY CONSIDERATIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Adding new features to meet health, safety or security requirements, in a manner that conserves the constructed elements and minimizes impact on the heritage value of the engineering work.</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Working with code specialists to determine the most appropriate solution to health, safety and security requirements with the least impact on the character-defining elements and overall heritage value of the engineering work.</td>
<td>Making changes to constructed elements, without first exploring equivalent systems, methods or devices that may be less damaging to the character-defining elements of the engineering work.</td>
</tr>
<tr>
<td>41</td>
<td>Protecting constructed elements against loss or damage by identifying and assessing specific risks, and by implementing an appropriate fire protection strategy that addresses those specific risks.</td>
<td>Implementing a generic fire protection strategy or one that does not appropriately address the specific fire risks of the engineering work.</td>
</tr>
<tr>
<td>42</td>
<td>Installing sensitively designed fire-suppression systems, such as sprinklers, that retain the character-defining elements and respect the heritage value of the engineering work.</td>
<td>Installing fire-suppression systems in a manner that damages or destroys character-defining elements.</td>
</tr>
<tr>
<td>43</td>
<td>Applying fire retardant or protective materials that do not damage or obscure constructed elements. For example, applying fire-retardant, intumescent paint to a deck to further protect its steel.</td>
<td>Covering flammable, character-defining constructed elements or their components with fire-resistant sheathing or coatings that alter their appearance.</td>
</tr>
<tr>
<td>44</td>
<td>Removing hazardous materials from engineering works, their constructed elements or their components, only after thorough testing has been conducted and less-invasive abatement methods have been shown to be inadequate. Where applicable, archaeological work to collect data should be carried out before the site is disrupted by soil decontamination operations.</td>
<td></td>
</tr>
</tbody>
</table>
## ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACCESSIBILITY CONSIDERATIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td><strong>Introducing</strong> a new feature to meet accessibility requirements in a manner that conserves the constructed element and respects the overall heritage value of the engineering work.</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td><strong>Working</strong> with accessibility and conservation specialists and users to determine the most appropriate solution to accessibility issues with the least impact on the character-defining elements and overall heritage value of the engineering work.</td>
<td>Altering character-defining constructed elements without consulting the appropriate specialists and users.</td>
</tr>
<tr>
<td><strong>SUSTAINABILITY CONSIDERATIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td><strong>Complying</strong> with energy-efficiency objectives in upgrades to the constructed elements in a manner that respects the engineering work’s character-defining elements.</td>
<td>Damaging or destroying constructed elements and undermining the heritage value of the engineering work while making modifications to comply with energy-efficiency objectives.</td>
</tr>
<tr>
<td>48</td>
<td><strong>Working</strong> with specialists to determine the most appropriate solution to energy efficiency requirements with the least impact on the character-defining elements and overall heritage value of the engineering work.</td>
<td>Making changes to constructed elements, without first exploring alternative energy efficiency solutions that may be less damaging to the character-defining elements and overall heritage value of the engineering work.</td>
</tr>
<tr>
<td><strong>CEASING OPERATION OF AN ENGINEERING WORK</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td><strong>Following</strong> appropriate mothballing procedures when ceasing operation of an engineering work so as to maintain the potential for future operation of the work or its constructed elements, including installing appropriate safety shut-offs, and carrying out regular maintenance on the shut-down mechanisms to prevent their deterioration.</td>
<td></td>
</tr>
</tbody>
</table>
## ADDITIONAL GUIDELINES FOR RESTORATION PROJECTS

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>50</strong> Repairing constructed elements from the restoration period using a minimal intervention approach, such as patching, splicing, consolidating or otherwise reinforcing its materials and improving weather protection.</td>
<td>Replacing an entire constructed element from the restoration period when the repair of materials and limited replacement of deteriorated or missing parts is possible.</td>
</tr>
</tbody>
</table>

### REPLACING EXISTING FEATURES FROM OTHER PERIODS

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>51</strong> Replacing in kind an entire constructed element from the restoration period that is too deteriorated to repair using the physical evidence as a model to reproduce the element. The replacement should have the same form, appearance and material properties as the replaced element, and have adequate strength or load-bearing capabilities. The new work should be unobtrusively dated to guide future research and treatment.</td>
<td>Removing an irreparable constructed element from the restoration period and not replacing it, or replacing it with an inappropriate new element.</td>
</tr>
</tbody>
</table>

### RECREATING MISSING FEATURES FROM THE RESTORATION PERIOD

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>53</strong> Recreating a missing constructed element from the restoration period, based on physical or documentary evidence.</td>
<td>Installing a constructed element that was part of the engineering work’s original design but was never actually built, or a constructed element that was thought to have existed during the restoration period but for which there is insufficient documentation.</td>
</tr>
</tbody>
</table>

### RESTORING OPERATION TO AN ENGINEERING WORK

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>54</strong> Restoring operation to an engineering work that is important in defining its heritage value.</td>
<td>Keeping an engineering work in a non-operational state when the operation of the work is important in defining its heritage value.</td>
</tr>
</tbody>
</table>
These guidelines provide direction when architectural or structural metals are identified as character-defining elements of an historic place. They also give direction on maintaining, repairing and replacing metal elements.

Structural metals typically include steel or iron columns, beams, trusses, or frames. Architectural metals encompass all other metal elements, which include a wide variety of architectural elements, such as sculpture, roofing, flashings, cladding, creSTInG, windows, doors, curtain-wall mullions and spandrel panels, railings and banisters, stairs, bathroom fixtures and partitions, hardware, gates, fences, and sign posts.

The metals used in the construction of historic places throughout Canadian history include, but are not limited to, iron (cast and wrought), steel, stainless steel, galvanized steel, tin, copper and copper alloys, zinc, aluminum, lead, nickel and bronze.

The long-term performance of metal components depends on their physical and chemical properties, the environment they are exposed to, design details, and their proximity to other metallic and non-metallic components. Typical forms of metal deterioration include corrosion, erosion, abrasion, deformation, cracking and fatigue, and flaws due to original design, manufacture or assembly.

The first step in preserving architectural metals is to identify the type of metal. Before cleaning, determine that the method is appropriate for the particular metal: removing the patina from these bronze doors would not be appropriate if the patina is a character-defining finish of the metal, or if it provides a protective coating. Testing is recommended to ensure that the gentlest cleaning method possible is used.

Some metal elements of a historic place may originally have been finished with a protective coating under shop conditions that are difficult to reproduce on site when repairs are required. In this case, the character-defining black anodized aluminium mullions and spandrel panels have deteriorated due to decades of exposure to sunlight. The approach to repair should be based on the analysis of all repair options, thorough testing of the chosen techniques, and careful protection of the curtain wall from further damage during all interventions.
Generally, metal components tend to be durable, but components that are not suited to a particular location or function, or not receiving adequate maintenance, may become fragile. To correct damage to a metal component, the cause of its deterioration must be understood and the type of metal correctly identified. If the metal’s properties are not understood, inappropriate treatment may cause an adverse reaction and further deterioration. Some metals, such as wrought iron, cast iron and steel, are easy to recognize, but alloys can be challenging to identify. Accurately identifying an alloy may require help from a metals conservator or conservation professional.

These guidelines provide general recommendations for architectural and structural metals, and should be used in conjunction with 4.5.1, All Materials. For structural metals, also refer to Structural Systems in the Guidelines for Buildings.

Most historic lighthouses have faced accelerated deterioration due to changes in how they operate; in addition, wet, salty coastal environments are challenging conditions in which to conserve metals. The heat produced by the original light source once helped keep the lantern dry, as did roof top ventilators and gutter systems. Electric lights and the lack of regular on-site personnel to maintain and operate these features have necessitated a pro-active conservation approach and likely the involvement of metal conservators.

Under certain circumstances, substitute materials may be appropriate. As part of a Rehabilitation project, new finials were designed based on original remains. The originals were fabricated of wafer-thin galvanized metal soldered together. The substitute material used in the new design was plate aluminum.

The two remaining decorative sheet metal urns at the top of the façade of the M & J Hardware Building in Lacombe, AB were determined to be beyond repair due to weathering over time. A third sheet metal urn (centre) was missing. The existing deteriorated elements and photographic documentation were used to replicate these elements. The M & J Hardware Building is an example where missing features from the restoration period have been re-instated based on physical and documentary evidence.
<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Understanding the properties and characteristics of metals and their finishes or coatings.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Documenting the form, composition, and condition of metals, before undertaking an intervention.</td>
<td>Undertaking an intervention that affects metals without first documenting their characteristics and condition.</td>
</tr>
<tr>
<td>3</td>
<td>Protecting and maintaining metals from corrosion by preventing water penetration and maintaining proper drainage, so that water or organic matter does not stand on flat surfaces or accumulate in decorative features.</td>
<td>Failing to identify, evaluate and treat the causes of corrosion.</td>
</tr>
<tr>
<td>4</td>
<td>Ensuring that incompatible metals are not in contact with each other by installing an appropriate separator to prevent galvanic corrosion.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Identifying the type of metal and the most appropriate cleaning method, and testing it in an inconspicuous area to ensure an appropriate level of cleanliness.</td>
<td>Over-cleaning metal elements. Using cleaning methods that alter or damage the character-defining colour, texture and finish of the metal.</td>
</tr>
<tr>
<td>6</td>
<td>Determining the appropriate level of patina before cleaning, and ensuring that this level is maintained for the entire element.</td>
<td>Removing the character-defining patina of a metal element.</td>
</tr>
<tr>
<td>7</td>
<td>Cleaning painted metals using appropriate techniques and products to remove corrosion and layers of paint, if required, before repainting.</td>
<td>Exposing metals intended to be protected from the environment. Applying paint or other coatings to metals that were meant to be exposed.</td>
</tr>
<tr>
<td>8</td>
<td>Cleaning soft metals, such as lead, tin, copper, aluminum, brass, silver, bronze and zinc, with appropriate non-abrasive methods.</td>
<td>Using abrasives on soft metals.</td>
</tr>
<tr>
<td>9</td>
<td>Using the gentlest cleaning methods for hard metals, such as cast iron, wrought iron and steel, to remove excessive paint build-up and corrosion.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Applying an appropriate protective coating to an unpainted metal element that is subject to frequent use and handling, such as a bronze door or brass hardware, or to corrosion due to environmental factors, such as abrasives in winter. The coating should be regularly reapplied, as required, to ensure ongoing protection.</td>
<td></td>
</tr>
</tbody>
</table>
### GENERAL GUIDELINES FOR PRESERVATION, REHABILITATION AND RESTORATION

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td><strong>Re-applying</strong> appropriate paint or coating systems after cleaning to decrease the corrosion rate of painted or coated metals.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td><strong>Retaining</strong> all sound and repairable metals that contribute to the heritage value of the historic place.</td>
<td>Replacing metals that can be repaired.</td>
</tr>
<tr>
<td>13</td>
<td><strong>Stabilizing</strong> deteriorated metals by structural reinforcement and weather protection, or correcting unsafe conditions, as required, until repair work is undertaken.</td>
<td>Removing deteriorated metals that could be stabilized or repaired.</td>
</tr>
<tr>
<td>14</td>
<td><strong>Repairing</strong> parts of metal elements by welding, soldering, patching, or splicing, using recognized conservation methods.</td>
<td>Replacing an entire metal element, when repair and limited replacement of deteriorated or missing parts is possible.</td>
</tr>
<tr>
<td>15</td>
<td><strong>Replacing</strong> in kind, extensively deteriorated or missing parts of metal elements, based on physical and documentary evidence.</td>
<td>Replacing an entire metal element, when limited replacement of deteriorated and missing parts is appropriate. Using a substitute material that neither conveys the appearance of the surviving parts of the metal element, nor is physically or chemically compatible.</td>
</tr>
</tbody>
</table>

### ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td><strong>Repairing</strong> metal elements by welding, soldering, patching, or splicing, using recognized conservation methods. Repair may also include the limited replacement in kind, or replacement with a compatible substitute material, of extensively deteriorated or missing metal elements, where there are surviving prototypes.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td><strong>Reinforcing</strong> metal elements, following recognized conservation methods to improve their strength. Reinforcement should be physically and visually compatible.</td>
<td>Replacing an entire metal element when reinforcement is feasible.</td>
</tr>
<tr>
<td>18</td>
<td><strong>Replacing</strong> in kind an irreparable metal element, based on documentary and physical evidence.</td>
<td>Removing an irreparable metal element and not replacing it, or replacing it with an inappropriate new element.</td>
</tr>
</tbody>
</table>

### HEALTH, SAFETY AND SECURITY CONSIDERATIONS

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td><strong>Removing</strong> hazardous materials from metals using the least-invasive abatement methods and only after adequate testing has been conducted.</td>
<td></td>
</tr>
</tbody>
</table>
## ADDITIONAL GUIDELINES FOR RESTORATION PROJECTS

<table>
<thead>
<tr>
<th></th>
<th><strong>Recommended</strong></th>
<th><strong>Not Recommended</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Repairing, stabilizing and conserving fragile metal elements from the restoration period, using well-tested consolidants, when appropriate. Repairs should be physically and visually compatible and identifiable on close inspection for future research.</td>
<td>Removing metal elements from the restoration period that could be stabilized and conserved.</td>
</tr>
<tr>
<td>21</td>
<td>Replacing in kind a metal element from the restoration period that is too deteriorated to repair, based on documentary and physical evidence. The new work should be well documented and unobtrusively dated to guide future research and treatment.</td>
<td>Removing an irreparable metal element from the restoration period and not replacing it, or replacing it with an inappropriate new element.</td>
</tr>
</tbody>
</table>
4.5.4 CONCRETE

These guidelines provide direction when concrete is identified as a character-defining element of a historic place. They also give direction on maintaining, repairing and replacing concrete elements.

Early uses of concrete were typically utilitarian and formed part of structures that were hidden from view. The earliest concrete was massive, un-reinforced, cast-in-place construction containing variable aggregates that were obtained from local sources. Beginning in the early 1900s, the use of concrete as an aesthetic material became more common and was fully embraced by the middle of the 20th century. Reinforced concrete began appearing in the early 1900s, introducing more efficient designs of concrete members and structures. This, in turn, allowed for increased spans and the creation of architectural features, such as sculptural staircases and organic roof forms. Pre-cast concrete, where the members are fabricated off-site and brought to the site for erection, was first used in the 1930s. This coincided with the increased use of concrete as an exposed architectural, decorative and functional element, such as paving tiles and exterior wall cladding.

Cape Race Lighthouse, on the southernmost tip of the Avalon Peninsula in Newfoundland and Labrador, is Canada’s most prominent landfall marker. Built in 1906–1907, Cape Race was the first Canadian lighthouse to be constructed in reinforced concrete and probably the second lighthouse constructed in reinforced concrete in the world.

Special formwork or chemical or mechanical treatments can create a wide variety of concrete finishes, such as these pre-cast panels with exposed Laurentian granite aggregate at the National Arts Centre in Ottawa. Recreating these finishes when repairing or replacing-in-kind should be preceded by a mock up to ensure that the new work will be compatible with the historic place.
Architectural uses for concrete include exterior cladding, flooring and paving. The aesthetic qualities of concrete can include the texture created by formwork, such as smooth or board formed, and the colour and finish, such as exposed aggregate or terrazzo.

Finding recognized conservation techniques for concrete can be a challenge because these are part of a relatively new area of conservation. Some repair techniques may not have been thoroughly tested. A significant industry exists in Canada for repairing recent concrete structures; however, commonly used repair techniques and materials are usually not suited to historic concrete. The monolithic nature of concrete complicates its repair. High-quality workmanship and compatible materials are necessary in any repair to reduce the abrupt altering of the properties of the matrix, which could lead to shrinkage cracking.

These guidelines provide general recommendations for concrete and should be used in conjunction with 4.5.1, All Materials. Because concrete can also form part of the structure or cladding of a building or engineering work, also refer to Structural Systems or Exterior Walls in the Guidelines for Buildings.

Important properties to match when patching concrete can include the modulus of elasticity, cement to aggregate ratio, aggregate gradation, compressive and shear strength, and coefficient of thermal expansion. In this case the coarse aggregate in the repair patch does not match that of the original concrete.

In the early 20th century, concrete was still an experimental material. The early designers and fabricators did not have full knowledge about the properties and characteristics of the concrete or its performance in the Canadian environment. Early examples of concrete construction often have inherent problems, are in poor condition and can require considerable conservation work.

Deterioration of concrete is a significant conservation issue, particularly in the Canadian climate. Deterioration typically results from environmental factors, such as moisture, temperature and the presence of salts and carbon dioxide, which can corrode the steel reinforcements. Durability factors related to the original materials and workmanship, and improper maintenance, can also significantly affect concrete.

The skills and expertise to repair or replace sections of cracked and chipped terrazzo flooring are still available. These specialised skills should be sought out when repairs are needed. The colourful, decorative and functional finish of this crest in the floor at the Royal Canadian Legion Branch No 1 in Regina is an important character-defining feature of the building.
### General Guidelines for Preservation, Rehabilitation and Restoration

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>Understanding</strong> the properties and characteristics of the concrete of the historic place.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>Documenting</strong> the form, composition, strength, colour, texture, details and condition of the concrete before undertaking an intervention. For example, identifying the particular characteristics and source of the type of aggregate used.</td>
</tr>
<tr>
<td></td>
<td>Undertaking an intervention that affects concrete, without first documenting its existing character and condition.</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>Protecting</strong> and maintaining concrete by preventing moisture penetration; maintaining proper drainage; improving water shedding; and by preventing damage due to the overuse of ice-clearing chemicals.</td>
</tr>
<tr>
<td></td>
<td>Failing to identify, evaluate and treat the various causes of concrete deterioration.</td>
</tr>
<tr>
<td></td>
<td>Applying water-repellent coatings to above-grade concrete to stop moisture penetration, when the problem could be solved by repairing failed flashings or other mechanical defects.</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>Cleaning</strong> concrete, only when necessary, to remove heavy soiling or graffiti. The cleaning method should be as gentle as possible to obtain satisfactory results.</td>
</tr>
<tr>
<td></td>
<td>Over-cleaning concrete surfaces to create a new appearance, thus introducing chemicals or moisture into the concrete.</td>
</tr>
<tr>
<td></td>
<td>Using a cleaning method that involves water or liquid chemical solutions when there is a possibility of freezing temperatures.</td>
</tr>
<tr>
<td></td>
<td>Cleaning with chemical products that damage the concrete.</td>
</tr>
<tr>
<td></td>
<td>Failing to rinse off and neutralize appropriate chemicals on concrete surfaces after cleaning.</td>
</tr>
<tr>
<td></td>
<td>Blasting the concrete with abrasives that permanently erode the surface and damage soft or delicate materials adjacent to it.</td>
</tr>
<tr>
<td></td>
<td>Applying coatings or paint over the concrete to present a uniform appearance.</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>Testing</strong> cleaning methods in inconspicuous areas before cleaning the entire concrete surface, and observing the results of the cleaning tests over a sufficient period of time to determine their immediate and long-term effect.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td><strong>Inspecting</strong> painted concrete surfaces to determine whether repainting is necessary.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7</strong></td>
<td><strong>Removing</strong> damaged or peeling paint, using the gentlest method possible before repainting.</td>
</tr>
<tr>
<td></td>
<td>Removing paint that is firmly adhered to concrete.</td>
</tr>
<tr>
<td></td>
<td>Recommended</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>8</td>
<td><strong>Reapplying</strong> compatible paint or coatings, if necessary, that are</td>
</tr>
<tr>
<td></td>
<td>physically and chemically compatible with the previous surface treatment, and</td>
</tr>
<tr>
<td></td>
<td>visually compatible with the surface to which they are applied.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td><strong>Selecting</strong> an appropriate approach to corrosion protection to minimize</td>
</tr>
<tr>
<td></td>
<td>damage to the concrete, including regular inspection and maintenance.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td><strong>Retaining</strong> sound and repairable concrete elements that contribute to the</td>
</tr>
<tr>
<td></td>
<td>heritage value of the historic place.</td>
</tr>
<tr>
<td>11</td>
<td><strong>Stabilizing</strong> deteriorated concrete elements by structural reinforcement</td>
</tr>
<tr>
<td></td>
<td>and weather protection, or correcting unsafe conditions, as required, until</td>
</tr>
<tr>
<td></td>
<td>repair work is undertaken.</td>
</tr>
<tr>
<td>12</td>
<td><strong>Repairing</strong> deteriorated concrete by patching or consolidating, using</td>
</tr>
<tr>
<td></td>
<td>appropriate conservation methods.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td><strong>Minimizing</strong> damage to early concrete by limiting the size of the</td>
</tr>
<tr>
<td></td>
<td>chipping equipment to better control the degree of removal, remembering that</td>
</tr>
<tr>
<td></td>
<td>the compressive strength of early concrete may be much lower than modern</td>
</tr>
<tr>
<td></td>
<td>concrete.</td>
</tr>
<tr>
<td>14</td>
<td><strong>Cleaning</strong> concrete before repair to remove contaminants, dirt and soil,</td>
</tr>
<tr>
<td></td>
<td>so that the new concrete patches match the cleaned surface.</td>
</tr>
<tr>
<td>15</td>
<td><strong>Sealing</strong> inactive cracks in concrete by pointing with a cementitious</td>
</tr>
<tr>
<td></td>
<td>mortar, or injecting epoxies to prevent moisture from entering the concrete</td>
</tr>
<tr>
<td></td>
<td>mass.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td><strong>Replacing</strong> in kind extensively deteriorated or missing parts of concrete</td>
</tr>
<tr>
<td></td>
<td>elements, based on documentary and physical evidence.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### ADDITIONAL GUIDLINES FOR REHABILITATION PROJECTS

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 <strong>Repairing</strong> and reinforcing deteriorated concrete by encasing it in a jacket of new concrete, using appropriate conservation methods.</td>
<td>Failing to maintain the proportions or form of deteriorated concrete elements, when repairing by jacketing with new concrete.</td>
</tr>
<tr>
<td>18 <strong>Replacing</strong> in kind an irreparable concrete element, based on documentary and physical evidence.</td>
<td>Removing an irreparable concrete element and not replacing it, or replacing it with an inappropriate new element.</td>
</tr>
<tr>
<td>19 Applying appropriate surface treatments, such as breathable coatings, to concrete as a last resort, only if repairs, alternative design solutions, or flashings have failed to stop water penetration, and if a maintenance program is established for the coating.</td>
<td>Applying coatings to concrete instead of correcting the problem that caused the damage.</td>
</tr>
</tbody>
</table>

### HEALTH, SAFETY AND SECURITY CONSIDERATIONS

| 20 Removing hazardous materials from concrete by using the least-invasive abatement methods and only after thorough testing has been conducted. | |

### ADDITIONAL GUIDLINES FOR RESTORATION PROJECTS

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 <strong>Repairing</strong> deteriorated concrete from the restoration period by patching or consolidating, using recognized conservation methods. Repairs should be physically and visually compatible and identifiable on close inspection for future research.</td>
<td>Removing concrete from the restoration period that could be stabilized and conserved.</td>
</tr>
<tr>
<td><strong>Replacing</strong> in kind a concrete element from the restoration period that is too deteriorated to repair, based on documentary and physical evidence. The new work should be well documented and unobtrusively dated to guide future research and treatment.</td>
<td>Removing an irreparable concrete element from the restoration period and not replacing it, or replacing it with an inappropriate new element.</td>
</tr>
<tr>
<td><strong>Replacing</strong> in kind a concrete element from the restoration period that is too deteriorated to repair, based on documentary and physical evidence. The new work should be well documented and unobtrusively dated to guide future research and treatment.</td>
<td></td>
</tr>
</tbody>
</table>

### Recommended

- **Repairing** and reinforcing deteriorated concrete by encasing it in a jacket of new concrete, using appropriate conservation methods.
- **Replacing** in kind an irreparable concrete element, based on documentary and physical evidence.
- Applying appropriate surface treatments, such as breathable coatings, to concrete as a last resort, only if repairs, alternative design solutions, or flashings have failed to stop water penetration, and if a maintenance program is established for the coating.
- Removing hazardous materials from concrete by using the least-invasive abatement methods and only after thorough testing has been conducted.
- **Repairing** deteriorated concrete from the restoration period by patching or consolidating, using recognized conservation methods. Repairs should be physically and visually compatible and identifiable on close inspection for future research.
- **Replacing** in kind a concrete element from the restoration period that is too deteriorated to repair, based on documentary and physical evidence. The new work should be well documented and unobtrusively dated to guide future research and treatment.

### Not Recommended

- Failing to maintain the proportions or form of deteriorated concrete elements, when repairing by jacketing with new concrete.
- Removing an irreparable concrete element and not replacing it, or replacing it with an inappropriate new element.
- Applying coatings to concrete instead of correcting the problem that caused the damage.
- Removing concrete from the restoration period that could be stabilized and conserved.
- Replacing an entire concrete element from the restoration period when repair and limited replacement of deteriorated or missing parts is possible.
- Using a substitute material for replacement that neither conveys the same appearance as the surviving concrete, nor is physically or chemically compatible.
- Removing an irreparable concrete element from the restoration period and not replacing it, or replacing it with an inappropriate new element.
Appendix B: New Bridge Design
Black Bridge Road Bridge

Preliminary Structural Design Brief
Cambridge, Ontario
Wood Project No. IM21106003, City of Cambridge

Prepared for:

City of Cambridge
50 Dickson Street, PO Box 669, Cambridge, ON N1R5W8
Black Bridge Road Bridge

Preliminary Structural Design Brief
Wood Project No. IM21106003, City of Cambridge

Prepared for:
City of Cambridge
50 Dickson Street, PO Box 669, Cambridge, ON N1R5W8

Prepared by:
Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5 Canada
T: 905-335-2353

10/1/2021

Copyright and non-disclosure notice
The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment & Infrastructure Solutions a Division of Wood Canada Limited). save to the extent that copyright has been legally assigned by us to another party or is used by Wood under license. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

Third-party disclaimer
Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.
Table of Contents

1.0 Introduction ......................................................................................................................................................... 1
2.0 Key Plan .................................................................................................................................................................. 1
3.0 Reference Drawings & Reports ................................................................................................................................. 1
4.0 Existing Bridge .......................................................................................................................................................... 2
  4.1 Black Bridge Road Bridge ..................................................................................................................................... 2
5.0 Proposed New Bridge .................................................................................................................................................. 2
  5.1 Black Bridge Road Bridge ..................................................................................................................................... 2
    5.1.1 Previous Design ............................................................................................................................................... 2
    5.1.2 Proposed Changes to Previous Design ........................................................................................................... 2
6.0 Design Considerations ................................................................................................................................................ 5
  6.1 Steel Girders ............................................................................................................................................................. 2
  6.1.2.1 Steel Girders .................................................................................................................................................. 2
  6.1.2.2 Pier Foundations ........................................................................................................................................... 3
  6.1.2.3 Barrier Walls and Railings ............................................................................................................................... 3
  6.1.2.4 Retaining Walls .............................................................................................................................................. 4
  6.1.2.5 Proposed Bridge Cross-Section ....................................................................................................................... 5
6.1.2.6 Proposed Bridge Cross-Section ....................................................................................................................... 5
  6.0 Design Considerations ................................................................................................................................................ 5
  6.1 Semi-Integral v Integral Abutments ........................................................................................................................... 5
  6.2 Premium Reinforcement in Splash Zone .................................................................................................................. 6
  6.3 Precast Panels vs. Cast-in-Place Concrete Deck ..................................................................................................... 6
  6.4 Approach Slabs and Expansion Joints ....................................................................................................................... 6
  6.5 Drainage .................................................................................................................................................................. 6
  6.6 Utilities on New Bridge ......................................................................................................................................... 6
  6.7 Street Lighting Poles ................................................................................................................................................. 7
7.0 Construction Duration .................................................................................................................................................. 7
  7.1 Construction Duration ................................................................................................................................................. 7
8.0 Miscellaneous ............................................................................................................................................................... 7
  8.1 Design Codes ........................................................................................................................................................... 7
  8.2 Construction Access .................................................................................................................................................. 7
9.0 Summary .................................................................................................................................................................... 7
10.0 Closure ..................................................................................................................................................................... 8

List of Figures

Figure 1: Key Plan of Work ................................................................................................................................................ 1

Appendices

Appendix ‘A’ – Comparison of Wall Options
1.0 Introduction

Wood Environment & Infrastructure Solutions has been retained by the City of Cambridge to provide Consulting Design Services for the design of a new road bridge alongside the existing Black Bridge Road Bridge. The existing structure is approximately 200m West of Townline Road and crosses the Speed River. The new road bridge will cross the Speed River to the North of the existing structure. The existing structure will remain in use as a Multi-Use Trail (MUT) and the new structure will serve two lanes of vehicle traffic (one lane in each direction) on Black Bridge Road.

An Environmental Assessment and Concept Design was completed by BT Engineering (BTE) in July, 2020. Wood will be progressing the design to detailed and final design. The purpose of this Preliminary Design Memo is to confirm the conceptual design recommendations made by BTE and to propose changes to the design where deemed necessary.

2.0 Key Plan

![Key Plan of Work](image)

Figure 1: Key Plan of Work

3.0 Reference Drawings & Reports

The following drawings and reports have been referenced in the preparation of this Structural Design Report:

- Environmental Assessment and Concept Design, July 2020, by BTE.
4.0 Existing Bridge

4.1 Black Bridge Road Bridge
The existing Black Bridge Road Bridge was constructed in 1916 and is a single span, Pratt Truss. The bridge has a span of 35.7m and is 5m wide with a maximum vertical clearance of 3.1m. The existing cross section consists of a single lane of traffic with a three-rail steel railing on each side. The substructure consists of two CIP, reinforced concrete abutments at the East and West.

The structure spans over the Speed River and is designated under Part IV of the Ontario Heritage Act through By-law 16-03. The bridge has retained its original form despite undergoing extensive rehabilitation in 1931 and 1996. The Heritage Impact Assessment prepared in 2016 includes a detailed list of heritage attributes and significant views to and from the bridge.

5.0 Proposed New Bridge

5.1 Black Bridge Road Bridge

5.1.1 Previous Design
The proposed design for the new Black Bridge Road Bridge, as detailed in the initial Preliminary Design Report, by others, is a 77 m long structure consisting of two equal 38.5 m spans, supported on a central pier and on abutments at each end. The bridge cross section consists of two lanes (one in each direction) with shoulders on each side and a sidewalk on just the side closest to the existing heritage structure. There are steel four-tube traffic barriers on each side of the new bridge and the sidewalk extends into a viewing platform at the centre of the bridge.

The previous structural design consisted of a concrete deck supported by five (5) prestressed precast concrete NU girders, with semi-integral abutments. The piers and abutments were supported on spread footings and the approach ramps were supported on each side by armourstone retaining walls.

Wood has proposed various changes to this design, and these are listed in the section below.

5.1.2 Proposed Changes to Previous Design

6.1.2.1 Steel Girders
The previous Preliminary Design Report showed the concrete bridge deck to be supported by five (5) prestressed precast concrete NU girders, 1800mm deep. Wood instead proposes that the bridge deck be supported by four (4) steel girders, 1450mm deep. Steel girders are structurally more efficient than concrete and can achieve greater continuity over the central pier, and this allows less girders to still achieve a shallower girder depth than the concrete option. There are various other reasons for the recommendation of steel:

The originally proposed concrete girders are 38.5m long and each weigh 55t. Access to the site from the highway is via relatively small roads with sharp turns which will make transporting these girders to site difficult. Additionally a very large crane will be needed on each approach to lift the concrete girders into place.

Steel girders would be much lighter. The girders would be continuous over the pier with each continuous girder fabricated in three (3) sections. Each section would weigh about 25-30t and would be a maximum of 30m long, making it shorter and easier to transport in comparison with the concrete girders. The central section will be lifted onto the pier bearing and held in place while the two end sections are lifted.
onto the abutment bearings and spliced to the central section. It is possible that the central section can be lifted into place from two barges floating in the river, with one barge on each side of the pier. A water depth of 1 – 1.5 m would be needed for this to be feasible, and preliminary cross-sections indicates this depth to be present in the centre of the creek. It is also anticipated that a suitable launching area can be found or created in the vicinity of the construction zone. If barges can be utilized, then a much smaller crane would be needed on the approaches, as the crane would just lift the end sections into place.

While it is acknowledged that prestressed concrete girder bridges are often cheaper overall than steel girder bridges, for this particular site the transportation and erection issues mentioned above will likely result in the steel option being cheaper.

This is especially true because weathering steel can be used at this site. Weathering steel forms an adherent protective rust patina that inhibits further corrosion. It therefore does not require any paint coating, as long as 2.5m clearance between the girder soffit and the surface of the water can be achieved. Based on the preliminary design report, the vertical clearance under normal conditions appears to be about 3.0m, and this will be verified during detailed design. The lack of coating reduces the capital cost as well as the cost of maintenance of the bridge.

The contrast in colour between the weathering steel and concrete deck arguably provides a nicer aesthetic than the solid concrete option. Another advantage of steel for this bridge is that the existing crossing is constructed from steel, and so a new steel bridge would be more sympathetic to the existing bridge.

Finally, the new MTO prestressed concrete girder specification has tightened up the curing requirements. Because very few girder manufacturers in the province can adhere to the new requirements, it has made sourcing precast concrete girders more difficult at present and there is currently a one-year backlog for ordering new girders. If this problem persists, then the use of prestressed concrete girders could impact the schedule.

### 6.1.2.3 Pier Foundations

The previous Preliminary Design Report showed the pier to be supported on spread footings, founded on the shallow bedrock. However construction of spread footings requires a large cofferdam area to be created in the centre of the creek, which comes at a substantial cost.

Wood instead proposes the use of caisson foundations which are also a very suitable foundation type on shallow bedrock. The caisson foundations could be made continuous with circular pier columns above, thereby removing the need for pile caps. This avoids the need for the cofferdams during construction and saves on cost and constructability issues. Instead a hole for the caisson would be augered into the bedrock through the opening in a steel liner that has first been driven down to top of bedrock from a barge. Then the liner would be removed as the concrete in the caisson is poured. Because there are no pile caps in this design, there is also minimal risk of future scour.

### 6.1.2.4 Barrier Walls and Railings

The previous Preliminary Design Report showed a TL-4 four-tube steel traffic barrier on each side of the bridge, 1.37m high to allow for cyclists. The TL-4 barrier on the sidewalk side was shown to curve around a viewing platform at the centre of the bridge. Wood has safety concerns regarding this detail as it creates blunt ends where the curved section meets the straight barrier which would not be safe in the event of a vehicle collision.

Wood instead proposes a concrete parapet wall 825mm high to be installed between the roadway and the sidewalk, and a cyclist railing to be installed at the outside edge of the sidewalk, curving around the
viewing platform. The cyclist railing can then incorporate a more aesthetic design which could reflect the cyclist railing to be installed on the heritage bridge, as it is not bound by the standard MTO barrier details. On the side of the bridge where there is no sidewalk, an 825mm high concrete parapet wall with cyclist railing would be installed to match the parapet wall on the other side.

The railings on the outside of the sidewalk would be corten steel (weathering steel) and would match the railings which will be installed on the existing heritage bridge. Details of the proposed railing design are provided in ‘Architectural Report – Railing Options’ by Wood.

The railings on the parapet walls would also match the aesthetic of the railings on the existing heritage bridge, however would be shorter and without the handrails and wire mesh ‘guards’.

6.1.2.5 Retaining Walls

The previous Preliminary Design Report showed armourstone walls on each side of the approach embankments. On top of these was a shallow concrete L-wall, and a four-tube steel traffic barrier was then installed onto the concrete roadbase. The PDR recommends these retaining walls to be armourstone walls for better integration with the cultural heritage landscape.

Wood has concerns about the stability of the wall as it is currently shown. In the PDR, a gap was left between the concrete L-wall and the armourstone in order to relieve the pressure on the armourstone. However the retaining walls would still be a few meters high where they meet the bridge and would also need fairly deep embedment to protect them against scour. Therefore if they are installed as a gravity wall, the wall would need larger armourstone units or multiple units back, especially at the base of the wall. This would end up being relatively expensive. Alternatively smaller armourstone blocks could be installed as a facing on an RSS (Reinforced Soil Slope) wall. The RSS wall would then provide the stability through geogrid tied back into the slope, while the armourstone blocks would be tied to the front to provide the look of an armourstone wall.

Another option would be to use just an MTO-style RSS wall with an ashlar stone finish on the concrete facing panels, however this would still look very urban and would not integrate with the landscape in the same way as armourstone would. The MTO-style RSS walls have a concrete barrier wall mounted on the top of them to provide safety for vehicles.

There are other concrete block walls, such as Redi-rock, which have a more realistic stone design on them. They also utilize a Steel beam guide rail set back from the wall, which is less obtrusive than a concrete barrier, however they still have a coping on the top and would not integrate so well with the landscape.

A different option would be to use a vegetated slope. This could be Terrafix, Envirolok or equivalent, consisting of bags filled with granular material and soil, tied together and supported by geogrid tied back into the slope. The geogrid allows for a steep slope, while the soil in the bags enables vegetation to grow on the slope, allowing it to blend into the surrounding environment. While in theory the slope could be vertical, in practice the limit is about 3V:1H in order to allow the vegetation to grow without maintenance.

An advantage of using a RSS wall, either on its own or behind armourstone, is that the concrete traffic barrier on the top is in line with the barrier wall on the culvert. If an armourstone wall, Redi-rock wall or else a vegetated slope is used, then vehicle protection would instead be provided by a steel beam guiderail located 1.0m behind the top of the slope. This is a cheaper option than a concrete barrier but the offset requires a larger footprint for the roadway cross-section.

Considering the above, Wood proposes the use of a vegetated slope, which would be cheaper than an armourstone wall and less intrusive than a MTO-style RSS wall or Redi-rock wall. The founding elevation of the slopes would be designed to mitigate against scour during flooding events. The grade of slope
would be chosen to maximize vegetation growth while minimizing the footprint of the approaches. Concrete wingwalls would still be required at the corners of the bridge, connected to the abutments, in order to transition the grading from the sides of the river.

On the approaches to the bridge, steel beam guide rails would be provided as safety treatments for the parapet walls. The steel beam guide rails would be extended for an additional length so that they also protect traffic from driving over the steep vegetated slopes. On the outside of the sidewalk, the cyclist railing would also extend to the ends of the vegetated slope.

For a table with a comparison of the different wall options, refer to Appendix ‘A’.

**6.1.2.6 Proposed Bridge Cross-Section**
Wood’s proposed bridge cross-section is included below.

---

### 6.0 Design Considerations

#### 6.1 Semi-Integral v Integral Abutments

The previous Preliminary Design Report showed the bridge supported on semi-integral abutments. With this type of construction, the girders rest on bearings at the abutments (similar to conventional bridges), but the approach slab is connected directly to the end diaphragm and the expansion joint is moved to the far end of the approach slab, away from the bearings.
Wood has also looked into the use of integral abutments for this bridge. With this type of construction, the expansion joints are again moved to the far end of the approach slabs. However the girders are cast directly into the abutment, and the abutment is supported on a single row of steel piles, which allows the entire abutment to flex with the expansion and contraction of the bridge.

Both integral and semi-integral abutments move the expansion joints to the end of the approach slabs rather than over the bearings. This prevents leakage of water through the joints which can cause deterioration of the bearings and girder ends. Integral abutments have some limitations, however in cases where they can be used, they are a cheaper solution than semi-integral and have lower future maintenance costs. The length of the bridge (under 100m), the lack of a skew and the low height of the abutment (under 7m) in theory makes this bridge an ideal candidate for integral abutments.

However the H-piles supporting the abutments must be longer than 5m for an integral abutment, and the bedrock is shallow at this site. It is possible to insert the bottom of the piles into augered holes in the bedrock, filled with granular material, to achieve the 5m length, however this would mean a 3m long augered hole at the west abutment and a 4m long augered hole at the east abutment, and this is not considered economical. Therefore Wood agrees with the previous preliminary design to go with semi integral abutments, supported on spread footings founded on bedrock.

### 6.2 Premium Reinforcement in Splash Zone

As per the MTO Structural Manual, premium reinforcement (either stainless steel or GFRP) should be used in locations vulnerable to salt-induced corrosion. For the Black Bridge Road Bridge, this includes the parapet walls and the sidewalk on the south side of the bridge, the expansion joint dams on sleeper slabs and the top face reinforcing of the approach slabs.

Wood intends to use stainless steel reinforcing, however GFRP will be considered for the longitudinal reinforcement in the sidewalks above the outside girders as it may provide a cost saving.

### 6.3 Precast Panels vs. Cast-in-Place Concrete Deck

Wood plans to use a conventional cast-in-place concrete deck for the new bridge. It is not considered to be an advantage to use precast panels for this structure, which are more expensive and generally only used when speed of construction is critical.

### 6.4 Approach Slabs and Expansion Joints

Wood is proposing to use integral abutments with the expansion joints located at the ends of the approach slabs rather than above the bearings. At the ends of the approach slabs, a Type ‘C’ expansion joint with a sleeper slab will allow for movement of the bridge. The approach slabs on each end of the bridge will be built according to MTO standard drawing SS116-1.

### 6.5 Drainage

The bridge has a longitudinal grade of 3.5% in each direction from the centre of the bridge. Therefore the water will drain to the east and west ends of the bridge. It is preferable to avoid deck drains on the bridge, as it spans over a creek, however catch basins should be installed in the road a little way off either end of the bridge.

### 6.6 Utilities on New Bridge

Enbridge is considering installation of a new 150mm diameter gas main on the new bridge. Wood will coordinate with Enbridge engineers to determine the final location and support system for the new gas
main. However it is understood that the design of the gasmain and support system will be carried out by Enbridge.

Electrical ducts may be needed on the bridge for the streetlighting poles.

6.7 **Street Lighting Poles**

Street Lighting Poles will be required along the roadway at a typical spacing of 40 – 50m. Therefore it is expected that one or two lighting poles will be installed on the bridge.

7.0 **Construction Duration**

7.1 **Construction Duration**

The project is expected to commence construction in 2023, with a construction duration of approximately 2 years for the overall project.

Construction of the bridge itself is expected to be done within one construction season.

8.0 **Miscellaneous**

8.1 **Design Codes**

The design of the bridge will be undertaken in accordance with the Canadian Highway Bridge Design Code (CHBDC) and the MTO Structural Manual as well as other relevant current directives and standards. Relevant OPSS & OPSD as well as Region of Waterloo and City of Cambridge standards and drawings, will be specified in the drawings and Contract Documents.

8.2 **Construction Access**

The new bridge is accessible from Black Bridge Road on both the east and west bridge approaches. It is anticipated that the new road alignment will have been completed before construction of the bridge, allowing construction access right up to the site of the new bridge.

The site is also accessible by barge from either direction along the Speed River.

9.0 **Summary**

The existing Black Bridge Road Bridge over the Speed River is a heritage structure which carries one lane of alternating traffic. It is proposed to widen and realign this section of road, including construction of a new road bridge across the Speed River to the North of the existing structure. The existing structure will remain in use as a Multi-Use Trail (MUT)

Wood has reviewed BTE’s preliminary design and proposed various revisions to the design as described in this memo.
10.0 Closure

We trust that this report is adequate for your purposes. If you have any questions or concerns, please feel free to contact the undersigned at your convenience.

Respectfully submitted by:

Wood Environment & Infrastructure Solutions
A Division of Wood Canada Limited

Report prepared by:

____________________________________
Emma Levy
Structural EIT

Report reviewed by:

____________________________________
Matthew Galloway, M.Eng., P.Eng., MICE,
MIStructE
Senior Structural Engineer
APPENDIX A
COMPARISON OF WALL OPTIONS
<table>
<thead>
<tr>
<th>Wall Type</th>
<th>Approx. Cost/m²</th>
<th>Aesthetic</th>
<th>Durability</th>
<th>Transition at Abutments</th>
<th>Vehicular Barrier</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armourstone gravity wall with 1.0m deep blocks at top, increasing to 2.0m deep blocks at bottom, and with 10V:1H face.</td>
<td>$800</td>
<td>Good</td>
<td>Armourstone wall would need return at end of wingwall to accommodate 1.0m offset.</td>
<td>Steel Beam Guide Rail, with 1.5m clear space between SBGR and front face of armourstone</td>
<td>At a 10V:1H slope and a 4.0m wall height adjacent to Blackbridge Road Bridge, it will encroach 2.4m from edge of road</td>
<td></td>
</tr>
<tr>
<td>Terrafix Flex MSE with geogrid and 3V:1H face.</td>
<td>$400</td>
<td>Generally good (as long as installed to specifications) but vehicular impact with steel beam guide rail could damage geogrid and require repairs to the wall</td>
<td>Grading would transition around wingwalls to accommodate 1.0m offset and slope</td>
<td>Steel Beam Guide Rail with post inside sleeve to pass through geogrid, with 1.0m clear space between SBGR and front face of bags</td>
<td>At a 3V:1H slope and a 4.0m wall height adjacent to the Blackbridge Road Bridge, it will encroach 2.8m from edge of road</td>
<td></td>
</tr>
<tr>
<td>Redi-Rock with geogrid and 20V:1H face.</td>
<td>$500</td>
<td>Generally good (as long as installed to specifications) but vehicular impact with steel beam guide rail could damage geogrid and require repairs to the wall</td>
<td>Wall would need return at end of wingwall to accommodate 1.0m offset. Alternatively blocks could be extended around face of abutments, but this would be more expensive.</td>
<td>Steel Beam Guide Rail with post inside sleeve to pass through geogrid, with 1.0m clear space between SBGR and front face of blocks</td>
<td>At a 20V:1H slope and a 4.0m wall height adjacent to the Blackbridge Road Bridge, it will encroach 1.7m from edge of road</td>
<td></td>
</tr>
<tr>
<td>MTO style RSS wall with geogrid and vertical face.</td>
<td>$500 (+ higher cost for concrete barrier on top compared to SBGR)</td>
<td>Good</td>
<td>RSS wall would start at end of bridge’s concrete wingwalls, and wall would be in line with wingwalls</td>
<td>Parapet Wall on top of RSS wall</td>
<td>For a 4.0m wall height adjacent to the Blackbridge Road Bridge, it will encroach 0.5m from edge of road</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Railing Options for Black Bridge
Architectural Report – Railing Options

Black Bridge Road Bridge
Cambridge, ON.
Project # IM21106003

Prepared for:
City of Cambridge
50 Dickson St. Cambridge, ON.
N1R 8S1

Prepared by:
Wood Environment and Infrastructure Solutions
a Division of Wood Canada Limited
3450 Harvester Rd.
Burlington, Ontario L7N 3W5
Canada
T: +1 905-335-2353

27 September 2021

Copyright and non-disclosure notice
The contents and layout of this report are subject to copyright owned by Wood (© Wood Environment and Infrastructure Solutions a Division of Wood Canada Limited) save to the extent that copyright has been legally assigned by us to another party or is used by Wood under license. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wood. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third-Party Disclaimer set out below.

Third-party disclaimer
Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Wood at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Wood excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents</td>
<td>i</td>
</tr>
<tr>
<td>1.0 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>2.0 Existing Structure</td>
<td>1</td>
</tr>
<tr>
<td>3.0 Proposed Modifications to Convert Bridge to Multi-Use Trail</td>
<td>1</td>
</tr>
<tr>
<td>3.1 Design of Railings</td>
<td>2</td>
</tr>
<tr>
<td>3.2 Design Options</td>
<td>3</td>
</tr>
<tr>
<td>3.2.1 Option 1</td>
<td>3</td>
</tr>
<tr>
<td>3.2.2 Option 2</td>
<td>5</td>
</tr>
<tr>
<td>3.2.3 Option 3</td>
<td>7</td>
</tr>
<tr>
<td>3.3 Material Selection</td>
<td>9</td>
</tr>
<tr>
<td>3.3.1 Corten Steel</td>
<td>9</td>
</tr>
<tr>
<td>3.3.2 Stainless Steel Railings</td>
<td>10</td>
</tr>
<tr>
<td>3.3.3 Stainless Steel Mesh</td>
<td>10</td>
</tr>
<tr>
<td>4.0 Summary &amp; Recommendation</td>
<td>11</td>
</tr>
<tr>
<td>5.0 Closure</td>
<td>12</td>
</tr>
</tbody>
</table>
1.0 Introduction

Wood Environment and Infrastructure Solutions Ltd. (Wood) was retained by the City of Cambridge to complete the detailed design of a new bridge structure crossing the Speed River, a new alignment for Black Bridge Road, improvements to Townline Road, a new crossing of Irish Creek, and the reuse of the existing heritage truss bridge as part of a Multi-use Trail (MUT).

In order to re-use the heritage truss bridge as a Multi-Use Trail, the railings on either side of the bridge will need to be upgraded to cycle rails that are compliant with current codes of practice. The purpose of this report is to propose alternative options for the new railings and recommend on a preferred design.

2.0 Existing Structure

The existing structure is a 35.7m long, single span Pratt type truss bridge constructed in 1916, crossing the Speed River. The span is supported by two concrete abutments, with rocker bearings at the east abutment and fixed bearings at the west abutment. The bridge consists of a single lane roadway, the total bridge width is 4.8m and deck width is 4.24m. The bridge was designed as a 152mm thick concrete deck supported by longitudinal stringers and transverse floor beams. There are existing cross-bracings between the transverse floor beams, that were installed as part of a rehabilitation in 1995. The bridge has been substantially rehabilitated during its 100-year history. It is recognized under Ontario Heritage Act as a Municipal Heritage Designation (Part IV) structure. Character defining elements that contribute to the heritage value of the Black Bridge include its:

- single-lane construction
- pin-joints
- steel truss configuration
- location on Black Bridge Road, spanning the Speed River
- views to the bridge from both banks and the north and south Black Bridge Road approaches
- views from the bridge of the surrounding rural landscape.

3.0 Proposed Modifications to Convert Bridge to Multi-Use Trail

The structure is to be converted from a vehicular bridge to a multi-use trail. The following modifications to the bridge are proposed in order to facilitate this change:

- Remove existing concrete curbs on bridge deck;
- Construct new wider concrete curbs on bridge deck, to support new cycle height railings. Leave recesses around existing deck drains;
- Construct new concrete footings on approaches, extending to ends of wingwalls, to support new cycle height railings;
- Install new cycle height railings on bridge and approaches;
- Install cover plate over expansion joint at each end of bridge. Cover plate prevents edges of joint from becoming trip hazard to pedestrians and cyclists;
- Remove steel beam guide rails on approaches; and
- Remove vehicular signage at each end of bridge.
This report discusses the design of the new railings on the bridge and approaches.

3.1 Design of Railings

The Black Bridge Road Bridge located in the City of Cambridge, Ontario, is a single-lane, steel truss bridge, which was constructed in 1916. The reuse of the existing heritage truss bridge into a Multi-use Trail (MUT) requires new guard rails and handrails to comply with the code requirements. The bridge cycle trail requires a minimum railing height of 1370mm on both sides. Hand rails should be at a height of 900mm. The lower 1050mm of the railing is considered the guard and openings for the lower 1050 mm shall not exceed 100 mm in the least direction or shall be covered with chain link mesh. Openings in chain link mesh shall not be larger than 50 × 50 mm. The railings are to be a non-climbable construction.

The existing Black Bridge Road Bridge railings do not meet the required safety heights required for a MUT. The existing railing is 1050mm, sufficient for a pedestrian trail, but falls 320mm short of the required cycle trail height of 1370mm. The MUT bridge horizontal railing requirement calls for a maximum 100mm spacing between members. The existing Black Bridge Road Bridge horizontal railings are currently spaced 300mm apart.

In order to conserve the heritage elements of Black Bridge Road Bridge the options proposed here assume retaining the existing railings and providing a new compatible railing that meets current building code requirements for guard rail and hand rail. The retention of the existing railings of the Black Bridge Road Bridge will preserve and maintain the character-defining elements and aid in creating a visually compatible final product.

An alternative option of using the existing railings and modifying them was also initially considered. However this option would require attaching additional horizontal members to the existing vertical and horizontal truss members, and/or attaching additional vertical pickets to the front of the existing horizontal railings. This has the potential to damage the existing structure. Further to this, the thickness of the existing railings is unknown and so their structural capacity can not be assessed. Finally, the aesthetics of such a railing was considered less attractive than a new compatible railing. For these reasons, this alternative option was not carried forward.

Figure 6-11: Black Bridge Road Bridge over Speed River
3.2 Design Options

The following sections discuss the various options for the design of the railings, including their construction materials:

3.2.1 Option 1

Option 1 includes posts constructed from two Corten steel or weathering steel plates 12-14mm thick, that fit the handrail supports of the same thickness between them. The angled geometry allows the panels to pass the existing structure and existing handrails. The base plates can be anchored by bolting to the structural curb below. Horizontal plates at the middle and bottom of the railing frame stainless-steel mesh panels that form the guard. Thinner dimensions of these plates face the pathway to enhance the conception of transparency when viewing the creek from the bridge.

Stainless-steel is proposed for the mesh panels because it is a more durable material than weathering or Corten steel. Stainless steel has a gloss that would adapt the colour of its surroundings and blend into it rather than compete with it.

Figure 6.2.1.1 – Railing Section (Option 1)

Figure 6.2.1.2 – Railing Elevation (Option 1)
Figure 6.2.1.3 – View from inside (Option 1)

Figure 6.2.1.4 – View from outside (Option 1)
3.2.2 Option 2

Option 2 again includes posts constructed from two Corten steel or weathering steel plates 12-14mm thick, that fit the handrail supports of the same thickness between them. The curved shapes and angled geometry allow the panels to pass the existing structure and existing handrails. The base plates can be anchored by bolting to the structural curb below. Horizontal plates at the middle and bottom of the railing frame coated metal welded wire mesh panels that form the guard. Thinner dimensions of these plates face the pathway to enhance the conception of transparency when viewing the creek from the bridge.

The steel material for the metal welded wire mesh panels shall be galvanized steel and color coated.

Figure 6.2.2.1 – Railing Section (Option 2)

Figure 6.2.2.2 – Railing Elevation (Option 2)
Figure 6.2.2.3 – View from inside (Option 2)

Figure 6.2.2.4 – View from outside (Option 2)
3.2.3 Option 3

In Option 3, the upper bike rail is anchored on to a vertical metal plate which leans outwards and also supports the handrail at the lower end. The guard rail is a continuous metal plate that is supported by the posts. The pickets are positioned vertically with an alternate shift in top and lower location of the ends. This gives an illusion of seeing the pickets as braced as one walks along this multi-use trail with constantly changing position yet looks vertically straight when looking in elevation. This affect compliments the bracing pattern that is seen on the vertical and diagonal truss members of the exiting heritage bridge.

Horizontal plates at the middle and bottom of the railing frame the picketed guard panels. Thinner dimensions of these plates face the pathway to enhance the conception of transparency when viewing the creek from the bridge.

![Figure 6.2.3.1 – Railing Section (Option 3)](image)

![Figure 6.2.3.2 – Railing Elevation (Option 3)](image)
Figure 6.2.3.3 – View from inside (Option 3)

Figure 6.2.3.4 – View from outside (Option 3)
3.3 Material Selection

The material selection for the new guard rails and handrails have been chosen with the Black Bridge Road Bridge’s heritage designation in mind. The materials proposed are compatible with the existing bridge’s materials and colour. The two main materials selected are Corten Steel and Stainless Steel.

3.3.1 Corten Steel

The original material of the Black Bridge Road Bridge is weathered Steel. Corten Steel, also often referred to as ‘Weathered Steel’, is regularly used in outdoor construction. The steel develops a rusted appearance in a few months when exposed to the exterior elements. Corten steel’s natural patina process removes the need for painting or regular maintenance. The use of Corten steel in the construction of the new guard rails is aligned with maintaining the visual integrity of the Black Bridge Road Bridge.

Figure 6-31: Corten Steel Weathering Stages
3.3.2 Stainless Steel Railings

Stainless steel handrails have been proposed for the new railings on the Black Bridge Road Bridge. Corten steel is not recommended due to its high maintenance requirements and costs. Corten steel railings would require a polyurethane coating to be applied on a yearly basis to prevent the transferring of the weathered steel rust coating onto the bridge users. Stainless steel railings are preferred due to their lower maintenance requirements and high durability.

![Figure 6-32: Pedestrian Bridge Stainless Steel Railings](image)

3.3.3 Stainless Steel Mesh

A stainless steel mesh fence is the proposed material for option 1 for the Black Bridge Road Bridge guardrail. Stainless steel, due to its reflective nature, will take on the Corten steel finish of the existing bridge and blend into the existing structure. Stainless steel mesh is extremely strong, yet transparent and essentially disappears once installed. The mesh has a flexible diamond pattern which is climb resistant, preventing secure footholds. The stainless steel mesh is maintenance-free, corrosion-resistant, requires no caustic cleaners or coatings, is fully recyclable and is able to withstand extreme climates.

![Figure 6-33: Pedestrian Bridge with Stainless Steel Mesh Barrier](image)
4.0 Summary & Recommendation

This report proposes three options for the new cycle height railing on the Black Bridge Road bridge and approaches. The 3 (three) options presented above meet the code requirements for a cycle railing.

Option 1 is recommended to be the preferred option for its simplicity and least impactful design considering the impact the railing has on the heritage character of the bridge. Horizontal and vertical plate members can all be corten steel finish. However, stainless steel mesh panels and stainless-steel handrails are recommended for ease of maintenance and for the inherent character of the stainless steel finish to blend into the environment due to its reflectance. Horizontal plate members at the top, middle and bottom have thinner dimensions facing the pathway. This arrangement enhances the conception of transparency when viewing the creek from the bridge.

Pickets and posts, such as the ones shown in Option 3 will have a more significant visual impact due to the spacing and size of the pickets.
5.0 Closure

We trust that this report is adequate for your purposes. If you have any questions or concerns, please feel free to contact the undersigned at your convenience.

Sincerely,

Wood Environment and Infrastructure Solutions
a Division of Wood Canada Limited

Prepared by: Chabungbam (Joy) Singh, M.Arch, OAA, LEED AP BD+C.
Senior Architect, Eastern Canada
Mobile: +1 (647) 203-5933

Reviewed by: Shery Cherian, M.Eng., OAA, AIBC, PMP, LEED AP BD+C.
Senior Architect
Cell: +1 (289) 962-5657
VOIP: #7106000
shery.cherian@woodplc.com
Appendix D: Assessor Qualifications
ASSESSOR QUALIFICATIONS

Heidy Schopf, MES, CAHP – Built and Landscape Heritage Team Lead - Heidy Schopf the Built and Landscape Heritage Team Lead at Wood. She has over ten years’ experience in Cultural Resource Management. She is a professional member of the Canadian Association of Heritage Professionals (CAHP) and is MTO RAQs certified in archaeology/heritage. She has worked on a wide variety of projects throughout Ontario, including: cultural heritage resources assessments, heritage impact assessments, documentation reports, cultural heritage evaluations, strategic conservation plans, heritage conservation district studies and plans and AAs. Ms. Schopf has extensive experience applying local, Provincial, and Federal heritage guidelines and regulations to evaluate protected and potential cultural heritage properties. She is skilled at carrying out impact assessments and developing mitigation measures to conserve the heritage attributes of properties where changes are proposed.

Henry Cary, Ph.D., CAHP, RPA – Senior Cultural Heritage Specialist – Dr. Henry Cary has over 20 years public and private-sector experience directing cultural heritage projects in diverse environments across southern and northern Canada. His expertise is in the historic architecture and cultural landscapes of North America, with specialization in industrial and military heritage. Since joining Golder, he has produced heritage evaluations, impact assessments and conservation plans for a wide range of properties in southern Ontario, from a pre-War of 1812 stone house in Niagara to the 1930 Glengrove Transformer Station in Toronto, and multiple properties in heritage conservation districts and character areas in the City of Hamilton, City of Vaughan, and Municipality of Port Hope. He has also evaluated several industrial sites for Hydro One Networks Inc. and the City of Hamilton and has provided policy advice to the City of Cambridge on managing its heritage structural walls. Prior to joining Golder, Dr. Cary worked for Parks Canada, notably for the Fort Henry National Historic Site Conservation Program and served as Heritage Manager for the Town of Lunenburg UNESCO World Heritage Site. He is a member of the Canadian Association of Heritage Professionals (CAHP), Association for Industrial Archaeology (AIA), Society for Industrial Archaeology (SIA), and The International Committee for the Conservation of the Industrial Heritage (TICCIH). He is an Adjunct Professor at Saint Mary’s University, and was the 2020-21 McCain Postdoctoral Teaching Fellow in Visual and Material Culture at Mount Allison University.

Luke Fischer, MA, CAHP - Cultural Heritage Specialist: Mr. Fischer is an intermediate Heritage Specialist and Senior Archaeologist who has been working in the Cultural Heritage field since 2002. In addition to his experience in Ontario, he has worked on linear corridor studies in Alberta, British Columbia, and Illinois. Mr. Fischer has successfully authored and managed the production of Cultural Heritage Evaluation Reports and Heritage Impact Assessments for multiple clients during his time at Wood. Mr. Fischer is a member of the Canadian Association of Heritage Professionals (CAHP) and sits on the Toronto Advisory Committee on Heritage (LACH). Mr. Fischer’s graduate studies included the examination of Ontario architecture and built landscape as it applies to social themes common to anthropological discourse. Mr. Fischer holds a Professional Archaeology License (P219) issued by the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries.

Chelsea Dickinson, BA - Cultural Heritage Specialist | Research Archaeologist Ms. Dickinson holds an Honours B.A. Degree in Near Eastern and Classical Archaeology from Wilfrid Laurier University, and a Post-Graduate Certificate in Geographical Information Systems from Fanshawe College. She has been working in the field of cultural resource management since 2015 and holds an Applied Research license (License R1194) in Archaeology from the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries. Ms. Dickinson has worked on a wide variety of projects throughout Ontario, including: Cultural Heritage Assessments Reports (CHARs), Cultural Heritage Reports (CHRNs under
TPAP), Heritage Impact Assessments (HIAs), Cultural Heritage Evaluation Reports (CHERs) using Ontario Regulation 9/06 and 10/06, Strategic Conservation Plans (SCP), and AAs (Stage 1-4) throughout Ontario. Ms. Dickinson has been the prime/co-author on a multitude of archaeological (i.e., Stage 1-4) and cultural heritage assessment reports (i.e., CHAR, CHER, HIA, CHDR), specializing in historical background research across Ontario. Ms. Dickinson has had the privilege of working alongside a multitude of First Nation community members while conducting AAs in both Northern and Southern Ontario. In addition, she has experience using ArcGIS/Collector and high precision GPS technologies, specifically Top Con Hi SR and FC5000 positioning systems, used to map in architectural features, diagnostic artifacts, as well as topographical anomalies and site boundaries.
Appendix E: Limitations
Limitations

1. The work performed in the preparation of the Strategic Conservation Plan (SCP) and the conclusions presented are subject to the following:
   a) The Standard Terms and Conditions which form a part of our Professional Services Contract;
   b) The Scope of Services;
   c) Time and Budgetary limitations as described in our Contract; and,
   d) The Limitations stated herein.

2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.

3. The conclusions presented in the report are based, in part, on visual observations of the Study Area. Our conclusions cannot and are not extended to include those portions of the Study Area which were not reasonably available, in Wood Environment & Infrastructure’s opinion, for direct observation.

4. The potential and protected cultural heritage resources encountered at the Study Area were assessed, within the limitations set out above, having due regard for applicable heritage regulations as of the date of the inspection.

5. Services including a background study and fieldwork were performed. Wood Environment & Infrastructure’s work, including archival studies and fieldwork, were completed in a professional manner and in accordance with the Ministry of Heritage, Sport, Tourism and Culture Industries’ guidelines. It is possible that Cultural heritage resources not visible from the public realm may be within, or adjacent to the Study Area.

6. The utilization of Wood Environment & Infrastructure’s services during the implementation of any further cultural heritage work recommended will allow Wood Environment & Infrastructure to observe compliance with the conclusions and recommendations contained the CHAR. Wood Environment & Infrastructure’s involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.

7. This report is for the sole use of the parties to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Wood Environment & Infrastructure accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.

8. This report is not to be given over to any third-party other than a governmental entity, for any purpose whatsoever without the written permission of Wood Environment & Infrastructure, which shall not be unreasonably withheld.
Date: 04/14/2024 Memo #:2022-01 (MHAC)

To: Members of the Municipal Heritage Advisory Committee

Department: Community Development

Division: Planning Services

From: Joan Jylanne, Manager of Policy Planning

Subject: To request comments on the Heritage Impact Assessment for 211-215 Queen Street West.

Comments

Purpose

The purpose of this memorandum is to advise the Municipal Heritage Advisory Committee of a Heritage Impact Assessment (HIA) submitted to the City in support of an Official Plan Amendment (OPA) and Zoning Bylaw Amendment (ZBA) application for 211-215 Queen Street West. Development will also be subject to a future site plan application.

The intent is for the MHAC to receive the submitted HIA and accompanying Heritage Considerations Technical Memo for Phase 2 Height Increase and provide input towards the appropriate means to support the advancement of the OPA and ZBA applications and ultimate site plan process.

Additional detailed information will be made available prior to site plan approval.

Background

The subject lands located at 211-215 Queen Street West are considered a significant cultural heritage resource as it includes the remnant features of a 19th century mill complex which has evolved over time. The property is designated under Part IV of the Ontario Heritage Act.

The lands are currently subject to ongoing Official Plan and Zoning By-law Amendment applications (City File No. OR01/21). The applications are for the development of residential and mixed-uses on the site including a total of 229 residential dwellings within the large existing building and new ten storey tower combined. The subject lands are currently zoned M3, and M3 Site Specific which permits industrial uses, as per the existing use of the site. A Zoning Bylaw Amendment is required to permit the proposed residential and commercial uses.
The proposed development is separated into two phases. The first phase includes the retention and adaptive re-use of all existing mill buildings located on the subject lands. The second phase involves the construction of one new ten storey residential building.

As part of the application submission, a Heritage Impact Assessment (HIA) was prepared by MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC), dated February, 2021 (See Attachment 1). The HIA evaluates the proposed development in terms of potential impacts to cultural heritage resources and provides mitigation recommendations, where necessary.

According to the HIA submitted the proposed development includes the retention and adaptive re-use of all existing mill buildings, including the features of the mill factory as well as the mill housing. The Heritage Impact Assessment evaluates both phases (Phase 1 and Phase 2) of the proposed development in terms of impacts to cultural heritage resources. The first phase of the proposed development includes the retention of all existing heritage buildings located on the subject lands supporting their adaptive re-use for residential and mixed-use purposes. The HIA notes that the second phase of the proposed development includes the construction of two (2) new residential buildings on the vacant portion of the subject lands at 211 Queen Street West. The current development application proposes only one new 10 storey residential building.

The HIA recommends that the details of how the heritage buildings will be altered will be reviewed by way of a Conservation Plan at the site plan approval phase.

On January 14, 2022 the applicant submitted a Heritage Considerations Technical Memorandum for a Phase 2 Height Increase on the site. The memorandum provided additional information and a scoped update to the HIA submitted with the application to address the consideration of an increase in building height of 2 additional storeys for the 8 storey Phase 2 building located at the east end of the site. The memorandum included an updated concept plan, massing model and shadow study to illustrate the proposed changes (See Attachment 2).

**Comments**

The current proposal is to adaptively reuse all existing mill buildings, including the features of the mill factory as well as the mill housing. New construction would occur on lands that are currently vacant.

The HIA recommends that the details of how the heritage buildings will be altered will be reviewed by way of a Conservation Plan at the Site Plan Approval phase.

The Municipal Heritage Advisory Committee is asked to provide comments on the conservation approach suggested by the Heritage Impact Assessment so that development
can be advanced in a manner that reactivates the subject lands and conserves identified cultural heritage resources.

Attachments

2. Heritage Considerations Technical Memo for Phase 2 Height Increase - 211-215 Queen Street West, MHBC, January 14, 2022.
HERITAGE IMPACT ASSESSMENT REPORT

211-215 Queen Street West, City of Cambridge

Date: February, 2021

Prepared for: Blacks Point Developments Inc.

Prepared by: MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC)
200-540 Bingemans Centre Drive
Kitchener, ON N2B 3X9
T: 519 576 3650
F: 519 576 0121

Our File: '18240 A'
DATE

February 2021

PREPARED FOR

Blacks Point Development Inc.

PREPARED BY

MacNaughton Hermsen Britton Clarkson Planning Limited
200-540 Bingemans Centre Drive
Kitchener, ON N2B 3X9
T: 519 576 3650
F: 519 576 0121
# TABLE OF CONTENTS

**PROJECT PERSONNEL** ............................................................................................................................................................................... 5  
**GLOSSARY OF ABBREVIATIONS** .......................................................................................................................................................... 5  
Acknowledgement of Indigenous Communities ................................................................................................................. 6  
Acknowledgement of Organizations/Institutions ................................................................................................................ 6  
**EXECUTIVE SUMMARY** .............................................................................................................................................................................. 7  
1.0 **INTRODUCTION** ................................................................................................................................................................................. 9  
  1.1 LOCATION OF SUBJECT LANDS ............................................................................................................................................ 9  
  1.2 DESCRIPTION OF SUBJECT LANDS .................................................................................................................................. 10  
  1.3 HERITAGE STATUS ...................................................................................................................................................................... 12  
    1.3.1 Designation under Part IV of the Ontario Heritage Act .................................................................................. 12  
    1.3.2 National Historic Site, Historic Sites and Monuments Act ........................................................................ 13  
    1.3.3 Adjacent Lands ................................................................................................................................................................... 14  
  1.4 LAND USE AND ZONING ........................................................................................................................................................ 14  
2.0 **POLICY CONTEXT** .......................................................................................................................................................................... 16  
  2.1 THE PLANNING ACT .................................................................................................................................................................. 16  
  2.2 PPS 2020 ........................................................................................................................................................................................... 16  
  2.3 ONTARIO HERITAGE ACT ....................................................................................................................................................... 18  
  2.4 HISTORIC SITES AND MONUMENTS ACT..................................................................................................................... 18  
  2.5 REGION OF WATERLOO OFFICIAL PLAN ..................................................................................................................... 18  
  2.6 CITY OF CAMBRIDGE OFFICIAL PLAN ............................................................................................................................ 19  
  2.7 CITY OF CAMBRIDGE HERITAGE MASTER PLAN ............................................................................................. 22  
  2.8 CITY OF CAMBRIDGE TERMS OF REFERENCE ................................................................................................... 22  
3.0 **BACKGROUND RESEARCH AND HISTORICAL CONTEXT** ........................................................................................................... 23  
  3.1 INDIGENOUS COMMUNITIES AND PRE-CONTACT HISTORY .......................................................................................... 23  
  3.2 WATERLOO COUNTY, TOWNSHIP OF WATERLOO ........................................................................................................ 24  
  3.3 HESPELER (NOW CITY OF CAMBRIDGE) .................................................................................................................... 26  
  3.4 211-215 QUEEN STREET WEST ........................................................................................................................................... 27
4.0 **DETAILED DESCRIPTION** ......................................................................................................................................................... 43
  4.1 DESCRIPTION OF SUBJECT LANDS ........................................................................................................................................ 43
  4.2 215 Queen Street West ........................................................................................................................................................... 44
    4.2.1 215 Queen Street West: East Half ........................................................................................................................... 45
    4.2.2 215 Queen Street West: West Half ......................................................................................................................... 52
  4.3 211 Queen Street West ........................................................................................................................................................... 65

5.0 **EVALUATION OF CULTURAL HERITAGE RESOURCES** ..................................................................................................... 70
  5.1 EVALUATION CRITERIA ............................................................................................................................................................ 70
  5.2 EVALUATION CRITERIA OF THE CITY OF CAMBRIDGE OFFICIAL PLAN ........................................................................ 71
  5.3 EVALUATION OF 211-215 QUEEN STREET WEST ........................................................................................................... 72
    5.3.1 Design/Physical Value .................................................................................................................................................... 72
    5.3.2 Historical/Associative Value ........................................................................................................................................ 74
    5.3.3 Contextual Value ................................................................................................................................................................ 74
    5.3.4 List of Heritage Attributes ............................................................................................................................................ 75
  5.4 CULTURAL HERITAGE LANDSCAPE EVALUATION ..................................................................................................... 76
    5.4.1 Introduction to CHL Evaluation ............................................................................................................................... 76
  5.5 SUMMARY OF CHVI ................................................................................................................................................................... 77

6.0 **DESCRIPTION OF PROPOSED DEVELOPMENT** .................................................................................................................. 80
  6.1 INTRODUCTION TO THE DEVELOPMENT CONCEPT ............................................................................................ 80
  6.2 SITE PLAN: PHASE 1 ................................................................................................................................................................... 81
  6.3 ADAPTIVE RE-USE OF EXISTING HERITAGE BUILDINGS ............................................................................................. 82
    6.3.1 215 Queen Street West (East Half) ......................................................................................................................... 82
    6.3.2 211 Queen Street West .................................................................................................................................................. 84

7.0 **IMPACT ANALYSIS** ............................................................................................................................................................... 87
  7.1 INTRODUCTION ............................................................................................................................................................................ 87
  7.2 POTENTIAL SOURCES OF IMPACTS (ONTARIO HERITAGE TOOLKIT) .................................................................................. 87
  7.3 IMPACT ANALYSIS: 215 QUEEN STREET WEST ......................................................................................................... 88
  7.4 IMPACT ANALYSIS: 211 QUEEN STREET WEST ......................................................................................................... 89
    7.4.1 Phase 1 (Rehabilitation of Workers Housing Structures) ........................................................................ 89
    7.4.2 Phase 2 (Proposed New Residential Buildings) ........................................................................................................ 90
PROJECT PERSONNEL

Dan Currie, MA, MCIP, RPP, CAHP
Managing Director of Cultural Heritage

Vanessa Hicks, MA, CAHP
Senior Heritage Planner

GLOSSARY OF ABBREVIATIONS

HIA  Heritage Impact Assessment
HCD  Heritage Conservation District
MHBC  MacNaughton Hermsen Britton Clarkson Planning Limited
MHSTCI  Ministry of Heritage, Sport, Tourism and Culture Industries
OHA  Ontario Heritage Act
OHTK  Ontario Heritage Toolkit
O-REG 9/06  Ontario Regulation 9/06 for determining cultural heritage significance
PPS 2020  Provincial Policy Statement (2020)
Acknowledgement of Indigenous Communities

This Heritage Impact Assessment acknowledges that the subject lands located at 211-215 Queen Street West is situated territory of the Anishinaabe. These lands are acknowledged as being associated with the following treaty (whoseland.ca, accessed online in September 2020):

- Treaty 19, 1818

This document takes into consideration the cultural heritage of Indigenous Communities, including their oral traditions and history when available and related to the scope of work.

Acknowledgement of Organizations/Institutions

The City of Cambridge Archives, the Kitchener Public Library (Grace Schmidt Room of Local History) the University of Waterloo (Archives and Rare Book room), and the Documentation Centre of Parks Canada (Cultural Heritage Directorate) are acknowledged for their generous assistance in providing historical information referenced in this report.
EXECUTIVE SUMMARY

MHBC was retained in 2020 by Blacks Point Development Inc. to undertake a Heritage Impact Assessment (HIA) for the subject lands located at 211-215 Queen Street, Cambridge. The purpose of this Heritage Impact Assessment is to evaluate the proposed development in terms of potential impacts to cultural heritage resources and provide mitigation recommendations, where necessary.

The subject lands located at 211-215 Queen Street West are considered a significant cultural heritage resource as it includes the remnant features of a 19th century mill complex which has evolved over time. The property is recognized as a National Historic Site and is designated under Part IV of the Ontario Heritage Act. The site has historic and contextual relationships to the Speed River, the railway corridor, and the mill works housing structures.

The proposed development is supported as it will retain the heritage attributes of the site and conserve them over the long-term. The existing heritage buildings will be altered in such a way which will retain their heritage value, provided that alterations are carried-out appropriately. No significant adverse impacts are anticipated as a result of the proposed development.

Rehabilitation is recognized as a form of conservation in the Parks Canada Standards & Guidelines for the Conservation of Historic Places in Canada and is considered a beneficial impact. The proposed development will retain the important features of the site as well as its setting and views of the Speed River.

This Heritage Impact Assessment has evaluated both phases (Phase 1 and Phase 2) of the proposed development in terms of impacts to cultural heritage resources. The first phase of the proposed development includes the retention of all existing heritage buildings located on the subject lands so that they can be adaptively re-used for residential and mixed-use. The second phase of the proposed development is related to the construction of two (2) new residential buildings.

Features which are not of cultural heritage value will be removed. This includes the contemporary additions to the workers housing structures, for example. The details of how the heritage buildings will be altered is recommended to be reviewed by way of a Conservation Plan at the Site Plan Approval phase.

The second phase of the proposed development has been assessed in terms of the location, height, scale/massing, and shadows of the proposed new 4 storey and 8 storey residential buildings. No adverse impacts to the heritage attributes of the site are anticipated as a result of the proposed new residential buildings. No further cultural heritage analysis is necessary unless Phase 2 deviates significantly from what has been proposed to date.
SUMMARY OF MITIGATION RECOMMENDATIONS

- The details of alterations to the existing buildings in Phase 1 of the proposed development should be advised through a Conservation Plan at the Site Plan Approval phase or prior to Building Permit to assess the proposed alterations in context of the cultural heritage attributes;
- The existing building should be documented with photographs to supplement the historic record, as may be required, when there is a full understanding of the alterations that are proposed. This will occur prior to Building Permit.
- That the future Site Plan and Landscape Plans include consideration for commemoration of the history and cultural heritage value of the site, as described in the Urban Design Brief that has been prepared for the subject lands. The commemoration will provide information on how the history and cultural heritage value of the site can be interpreted, including historical plaques, and/or landscape features;
- Designation By-law No. 353-87 should be amended following the completion of Phases 1 and 2 of the proposed development in order to:
  - Conform to the Ontario Heritage Act;
  - Provide a revised description of the site;
  - Provide a revised summary of cultural heritage value or interest; and
  - Provide a revised list of heritage attributes.
- There is potential for vibration impacts due to grading and construction. A temporary protection plan may be required to inform recommendations of the Conservation Plan at the time of Site Plan Approval, depending on the nature of construction activities in proximity to the existing buildings.

Phase 2 (New Residential Building Development)

- No mitigation measures are recommended with the development of the proposed new buildings (Phase 2).
1.0 INTRODUCTION

MHBC was retained in 2020 by Blacks Point Development Inc. to undertake a Heritage Impact Assessment (HIA) for the subject lands located at 211-215 Queen Street West, Hespeler, legally described as Concession 9, Part Lot 6 and Registered Plan 67-R-2965.

The subject lands are designated under Part IV of the Ontario Heritage Act as per By-law no. 353-87. The purpose of this Heritage Impact Assessment is to evaluate the proposed development in terms of potential impacts to cultural heritage resources. This includes potential cultural heritage resources located on the subject lands and adjacent lands.

This report has been prepared as input to the planning application and development proposal. The background information and research has provided direction on the redevelopment concept. This report evaluates the proposal in the context of the City’s policy framework and Provincial policy.

1.1 LOCATION OF SUBJECT LANDS

The subject lands are located in the community of Hespeler, City of Cambridge. The subject lands are situated south of the Speed River, north of Queen Street West. The subject lands are located in an area designated business industrial, surrounded by open space primarily to the north, and west. Low/medium density residential uses are located to the east and south, on the south side of Queen Street West. The property is located north of the tracks of the Grand Trunk Railway and south of the Speed River and dam, which was constructed to provide power for the mill. It is important to note that the subject lands have been severed such that they no longer include the Speed River, dam, or the river bank (See lot fabric in Figure 1 below).
1.2 DESCRIPTION OF SUBJECT LANDS

The subject lands are comprised of two parcels. The western portion of the subject lands is municipally known as 215 Queen Street West, and includes the former textile factory. The factory building is referred to in this report as having two portions, those being east and west. The property located at 211 Queen Street West contains two 19th century dwellings which are interchangeably referred to as the “cottages”, “workers’ housing” or “workers’ housing structures”.

The existing buildings which make-up the mill factory at 215 Queen Street West were constructed at various points in time. The east half of the mill building was constructed in 4 main parts. The larger factory portion of the east half of the mill is described in this report and as East-1. The portions of the office building are identified in the figure below as East-2, East-3, and East-4. The west half of the mill includes the main factory, described in in this report as West-2 and West-3. Other
component parts of the mill are described as the tower, West-1, West-4, West-5, West-6, West-7 and West-8. The mill workers housing are identified in the figure below as WH-1 and WH-2, north of a stone walkway. These mill workers’ housing buildings have been altered and are part of a large 20th century addition.

The portions of the existing buildings as described above are illustrated with the figure below (See Figure 2 below). These buildings are described in detail in Section 4.0 of this report.

The existing buildings located on the subject lands are visible in red in Figure 3 (see below). The photograph below illustrates that the majority of buildings associated with milling operations have been removed. This image below also indicates the former line of the streetcar line (in green) which has been removed, and the railway tracks (in orange) which are located south of the subject lands.

Figure 2: Aerial photograph noting the location of the subject lands (outlined in red) and the various portions of the existing buildings at 211-215 Queen Street West, (Source: MHBC, 2020)

The existing buildings located on the subject lands are visible in red in Figure 3 (see below). The photograph below illustrates that the majority of buildings associated with milling operations have been removed. This image below also indicates the former line of the streetcar line (in green) which has been removed, and the railway tracks (in orange) which are located south of the subject lands.

Figure 2: Aerial photograph noting the location of the subject lands (outlined in red) and the various portions of the existing buildings at 211-215 Queen Street West, (Source: MHBC, 2020)

The existing buildings located on the subject lands are visible in red in Figure 3 (see below). The photograph below illustrates that the majority of buildings associated with milling operations have been removed. This image below also indicates the former line of the streetcar line (in green) which has been removed, and the railway tracks (in orange) which are located south of the subject lands.

1 “WH” stands for workers’ housing
1.3 HERITAGE STATUS

1.3.1 Designation under Part IV of the Ontario Heritage Act

The subject lands are designated under Part IV of the Ontario Heritage Act as per By-law no. 353-87. The By-law was registered on-title in 1987 and designated all of Lot 64, Plan 832. The lot has since been subdivided and the designation applies to the entirety of the subject lands. The reasons for designation are stated in the By-law as being related to architectural and historic significance.
The by-law identifies that it designates the “Lower Mill Complex” buildings which are outlined on the 1901 image provided in Appendix “C” of the designation By-law\(^2\). These “Lower Mill Complex” buildings include the following built features:

- Main Mill (No. 1);
- No. 1 wing;
- Stone Tower; and
- Enclosed exterior staircase at the southeast façade of No. 1 Main Mill.

The By-law provides further clarification on the features of these buildings, as follows:

- All exterior wall materials and treatments including;
- Roughly coursed limestone rubble-stone with stuck relief joints;
- String courses on the tower;
- Board and batten cladding on the stair tower;
- All stone quoining;
- Wide flat relief joints on tower lintels;
- All existing roof profiles and features including the stone cap on the tower; flared metal eaves with simple cornice lines;
- All existing openings including associated voussoirs, keystones and lugsills; and
- All tie rod rondels.

While the designation By-law applies to 211 Queen Street West and 215 Queen Street West, the designated heritage attributes were destroyed by fire in 1995, with the exception of the existing tower. Therefore, while the entirety of the subject lands are designated under Part IV of the Ontario Heritage Act, the only physical attribute of the property which is identified in the By-law is the stone tower. A copy of Designation By-law No. 353-87 is provided in Appendix C of this report.

1.3.2 National Historic Site, Historic Sites and Monuments Act

The property located at 215 Queen Street West is also recognized as a National Historic Site under the Historic Sites and Monuments Act (R.S.C., 1985, c. H-4) as part of the Directory of Federal Heritage Designations. The property was recognized in 1989 as including the Forbes Textile Mill. This recognition does not identify any of the heritage attributes of the site and does not provide any legislative framework regarding heritage status or restrictions on development. A copy of the register of the Directory of Federal National Historic Sites is provided in Appendix D.

---

\(^2\) It is important to note that the designation By-law inaccurately refers to this 1901 image/map in Appendix “C” as a Fire Insurance Plan. A copy of this image/map is not available at the City of Cambridge Archives and was not able to be found in the historic record.

February, 2021
1.3.3 Adjacent Lands

The subject lands are not located adjacent (contiguous) to any listed or designated cultural heritage resources identified by the City of Cambridge. However, this report acknowledges that the subject lands are located along the Speed River, which was designated as a Canadian Heritage River in 1994. This designation recognizes the “…outstanding human heritage values and excellent recreational opportunities along the rivers. The designation carries no regulatory or legal authority or restrictions.” The subject lands and the “Forbes Textile Mill” is noted identified as a feature which supports the recognition of the Grand River as a Canadian Heritage River in the Heritage River Inventory of the Grand River Watershed (Grand River Conservation Authority, 2013).

1.4 LAND USE AND ZONING

The Subject lands are located within the Built-Up Area and Regeneration as per Map 1A (Urban Structure) of the City of Cambridge Official Plan. The majority of the subject lands are designated “Business Industrial” and “Open Space’ as per Map 2 (General Land use) of the City of Cambridge Official Plan. The subject lands are also located in a Regeneration area as per Map 6 of the City of Cambridge Official Plan.

Figure 4 – Excerpt of Map 2 (General Land Use) of the City of Cambridge Official Plan noting the location of the subject lands in red (north of Queen Street West, south of the Speed River)
The subject lands are currently zoned M3, and M3 Site Specific as per the City of Cambridge Zoning By-law 150-85. The M3 class zone accommodates industrial uses, as per the existing use of the site. Residential uses are not permitted in the M3 zone, requiring a Zoning By-law amendment for the proposed development.
2.0 POLICY CONTEXT

2.1 THE PLANNING ACT

The Planning Act makes a number of provisions respecting cultural heritage, either directly in Section 2 of the Act or Section 3 respecting policy statements and provincial plans. In Section 2, the Planning Act outlines 18 spheres of provincial interest that must be considered by appropriate authorities in the planning process. One of the intentions of The Planning Act is to “encourage the co-operation and co-ordination among the various interests”. Regarding cultural heritage, Subsection 2(d) of the Act provides that:

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

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

The Planning Act therefore provides for the overall broad consideration of cultural heritage resources through the land use planning process.

2.2 PPS 2020

In support of the provincial interest identified in Subsection 2 (d) of the Planning Act, and as provided for in Section 3, the Province has refined policy guidance for land use planning and development matters in the Provincial Policy Statement, 2020 (PPS). The PPS is “intended to be read in its entirety and the relevant policy areas are to be applied in each situation”. This provides a weighting and balancing of issues within the planning process. When addressing cultural heritage planning, the PPS provides for the following:

2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.
Significant: e) in regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the Ontario Heritage Act.

Built Heritage Resource: means a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property’s cultural heritage value or interest as identified by a community, including an Indigenous community. Built heritage resources are located on property that may be designated under Parts IV or V of the Ontario Heritage Act, or that may be included on local, provincial, federal and/or international registers.

Cultural Heritage Landscape: means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the Ontario Heritage Act, or have been included on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms.

Conserved: means the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decision-maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.

Protected Heritage Property: means property designated under Parts IV, V or VI of the Ontario Heritage Act; property subject to a heritage conservation easement under Parts II or IV of the Ontario Heritage Act; property identified by the Province and prescribed public bodies as provincial heritage property under the Standards and Guidelines for Conservation of Provincial Heritage Properties; property protected under federal legislation, and UNESCO World Heritage Sites.
2.3 ONTARIO HERITAGE ACT

The Ontario Heritage Act, R.S.O, 1990, c.0.18 remains the guiding legislation for the conservation of significant cultural heritage resources in Ontario. This HIA has been guided by the criteria provided with Regulation 9/06 of the Ontario Heritage Act outlines the mechanism for determining cultural heritage value or interest. The regulation sets forth categories of criteria and several sub-criteria.

2.4 HISTORIC SITES AND MONUMENTS ACT

Section 3 of the Historic Sites and Monuments Act R.S.C., 1985, c. H-4 (HSMA) identifies that the Minister may commemorate a National Historic Site, and make agreements with any person(s) for making or commemorating historic places pursuant to the Act and for the care and preservation of any places so marked or commemorated. The Historic Sites and Monuments Act does not regulate or restrict properties which are recognized, and its function is for honorary and recognition purposes only.

2.5 REGION OF WATERLOO OFFICIAL PLAN

Chapter 3 of the Region of Waterloo Official Plan provides direction regarding liveability in Waterloo Region. Section 3G of the ROP provides policies regarding the management of cultural heritage resources. The following provides a selection of these policies as it relates to the scope of this HIA.

**Identification of Cultural Heritage Resources**

3.G.1 The Region and Area Municipalities will ensure that cultural heritage resources are conserved using the provisions of the Heritage Act, the Planning Act, the Environmental Assessment Act, the Cemeteries Act and the Municipal Act.

**Cultural Heritage Impact Assessments**

3.G.13 Area Municipalities will establish policies in their official plans to require the submission of a Cultural Heritage Impact Assessment in support of a proposed development that includes or is adjacent to a designated property, or includes a non-designated resource of cultural heritage value or interest listed on the Municipal Heritage Register.
2.6 CITY OF CAMBRIDGE OFFICIAL PLAN

The City of Cambridge Official Plan provides policies for the management of cultural heritage resources in Chapter 4. The following provides a selection of these policies which are related to the scope of this Heritage Impact Assessment.

4.2 Priorities for Cultural Heritage Resources

1. When development is proposed, the City will encourage the conservation of cultural heritage resources in the following order of preference:

a) Incorporation of cultural heritage resources and their surrounding context into development applications in a manner which does not conflict with the cultural heritage resource;

b) Promotion of the use of scale and design which blends harmoniously with existing cultural heritage resources when development occurs; and

c) Preservation and adaptive re-use of buildings of cultural heritage significance for compatible residential intensification and/or for other appropriate and compatible uses is encouraged.

The policies provided above are relevant to this HIA as the development proposal includes the retention and adaptive re-use of the existing buildings on-site.

4.4 Cultural Heritage Value Evaluation Criteria

1. The City will determine that the following shall be used in determining the significance of cultural heritage resources included or proposed to be included in the City’s Register described in Section 4.3 of this Plan:

a) A property shall be considered to have cultural heritage value or interest if the property has been designated by the Province to be of architectural or historical significance pursuant to the Ontario Heritage Act or, in the opinion of the City, satisfies at least two of the following criteria:

i) it dates from an early period in the development of the city’s communities;

ii) it is a representative example of the work of an outstanding local, national or international architect, engineer, builder, designer, landscape architect, interior designer, sculptor, or other artisan and is well preserved or may be rehabilitated;
iii) it is associated with a person who is recognized as having made an important contribution to the city’s social, cultural, political, economic, technological or physical development or as having materially influenced the course of local, regional, provincial, national or international history;

iv) it is directly associated with an historic event which is recognized as having local, regional, provincial, national or international importance;

v) it is a representative example and illustration of the city’s social, cultural, political, economic or technological development history;

vi) it is a representative example of a method of construction now rarely used;

vii) it is a representative example of its architectural style or period of building;

viii) it is a representative example of architectural design;

ix) it terminates a view or otherwise makes an important contribution to the urban composition or streetscape of which it forms a part;

x) it is generally recognized as an important landmark;

xi) it is a representative example of outstanding interior design; or

xii) it is an example of a rare or otherwise important feature of good urban design or streetscaping.

While the subject lands are designated under Part IV of the Ontario Heritage Act and Cultural Heritage Value or Interest has already been established, the existing designation by-law pre-dates the amendments to the Ontario Heritage Act which occurred in 2005. Therefore, the by-law requires analysis and updates in order to ensure it complies with the existing requirements of the Act. Therefore, the evaluation of the subject lands includes the above-noted evaluation criteria in addition to Ontario Regulation 9/06.

4.10 Cultural Heritage Impact Assessment

1. A Cultural Heritage Impact Assessment shall be required for a development proposal or Community Plan that includes or is adjacent to a designated property or cultural heritage landscape, or that includes a non-designated resource of cultural heritage value or interest listed on the Municipal Heritage Register. The potential impacts could be direct, such as demolishing or altering a structure on a designated property, or indirect such as changes to the streetscape of lands adjacent to a cultural heritage resource. A Cultural Heritage Impact Assessment may include the following elements:

a) identification and evaluation of the cultural heritage resource;
b) graphic and written inventory of the cultural heritage resource;
c) assessment of the proposal’s impact on the cultural heritage resource;
d) means to mitigate impacts, in accordance with the cultural heritage resources priorities established in Policy 4.2.1 of this Plan;
e) alternatives to the proposal; and
f) identification of and justification for the preferred option.

2. The City will determine the need for a Cultural Heritage Impact Assessment in consultation with the owner/applicant. The City will refer the completed Cultural Heritage Impact Assessment to MHAC when the development is major in nature or where the City believes there will be a detrimental impact to the cultural heritage resource.

3. A Cultural Heritage Impact Assessment shall be undertaken by a professional who is qualified to evaluate the cultural heritage resource under review.

4. Additional information may be required by the City, particularly depending on the nature and location of the proposal. The City shall make available any relevant information that it maintains, including archival records.

5. A completed Cultural Heritage Impact Assessment will first be submitted to the MHAC for review and the recommendation of MHAC will be forwarded to Council for consideration with the proposal. A Cultural Heritage Impact Assessment may be scoped or waived by either Council or MHAC.

6. The City will, and the Region is encouraged to, give consideration to the impact of modifications to Regional or City arterial and major collector roads and other road improvements in general, including re-alignment and road widening, on cultural heritage resources. Conservation of the cultural heritage resource, especially in relation to the character of streetscapes and major crossroads or intersections, shall be encouraged.

7. A Cultural Heritage Impact Assessment will be conducted in accordance to Council approved guidelines.

8. Where a Cultural Heritage Impact Assessment relates to a cultural heritage resource of Regional interest, the City will ensure a copy of the assessment is circulated to the Region for review. In this situation, the Cultural Heritage Impact Assessment submitted by the owner/applicant will be completed to the satisfaction of both the City and the Region.
9. Where a development application includes, or is adjacent to, a cultural heritage resource of Regional interest which is not listed on the City’s Register of Cultural Heritage Resources, the owner/applicant will be required to submit a Cultural Heritage Impact Assessment to the satisfaction of the Region.

### 2.7 CITY OF CAMBRIDGE HERITAGE MASTER PLAN

This Heritage Impact Assessment acknowledges that the Cambridge Heritage Master Plan (2008) includes information on the cultural heritage value of the subject lands. The CHMP provided a summary of the history of communities which make-up what is now the City of Cambridge with the intent on providing recommendations regarding principles, objections, and an action plan for the wise management of cultural heritage resources. This Plan does not include any policies or guidelines for cultural heritage resources and does not result in any restrictions to the subject lands.

The CHMP identifies the subject lands as part of the “Neighbourhood of Millvue Street” area, which identifies the remnants of the “major factory building” (former Forbes mill) as a cultural asset of the City of Cambridge. The CHMP provides the following as it relates to development concerns and opportunities:

**Conservation and Development Concerns and Opportunities**

This small area is sheltered from major development pressures but is subject to traffic infiltration from adjacent subdivisions and to inappropriate alterations as the original fabric and cladding ages. Opportunities exist to conserve and restore original building fabric and to bolster the streetscape character by retaining the rural street cross section and by conserving and adding street trees. Initiatives to improve this neighbourhood should attempt to resist the trend towards gentrification of what is now a modest working class area.

### 2.8 CITY OF CAMBRIDGE TERMS OF REFERENCE

This Heritage Impact Assessment and its components have been guided by the City of Cambridge Terms of Reference provided in Appendix E of this report as well as the policies of the City of Cambridge Official Plan provided in Section 2.5 of this report (see above).
3.0 BACKGROUND

RESEARCH AND HISTORICAL CONTEXT

3.1 INDIGENOUS COMMUNITIES AND PRE-CONTACT HISTORY

The Pre-Contact settlement of the province can be divided into 4 main time periods including Paleo-Indian, Archaic, Woodland, and Historic. According to the Regional Municipality of Waterloo Archaeological Facilities Master Plan (1989), evidence of the first Paleo-Indians residing in the vicinity of Waterloo Region were found between 9,500 B.C. and 8,000 B.C. The Paleo period was characterized by hunter-gatherer-type societies who followed big game. The Archaic period can be dated approximately 8,000 B.C. to 800 B.C. Their material cultures are primarily based on the presence of stone, bone, shell, and copper tools. By the Woodland period (900 B.C. – 1650 A.D.), pottery, horticulture and more sedentary lifestyles (such as villages) were common. The Historic Euro-Canadian period did not begin until the late 1700s.

The City of Cambridge is situated on territory of the Haudenosaunee (Longhouse Confederacy), originally Five Nations known as the Mohawk, Oneida, Onondaga, Cayuga and Seneca. These lands are acknowledged as being associated with the Haldimand Tract Treaty (www.whose.land.ca). The Haldimand Tract is a tract of land six miles on either side of the Grand River which originally included 950,000 acres.

The property located at 211-215 Queen Street West were subject to a Stage 1 and Stage 2 Archaeological Assessment. The Stage 2 test-pit analysis was completed in September, 2020 by Fisher Archaeological Consulting. No material culture indicative of indigenous communities were
identified. Further information regarding indigenous communities and archaeology are provided in the Archaeological Assessment reports.

### 3.2 WATERLOO COUNTY, TOWNSHIP OF WATERLOO

The subject lands is historically part of Concession 2, Lot 9, Beasley’s Lower Block (Waterloo County, Township of Waterloo) (See Figure 4 below). Part of Lot 9 became part of the community of New Hope, which was renamed Hespeler in 1858. The first settler of this community was Jacob Hespeler, in 1845 (Bloomfield, 2006).

![Figure 4: Excerpt of the I. B. Bricker map of Block Number 2, Waterloo Township. Location of Lot 9, Concession 2, Beasley’s Lower Block noted in red. (Source: Waterloo Historical Society, 1934).](image-url)
According to publications of the Waterloo Historical Society (1934), all 200 acres of Lot 9, Concession 2 of Beasley’s Lower Block was purchased by Christrian Stromer from Jacob Bretz (Pratts) in 1823 (See Figure 5 below).

**Figure 5**: Hand drawn map noting early property owners by historian Ellis Little, Beasleys Lower Block, Concession 2, Lot 9. Approximate location of 215 Queen Street noted with red star. (Source: Waterloo Public Library)

According to the Tremaine map of Waterloo Township, part of Concession 2, Lot 9 was owned by Jacob Hespeler (See Figure 6 below). This included part of the Speed River.
3.3 HESPELER (NOW CITY OF CAMBRIDGE)

What is now part of the City of Cambridge (formerly New Hope and Hespeler) is described in the 1851 Gazetteer and Directory of Canada. Here, New Hope is described as a Village in Waterloo Township, with a population of approximately 250 (See Figure 7).

Section 4.4 of the City of Cambridge Heritage Master Plan (CHMP) provides a summary of the history of the community of Hespeler. Here, the CHMP notes that the early development of Hespeler is connected to Michael Bergey, an early settler who purchased land along the Speed River from Joseph Oberholtzer and the establishment of a sawmill and foundry. The community is said to have also been known as “Bergeytown” in the early 19th century (and later New Hope) (Eby, 1901). By the mid. 20th century, New Hope was connected to Guelph and nearby communities via stagecoach. By this time, several industries of the community were noted in the 1851 Gazetteer and Directory. The settlement was re-named Hespeler and the village incorporated in 1858. The industries of the settlement increased, as with its population and the village was recognized as a Town (Cambridge Cultural Heritage Master Plan, 2008).
3.4 211-215 QUEEN STREET WEST

The property located at what is now 211-215 Queen Street west was formerly part of Concession 2, Lot 9, Beasley’s Lower Block. The lot was subdivided, resulting in the creation of Plan 832, and the subject lands became part of Lots 64, 65, and 67. The existing lot fabric has resulted in the division of the east and west halves of the site, thereby separating the mill factory buildings (now 215 Queen Street West) from the two stone cottages (also referred to as mill workers housing) at 211 Queen Street West.

What is now 211-215 Queen Street was originally owned by Joseph Oberholtzer (Eby, 1901). Joseph Oberholtzer was a blacksmith and settled in Hespeler in the early 19th century, purchasing 24 acres of land on either side of the Speed River from Christian Strome (also Strohm) in 1823 and constructed a saw mill. According to Eby (1901), the site of this sawmill was located “...just south of The Forbes Co.’s present mill property” (Eby, 1906: 6). Soon after Oberholtzer constructed his first sawmill, he constructed another sawmill “…just south of the Forbes’ [mill] race.” (Eby, 1901: 6). The existing dam was not yet constructed (Eby, 1901). The Oberholtzer (also Oberholser) mill is noted in the 1851 Gazetteer of Canada in the community of New Hope (See Figure 7).

Figure 7: Excerpt of the 1851 Gazetteer of Canada noting the J. Oberholser saw mill, New Hope. (Source: National Archives Canada)

The Great Western Railway was extended from Galt to Guelph in 1858. The tracks extend along the Speed River and remain in their original location, south of the subject lands.

3 All of Lot 64 of Plan 832 is designated under Part IV of the Ontario Heritage Act as per Designation By-law 353-87.
The J. Oberholtzer saw mill was purchased by Randall & Farr, who tore the saw mill buildings down and constructed a stone woolen mill in 1862 (Quantrell, 1998; Eby, 1901). According to a review of available Fire Insurance Plans (dated 1885 and 1910, revised 1917), the only remaining structures of the mill complex located on the subject lands which may date pre-1885 is the stone building on the north side of the site, identified in this report as “West-1” and part of “West-5”. A detailed description of this building is provided in Section 4.0 of this report. According to Eby (1901), Randall & Farr operated this woolen mill until 1873. According to the 1867 Gazetteer and Directory of Waterloo County, the Hespeler Knitting Mills of the Randall, Farr & Co. was established in 1864, employing approximately 100 workers in a stone building.

![Figure 8: Excerpt of the 1867 Directory for the County of Waterloo (Source: National Archives Canada)](image)

In 1873 the mill was sold to Schofield & Forbes. At this time, the mill was known as J. Schofield & Co., Star Woollens (Quantrell, 1998).

According to Leung (1986), the property included a two and a half storey stone mill building in 1877. Other stone buildings were constructed on-site which were used for store rooms and an engine house. Other outbuildings were constructed around the main mill building.

The mill was enlarged to provide functional space for worsting, spinning, and weaving in 1887. These alterations are visible on the 1885 Fire Insurance Plan. Other alterations to the mill were made in 1893, 1902, and 1909 Leung (1986). Two buildings were joined together making the mill building’s total length 1,600 ft. (approximately 487 metres) Leung (1986).

The J. Schofield & Co. partnership remained until 1880 when Robert Forbes bought out Schofield, when it became the R. Forbes & Co. mill.

Robert Forbes was born in Scotland, 1814. He came to Canada in 1836 and was employed by a merchant in Hamilton. He moved to Waterloo Township in the 1840s where he and his brother owned a paper mill, which was not successful. Robert Forbes went on to own a tannery and stave.

---

4 The total length of the main mill buildings located on the subject lands is approximately 137 metres (East-1 and West-2).

5 A stave mill produces strips of wood used in the manufacturing of barrels (also known as “coopering”).

George Duthie Forbes (son of Robert and Ann) worked in the mill beginning in 1882 and became President in 1888. Robert Forbes died in 1895 and the company was left to his son, George Forbes. George Forbes sold the company to the Dominion Woollens and Worsted Co. Ltd. in 1928 (Quantrell, 1998). George D. Forbes was inducted into the City of Cambridge Hall of Fame in 1997.

According to a review of the 1885 Fire Insurance Plan, the mill complex is identified as the “Star Woollen Mills” of the R. Forbes & Co. The map identifies that the two largest mill buildings existing at the time were known as “No.1A” and “No.1B”. These buildings were situated at the edge of the mill pond, where the water fed through the building and exited out a tail race to the west.

All buildings noted on the 1885 Fire Insurance Plan have been demolished with the exception of the building noted on the map as “No. 2” (outlined in red on Figure 10). This building is identified in this report as “West-1” and “West-5”. This building was constructed at some point between 1862 and 1885. This building is noted on the Fire Insurance Plan as being used for storage, sorting, and picking.
Figure 10: Excerpt of the 1885 Fire Insurance Plan noting the portion of the mill complex which remains on the subject lands in red. *Note: All other buildings indicated on the map have been demolished. (Source: City of Cambridge Archives)

Several 19th century photographs of the mill complex are available. The following photograph depicts several portions of the Forbes mill in 1899. All of the buildings visible in the photograph have been demolished with the exception of the stone tower (noted in red on Figure 11).
The west half of the mill building noted in this report as West-2 is noted in an illustration of the R. Forbes Co. Ltd provided in Appendix C of the designation By-law. Therefore, this portion of the building was constructed by 1901. The east half of the mill building had not yet been constructed.
Figure 12: Excerpt of Schedule C of Designation By-law No. 353-87 noting the buildings part of the R. Forbes Co. Ltd “as they appeared in 1901”. Existing buildings outlined in red. Note: All buildings associated with the east half of the building (i.e. East-1, East-2, and East-3) have not yet been constructed. (Note: A copy of the designation By-law is provided in Appendix C of this report)

A photograph of the mill complex dated 1901 provides evidence of the date of construction of existing buildings located on the subject lands (See Figure 13 below). The existing tower is noted in this photograph, as well as the portion of the mill at the west end of the site (noted in this report as West-2).
Dwellings constructed on-site for mill workers was an integral component to most 19th century mill complexes. These buildings are commonly referred to as mill workers’ housing, workers housing, or workers cottages. The close proximity of these dwellings to the mill enabled workers to reside in apartments which were readily available and removed the necessity of commuting to work at a time when the built environment was not yet geared towards personal automobiles.

A 19th century photograph which was taken from the existing tower of the Forbes mill provides a view of the two existing stone structures located at what is now 211 Queen Street (See Figure 14 below).
Figure 14: Bird’s Eye View of Hespeler, early 20th century, looking east from Forbes Tower at 215 Queen Street towards 211 Queen Street West (no date, likely late 19th century). Stone buildings at what is now 211 Queen Street are noted on the photograph (outlined in red). Approximate location of the railway is noted in orange, and the former streetcar rail line noted in green. (Source: Eby, 1901)

A comparison of the bird’s eye view photo and present day photographs identifies that these two buildings have been altered and converted to read as one building with a large contemporary addition towards the rear (See Figures 15 & 16).
According to an early 19th century film of the site (courtesy of the University of Waterloo library), the property at 211 Queen Street west included a total of 6 multi-unit dwellings for mill workers. Two of these mill workers housing structures remain on the subject lands at 211 Queen Street West (See Figure 17). Stills of the filmstrip show that these mill workers housing buildings have been altered extensively over time, resulting in the removal and enclosure of the original front entrances. The alterations to these two buildings are outlined in detail in Section 4.0 of this report.
The 1910 (revised 1917) Fire Insurance Plan provides a detailed description of the mill complex which existed at that time. This includes the existing buildings located on the subject lands, and those which have been demolished.

Portions of the site which have been demolished include the mid. 19th century stone mills which were connected to the dam, brick factory buildings traversing Queen Street West, and other mill infrastructure, such as components of the tail race, coal sheds, storage houses, and a boiler house. All of these buildings are visible on the 1910 (revised 1917) Fire Insurance Plan (See Figure 18).

The buildings existing on the subject lands are described on the 1917 Fire Insurance Plan as “No. 2 Main Mill”, and “No. 3 Main Mill”. The map indicates the function and use of the buildings in the fabric-making process. This includes combing, drawing, finishing, winding, etc. (See Figures 18 & 19 below). The mill complex grew considerably in the first half of the 20th century and according to Leung (1986), the Forbes mill was said to have been the largest woolen and worsted wool plant in Canada.
Figure 18: Excerpt of the 1910 (revised 1917) Fire Insurance Plan, Hespeler. Portion of the building existing at what is now 215 Queen Street outlined in red (Source: National Archives Canada)

Figure 19: Excerpt of the 1910 (revised 1917) Fire Insurance Plan, Hespeler. Portion of the building existing at what is now 215 Queen Street outlined in red (Source: National Archives Canada)

The following provides an image which has been stitched together from an early 20th century film available on the University of Waterloo archives’ website.\(^6\) The image provides a snapshot of what

\(^6\) This film was provided courtesy of the University of Waterloo at [http://digital.library.uwaterloo.ca/uwdl-c1aaca3c-7836-4361-b4a2-ab6e30067cf/r-forbes-co-ltd-film](http://digital.library.uwaterloo.ca/uwdl-c1aaca3c-7836-4361-b4a2-ab6e30067cf/r-forbes-co-ltd-film).
the mill would have looked like from Queen Street West, including workers’ housing located east of the mill buildings.

Figure 20: View of the R. Forbes Co. mill (date unknown) stitched together from an early 20th century film. The image shows buildings which are existing and those which have been removed. The buildings which have been retained are outlined in red. (Source: University of Waterloo Archives and Digital Library Collections, accessed online at http://digital.library.uwaterloo.ca/uwdl-c1aaca3c-7836-4361-b4a2-ab65e30067cf/r-forbes-co-ltd-film)

Figure 21: Snapshot of the University of Waterloo R. Forbes & Co. Ltd. film, depicting the office sign during the early 20th century (Source: University of Waterloo Archives and Digital Library Collections, accessed online at http://digital.library.uwaterloo.ca/uwdl-c1aaca3c-7836-4361-b4a2-ab65e30067cf/r-forbes-co-ltd-film)

The following photographs provided below depicts the subject lands and surrounding area in the mid. 20th century. The existing portion of the building is outlined in red. The balance of the site was destroyed by fire in 1995 (See Figures 22 & 23).
Figure 22: Photograph of the Dominion Woolen Company, date unknown. Existing building outlined in red. Approximate location of railway tracks noted with orange line, and former streetcar tracks noted in green. (Source: City of Cambridge Archives)
According to the current property owner, the property was owned by Silknit in the later half of the 20th century. The business which operated out of the building was bought by Waterloo Textiles in approximately 1959. Waterloo Textiles was purchased by Manual Carreiro and Alic Deitrich in approximately 1980. Silknit went into receivership in 1985. At this time, the property was purchased by Manual Carreiro and was split into two halves.

A newspaper article by Chris Masterman (date unknown) identifies that “In 1989, half of Silknit was demolished by hand in order to be able to sell the construction materials such as the clay bricks.” This article identifies that the planned demolition took place on the west side of the site, which was owned by Silknit. At the time, the east half of the site was owned by Waterloo Textiles. The newspaper article identifies that vandals set fire to six buildings at the west half of the site in 1988. The entire site was severely damaged by fire in 1995.
A comparison of the 1955 aerial photo and a present-day aerial photo demonstrates the changes which occurred to the subject lands and the surrounding context in the later half of the 20th and the 21st centuries. The 1955 aerial photo identifies the location of the existing buildings on the subject lands in relation to the mill buildings which have since been demolished. This includes the mill workers’ housing structures which were demolished at 211 Queen Street West. A detailed description of the existing buildings located on the subject lands are provided in the following section of this report.

The changes to the site are visible on the 1955 aerial photograph (See Figure 25 below) and the present-day aerial photograph (See Figure 26 below).
Figure 25: 1955 Aerial photo of the subject lands and surrounding context. Approximate location of mill buildings at 215 Queen Street West outlined in red. Approximate location of mill workers’ housing at 211 Queen Street West outlined in orange. (Source: Waterloo Geospatial Centre Interactive Historic Aerial Photo Index, accessed 2020)

Figure 26 – Aerial photo of the subject lands and surrounding context. (Source: Google Earth, accessed 2020)
4.0 DETAILED DESCRIPTION

4.1 DESCRIPTION OF SUBJECT LANDS

The subject lands are comprised of two parcels. The western portion of the subject lands is municipally known as 215 Queen Street West, and contains the former textile factory. The factory is referred to in this report as having two portions, those being east and west. The smaller portion of the subject lands is municipally known as 211 Queen Street West, contains two 19th century dwellings (commonly referred to as the “cottages”) and served as workers housing.

The property is located north of the tracks of the Grand Trunk Railway and south of the Speed River and dam, which was constructed in the 19th century to provide power for the mill buildings. It is important to note that the subject lands have been severed such that they no longer include the Speed River, dam, or the river bank.

Figure 27 – (left) 3-D aerial photograph of the subject lands. (Source: Google Earth, accessed 2020)
The following sub-sections of this report provide a detailed description of the site and is organized in two sections. The first section includes the property at 215 Queen Street West and the subsequent section includes the property at 211 Queen Street West. The description of the property at 215 Queen Street West is further divided in order to describe the east and west portions of the mill structure in detail. The portions of the buildings located on the subject lands were constructed at different points in time and include features indicative of their date of construction. The date of construction of these portions of the building were identified using a combination of expert on-site analysis and physical evidence, historic maps and documentation, historic photographs, and Fire Insurance Plans.

In order to assist in the description of the site, Appendix G provides a photo map of the entirety of the subject lands.

### 4.2 215 Queen Street West

The property located at 215 Queen Street West includes the former mill buildings. These buildings are described as “east” and “west” halves as per the figure below (See Figure 28).
4.2.1 215 Queen Street West: East Half

The east half of the mill building was constructed in 4 main parts. The factory portion of the Mill is described in this report and as East-1. The portions of the office building are identified in the figure below as East-2, East-3, and East-4 (See Figure 29).

Figure 29 – Aerial photo of subject lands noting the location of portions of the east half of the mill buildings, identified as “East-1”, “East-2”, “East-3”, and “East-4”. (Source: Google Maps, accessed 2020)

215 Queen Street West: East – 1

The portion of the building noted on Figure 29 as “East-1” was constructed between 1910 and 1917. The 1910 (revised 1917) Fire Insurance Plan identifies that this building was the “No. 3 Main Mill” and is described as having weaving activities on the first floor, wrapping-winding and cloth shipping on the second floor, storage, finished goods and packing on the third floor, and storage

---

7 Photograph has been intentionally darkened to enable easier identification of the portions of the building.
in the basement. The building is noted as being constructed of brick, being 3 storeys in height with an external staircase at the north side of the building (noted as “stairs” on Figure 29). The building connects to the office portion of the building, noted on Figure 29 as “East-2”. The “P” noted on the Fire Insurance Plan indicates that the roof was tar and gravel on wood.

This portion of the building (East-1) is constructed of a buff-brown brick with large floor to ceiling window openings at each of the three storeys. All windows include three rows of end-brick voussoirs and wood sills.

The south elevation of East-1 includes 3 storeys of 17 large arched window openings, and 17 arched window openings at ground level providing light to the basement. The basement includes windows as well, which have been bricked-over and/or are no longer visible due to the addition of fill over time. These basement windows would have been exposed during the 19th century.

All windows at the south elevation have been enclosed. Some of the enclosed window openings include retro-fitted vents and air conditioning units or fans. The east elevation includes three x3 (9 total) large arched window or bay-door openings. Star-shaped metal tie-rod ends are located on either side of each window arch at the first and second storeys at all elevations of East-1.

The south elevation of East-1 includes one un-enclosed window opening which has been fitted with a door to allow for air circulation (noted in red on Figure 30). Three window openings have remained un-enclosed at the north side of the building. These floor to ceiling windows include two sets of wood frame windows having green painted wood muntins, and 3x5 sets of window panes (15 total panes) (See Figure 34).

The roof of East-1 is flat and is covered with tar and gravel. Un-decorated wood brackets are located along the north and south elevations. A brick cornice end is located at the south-west corner of the building (noted in red on Figure 31). The roofline at the east elevation includes a very gently pitched gable end (noted in red on Figure 37).
Figures 30 & 31 – (left) View of south elevation of East-1, looking north-east towards office building (East-2, East-3, and East-4). Location of bay-door noted in red, (right) Secondary view of East-1 looking east, noting location of brick corbistep parapet wall (Source: MHBC, date)

Figures 32 & 33 – (left) Detail view of third storey windows at south elevation of East-1. Noting location of 4 tie-rods above second storey windows and example of wood brackets at the roofline, (right) Detail view of brick corbistep parapet at the end of south-west corner of East-1, (Source: MHBC, 2020)
The east elevation of East-1 has been altered by the construction of additions which are described in this report as East-2, East-3, and East-4. It is likely that the first of these structures to be constructed was East-2 and East-3, followed by East-4 as per the chart provided below. The following provides a detailed description of these portions of the buildings (See Figure 38).

**215 Queen Street Wes: East – 2, East-3, and East-4**

(Figures 34 & 35) – (left) View of south elevation of East-1, looking south-east, (right) View of south elevation of East-1, looking west (extent of East-1 noted with red dashed line), (Source: MHBC, 2020)

(Figures 36 & 37) – (left) View of east elevation of East-1, looking west (right) Secondary view of east elevation of East-1, noting slightly pitched gable with red dashed line (Source: MHBC, 2020)
Figure 38 – View of East mill buildings (East 1, East 2, East 3, and East 4) looking north-west, (Source: MHBC, 2020)<sup>8</sup>

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Description (reference to 1917 FIP)</th>
<th>Date of Construction</th>
<th>Source/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>East – 1</td>
<td>“No. 3 Main Mill”</td>
<td>Between 1910 and 1917</td>
<td>1910 illustration in designation By-law, Schedule “C” and 1917 FIP.</td>
</tr>
<tr>
<td>East - 2</td>
<td>“3 &amp; Ba$k” (Part of office building)</td>
<td>Between 1910 and 1917</td>
<td>1910 illustration in designation By-law, Schedule “C” and 1917 FIP.</td>
</tr>
<tr>
<td>East – 3 (a)</td>
<td>“No. 5 Office &amp; Sample Room”</td>
<td>Between 1910 and 1917</td>
<td>1910 illustration in designation By-law, Schedule “C” and 1917 FIP.</td>
</tr>
<tr>
<td>East – 3 (b)</td>
<td>Entrance room (single storey)</td>
<td>Between 1917 and 1920s/1930s.</td>
<td>1917 FIP and photographic evidence.</td>
</tr>
</tbody>
</table>

<sup>8</sup> Photograph has been darkened to enable easier identification of the portions of the building.
East – 3 (c) | Third floor of Office | After 1917, pre- 1950s | Does not appear on 1917 FIP, visible in 1950s era photographs.
---|---|---|---
East – 4 (a) | Part of office building | After 1917, pre- 1950s | Does not appear on 1917 FIP, visible in 1950s era photographs.
East – 4 (b) | Part of office building | After 1917, pre- 1950s | Does not appear on 1917 FIP, visible in 1950s era photographs.

215 Queen Street West: East-2

This portion of the building directly abuts the east elevation of East-1 and is likely the original staircase which would have been provided at the east end of East-1. Therefore, East-2 was likely constructed at approximately the same time as East-1. This portion of the building is 3 storeys and includes 3 pairs of 2 windows (6 windows total) at the south elevation. Each window includes a brick voussoir and wood sills (See Figures 39 & 40 below).

215 Queen Street West: East-3 (a), East-3 (b) and East-3 (c)

A review of the 1910 (revised 191) Fire Insurance Plan identifies that East-3 was known as the “No. 5 Office & Sample Room”. The FIP identifies the building as 2 storeys, of brick construction. Therefore, East-3 was constructed in two parts, where the existing third storey (East-3 (b) was constructed between 1917 and the 1920s/1930s area when it appears in photographs dating to...
that time period. The small single storey brick entrance to the building identified in this report as East-3 (c) was likely constructed at a similar point in time as East-3 (b).

East-3 (a) can be described as a brick 2 storey building, having 4 windows at each storey of the south, north, and east elevations. The windows at the south elevation include brick voussoirs of a lighter brown colour, as well as a central window which was likely a door opening. This former door opening includes a rounded arch. The location of the former “R. Forbes” office sign was located near this door opening and is noted in Figure 42.

![Figures 41 & 42](left) View of East-3 (a) looking north towards south elevation. Approximate location of former “R. Forbes” business sign noted in red. Approximate location of arched former door opening also noted with red dashed line. (right) View of south and west elevations of East-3 (a) and (b) looking south. (Source: MHBC, 2020)

### 215 Queen Street West: East-4 (a) and East-4 (b)

Neither East-4 (a) nor East-4 (b) are identified on the 1910 (revised 1917) Fire Insurance Plan and were therefore constructed afterwards. Photographic evidence suggests that East-4 (a) was constructed in between approximately 1917 and the 1950s. East-4 (a) is a single storey brick addition with 2 square shaped windows at the west elevation and 3 square shaped windows at the south elevation. East-4 (b) is a 2 storey addition and includes 3 square shaped windows at the west elevation and 6 square shaped windows at the south elevation. The building is distinctly different from that of the other portions of the office building (East-2 and East-3) as it includes brick string courses, which are more reminiscent of the Edwardian or Art Deco architectural styles (See Figures 43 & 44 below).
4.2.2 215 Queen Street West: West Half

The west half of the mill was constructed at different points in time. The main portion of the Mill is described in this report and as West-2. The stone building at the north side of the mill, identified as West-1. The majority of buildings at the west half of the site were constructed between 1885 and 1917 as per a review of Fire Insurance Plans. This includes the tower, West-2, West-3, West-4, and West-5. The only portions of the building constructed after 1917 are West-6, West-7, and West-8. These portions of the building are illustrated with Figure 45 below and are described in detail.
Figure 45 – Aerial photograph of the subject lands, noting the various portions of the building part of the west half of the site. (Source: Google Maps, accessed 2020)

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Description</th>
<th>Date of Construction</th>
<th>Source/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>West - 1</td>
<td>Single storey stone building</td>
<td>Pre-1885 (possibly as early as 1862)</td>
<td>Not visible on 1885 FIP, visible on 1917 FIP.</td>
</tr>
<tr>
<td>Tower</td>
<td>6 storey stone tower with quoins, tie rods, flat roof, round windows at 6th storey</td>
<td>Between 1885 and 1899.</td>
<td>Not visible on 1885 FIP, appears on photo dated 1899.</td>
</tr>
</tbody>
</table>

Photograph has been intentionally darkened to enable easier identification of the portions of the building.

February, 2021
<table>
<thead>
<tr>
<th>Building</th>
<th>Description</th>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>West - 2</td>
<td>&quot;No. 2 Main Mill&quot;</td>
<td>Between 1885 and 1900</td>
<td>Not visible on 1885 FIPs, visible on historic photographs.</td>
</tr>
<tr>
<td>West – 3 (a)</td>
<td>&quot;No. 2 Extension&quot; (note: gable roof added post 1917)</td>
<td>Between 1885 and 1917</td>
<td>Not visible on 1885 FIP, visible on 1917 FIP.</td>
</tr>
<tr>
<td>West – 3 (b)</td>
<td>&quot;No. 2 Extension&quot; (note: gable roof added post 1917)</td>
<td>Between 1885 and 1917, likely added after West-3 (a)</td>
<td>Not visible on 1885 FIP, visible on 1917 FIP.</td>
</tr>
<tr>
<td>West - 4</td>
<td>&quot;No. 7 Engine House&quot;</td>
<td>Between 1885 and 1917</td>
<td>Not visible on 1885 FIP, visible on 1917 FIP.</td>
</tr>
<tr>
<td>West - 5</td>
<td>&quot;Picker House&quot;</td>
<td>Pre-1885, west end re-clad between 1885 and 1917</td>
<td>Not visible on 1885 FIP, visible on 1917 FIP.</td>
</tr>
<tr>
<td>West - 6</td>
<td>Addition to picker house</td>
<td>Between 1917 and 1950s</td>
<td>Building materials and construction techniques, photographs and aerial photos</td>
</tr>
<tr>
<td>West-7</td>
<td>Staircase/bathrooms</td>
<td>Between 1917 and 1950s</td>
<td>1917 FIP and aerial photos</td>
</tr>
<tr>
<td>West-8</td>
<td>Single storey addition between West-1 and West-2</td>
<td>Post 1917</td>
<td>Not visible on 1917 FIP</td>
</tr>
</tbody>
</table>

**West-1 and West-5**

The building identified in this report as West-1 describes the structure on the north side of the site, which is identified on the 1885 Fire Insurance Plan as a single store stone structure used for storing and sorting materials. The portion of the building identified in this report as West-5 also appears on the 1885 Fire Insurance Plan and was used for picking wool.

These two portions of the building are the oldest remaining on-site and have been extensively altered over time. A portion of the west end of West-5 was removed at some point between the 1885 and 1917) as per a review of the Fire Insurance Plans. According to the 1910 (revised 1917) Fire Insurance Plan, the west end of the building was re-clad with brick (See Figure 46).

---

10 The construction date of West-8 is difficult to confirm as it is a shallow single storey structure between West-1 and West-2 and is not visible on late 20th century photographs. This portion of the building does not appear on the 1917 FIP and is therefore dated after this time.
West-1 can be described as a stone building with stone quoins and a parapet wall at the east and west ends, the west end parapet wall having been altered by the addition of bricks (See Figure 48). West-1 has been extensively altered with the addition of 5 rectangular-shaped window openings along the north elevation and two door openings. According to the 1885 Fire Insurance Plan, none of these window and door openings at the north elevation are original. Two windows were originally located at the north elevation of West-1, but were originally rectangular-shaped windows with heavy stone voussoirs, which remain on the structure (See Figure 47). A louvred window above the roofline was added to the structure at some point after 1917 (See Figure 49).

West-5 can be described as a brick and stone structure having an arched window opening at the second storey of the north elevation and two door openings at the east elevation (See Figure 48).

Figures 46 & 47 – (left) View of West-1, West-6 and West-5 looking south-east, (right) View of West-1 and West-6 looking south-west, (Source: MHBC, 2020)
Figure 48 – (left) View of West-1 and West-5, looking south-east noting line between stone of pre-1885 building and brick addition constructed at some point between 1885 and 1917 (noted with white dashed line) (Source: MHBC, 2020)

Figures 49 & 50 – (left) View of West-1 and louvred window above roofline looking east from third storey window within West-3, (right) Partial view of West-5, looking north-east from third storey window within West-3, (Source: MHBC, 2020)
Tower

The portion of the building identified as the “Tower” in this report was constructed at some point between 1885 and 1900. The 1917 Fire Insurance Plan identifies this structure as being constructed of stone, and is referred to as the “Tower”. The structure can be described as a 5 storey stone building having stone quoins, and stone voussoirs above rectangular-shaped windows remaining at the north and east façade. Windows and door openings at the north and east elevations have been enclosed. The building includes a stone stringcourse at the fifth storey with four stone round windows (also known as an oeil-de-boeuf or “ox-eye” window) with arched stone hood moulds at the north, east, south and west elevations below a flat roof. With the exception of some of the window and door openings being enclosed, and west elevation being enclosed, the majority of features of the tower are original and have retained their heritage integrity.

A photograph dating to 1899 suggests that the tower was constructed at some point between 1885 and 1900. The photograph from 1899 identifies that the tower originally had a hipped or cupola style roof. This portion of the roof was removed at some point in the late 19th or early 20th century (See Figures 51 & 52).

Figures 51 & 52 – (left) Historic photo (dated 1899) of the site noting the location of the existing tower in green, (right) Detail view of the tower and roof looking south-west, (Source: City of Cambridge Archives; MHBC, 2020)
Figures 53 & 54 – (left) View of the north side of the mill structures noting the location of the tower with green dashed line, (right) Detail view of the tower, looking towards the fifth storey from the north elevation, (Source: MHBC, 2020)

Figure 55 – View of the Tower looking south-west, (Source: MHBC, 2020)
West-2

The structure identified as West-2 in this report is identified on the 1917 Fire Insurance Plan as the “No. 2 Main Mill”. The building was constructed between 1885 and 1917. The building is described on the 1917 Fire Insurance Plan as a 3 storey brick building with a basement. The building includes external staircases at the north and south elevations of the east end of the building. An elevator is noted at the east end of the building in the existing location of the elevator as noted on Figure 45. The building is described as including storage in the basement, gilling, combing and drawing uses at the first level, spinning and twisting at the second level, and knitted goods (reeling and shipping) at the third level.

The building includes an addition at the west end identified in this report as West-3. This portion of the building is noted as the “No. 2 Extension” on the 1917 Fire Insurance Plan and was constructed at some point prior to 1917. West-2 can includes approximately 3 storeys of 20 rows of window openings at the south elevation (total 60 windows) with an additional 20 rows of window openings providing light to the basement. The south façade of West-3 includes a series of 6 window openings at each of the 3 levels above grade, meaning that the entire south façade of the main mill building reads as having a total of 78 window openings above grade excluding basement windows. Each window opening includes an arched brick voussoir and wood sill. All windows have been enclosed with contemporary siding/cladding.
Figure 56 – View of West-2 (outlined in yellow) looking east towards the south elevation, (Source: MHBC, 2020)

Figures 57 & 58 – (left) View of West-2, looking north-west towards south elevation, (right) Detail view of the south elevation of West-2 looking east from a third storey window of West-3, Source: MHBC, 2020
West-3

The portion of the building identified in this report as West-3 can be described as a three storey brick addition to West-2 constructed at some point between 1885 and 1917. The south façade of West-3 includes a series of 6 window openings at each of the 3 levels above grade. These windows were constructed with similar arrangements and sizes to that as West-2 so that the addition would read as one comprehensive building. All windows at the south elevation of West-3 have been enclosed with the exception of a window opening at grade which has been converted to a door opening with a poured concrete loading ramp (See Figure 60) and a basement window which has been converted into a door opening (See Figure 61). The majority of the west elevation has been parged and painted white and all window and door openings have been enclosed. A small portion of the west elevation towards the north has not been parged. This portion of the building includes nine window openings at each of the three storeys (See Figure 62). The entire north elevation of West-3 has been enclosed with contemporary siding (See Figure 63). The roofline of West-3 includes a gable roof, which provides a louvred window (See Figure 64).

Figure 59 – View of West-3 (outlined in pink) looking east towards the south elevation, (Source: MHBC, 2020)
Figures 60 & 61 – (left) Detail view of window opening at the south elevation of West-3 converted into a door opening, looking north, (right) Detail view of a basement window opening at the south elevation of West-3 altered into a basement door opening, (Source: MHBC, 2020)

Figures 62 & 63 – (left) View of the west elevation of West-3 looking north-east, (right) View of the south elevation of West-3 looking south, (Source: MHBC, 2020)
The building identified in this report as West-4 can be described as a 3 storey brick building located south of the tower. This building was constructed between 1885 and 1917 and is identified on the 1917 Fire Insurance Plan as the No. 7 Engine House (500 horse power). The 1917 Fire insurance Plan identifies that the building was only 1 storey. Therefore, the existing second and third storeys were added after 1917. This can be confirmed as the brick of the first storey is distinctly different than that of the second and third storeys (See Figure 65). The building is only visible from the north side of the site, which provides views of the east elevation which includes three levels of 4 window openings. Two of these window openings are partially enclosed and include wood frame windows (See Figure 66). A door to this building is available at the north elevation which has been altered (See Figure 65).
West-6

West-6 can be described as a single storey brick loading bay located at the east elevation of West-1. This portion of the building is likely dated to the mid. 20th century due to its construction materials and techniques. This portion of the building includes a loading ramp and bay door with metal rain guard at the east elevation with a window opening which has been enclosed with cinder blocks. Two additional window openings and one door opening is located at the north elevation which have also been enclosed with cinder blocks (See Figures 67 & 68).

![Figures 67 & 68](image)

**Figures 67 & 68** – (left) View of the north elevation of West-4 looking south, (right) View of the east elevation of West-4 looking west from the rooftop, (Source: MHBC, 2020)

West-7

West-7 can be described as a three storey brick addition at the north elevation of West-2. This portion of the building was constructed at some point between 1917 and the mid. 20th century based on a review of the 1917 Fire Insurance Plan and available photographs and maps. This portion of the building was constructed to provide stairs and bathrooms to the mill facility. The architectural style of this portion of the building is distinctly different than that of West-2 and includes rectangular-shaped windows and stringcourses similar to that of the buildings described in this report as East-4 (See Figures 69 & 70).
4.3 211 Queen Street West

The property located at 211 Queen Street West includes one building currently used for commercial/retail purposes. This building is comprised of three main sections including two mid-to late 19th century mill workers dwellings constructed of stone, and a large addition located to north and east. This addition also fills-in the space between the two buildings and reads as one structure. A concrete pathway is located along the structure running east-west and provided a walkway to the two remaining mill workers housing as well as four others located to the east, which were demolished at some point between the 1950s and 2000 as per a review of available aerial photos.
Figure 71 – Aerial photograph of 211 Queen Street West noting location of 18th century workers housing in red, contemporary infill in white dashed line and former location of demolished workers housing outlined in yellow, (Source: Google Maps, accessed 2020)

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Description</th>
<th>Date of Construction</th>
<th>Source/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WH-1 (Workers Housing-1)</td>
<td>Workers Housing (stone construction) *note that the entire north and east elevation walls at the first storey have been removed.</td>
<td>Mid. to late 19th century</td>
<td>Historic photos available in Hespeler, A Souvenir of the Factory Town</td>
</tr>
<tr>
<td>WH-2 (Workers Housing-2)</td>
<td>Workers Housing (stone construction) *note that portions of the north, west, and east elevation walls have been removed.</td>
<td>Mid. to late 19th century</td>
<td>Historic photos available in Hespeler, A Souvenir of the Factory Town</td>
</tr>
<tr>
<td>Walkway</td>
<td>Concrete Walkway</td>
<td>Early 20th century</td>
<td>Visible on early 19th century photos and film</td>
</tr>
<tr>
<td>Contemporary Addition (white line)</td>
<td>Contemporary addition to WH-1 and WH-2</td>
<td>Constructed at some point between 1950s and 2000</td>
<td>Not visible on 1955 aerial photo, visible on 2000 aerial photo</td>
</tr>
</tbody>
</table>
Workers Housing - 1

The building referred to as WH-1 (Workers Housing – 1) can be described as a 1 ½ storey stone building constructed in the mid. to late 19th century as a mill workers dwelling, often referred to as a “workers house” or “workers cottage”. The building has been altered over time to include a large addition at the north and east elevation, resulting in the removal of the entire north elevation wall and the majority of the east elevation wall. The original front entrance was located central to the two existing window openings at the south elevation. This front entrance has been enclosed with stone (See Figure 72). The building includes two basement windows which have also been enclosed with stone. All original window and door openings include stone lintels. Stone quoins are visible at the east and west end of the south elevation. The west elevation includes four original rectangular shaped window openings with stone sills. A portion of the north façade remains and has been clad with sheet metal. The north elevation includes a fire exit at the second storey which is not original to the structure as it is not visible on 19th century photographs of the building.

Figure 72 – View of south elevation of WH-1 (noted in red) and WH-2 looking north-east, (Source: MHBC, 2020)
Workers Housing - 2

The building referred to as WH-2 can be described as a 1 ½ storey stone dwelling which has been altered over time to include a large contemporary addition at the north, east and west elevations. The building is constructed similar to that of WH-1 and includes similar features, including overall size/massing and stone construction with stone quoins and lintels above original window and door openings. The alteration of the building has resulted in the removal of several attributes and the enclosure of the original door opening at the south elevation (See Figures 75 – 77).
**Figure 75** – View of south elevation of WH-1 and WH-2 (noted in red) looking north-east, (Source: MHBC, 2020)

**Figures 76 & 77** – (left) View of WH-2, north and west elevations (outlined in red) looking south-west from 215 Queen Street West, (right) Detail view of WH-2 noting former location of door opening (enclosed in stone), (Source: MHBC, 2020)
5.0 EVALUATION OF CULTURAL HERITAGE RESOURCES

5.1 EVALUATION CRITERIA

The following sub-sections of this report will provide an analysis of the cultural heritage value of the subject lands as per Ontario Regulation 9/06, which is the legislated criteria for determining cultural heritage value or interest. This criteria is related to design/physical, historical/associative and historical values as follows:

1. The property has design or physical value because it:
   a. Is a rare, unique, representative or early example of a style, type, expression, material or construction method,
   b. Displays a high degree of craftsmanship or artistic merit, or
   c. Demonstrates a high degree of technical or scientific achievement.

2. The property has historical value or associative value because it,
   a. Has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,
   b. Yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or
   c. 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,
   a. Is important in defining, maintaining or supporting the character of an area,
   b. Is physically, functionally, visually or historically linked to its surroundings, or
   c. Is a landmark.
5.2 EVALUATION CRITERIA OF THE CITY OF CAMBRIDGE OFFICIAL PLAN

In addition to the evaluation criteria provided under Ontario Regulation 9/06, the City of Cambridge Official Plan provides additional criteria which is considered in this report. Some of the criteria provided below is similar to that of O-Reg 9/06 and can be considered under this legislation. Others which are not similar to those provided under O-Reg 9/06 will be evaluated in the following subsections of this report.

i) it dates from an early period in the development of the city’s communities;

ii) it is a representative example of the work of an outstanding local, national or international architect, engineer, builder, designer, landscape architect, interior designer, sculptor, or other artisan and is well preserved or may be rehabilitated;

iii) it is associated with a person who is recognized as having made an important contribution to the city’s social, cultural, political, economic, technological or physical development or as having materially influenced the course of local, regional, provincial, national or international history;

iv) it is directly associated with an historic event which is recognized as having local, regional, provincial, national or international importance;

v) it is a representative example and illustration of the city’s social, cultural, political, economic or technological development history;

vi) it is a representative example of a method of construction now rarely used;

vii) it is a representative example of its architectural style or period of building;

viii) it is a representative example of architectural design;

ix) it terminates a view or otherwise makes an important contribution to the urban composition or streetscape of which it forms a part;

x) it is generally recognized as an important landmark;

xi) it is a representative example of outstanding interior design; or
Heritage Impact Assessment,
211-215 Queen Street West, City of Cambridge

xii) it is an example of a rare or otherwise important feature of good urban design or streetscaping.

5.3 EVALUATION OF 211-215 QUEEN STREET WEST

The evaluation of the subject lands provided below includes both the parcels of land municipally addressed as 211 Queen Street West and 215 Queen Street West. The designation By-law which was registered in 1984 included both parcels, which were consolidated as one lot at the time. The two lots are historically interrelated in terms of their design, historical, and contextual values.

The following evaluation takes into consideration the summary of cultural heritage value provided in Designation By-law no. 353-87 as well as the information provided courtesy of the Historic Sites and Monuments Board Archives which was submitted in support of recognition of the subject lands as a National Historic Site.

5.3.1 Design/Physical Value

The subject lands have design/physical value as they include features of a 19th century Mill Complex. The subject lands were designated under Part IV of the Ontario Heritage Act in 1984 as per By-law No. 353-87. The by-law specifies that the designation applied to the “Silknit-Lower Mill Complex”, which included the following features:

1. Main Mill No. 1;
2. No. 1 Wing;
3. The stone tower; and
4. The enclosed exterior staircase.

These features are outlined in blue in the figure below (See Figure 78). All features which were specifically intended for protection under Part IV of the Ontario Heritage Act as per By-law No. 353-87 were destroyed by fire in 1994 with the exception of the stone tower. Therefore, while the existing designation By-law is registered on-title to both the properties located at 211 Queen Street West and 215 Queen Street West, the only remaining feature which was included in the list of heritage attributes in the 1984 designation By-law is the stone tower.

The approximate location of the existing buildings located on the subject lands are indicated on the figure below in red (See Figure 78).
The existing buildings located on the subject lands are therefore considered remnants of the 19th century mill complex. The subject lands have design/physical value as they include mill buildings which are considered representative of the late 19th century. A review of available maps, photographs, and fire insurance plans identifies that the majority of existing buildings were constructed between 1885 and 1917. The exception to this is the stone structure located at the north side of the site, identified in this report as “West-1” and “West-5”. This building is noted on the 1885 Fire Insurance Plan and was therefore constructed between 1862 (i.e. when Randall & Farr tore down all previously existing mill structures) and 1885. The buildings do not exhibit a high degree of craftsmanship or artistic merit as they were constructed with the intention to be functional and without ornate decoration. The overall construction of the existing buildings includes materials and techniques which are now rarely used. Overall, the property demonstrates a degree of technical achievement as the functionality of the site related to the overall workings of the mill, the harnessing of waterpower, and later electrical power.

The building is not considered a representative example of outstanding interior design. The interior of the buildings were intended to be functional, without ornamental detailing and has been extensively altered over time.

It is important to note that the designation by-law identifies that the buildings part of the “Lower Mill” were constructed by Lewis Kribs and Halle and Pabst. Therefore, the only remaining portions of the mill which are associated with Kribs and Halle and Pabst are the Tower and West-1. The architects and builders of the balance of the site remains unknown, but should be added to the historic record should it become available.
5.3.2 Historical/Associative Value

The subject lands have historical/associative value for their direct associations with the industrial and milling operations from the early 19th century. The site has evolved considerably over time and is associated with different operations under different ownerships. This includes the following:

- Randall & Farr;
- J. Schofield & Co. Star Woollens;
- R. Forbes & Co.;
- Dominion Wollens and Worst Co. Ltd.;
- Silknit Ltd.; and
- Waterloo Textiles.

The mill became important to the community over time, solidifying the economic success of the area and employing many local workers. The mill is directly associated with George Duthie Forbes who was inducted into the Cambridge Hall of Fame in 1997. A review of Waterloo County Councillors (1995) identifies that several mill managers went on to became Councillors. The overall history of the mill may yield further information which would contribute to the understanding of the local community. The architect and builder of the remaining mill buildings is difficult to confirm. The By-law identifies that the buildings part of the “Lower Mill” were constructed by Lewis Kribs and Halle and Pabst. The designers, architects and builders of the remaining buildings were not identified in available historical documentation. Lewis Kribs was inducted into the City of Cambridge Hall of Fame for his various endeavours in the community. His description identifies him as the main contractor for the R. Forbes Co. Therefore, it is likely that Kribs was involved in the construction of the existing buildings described in this report.

5.3.3 Contextual Value

The subject lands have contextual value as they include important landmark features. The existing factory buildings are easily recognizable as a point of reference. The recognition of the property as a landmark feature is also established by its designation under the Ontario Heritage Act and was identified as a National Historic Site by the Historic Sites and Monuments Board of the Federal Government of Canada.

The subject lands are located along the north side of Queen Street West, south of the Speed River. The overall character of the subject lands has been maintained. The subject lands have functioned for at least 170 consecutive years for milling-related purposes. The character of the property throughout this time has been defined by the presence of the mill factory and workers housing structures and its related infrastructure, the proximity of these buildings to the Speed River and historic transportation routes (i.e. Queen Street West, railway and former streetcar) with the vegetated backdrop of the natural landscape.
The historic development of the property and the operation of the mills in the 19th century relied on harnessing the power of the Speed River. While this functional link is no longer operational, the existing mill buildings remain in their original locations and the Speed River remains visible from the subject lands. The physical link between the mill and the river was maintained in the 19th and in the majority of the 20th century through mill infrastructure, such as head and tail races. The head race and tail race formerly connected to the “Lower Mill” buildings have all been removed. This resulted in the removal of the physical links between the mill buildings and the Speed River. The mill workers’ housing has largely been removed with the exception of the two structures at 211 Queen Street West. While the historic use of these buildings have been discontinued, the relationship between the mill structures and the mill-workers’ housing is important in communicating the social and functional history of the property and its resulting land use patterns. The river and vegetated river corridor remains visible from the subject lands and now serves as a backdrop valued for its scenic beauty.

5.3.4 List of Heritage Attributes

The following provides a summary of the existing buildings and features located on the subject lands which have been identified as heritage attributes. These features of these buildings are described in detail in Section 4.0 of this report.

215 Queen Street West

- East-1;
- East-2;
- East-3 (a, b, c);
- East-4 (a, b);
- West-1;
- West-2;
- West-3;
- West-4;
- West-5;
- West-6;
- West-7;
- West-8; and
- Tower.

211 Queen Street West

- Workers Housing -1;
- Workers Housing – 2; and
- Walkway.
5.4 CULTURAL HERITAGE LANDSCAPE EVALUATION

5.4.1 Introduction to CHL Evaluation

A cultural heritage landscape (CHL) is defined by Provincial Policy Statement 2020 (Section 6.0) as follows:

**Cultural heritage landscape:** means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the Ontario Heritage Act, or have been included on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms.

The Ontario Heritage Toolkit identifies that a cultural heritage landscape (CHL) may be classified as either designed (purposely planned), evolved (grown over a period of time), static/relict (evolutionary process has ended), or dynamic (continuing to evolve). Section 4.1 of the Parks Canada Standards and Guidelines also provides guidance on the identification of cultural landscapes. Here, the Standards and Guidelines identify that a cultural landscape can demonstrate certain processes or features including evidence of land use, evidence of traditional practices, land patterns, spatial organization, visual relationships, circulation, ecological features, vegetation, landforms, water features, as well as built features. PPS 2020 identifies that the significance of a cultural heritage resource is identified through the evaluation criteria provided under Ontario Regulation 9/06.
The subject lands meet the technical criteria as a cultural heritage landscape as a) they have been modified by human activity, and b) has been designated under the Ontario Heritage Act and recognized as a National Historic Site and is thereby identified as being valued by the community. The evaluation of the subject lands below has demonstrated that the property has important design/physical, historical/associative and contextual values. The property includes the remnant features of a mill complex which was used for at least 170 consecutive years. While the mill is considered a representative example of a mill complex, it was at one point in time cited as being one of the largest woollen mills in Canada.

The subject lands have been extensively altered over time. Alterations include the removal of the majority of built features in the later half of the 20th century due to either planned demolition or fire. This includes the removal of mill buildings and any dis-continued components related to harnessing water-power and mill infrastructure. Several mill workers’ housing at 211 Queen Street West have also been removed. The subject lands have been severed from the lands located to the north, east, and west and no longer includes the railway lines or the mill pond and dam. However, these features remain visible from the subject lands due to their size and proximity. The site has changed over time and is considered a designed and evolved cultural heritage landscape. The mill was designed to have a functional link with its surroundings and natural features. While this functional link is no longer operational, the existing mill buildings, the Speed River and the railway remain in their original locations in-situ. The remaining features located on the subject lands and are important in interpreting its history.

5.5 SUMMARY OF CHVI

The following chart provides a summary of the cultural heritage value or interest for the subject lands:

<table>
<thead>
<tr>
<th><strong>Ontario Regulation 9/06</strong></th>
<th><strong>211-215 Queen Street West</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Design/Physical Value</strong></td>
<td><strong>Yes. The subject lands include the remnant features of a mill complex which is representative of the type of large-scale textile mills constructed in southern Ontario in the mid. 19th century.</strong></td>
</tr>
</tbody>
</table>

Rare, unique, representative or early example of a style, type, expression, material or construction method
| Displays high degree of craftsmanship or artistic merit | No. No features of the mill display a high degree of craftsmanship or artistic merit. Instead, the construction techniques are considered typical of their period of construction and purpose. |
| Demonstrates high degree of technical or scientific achievement | No. The remaining built features located on the subject lands do not demonstrate a high degree of technical or scientific achievement. Instead, it includes features of the building which are considered typical of their period of construction and purpose. |

### 2. Historical/Associative value

| Direct associations with a theme, event, belief, person, activity, organization, institution that is significant | Yes. The subject lands are associated with the theme of the industrial development in Hespeler from the early to mid. 19th century to present and activities associated with its milling/textile industries. The existing mill buildings are directly associated with the various owners of the property over time, whose activities had important impacts on the community related to its employment and industrial base. Past owners, such as George Duthie Forbes have been inducted to the City of Cambridge Hall of Fame. |
| Yields, or has potential to yield information that contributes to an understanding of a community or culture | Yes. The overall history of the mill may yield further information which would contribute to the understanding of the local community. |
| Demonstrates or reflects the work or ideas of an architect, artist, builder, designer, or theorist who is significant to the community. | Yes. The earlier portions of the mill (including the tower and “West-1”) were constructed by Lewis Kribs who was inducted to the City of Cambridge Hall of Fame for his work in Cambridge. It is possible that the other buildings existing on the site may have been constructed under the direction of Lewis Kribs as well. This should be confirmed if the information becomes available in the future in order to supplement the historic record. |

### 3. Contextual Value

| Important in defining, maintaining or supporting the character of an area | Yes. The existing built features of the site are important in defining and maintaining the context of the subject lands, north of Queen Street West, south of the Speed River. |
| Physically, functionally, visually, or historically linked to its surroundings | Yes. The functional link between the mill buildings and the Speed River is no longer operational. However, the existing mill buildings remain in their original locations and the Speed River remains visible from the subject lands. The physical link between the mill and the river was maintained in the 19th and in the majority of the 20th century through mill infrastructure. These Built features (i.e. the physical links) which formerly connected the |
The existing mill buildings are easily recognizable as a point of reference. The recognition of the property as a landmark is also established by its designation under the Ontario Heritage Act and was identified as a National Historic Site.

<table>
<thead>
<tr>
<th>Is a landmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>The river and vegetated river corridor remains visible from the subject lands and now serves as a backdrop valued for its scenic beauty.</td>
</tr>
</tbody>
</table>
6.0 DESCRIPTION OF PROPOSED DEVELOPMENT

6.1 INTRODUCTION TO THE DEVELOPMENT CONCEPT

The proposed development includes the retention and adaptive re-use of all existing mill buildings located on the subject lands. This includes the features of the mill factory as well as the mill workers’ housing. The development proposal is separated into two phases. The first phase includes the adaptive re-use of the existing textile mill buildings and mill workers’ housing (also referred to as the “cottages”).

The site will be accessed from the existing access point at Queen Street West, at the intersection of Winston Boulevard. A total of 281 parking spaces are proposed for both residential and commercial uses. A small dock for watercrafts/boats is proposed along the Speed River, north of a trail which is proposed to traverse the site. Walking trails and pedestrian circulation is provided throughout the site.

The second phase is related to the construction of two new residential buildings on the vacant eastern portion of the subject lands at 211 Queen Street West. The new residential building located north of the workers cottages is noted on the concept plan as having a maximum height of 4 storeys with 20 residential units. The proposed new 8 storey building located east of the workers cottages is a maximum of 8 storeys and 110 residential units.

The proposed development requires an Official Plan Amendment and a Zoning By-law Amendment.

A copy of the Concept Plan and Site Plan are provided in Appendix B of this report.
6.2 SITE PLAN: PHASE 1

The adaptive re-use of the existing mill buildings at 215 Queen Street West proposes approximately 140 residential units and commercial uses. This includes approximately 1,250 square metres of retail space, 15,000 square metres of office space, and 530 square metres of amenity space. The first phase includes the re-development of the site to include required parking, amenity areas and associated landscape features. The mill workers’ housing structures are proposed to be adaptively re-used as commercial or amenity space.
6.3 ADAPTIVE RE-USE OF EXISTING HERITAGE BUILDINGS

The following sub-sections provide a summary of the alterations proposed to the exterior of the buildings located on the subject lands.

6.3.1 215 Queen Street West (East Half)

All buildings and features part of the mill factory building described in this report as East-1, East-2, East-3, and East-4 will be retained and incorporated into the proposed development. No portions of the west half of the mill building are proposed for demolition. Minimal alterations are proposed in order to re-instate the original window openings. Some of the existing window openings will be altered as doors in order to avoid adding entirely new openings to the building, which avoids the removal of original heritage fabric. All star-shaped tie rod ends, brick voussoirs, and brick parapets at the ends of the buildings will be retained and conserved.

Figure 80 – Site Plan of the Proposed Development noting buildings associated with Phase 1 of development (i.e. existing buildings) in red, and proposed new buildings part of Phase 2 in blue. (Source: MHBC, 2020)
The tower will be retained and incorporated into the proposed development. The south elevation along this portion of the building will be excavated to expose basement window openings and utilize them as walk-outs for residential units. This will include the conversion of some existing basement windows as doors, and enlarge the remaining windows.

Figures 81 & 82 – (top) Photographs of the south elevation of East-1, East-2, East-3 and East-4. (bottom) Proposed South Elevation (East half) (Source: MHBC, 2020; EDGE Architects Ltd., 2020)
6.3.2 211 Queen Street West

**211 Queen Street West (Workers Housing)**

The proposed Concept Plan includes the retention of the workers housing buildings located at 211 Queen Street West, described in this report as WH-1 and WH-2 (See Figure 97 below). These buildings have been altered and incorporated into the existing addition. These alterations have resulted in the removal of the portions of the north and east elevations of WH-1 and the removal of portions of the west, north and east elevations of WH-2. The proposed development includes the retention of all original portions of these buildings. The portions of the buildings which have been removed will be filled-in with contemporary materials.

**Figure 97** – Proposed Concept Plan noting the location of the “cottages” in red (described in this report as WH-1 and WH-2, (Source: EDGE Architects Ltd., 2020)
211 Queen Street West (Walkway)

The proposed development includes the removal of the existing walkway located south of the workers housing structures. The walkway is proposed for removal in order to accommodate the surface parking (See Figures 98 & 99).

Figures 98 & 99 – (top) Aerial photo noting location of existing workers housing structures in relation to the walkway, (bottom) Proposed Concept Plan noting the location of the walkway in blue, (Source: MHBC 2020; EDGE Architects Ltd., 2020)
New Residential Buildings (Part of Phase 2)

The concept of the proposed development includes the construction of two new residential buildings at 211 Queen Street West. This includes a 4 storey residential building north of the workers housing structures as well as an 8 storey residential building east of the existing workers housing structures.
7.0 IMPACT ANALYSIS

7.1 INTRODUCTION

The following sub-sections of this report provide an analysis of impacts on identified cultural heritage resources located on the subject lands. The impact analysis is guided by the policies of the City of Cambridge Official Plan, the Parks Canada Standards & Guidelines for the Conservation of Historic Places in Canada (2010), and the Ontario Heritage Toolkit.

7.2 POTENTIAL SOURCES OF IMPACTS (ONTARIO HERITAGE TOOLKIT)

There are three classifications of impacts a proposed development may have on an identified cultural heritage resource: beneficial, neutral or adverse. Beneficial effects may include such actions as retaining a property of cultural heritage value, protecting it from loss or removal, maintaining restoring or repairing heritage attributes, or making sympathetic additions or alterations that allow for a continued long-term use and retain heritage building fabric. Neutral effects have neither a markedly positive or negative impact on a cultural heritage resource. Adverse effects may include the loss or removal of a cultural heritage resource, unsympathetic alterations or additions that remove or obstruct heritage attributes, the isolation of a cultural heritage resource from its setting or context, or the addition of other elements that are unsympathetic to the character or heritage attributes of a cultural heritage resource. Adverse effects may require strategies to mitigate their impact on cultural heritage resources.

The impacts of a proposed development or change to a cultural heritage resource may be direct or indirect. They may occur over a short term or long term duration, and may occur during a pre-construction phase, construction phase or post-construction phase. Impacts to a cultural heritage resource may also be site specific or widespread, and may have low, moderate or high levels of physical impact.
The following sub-sections of this report provide an analysis of the impacts which may occur as a result of the proposed development.

- **Destruction:** of any, or part of any significant heritage attributes or features;
- **Alteration:** that is not sympathetic, or is incompatible, with the historic fabric and appearance;
- **Shadows:** created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden;
- **Isolation:** of a heritage attribute from its surrounding environment, context or a significant relationship;
- **Direct or Indirect Obstruction:** of significant views or vistas within, from, or of built and natural features;
- **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.

### 7.3 IMPACT ANALYSIS: 215 QUEEN STREET WEST

The proposed development includes the retention and conservation of all existing buildings located at 215 Queen Street West. No portions of the mill factory building are proposed for demolition. This includes all component parts of the east and west halves of the mill factory. The buildings will be rehabilitated and adaptively re-used for mixed use. This will require that the various portions of the buildings be repaired and altered to accommodate the proposed new use. This constitutes a beneficial impact as the buildings will be conserved over the long-term.

Impacts ranging from negligible to minor are anticipated as a result of the proposed alterations. This includes the removal of original wood windows to facilitate the installation of contemporary windows while respecting original window openings. The proposed development includes the installation of new window and door openings by altering existing window and door openings. For example, the south elevation of West-2 and West-3 includes the alteration of basement windows so that they may be utilized as walk-outs for residential units. This alteration is considered a minor adverse impact as it facilitates adaptive re-use while avoiding the need of creating any completely new openings in the building. The addition of the canopy at the south elevation of the building is considered a negligible impact as it will not obstruct views of any features of the building and can be installed with minimal alterations to the masonry.
Repairs to the masonry throughout the mill factory are required, and is considered a beneficial impact. However, there is potential for adverse impacts if repairs are not completed properly. This potential adverse impact requires mitigation recommendations and will be addressed in a forthcoming Conservation Plan.

No shadow impacts are anticipated as a result of the proposed development. No new additions or elements will be added to the mill factory portion of the site which would create any new shadows. Shadows of the existing buildings will continue to be cast to the north, north-east, and north-west.

The proposed development will not result in the isolation or obstruction of any features on-site as all buildings are proposed to be retained and incorporated into the proposed development. The existing features of both the mill factory and the workers housing will remain in-situ and will be visible along Queen Street West.

The proposed change in land use will facilitate the adaptive re-use of the existing buildings and will not result in adverse impacts. There is potential for vibration impacts as a result of construction activities and grading. Mitigation recommendations are provided in Section 8.0 of this report.

7.4 IMPACT ANALYSIS: 211 QUEEN STREET WEST

7.4.1 Phase 1 (Rehabilitation of Workers Housing Structures)

The proposed development includes the retention and adaptive re-use of the workers housing structures at 211 Queen Street West, described in this report as WH-1 and WH-2 as part of Phase 1 of the Concept Plan. The contemporary addition adjoined to these buildings is not of cultural heritage value or interest and is proposed to be removed.

The retention and adaptive re-use of the workers housing structures is considered a beneficial impact as it will facilitate its continued use and conservation. The removal of the addition is considered a neutral impact. However, the removal of the contemporary addition will require the construction of new structural components where they have already been removed. The original portions of the buildings will be retained and integrated with the necessary new components. The remaining original window and door openings will be retained. The concept of these alterations are be supported provided that the work is accompanied by a Conservation Plan.

No shadow impacts are anticipated as a result of the proposed development. Shadows of the existing buildings will continue to be cast to the north, north-east, and north-west.
The proposed development includes the retention and integration of the existing mill workers structures in-situ. The heritage features of these buildings will not be isolated or obstructed. The buildings will maintain their spatial relationship with the factory buildings and will continue to be visible along Queen Street West.

The proposed change in land use will facilitate the adaptive re-use of the existing buildings and will not result in adverse impacts. There is potential for vibration impacts as a result of construction activities and grading. Mitigation recommendations are provided in Section 8.0 of this report.

The proposed development includes the removal of the existing walkway located south of the workers housing structures. The removal of the walkway is considered a minimal adverse impact as it is not of significant design/physical value. The walkway is considered a built feature which interprets the discontinued relationship between the factory and the mill workers housing. The removal of the walkway can be mitigated through documentation and interpretation.

7.4.2 Phase 2 (Proposed New Residential Buildings)

The new residential buildings are proposed to be constructed north and east of the workers’ housing structures, south of the Speed River. The design of the new buildings will be contemporary, and use materials and construction techniques which are a product of their own time. The construction of new residential buildings is not in conflict with the policies of the City of Cambridge Official Plan or the guidelines provided in the Parks Canada Standards & Guidelines. The construction of the proposed new buildings will not result in the demolition or alteration of any heritage features located on the subject lands. They will not result in isolating the factory building or mill workers’ housing from each other or the Speed River. The proposed location of the new residential buildings will not result in the obstruction of views of the heritage buildings from Queen Street West.

7.5 IMPACT ANALYSIS: SPEED RIVER

This report acknowledges that the proposed development is located along the Speed River, which is recognized as a Canadian Heritage River. While the subject lands are not located directly adjacent to the river, they are located within close proximity of each other. The history of the site is linked to the Speed River. The historical and visual relationship between the site and the Speed River will be maintained. The retention and adaptive re-use of the mill buildings will continue to support the recognition of the Grand River as a Canadian Heritage River.
7.6 CONFORMITY WITH OFFICIAL PLAN POLICY

The following summarizes how the proposed development conforms to the policies of the Region of Waterloo Official Plan and the City of Cambridge Official Plan which are applicable to this Heritage Impact Assessment.

7.6.1 Conformity with Region of Waterloo Official Plan Policy

Chapter 3 of the Region of Waterloo Official Plan identifies that cultural heritage resources provides a sense of place and community and personal identity. The Region provides policies related to the identification of heritage resources, Cultural Heritage Landscapes, Heritage Impact Assessments, and conservation.

**Identification of Cultural Heritage Resources**

3.G.1 The Region and Area Municipalities will ensure that cultural heritage resources are conserved using the provisions of the Heritage Act, the Planning Act, the Environmental Assessment Act, the Cemeteries Act and the Municipal Act.

The proposed development conforms to the above-noted policy as all cultural heritage resources located on-site will be retained and the planning process has been completed with regard to the Part IV designation of the subject lands under the Ontario Heritage Act.

**Cultural Heritage Impact Assessments**

3.G.13 Area Municipalities will establish policies in their official plans to require the submission of a Cultural Heritage Impact Assessment in support of a proposed development that includes or is adjacent to a designated property, or includes a non-designated resource of cultural heritage value or interest listed on the Municipal Heritage Register.

This Heritage Impact Assessment has regard for the above-noted Policy as well as the Terms of Reference provided by the City of Cambridge.

3.G.17 Cultural Heritage Impact Assessment will include, but not be limited to the following:
(a) historical research, site analysis and evaluation;
(b) identification of the significance and heritage attributes of the cultural heritage resource;
(c) description of the proposed development or site alteration;
(d) assessment of development or site alteration impacts;
(e) consideration of alternatives, mitigation and conservation methods;
(f) schedule and reporting structure for implementation and monitoring; and
(g) a summary statement and conservation recommendations.

The proposed development is in conformity with this policy as this report includes all information as noted above.

3.G.18 Where a Cultural Heritage Impact Assessment required in this Plan relates to a cultural heritage resource of Regional interest, the conservation recommendations will, wherever feasible, aim to conserve cultural heritage resources intact by:

(a) recognizing and incorporating heritage resources and their surrounding context into the proposed development in a manner that does not compromise or destroy the heritage resource;
(b) protecting and stabilizing built heritage resources that may be underutilized, derelict, or vacant; and
(c) designing development to be physically and visually compatible with, and distinguishable from, the heritage resource.

The Region of Waterloo has not identified whether or not the subject lands are considered a cultural heritage resource of Regional interest. Regardless, the proposed development is compatible with the context of the site and the relationship of the existing buildings to the Speed River. The buildings will remain in-situ and this contextual relationship will be maintained.

3.G.19 Where it is not feasible to conserve a cultural heritage resource intact in accordance with Policy 3.G.18, the conservation recommendations will:
(a) promote the reuse or adaptive reuse of the resource, building, or building elements to preserve the resource and the handiwork of past artisans; and
(b) require the owner/applicant to provide measured drawings, a land use history, photographs and other available documentation of the cultural heritage resource in its surrounding context.

The proposed development conforms to this policy as it includes the retention and rehabilitation of all existing buildings and attributes located on the proposed development while facilitating adaptive re-use. A photographic documentation of the site is recommended in the mitigation recommendations as per Section 8.0 of this report.
**Conservation, Promotion and Research**

3.G.22 The Region supports the national recognition given to the Grand River as a Canadian Heritage River, including its major tributaries, the Nith River, Speed River and Conestogo River, and will continue to promote appropriate initiatives to maintain, enhance, manage and conserve natural, cultural, recreational, scenic and ecological features.

This Heritage Impact Assessment acknowledges the status of the Speed River as a cultural heritage resource. Any interpretation of the site should acknowledge the functional relationship between the mill factory and the Speed River for harnessing water power in the 19th century.

7.6.2 Conformity with City of Cambridge Official Plan Policy

The City of Cambridge Official Plan provides policies related to the management of cultural heritage resources. The following provides a summary of how the proposed development conforms to policies which are related to the scope of this HIA.

**4.2 Priorities for Cultural Heritage Resources**

1. When development is proposed, the City will encourage the conservation of cultural heritage resources in the following order of preference:

   a) Incorporation of cultural heritage resources and their surrounding context into development applications in a manner which does not conflict with the cultural heritage resource;

   b) Promotion of the use of scale and design which blends harmoniously with existing cultural heritage resources when development occurs; and

   c) Preservation and adaptive re-use of buildings of cultural heritage significance for compatible residential intensification and/or for other appropriate and compatible uses is encouraged.

The proposed development meets this policy as it utilizes the primary treatment of cultural heritage resources by incorporating them into the surrounding context and does not result in significant adverse impacts.

3. Cultural heritage resources will be preserved and enhanced, wherever possible. For these purposes, Council may:

   a) assess the probable impact of proposed road improvements and other public works projects on any abutting cultural heritage resource which is included in the Register of
Cultural Heritage Resources described in Policy 4.3.1 and provide in the design of such projects for the mitigation of any negative impact;
b) require the integration of cultural heritage resources into the design of draft plans of subdivision and other development;
c) require the Committee of Adjustment to consider the implications of its decisions on cultural heritage resources and where feasible, provide for their protection;
d) provide for any cultural heritage resource located within the public areas as established by this Plan to be restored, rehabilitated, used and maintained for any purpose compatible with the existing or proposed function of such public areas in a manner that is consistent with other policies in this Plan;
e) pass by-laws under the Ontario Heritage Act to establish and regulate Heritage Conservation Districts designated in accordance with Section 4.7 of this Plan;
f) undertake studies and formulate and implement heritage plans and programs, including consultation and cooperation with other local, Regional, Provincial and national heritage conservation agencies and organizations;
g) promote public awareness of the Heritage Master Plan through a communication strategy directed by the Heritage Master Plan Implementation Committee; and
h) promote public awareness of the City’s cultural heritage resources included in the Register by conducting programs, publishing information or otherwise stimulating interest in such cultural heritage resources.

The proposed development meets this policy as cultural heritage resources are integrated into the plan for redevelopment and will be restored and rehabilitated. This plan for re-development is proposed to be informed by a Heritage Impact Assessment and Conservation Plan. This Heritage Impact Assessment and Conservation Plan will include recommendations regarding interpretation which will stimulate interest in the site.

4.4 Cultural Heritage Value Evaluation Criteria

1. The City will determine that the following shall be used in determining the significance of cultural heritage resources included or proposed to be included in the City’s Register described in Section 4.3 of this Plan:

a) A property shall be considered to have cultural heritage value or interest if the property has been designated by the Province to be of architectural or historical significance pursuant to the Ontario Heritage Act or, in the opinion of the City, satisfies at least two of the following criteria:

i) it dates from an early period in the development of the city’s communities;
ii) it is a representative example of the work of an outstanding local, national or international architect, engineer, builder, designer, landscape architect, interior designer, sculptor, or other artisan and is well preserved or may be rehabilitated;

iii) it is associated with a person who is recognized as having made an important contribution to the city’s social, cultural, political, economic, technological or physical development or as having materially influenced the course of local, regional, provincial, national or international history;

iv) it is directly associated with an historic event which is recognized as having local, regional, provincial, national or international importance;

v) it is a representative example and illustration of the city’s social, cultural, political, economic or technological development history;

vi) it is a representative example of a method of construction now rarely used;

vii) it is a representative example of its architectural style or period of building;

viii) it is a representative example of architectural design;

ix) it terminates a view or otherwise makes an important contribution to the urban composition or streetscape of which it forms a part;

x) it is generally recognized as an important landmark;

xi) it is a representative example of outstanding interior design; or xii) it is an example of a rare or otherwise important feature of good urban design or streetscaping.

The subject lands are designated under Part IV of the Ontario Heritage Act. This By-law, in part, establishes the CHVI of the subject lands. However, the by-law pre-dates the amendments to the Ontario Heritage Act which occurred in 2005 and does not provide information as it relates to the above-noted policies. The cultural heritage evaluation of the subject lands provided in Section 5.0 of this report has been drafted with regard for these criteria and therefore conforms to this policy.

4.10 Cultural Heritage Impact Assessment

1. A Cultural Heritage Impact Assessment shall be required for a development proposal or Community Plan that includes or is adjacent to a designated property or cultural heritage landscape, or that includes a non-designated resource of cultural heritage value or interest listed on the Municipal Heritage Register. The potential impacts could be direct, such as demolishing or altering a structure on a designated property, or indirect
such as changes to the streetscape of lands adjacent to a cultural heritage resource. A Cultural Heritage Impact Assessment may include the following elements:

a) identification and evaluation of the cultural heritage resource;
b) graphic and written inventory of the cultural heritage resource;
c) assessment of the proposal’s impact on the cultural heritage resource;
d) means to mitigate impacts, in accordance with the cultural heritage resources priorities established in Policy 4.2.1 of this Plan;
e) alternatives to the proposal; and
f) identification of and justification for the preferred option.

This HIA addresses all above-noted components and conforms to this policy.

3. A Cultural Heritage Impact Assessment shall be undertaken by a professional who is qualified to evaluate the cultural heritage resource under review.

This HIA has been completed by qualified cultural heritage professionals who are members of the Canadian Association of Heritage Professionals and conforms to this policy.

7. A Cultural Heritage Impact Assessment will be conducted in accordance to Council approved guidelines.

This HIA has been completed by qualified cultural heritage professionals who are members of the Canadian Association of Heritage Professionals and conforms to this policy.

8. Where a Cultural Heritage Impact Assessment relates to a cultural heritage resource of Regional interest, the City will ensure a copy of the assessment is circulated to the Region for review. In this situation, the Cultural Heritage Impact Assessment submitted by the owner/applicant will be completed to the satisfaction of both the City and the Region.

The Region of Waterloo has not identified whether or not the subject lands is considered a cultural heritage resource of Regional Interest. Regardless, this HIA has been drafted with regard for both municipal and regional policy.

The subject lands are located in a “Regeneration Area” as per Map 6 of the City of Cambridge Official Plan. Section 2.7 of the Official Plan provides the following policies for regeneration areas,

2.7 Employment Lands

2.7.3 Regeneration Areas
1. Regeneration Areas are areas within the city where a transition of use from one use, such as industrial to another use is anticipated during the planning horizon of this Plan. Regeneration Areas are identified on Maps 1A and 6.

2.8 Residential Densities

2.8.3 Residential Densities 1. The City will allow compatible higher density residential development in the Urban Growth Centre, Community Core Areas, Nodes, Regeneration Areas, Reurbanization Corridors, Major Transit Station Areas and high density residential designations to support and ensure viability of existing and planned transit service levels.

2. The City encourages compatible higher density development on sites where such development will result in the preservation of significant natural or cultural heritage resources.

The proposed development meets the above-noted policies as it intends to utilize an area identified by the Official Plan for regeneration while conserving cultural heritage resources. Table 2 of Section 2.8.3 of the Official Plan identifies that the maximum height of residential densities is 8 storeys. The proposed development includes a new 4 storey and a new 8 storey residential building which are therefore below the permitted height requirements.
### 7.7 SUMMARY OF IMPACT ANALYSIS

Phase 1 and Phase 2 of the proposed development are anticipated to result in a range of impacts from beneficial, negligible and minor. The following provides a summary of these impacts:

<table>
<thead>
<tr>
<th>Potential Impacts:</th>
<th>211-215 Queen Street West (Phase 1 and Phase 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Destruction</strong></td>
<td>Minor adverse impacts. No buildings of cultural heritage value are proposed for demolition. However, the proposed development includes the removal of the existing walkway south of the workers’ housing structures.</td>
</tr>
<tr>
<td><strong>Alteration</strong></td>
<td>Yes. Negligible to minimal adverse impacts are anticipated. Alterations should be advised by way of a Conservation Plan.</td>
</tr>
<tr>
<td><strong>Shadows</strong></td>
<td>No.</td>
</tr>
<tr>
<td><strong>Isolation</strong></td>
<td>No.</td>
</tr>
<tr>
<td><strong>Obstruction</strong></td>
<td>No.</td>
</tr>
<tr>
<td><strong>Change in Land Use</strong></td>
<td>No.</td>
</tr>
<tr>
<td><strong>Land Disturbances</strong></td>
<td>There is potential for vibration impacts as a result of grading and construction activities. Mitigation may be required.</td>
</tr>
</tbody>
</table>
8.0 ALTERNATIVES, MITIGATION & CONSERVATION RECOMMENDATIONS

8.1 INTRODUCTION

Section 6.0 of this report has identified that the concept of the proposed redevelopment of the subject lands includes the incorporation of all existing buildings into the proposed development to support adaptive re-use and rehabilitation.

While the concept of the development is supported as it retains the existing building and enables conservation over the long term and results in beneficial impacts, mitigation recommendations are required in order to minimize potential adverse impacts identified in Section 7.0 of this report.

8.2 ALTERNATIVE DEVELOPMENT OPTIONS

The following sub-sections of this report provide recommendations regarding alternative development approaches as it relates to the proposed development. Various options for the proposed development were considered through the planning process.

8.2.1 ‘Do Nothing’ Alternative

The ‘do nothing’ alternative would result in no redevelopment of the subject lands. This alternative would also result in no opportunity for repairs and rehabilitation resulting from the proposed redevelopment. Rehabilitation is identified by the Parks Canada Standards & Guidelines as a form of conservation, and is considered a beneficial impact. A ‘do nothing’ approach would result in the inability to redevelop the site to meet the changing needs of the community and may result in the potential deterioration of cultural heritage resources located on-site if they cannot be considered candidates for adaptive re-use. It is important to note that the subject lands are located in a...
“Regeneration Area” as per Map 6 of the City of Cambridge Official Plan. **This option is not recommended.**

8.2.2 Develop the Site without Retaining Cultural Heritage Resources

The alternative to redevelop the site in its entirety would result in the demolition of all structures located on the subject lands. The demolition of significant cultural heritage resources is considered an adverse impact. This alternative would result in the permanent loss of a former industrial complex that played a significant role in the development of Hespeler. This option is not recommended.

8.2.3 Develop the Site with an Alternative Design Concept

The site could be developed with an alternative concept that does not result in the minor changes to windows, doors and other building components. The retention and preservation of all features of the building at the interior and exterior (in a museum-like setting, for example) would result in less adverse impacts to heritage resources, but would make adaptive re-use of the existing buildings more difficult. The inability to adaptively re-use the site makes the conservation of the site over the long-term less feasible. Given that the proposed alterations are considered minor and a Conservation Plan is recommended in order to further ensure that potential impacts are minimized to heritage fabric, this option is not recommended.

8.2.4 Develop the Site as Proposed

The redevelopment of the site as proposed results in a few relatively minor impacts to heritage resources located on the subject lands. The proposed redevelopment would also result in the conservation of the heritage attributes of the long-term, which is a beneficial impact. The proposed development does not include the demolition of any existing buildings of cultural heritage value or interest. Alterations to these buildings to facilitate adaptive re-use can be mitigated. This option is in conformity with the Region of Waterloo Official Plan and the City of Cambridge Official Plan regarding the management of cultural heritage resources. The adaptive re-use of the site is considered conservation under the form of rehabilitation under the Parks Canada Standards & Guidelines for the Conservation of Historic places in Canada.
8.3 MITIGATION RECOMMENDATIONS

Phase 1:

- The details of alterations to the existing buildings in Phase 1 of the proposed development should be advised through a Conservation Plan at the Site Plan Approval phase or prior to Building Permit to assess the proposed alterations in context of the cultural heritage attributes;
- The existing building should be documented with photographs to supplement the historic record, as may be required, when there is a full understanding of the alterations that are proposed. This will occur prior to Building Permit.
- That the future Site Plan and Landscape Plans include consideration for commemoration of the history and cultural heritage value of the site, as described in the Urban Design Brief that has been prepared for the subject lands. The commemoration will provide information on how the history and cultural heritage value of the site can be interpreted, including historical plaques, and/or landscape features;
- Designation By-law No. 353-87 should be amended following the completion of Phases 1 and 2 of the proposed development in order to:
  - Conform to the Ontario Heritage Act;
  - Provide a revised description of the site;
  - Provide a revised summary of cultural heritage value or interest; and
  - Provide a revised list of heritage attributes.
- There is potential for vibration impacts due to grading and construction. A temporary protection plan may be required to inform recommendations of the Conservation Plan at the time of Site Plan Approval, depending on the nature of construction activities in proximity to the existing buildings.

Phase 2:

- No mitigation measures are recommended with the development of the proposed new buildings (Phase 2).
9.0 CONCLUSIONS & RECOMMENDATIONS

The proposed development of the subject lands includes the retention and conservation of all existing buildings of cultural heritage value or interest in the form of rehabilitation in order to facilitate adaptive re-use. Rehabilitation is recognized as a form of conservation in the Parks Canada Standards & Guidelines for the Conservation of Historic Places in Canada. The concept of the proposed development is supported as it intends to retain the heritage attributes identified in this report and conserve them over the long-term.

A range of impacts were identified as a result of the proposed development, from beneficial to minor. Beneficial impacts are related to repairs to the building through the proposed development and the amendment of the existing designation By-law after the development is completed in order to bring it into conformity with the Ontario Heritage Act. Negligible or neutral adverse impacts include those related to the minor alterations to allow for the adaptive re-use of the building. These alterations will not diminish the character of the building, provided that repairs and alterations are carried-out appropriately. A Conservation Plan is recommended. No major adverse impacts are anticipated as a result of the proposed development.

Respectfully submitted,

[Signatures]

Dan Currie, MA, MCIP, RPP, CAHP
Partner

Vanessa Hicks, MA, CAHP
Senior Heritage Planner
10.0 WORKS CONSULTED


Historic Sites and Monuments Board of Canada, Excerpt from the Minutes of June 1989. (Courtesy of the Parks Canada Documentation Centre)


Leung, Felicity L. Catalogue of Significant Extant Textile Mills Built in Canada Before 1940, 1986. (Courtesy of the Parks Canada Documentation Centre)


Panabaker, John. The History of the Woollen Mill in Hespeler now known as “The Dominion Woollens and Worsted Limited”, 1945. (courtesy of the Kitchener Public Library)


Masterman, Chris. “Woollen Mill Held Town Together”. The Waterloo Record. Date unknown.

Swayze, Kevin. “Demolition a ‘catastrophe’”. Publication name and date unknown.


University of Waterloo Library. Special Collections & Archives, R. Forbes & Co. Ltd. film (16mm, R_Forbes_and_Co_Ltd_Film_H264.), date unknown. (courtesy of the University of Waterloo, accessed online, 2020 at https://digital.library.uwaterloo.ca/uwdl-c1aaca3c-7836-4361-b4a2-ab65e30067cf/r-forbes-co-ltd-film)


APPENDIX A – LOCATION MAP
Figure 1
Location Plan

LEGEND

Subject Lands

215 Queen St W
City of Cambridge
Region of Waterloo
APPENDIX B – CONCEPT PLAN & ELEVATIONS
APPENDIX C  – DESIGNATION BY-LAW NO. 353-87
This document was retrieved from the Ontario Heritage Act e-Register, which is accessible through the website of the Ontario Heritage Trust at www.heritagetrust.on.ca.

Ce document est tiré du registre électronique. tenu aux fins de la Loi sur le patrimoine de l’Ontario, accessible à partir du site Web de la Fiducie du patrimoine ontarien sur www.heritagetrust.on.ca.
December 7, 1987
File: AC-65

Ministry of Citizenship and Culture,
Heritage Branch,
77 Bloor St. W.,
Toronto, Ont.
M7A 2R9

Attention: Louise Chipper

Dear Louise:

Please be advised that the City of Cambridge enacted By-law 353-87 on November 23, 1987 designating 215 Queen Street West under the Ontario Heritage Act.

Yours truly,

Gary Sosnoski,
LACAO Co-ordinator/
Clerk's Assistant

GS:mc
Encls.
BY-LAW NO. 353-87

OF THE

CORPORATION OF THE CITY OF CAMBRIDGE

Being a By-law of the City of Cambridge to designate the exterior (excluding window sash) of 215 Queen Street West, Cambridge, Ontario (Silknit - Lower Mill Complex) as a property of historic and architectural significance.

WHEREAS the Ontario Heritage Act, R.S.O., 1980, c. 337 authorizes the Council of a municipality to enact by-laws to designate real property including all buildings and structures thereof, to be of architectural value of interest;

AND WHEREAS Notice of Intention to so designate 215 Queen Street West, Cambridge, Ontario, have been duly published and served;

AND WHEREAS it is considered desirable to designate the property known as 215 Queen Street West, Cambridge, Ontario;

NOW THEREFORE, THE MUNICIPAL COUNCIL OF THE CORPORATION OF THE CITY OF CAMBRIDGE ENACTS AS FOLLOWS:

1. THAT there is designated as being of architectural and historic significance the exterior of the original structure (excluding window sash) located on the real property, more particularly described in Schedule "A", "B" and "C" attached hereto, known as 215 Queen Street West, Cambridge, Ontario. The reasons for designation are as set out in Schedule "B" attached hereto.

2. THAT the City of Cambridge is hereby authorized to cause a copy of this by-law to be served upon the owner of the said property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Cambridge.

READ A FIRST, SECOND AND THIRD TIME

ENACTED AND PASSED, THIS 23RD DAY OF NOVEMBER, A.D., 1987

MAYOR

CLERK
SCHEDULE "A"
TO BY-LAW NO. 353-87
OF THE
CORPORATION OF THE CITY OF CAMBRIDGE

ALL AND SINGULAR that certain parcel or tract of land and premises, situate, lying and being in the City of Cambridge, in the Regional Municipality of Waterloo (formerly in the Town of Hespeler) and Province of Ontario and being composed of Lot 64, Plan 932.
SCHEDULE "B"
TO BY-LAW 353-87
OF THE
CORPORATION OF THE CITY OF CAMBRIDGE

Architectural Description

The subject buildings, referred to as the Lower Mill Complex, are comprised of the following sections outlined on the 1901 Fire Insurance Map as the "Robert Forbes Co. Ltd. Buildings" (See attached Schedule "C"). All sections are constructed of lime-stone rubblestone with the exception of the exterior staircase which is board and batten.

1. Main mill (No. 1) is constructed parallel to the Speed River and runs northeast to southwest.
2. No. 1 wing is attached to the southwest end of the No. 1 Main Mill. It is constructed perpendicular to the Speed River and runs from northwest to southeast.
3. The stone tower (circa 1900) is a five storey limestone structure attached to the southeast corner of the No. 1 Wing.
4. The enclosed exterior staircase is attached to the southeast facade of No. 1 Main Mill.

The designated features of the buildings are as follows:

1. all exterior wall materials and treatment including; roughly coursed limestone rubblestone with stuck relief joints; string courses on the tower; board and batten cladding on the stair tower; all stone quoining; wide flat relief joints on tower lintels;
2. all existing roof profiles and features including the stone cap on the tower; flared metal eaves with simple cornice lines;
3. all existing openings including associated voussoirs, keystones and lugsills;
4. all tie rod rondels.

The architectural features of the building are detailed in the Lacac Building Description dated June, 1987.

Historical Description

The site on which the Mill is located was deeded to Joseph Oberholtzer in 1833. He constructed a frame saw mill there in the 1840's. Jacob Hespeler purchased the property in 1863 and re-deeded it to George and Shubert Randall and Herbert Marshall Farr. The frame mill (then known as the Krib's Mill) was moved to Forbes Street by Lewis Kribs in 1864 to make room for the construction of a new stone mill.

The general contract for the new mill was awarded to Lewis Kribs and the masonry contract to Halle and Pabst, both of Hespeler. Shafts and running gears were supplied by Goldie and McCulloch of Galt. The mill which operated as Randall, Farr and Company was sold to Robert Forbes and Jonathan Schofield in 1874. It continued to operate as Jonathan Schofield and Co. until Schofield's retirement in 1888 when it became the Robert Forbes Co. Ltd.
SCHEDULE "B"
TO BY-LAW 353-87
OF THE
CORPORATION OF THE CITY OF CAMBRIDGE
CONTINUED

Reasons for Designation

(a) Historical Significance

(i) It dates from an early period in the development of the city's communities.

(ii) It is associated with a person who is recognized as having made a significant contribution to the city's social, cultural, political, economic, technological or physical development or as having materially influenced the course of local, regional, provincial, national, or international history.

(iii) It is a well preserved example and illustration of the city's social, cultural, political, economic or technological development history.

(b) Architectural Significance

(i) It is a well preserved, representative example of a method of construction now rarely used.

(ii) It is a good, well-preserved and representative example of its architectural style or period of building.

(iii) It terminates a view or otherwise makes an important contribution to the urban composition or streetscape of which it forms a part.
SCHEDULE "C"
BY-LAW NO. 353-87
OF THE
CORPORATION OF THE CITY OF CAMBRIDGE

THE R. FORBES CO. LIMITED BUILDINGS AS THEY APPEARED IN 1901.
THE CORPORATION OF THE CITY OF CAMBRIDGE

In the matter of the Ontario Heritage Act, R.S.O. 1980, Chapter 337, and in the matter of the lands and premises at 215 Queen Street West (Silknit - Lower Mill Complex), in the City of Cambridge, in the Regional Municipality of Waterloo, and Province of Ontario.

NOTICE OF PASSING OF BY-LAW

TAKE NOTICE that the Council of the Corporation of the City of Cambridge has passed By-law No. 353-87, to designate the following property of architectural and historic significance under Part IV of the Ontario Heritage Act, R.S.O., 1980, Chapter 337.

215 Queen Street West
(Silknit - Lower Mill Complex)

DATED at the City of Cambridge this 25th day of November, 1987.

J. Anderson
City Clerk
APPENDIX D – EXCERPT OF THE DIRECTORY OF FEDERAL HERITAGE DESIGNATIONS (FORBES TEXTILE MILL, NATIONAL HISTORIC SITE OF CANADA)
Forbes Textile Mill National Historic Site of Canada

Cambridge, Ontario

Address: 215 Queen Street West, Cambridge, Ontario

Designation Date: 1989-06-22
Dates: 1863 to 1863 (Construction)
Other Name(s): Forbes Textile Mill (Designation Name)

Description of Historic Place
For a time in the early decades of the twentieth century, it was the largest woollen and worsted mill in Canada; 1863
APPENDIX E – SHADOW STUDY
APPENDIX F – CITY OF CAMBRIDGE TERMS OF REFERENCE
DETAILED GUIDELINES
FOR THE PREPARATION OF

CULTURAL HERITAGE IMPACT ASSESSMENTS
UNDER POLICY 4.10 OF THE
CITY OF CAMBRIDGE OFFICAL PLAN
(Council adopted May 7, 2012 with Regional Approval on November 21, 2012)

Endorsed by
Cambridge Council
on May 7, 2012
Detailed Guidelines for the Preparation Of a Cultural Heritage Impact Assessment

1. INTRODUCTION

Policy 4.10.1 of the City of Cambridge Official Plan states that a “Cultural Heritage Impact Assessment shall be required when a development proposal or Community Plan potentially impacts a cultural heritage resource. The potential impacts could be direct, such as demolishing or altering a structure on a designated property, or indirect, such as changes to the streetscape of lands adjacent to a cultural heritage resource.”

The Cambridge Municipal Heritage Advisory Committee (MHAC) has the mandate to advise Council on matters relating to the preservation of the City’s cultural heritage resources. It is this Advisory Committee that will first review Heritage Impact Assessments. It is important for the proponent to advise the MHAC early on in the process because it is possible that the requirement for a Heritage Impact Assessment may be scoped or waived. A site inspection by MHAC is also the recommended component of any Heritage Impact Assessment process.

2. CULTURAL HERITAGE RESOURCES

The City of Cambridge Official Plan broadly defines cultural heritage resources. As a starting point, MHAC strongly encourages owners/developers to refer to the Heritage Properties Registry for the addresses of significant heritage properties and to consult with the Heritage Planner regarding known cultural heritage resources in the area of the proposed development. The Heritage Properties Registry is endorsed and regularly updated by Cambridge Council.

---

1 Development means the creation of a new lot, a change in land use, or the construction of a building(s) or structure(s), requiring approval under the Planning Act, but does not include activities that create or maintain infrastructure authorized under an environmental assessment process or works subject to the Drainage Act. (Planning Act, revised)

2 Community Plan is a plan which is prepared for a specific geographic area of residential designated land containing detailed policies to guide future development. (New)

3 Cultural heritage resource means physical remains which include, but are not limited to: buildings (residential, commercial, institutional, industrial and agricultural); cultural heritage landscapes (designed, organic/evolved); structures (water tower, bridge, fence and dam); monuments (cenotaph, statue, cairn); archaeological resources; cemeteries; scenic roads; vistas/views; culturally significant natural features (tree and landforms); movable objects (archival records and artifacts); and cultural traditions (language, stories, music, dance, food, celebrations, arts and crafts. (ROP, revised).
Heritage Impact Assessment Guidelines

3

The City will make available any other relevant information that it maintains, including archival records.

The MHAC is available for consultation with the owner/developer and should be accessed for its expertise. A sub-committee of MHAC has been established to work with owners/developers through the assessment process.

3. CONTENTS OF HERITAGE IMPACT ASSESSMENTS

Under the City’s Official Plan, a Cultural Heritage Impact Assessment may include the following elements to address these policies:

Policy: identification and evaluation of the built heritage resource:

Guideline: A map of the subject area to identify the location of the property and properties within 150m of the subject site. Municipal street address, legal description and current owner’s address are also required. An evaluation of the property from a cultural heritage perspective will be conducted. The property will be assessed in accordance with the Heritage Evaluation Criteria in Policy 4.4 of the Official Plan.

Policy: graphic and written inventory of the heritage resource:

Guideline: Measured architectural drawings and photographic documentation of the subject property will be provided along with a written description. The measured architectural drawings will be of all built structures on the site such as fences, statues, barns, and residences. The drawings will be accurate measurements that provide enough information so that the building could be re-created. Measured drawings will include dimensions for building footprint, height, window and door openings, and roof details. The photographs will provide a visual documentation of the site and the structures. Photographs of both the interior and exterior of structures will form part of the inventory.

Policy: assessment of the proposal’s impact on the heritage resource;

Guideline: The proposal will be described and its impact on the heritage resource assessed. Changes to the heritage resource such as additions, alterations or demolition will be described. Changes to the landscape and streetscape will be described. New construction shall be evaluated in such terms as orientation, massing, scale,
building materials/colour and fenestration. Distance from existing heritage resources, traffic patterns and grading shall be evaluated.

Policy: means to mitigate negative impacts, in accordance with the heritage resources priorities established in Policy 4.2.1 of this plan.

Guideline: The priority is to preserve and be compatible with the heritage resource and surrounding lands into the proposed development in a manner that respects the cultural heritage attributes of the subject property. Describe how the proposed new development will incorporate the existing built heritage resources into the proposal. Describe what measures are being taken to ensure the integration of the existing with the new. Mitigation may include, but is not limited to, landscaping, lighting, and signage.

The scale and design of the development should complement the heritage resource in terms of its orientation, massing, materials and scale. Signage will meet the requirements of the City of Cambridge Sign By-law for Heritage Conservation Districts and Designated Buildings. The Senior Planner - Heritage will be consulted for additional information concerning the sign application.

Policy: alternatives to the proposal

Guideline: This is the key element of the Heritage Impact Assessment because it identifies more than one alternative and explores the possibilities of the site. At least three options will be submitted and will range from a “do-nothing” approach through to a complete redevelopment of the subject property.

Policy: identification of and justification for the preferred option

The proponent will identify the preferred option and provide the rationale for seeking its approval. The preferred option cannot be based solely on the economics of the site. The preferred option may also include natural and cultural heritage issues, streetscaping considerations and revitalization opportunities.

4. QUALIFICATIONS

A professional in good standing with the Canadian Association of Heritage Professionals (CAHP) is considered qualified to evaluate the heritage resource and shall complete the Cultural Heritage Impact Assessment. A curriculum vitae must be included in the Cultural Heritage Impact Assessment.
As a starting point, the Canadian Association of Professionals Heritage Consultants is a source of qualified individuals. The website is www.caphc.ca.

The Assessment will include a listing of previously completed Heritage Impact Assessments and contact list.

5. FORMAT

- The HIA will be formatted to be printed on 8 ½” by 11” paper. The HIA will be submitted electronically to the City.
- Maps or drawings 11” by 17” will be bound into the report. Larger maps or drawings shall be inserted in a pocket inside the back cover of the report.
- The HIA will include a title page listing the name of the proponent, the owner of the subject property, address of the subject property, and list the principal author and the date the report was completed.
- The HIA will contain an executive summary following the title page.
- The HIA will include a C.V. of the principal author (s).

6. PROCESS

- Contact the Senior Planner - Heritage to discuss proposal at earliest stage possible.
- Discuss Cultural Heritage Impact Assessment including whether scoping or waiving the requirement should be considered. A Heritage Impact Assessment may be scoped or waived by either Council or MHAC.
- Retain expertise to complete the Heritage Impact Assessment.
- Submit draft to the Senior Planner - Heritage for circulation to the <HAC sub-committee.
- Review comments received from the MHAC sub-committee and revise accordingly.
- Submit final report to the Senior Planner - Heritage for circulation to the MHAC.
- The Senior Planner – Heritage will advise of the meeting date at which the Committee will review the HIA and the proponent will have an opportunity to address the Committee.
- MHAC can approve the HIA, request additional information or not support the HIA.
- The completed Heritage Impact Assessment shall first be submitted to the Cambridge MHAC and the recommendation of MHAC will be forwarded to Council for consideration with the associated development proposal.
Heritage Impact Assessment Guidelines
6

7. QUESTIONS

Should you have any questions about these guidelines please contact:

Senior Planner - Heritage

50 Dickson Street, P.O. Box 669
Cambridge, Ontario N1R 5W8
(519) 621-0740 ext. 4788
ATTACHMENTS

1. City of Cambridge Official Plan – Chapter 5: Built Heritage Resources
2. City of Cambridge Sign By-Law for Heritage Conservation Districts
APPENDIX G – CHRONOLOGY SUMMARY
Joseph Oberholtzer purchases 24 acres of land on either side of the Speed River from Christian Strome and constructed a sawmill south of the existing mill.

Randall & Farr sells to Schofield & Forbes, known as the "J. Schofield & Co. Star Woollens."

Randall & Farr tore the saw mill buildings down and constructed a woollen mill.

Forbes sells to the Dominion Woollens and Worsted Co. Ltd.

Forbes sells to Schofield & Forbes, known as the "J. Schofield & Co. Star Woollens."

Forbes buys out Schofield and becomes the R. Forbes & Co.

Forbes buys out Schofield and becomes the R. Forbes & Co.

Company came under the ownership of Silknit Ltd.

Newspaper articles reference a fire which occurred in 1995 and caused considerable damage.

Property is purchased by Blacks Point Development Inc. and proposed for re-development.

The R. Forbes Woolen Mill, Hespeler, Ont.
APPENDIX H – PHOTO MAP
**Photo Map:** 211-215 Queen Street West, Hespeler

*Figure 1:* Aerial photo of the context of the subject lands noting location of photographs taken. (Source: MHBC, 2020)
Plate 1 & 2: (left) View of south elevation of mill factory at 215 Queen Street West and mill workers housing at 211 Queen Street West, looking north, (right) View of east half of factory, looking north-west towards south and portion of east elevation. (Source: MHBC, 2020)

Plate 3 & 4: (left) View of south elevation of west half of mill building, looking north-west, (right) View of east half of mill building, looking east. (Source: MHBC, 2020)
Plate 5 & 6: (left) View of west half of mill building looking west along south elevation, (right) View of east half of mill building, looking east. (Source: MHBC, 2020)

Plate 7 & 8: (left) View of vacant lot located west of the subject lands, (right) View of west elevation of the western portion of the mill factor, looking south. (Source: MHBC, 2020)
Plate 9 & 10: (left) View of north elevation of mill building, looking south-east, (right) View of tower, looking south-west towards east and north elevations, (Source: MHBC, 2020)

Plate 11 & 12: (left) View of dam located north of the subject lands, (right) View of vacant lot located west of the subject lands, looking west, (Source: MHBC, 2020)
Plate 13 & 14: (left) View of the north elevation of the east half of the mill buildings, looking south (right) Detail view of the north elevation of “West-1”, looking south, (Source: MHBC, 2020)

Plate 15 & 16: (left) View of the north elevation of the mill factory, looking south, (right) Detail view of the Speed River and dam, looking north, (Source: MHBC, 2020)
Plate 17 & 18: (left) View of the north elevation of the west half of the factory, looking south-east, (right) View of the north elevation of West-1 and West-8, looking south-west. (Source: MHBC, 2020)

Plate 19 & 20: (left) View of the east elevation of West-8, looking south-west, (right) View of staircase located between the east and west halves of the factory, looking south towards the north elevation. (Source: MHBC, 2020)
Plate 21 & 22: (left) View of the north elevation of the east half of the factory, looking south-east, (right) View of the north elevation of the east and west halves of the factory, looking west. (Source: MHBC, 2020)

Plate 23 & 24: (left) View of the east elevation of East-1, looking south-east, (right) View of the north elevation of the office portion of the factory building, looking south. (Source: MHBC, 2020)
Plate 25 & 26 (left) View of workers housing structures and contemporary addition, looking south-east. (right) View of west elevation of office building, looking north-west. (Source: MHBC, 2020)

Plate 27 & 28 (left) View of north elevation of factory building, looking west. (right) View of south elevation of workers housing structures, looking north. (Source: MHBC, 2020)
Plate 29 & 30: (left) View of east elevation of factory and south elevation of workers housing structures, looking north-west. (right) View of walkway located east of the mill workers’ housing structures (Source: MHBC, 2020)
APPENDIX I – CURRICULUM VITAE
CURRICULUM VITAE

Dan Currie, MA, MCIP, RPP, CAHP

Dan Currie, a Partner and Managing Director of MHBC’s Cultural Heritage Division, joined MHBC Planning in 2009, after having worked in various positions in the public sector since 1997 including the Director of Policy Planning for the City of Cambridge and Senior Policy Planner for the City of Waterloo.

Dan provides a variety of planning services for public and private sector clients including a wide range of cultural heritage policy and planning work including strategic planning, heritage policy, heritage conservation district studies and plans, heritage master plans, heritage impact assessments and cultural heritage landscape studies.

PROFESSIONAL ASSOCIATIONS

Full Member, Canadian Institute of Planners
Full Member, Ontario Professional Planners Institute
Professional Member, Canadian Association of Heritage Professionals

SELECTED PROJECT EXPERIENCE

Heritage Conservation District Studies and Plans
Alton Heritage Conservation District Study, Caledon (underway)
Port Stanley Heritage Conservation District Plan (underway)
Port Credit Heritage Conservation District Plan, Mississauga
Town of Cobourg Heritage Conservation District Plan updates
Rondeau Heritage Conservation District Study & Plan, Chatham Kent,
Barriefield Heritage Conservation District Plan Update, Kingston
Victoria Square Heritage Conservation District Study, Markham
Bala Heritage Conservation District Study and Plan, Township of Muskoka Lakes
Downtown Meaford Heritage Conservation District Study and Plan
Brooklyn and College Hill Heritage Conservation District Plan, Guelph
Garden District Heritage Conservation District Study and Plan, Toronto

Heritage Master Plans and Management Plans
City of Guelph Cultural Heritage Action Plan
Town of Cobourg Heritage Master Plan
Burlington Heights Heritage Lands Management Plan
City of London Western Counties Cultural Heritage Plan

EDUCATION

2006
Masters of Arts (Planning)
University of Waterloo

1998
Bachelor of Environmental Studies
University of Waterloo

1998
Bachelor of Arts (Art History)
University of Saskatchewan

CONTACT
540 Bingemans Centre Drive,
Suite 200
Kitchener, ON N2B 3X9
T 519 576 3650 x 744
F 519 576 0121
dcurrie@mhbcplan.com
www.mhbcplan.com
CURRICULUM VITAE

Dan Currie, MA, MCIP, RPP, CAHP

Cultural Heritage Evaluations
MacDonald Mowatt House, University of Toronto
City of Kitchener Heritage Property Inventory Update
Niagara Parks Commission Queen Victoria Park Cultural Heritage Evaluation
Designation of Main Street Presbyterian Church, Town of Erin
Designation of St Johns Anglican Church, Norwich
Cultural Heritage Landscape evaluation, former Burlingham Farmstead, Prince Edward County

Heritage Impact Assessments
Heritage Impact Assessment for Pier 8, Hamilton
Homer Watson House Heritage Impact Assessment, Kitchener
Expansion of Schneider Haus National Historic Site, Kitchener
Redevelopment of former industrial facility, 57 Lakeport Road, Port Dalhousie
Redevelopment of former amusement park, Boblo Island
Redevelopment of historic Waterloo Post Office
Redevelopment of former Brick Brewery, Waterloo
Redevelopment of former American Standard factory, Cambridge
Redevelopment of former Goldie and McCullough factory, Cambridge
Mount Pleasant Islamic Centre, Brampton
Demolition of former farmhouse at 10536 McCowan Road, Markham

Heritage Assessments for Infrastructure Projects and Environmental Assessments
Heritage Assessment of 10 Bridges within Rockcliffe Special Policy Area, Toronto
Blenheim Road Realignment Collector Road EA, Cambridge
Badley Bridge EA, Elora
Black Bridge Road EA, Cambridge
Heritage and Cultural Heritage Landscape Assessment of Twenty Mile Creek Arch Bridge, Town of Lincoln
Heritage Evaluation of Deer River, Girven, Burnt Dam and MacIntosh Bridges, Peterborough County

Conservation Plans
Black Bridge Strategic Conservation Plan, Cambridge
Conservation Plan for Log house, Beurgetz Ave, Kitchener
Conservation and Construction Protection Plan - 54 Margaret Avenue, Kitchener
CURRICULUM VITAE

Dan Currie, MA, MCIP, RPP, CAHP

Tribunal Hearings: Local Planning Appeal Tribunal & Conservation Review Board
Port Credit Heritage Conservation District (LPAT)
Demolition 174 St Paul Street (Collingwood Heritage District) (LPAT)
Brooklyn and College Hill HCD Plan (LPAT)
Rondeau HCD Plan (LPAT)
Designation of 108 Moore Street, Bradford (CRB)
Redevelopment of property at 64 Grand Ave, Cambridge (LPAT)
Youngblood subdivision, Elora (LPAT)
Designation of St Johns Church, Norwich (CRB - underway)
Designation of 27 Prideaux Street, Niagara on the Lake (CRB – underway)

MASTER PLANS, GROWTH MANAGEMENT STRATEGIES AND POLICY STUDIES

Town of Frontenac Islands Marysville Secondary Plan
Niagara-on-the-Lake Corridor Design Guidelines
Cambridge West Master Environmental Servicing Plan
Township of West Lincoln Settlement Area Expansion Analysis
Ministry of Infrastructure Review of Performance Indicators for the Growth Plan
Township of Tiny Residential Land Use Study
Port Severn Settlement Area Boundary Review
City of Cambridge Green Building Policy
Township of West Lincoln Intensification Study & Employment Land Strategy
Ministry of the Environment Review of the D-Series Land Use Guidelines
Meadowlands Conservation Area Management Plan
City of Cambridge Trails Master Plan
City of Kawartha Lakes Growth Management Strategy

DEVELOPMENT PLANNING

Provide consulting services and prepare planning applications for private sector clients for:
- Draft plans of subdivision
- Consent
- Official Plan Amendment
- Zoning By-law Amendment
- Minor Variance
- Site Plan
CURRICULUM VITAE

Vanessa Hicks, M.A., C.A.H.P.

Vanessa Hicks is a Heritage Planner with MHBC and joined the firm after having gained experience as a Manager of Heritage Planning in the public realm where she was responsible for working with Heritage Advisory Committees in managing heritage resources, Heritage Conservation Districts, designations, special events and heritage projects (such as the Architectural Salvage Program).

Vanessa is a member of the Canadian Association of Heritage Professionals and graduated from the University of Waterloo with a Masters Degree in Planning, specializing in heritage planning and conservation. Vanessa provides a variety of research and report writing services for public and private sector clients. She has experience in historical research, inventory work, evaluation and analysis on a variety of projects, including Heritage Conservation Districts (HCDs), Heritage Impact Assessments (HIAs), Cultural Heritage Evaluation Reports (CHERs), Conservation Plans (CPs), Documentation and Salvage Reports, and Commemoration Projects (i.e. plaques). Vanessa is also able to comment provide comments regarding Stages 1-4 Archaeological Assessments due to her experience as a practicing field archaeologist and experience writing archaeological reports submitted to the Ministry of Tourism, Culture and sport.

PROFESSIONAL EXPERIENCE

June 2016 - Present Cultural Heritage Specialist/ Heritage Planner
MacNaughton Hermsen Britton Clarkson Planning Ltd.

2012 - 2016 Program Manager, Heritage Planning
Town of Aurora

May 2012 - October 2012 Heritage Planning Assistant
Town of Grimsby

2007 - 2010 Archaeologist
Archaeological Research Associates Ltd.

CONTACT
540 Bingemans Centre Drive,
Suite 200
Kitchener, ON N2B 3X9
T 519 576 3650 x 728
F 519 576 0121
vhicks@mhbcplan.com
www.mhbcplan.com
CURRICULUM VITAE

Vanessa Hicks, M.A., C.A.H.P.

SELECT PROJECT EXPERIENCE

HERITAGE IMPACT ASSESSMENTS (HIAs) 2016-2018
Heritage Impact Assessment - 'Southworks', 64 Grand Avenue South, City of Cambridge
Heritage Impact Assessment - 47 Spring Street Waterloo, Albert/MacGregor Neighbourhood HCD
Heritage Impact Assessment - 107 Concession Street, City of Cambridge
Heritage Impact Assessment – 33 Laird Drive, City of Toronto
Heritage Impact Assessment – Badley Bridge, part of a Municipal EA Class Assessment, Township of Centre Wellington
Heritage Impact Assessment – 362 Dodge Drive, City of Kitchener
Heritage Impact Assessment – 255 Ruhl Drive, Town of Milton
Heritage Impact Assessment – 34 Erb Street East, City of Waterloo
Heritage Impact Assessment – 474 and 484 Queen Street South (and Schneider Haus National Historic Site), City of Kitchener
Heritage Impact Assessment – 883 Doon Village Road, City of Kitchener
Heritage Impact Assessment – 57 Lakeport Road, City of St. Catharines
Heritage Impact Assessment – 8331 Heritage Road, City of Brampton
Heritage Impact Assessment – 55 Fallbrook Lane, City of Cambridge
Heritage Impact Assessment – Langmaids Island, Lake of Bays
Heritage Impact Assessment – 28 Burgetz Avenue, City of Kitchener
Heritage Impact Assessment – 1679 Blair Road, City of Cambridge
Heritage Impact Assessment – 13373 Guelph Line, Milton
Heritage Impact Assessment – 64 Margaret Avenue, City of Kitchener
Heritage Impact Assessment – 51 David Street, City of Kitchener

CULTURAL HERITAGE EVALUATION REPORTS (CHERS) 2016-2018
Cultural Heritage Evaluation Report - Dunlop Street West and Bradford Street, Barrie - Prince of Wales School and Barrie Central Collegiate Institute
Cultural Heritage Evaluation Report - Lakeshore Drive, Town of Oakville
Cultural Heritage Evaluation Report - 317 Mill Street, 28/30 Elizabeth Street South, 16 Elizabeth Street South, Town of Richmond Hill
CURRICULUM VITAE

Vanessa Hicks, M.A., C.A.H.P.

Cultural Heritage Evaluation Report – Queen Victoria Park Cultural Heritage Landscape
Cultural Heritage Evaluation Report – 28 Burgetz Avenue, City of Kitchener

HERITAGE CONSERVATION DISTRICTS (HCDs)
Heritage Conservation District Study – Southeast Old Aurora (Town of Aurora)

CONSERVATION PLANS
Strategic Conservation Plan – Queen Victoria Park Cultural Heritage Landscape
Conservation Plan – 28 Burgetz Avenue, City of Kitchener

DOCUMENTATION AND SALVAGE REPORTS
Documentation and Salvage Report – Main Street Properties, Township of Whitchurch-Stouffville
Documentation and Salvage Report & Commemoration Plan – 474 and 484 Queen Street South, City of Kitchener
Documentation Report – 64 Grand Avenue South, City of Cambridge
Documentation and Salvage Report – 487424 30 Side Road, Town of Mono

SPECIAL PROJECTS
Artifact Display Case - Three Brewers Restaurant(275 Yonge St., Toronto)
This memorandum has been prepared for consideration of proposed changes to the concept plan and proposed development, for 211-215 Queen Street West, Cambridge, (subject lands). The subject lands are currently subject to ongoing Official Plan and Zoning By-law Amendment applications (City File No. OR01/21). As part of the application submission, a Heritage Impact Assessment (HIA) was prepared by MHBC, dated February, 2021.

The purpose of this memorandum is to provide additional information and a scoped update to the HIA submitted with the application to address the consideration of an increase in building height of 2 additional storeys for the Phase 2 building located at the east end of the site. Attached to this memo is an updated concept plan, massing model and shadow study to illustrate the proposed changes.

Section 7.4 of the HIA prepared by MHBC, dated February, 2021, supported the proposed development of an 8 storey building as it relates to Phase 2 of the project, based on the following considerations:

- The Phase 2 building will not obstruct views of the existing heritage buildings from Queen Street West or the Speed River;
- The proposed building includes appropriate setbacks from the existing building and step-backs. These setbacks and step-backs will minimize the impact on the adjacent heritage
buildings, surrounding neighbourhood to the south, and create visual interest and functional amenity space for the building residents.

This memo specifically considers potential for adverse impacts to identified cultural heritage resources as a result of the additional 2 storeys on the Phase 2 building. The following provides information as it relates to the proposed 2 storey height increase as well as potential impacts on cultural heritage resources as follows:

- The general location of the Phase 2 building and setback from the existing heritage buildings is maintained. Therefore the increase in height will not result in impacts associated with maintaining views of the existing heritage buildings;
- The proposed 2 storey height increase provides step-backs at the 8th-storey to the 10th storey, as a result the additional height of 2 storeys only relates to a portion of the proposed Phase 2 building;
- The design of the new building will remain contemporary, and use materials and construction techniques, which are a product of their own time; and,
- The details associated with the parking location, and design of the building will be addressed as part of a future site plan application.

The maximum unit count of 260 units for the entire site is not proposed to change and the additional building height will provide for flexibility for the consideration of structured parking for the new building giving the site limitation for underground parking.

We have reviewed the Shadow Study prepared for the updated Site Plan and can confirm that no adverse impacts are anticipated as it relates to shadows. Therefore, no adverse impacts are anticipated as a result in the 2 storey height increase and no additional mitigation measures are required.

One additional change to the conceptual site plan since the initial submission and HIA is that only one new residential building is proposed. The existing workers housing buildings includes a large addition to the north which is not of cultural heritage value or interest. The updated site plan proposes that a portion of this addition be retained for commercial use. The HIA provides sufficient recommendations as it relates to anticipated impacts as a result of alterations to the workers housing and the existing addition. The proposal to retain a portion of this addition is not anticipated to result in any additional impacts which have not already been addressed in the HIA.
In summary, the proposed increase in height for the Phase 2 building from 8 storeys to 10 storeys, will not result in adverse impacts to identified cultural heritage resources.

Yours Truly,

MHBC

Dave Aston, MSc., MCIP, RPP
Vice President, Partner

Vanessa Hicks, MA, CAHP
Associate

cc. Bryan Dykstra, Blacks Point Development
Notes:
- 3D Massing prepared in SketchUp Pro
- Existing building provided by Edge Architects ltd.

Conceptual Massing Plan

215 Queen Street W
City of Cambridge
Region of Waterloo

Date: January 12, 2022
Scale: N.T.S
File: 18240A
Drawn: JB
**Shadow Study**

Spring Equinox (March 21)

215 Queen Street W
City of Cambridge
Region of Waterloo

Notes:
- 3D Massing prepared in SketchUp Pro
- Existing building provided by Edge Architects ltd.

Date: January 12, 2022
Scale: N.T.S
File: 18240A
Drawn: JB

**Spring Equinox - March 21, 10:00 am**

**Spring Equinox - March 21, 12:00 pm**

**Spring Equinox - March 21, 2:00 pm**

**Spring Equinox - March 21, 4:00 pm**
Shadow Study
Summer Solstice (June 21)

Notes:
- 3D Massing prepared in SketchUp Pro
- Existing building provided by Edge Architects ltd.

Date: January 12, 2022
Scale: N.T.S
File: 18240A
Drawn: JB

215 Queen Street W
City of Cambridge
Region of Waterloo

200-540 Bingemans Centre Dr.
Kitchener, ON, N2B 3X9
P: 519.576.3650  F: 519.576.0121 | WWW.MHBCPLAN.COM
Shadow Study
Autumn Equinox (September 21)

215 Queen Street W
City of Cambridge
Region of Waterloo

Notes:
- 3D Massing prepared in SketchUp Pro
- Existing building provided by Edge Architects ltd.

Date: January 12, 2022
Scale: N.T.S
File: 18240A
Drawn: JB

Autumn Equinox - September 21, 10:00 am
Autumn Equinox - September 21, 12:00 pm
Autumn Equinox - September 21, 2:00 pm
Autumn Equinox - September 21, 4:00 pm

PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
Notes:
- 3D Massing prepared in SketchUp Pro
- Existing building provided by Edge Architects ltd.
CODE OF CONDUCT FOR
LOCAL BOARDS AND ADVISORY COMMITTEES
CITY OF CAMBRIDGE

SECTION 1: POLICY STATEMENT

A written Code of Conduct for Local Boards and Committees helps to ensure that those appointed to represent the City on a board or committee share a common basis for acceptable conduct.

SECTION 2: APPLICATION

This Code of Conduct applies to all public citizen members who are appointed by Cambridge City Council and participate on an advisory and/or local board within the City of Cambridge.

SECTION 3: CONDUCT OF MEMBERS

A member shall at all times conduct themselves with propriety, decency and respect and with the understanding that all members of the public, other members and staff are to be treated with dignity, courtesy and empathy.

Members shall conduct themselves with decorum in accordance with the provisions of applicable law including the Municipal Act and the City’s Procedural By-Law, to show courtesy and respect to fellow members and others.
SECTION 4: DUTIES AND OBLIGATIONS OF PUBLIC MEMBERS

Members of the public appointed to committees are appointed at the pleasure of Council. They do not hold office as elected officials nor do they represent either Council or the committee unless mandated to do so. Members of the public appointed to committees must respect both the word and spirit of this Code as it applies to them and also as it applies to Members of Council.

Members of the public shall, when conducting business of the corporation, act in a manner that:

(a) fulfills the mandate and mission state of the Committee or Board;
(b) respects due process and the authority of the Chair, Vice-Chair or Presiding Officer;
(c) demonstrates respect for all fellow committee members, Council, staff and the public;
(d) respects and gives fair consideration to diverse and opposing viewpoints;
(e) demonstrates due diligence in preparing for meetings, special occasions or other committee-related events;
(f) demonstrates professionalism, transparency, accountability and timeliness in completing any tasks or projects undertaken by the committee;
(g) conforms with all relevant legislation, by-laws, policies and guidelines; and,
(h) contributes in a meaningful manner, offering constructive comments to Council, staff and fellow members.

Furthermore, a member of the public shall not:

(a) come into a position where the member is under obligation to any person who might benefit from special consideration or favour on their part or who might seek in any way preferential treatment;
(b) accord, in the performance of his or her official duties, preferential treatment to relatives or to organizations in which the member, his or her relatives have an interest, financial or otherwise;
(c) deal with an application to the City for a grant, award, contract, permit or other benefit involving the member, his or her immediate relative;
(d) come into a position where the member could derive any direct benefit or interest from any matter about which they can influence decisions; and,
(e) benefit from the use of information acquired during the course of his or her official duties which is not generally available to the public.
Committees of Council are either advisory or quasi-judicial in nature, or have a management function.

(i) An advisory Committee provides Council with information or recommendations on matters related to their mandate for a Council decision.

(ii) Quasi-judicial committees, such as the Appeals Committee and the Committee of Adjustment, make decisions that are not subject to Council approval but may be the subject of an appeal to another body, such as the Ontario Municipal Board.

(iii) A management committee has responsibility for the management of an entity such as a cemetery.

A member who is aware of a known conflict of interest shall immediately disclose to the staff administrator and shall refrain and abide by any decision made with respect to such conflict of interest without recourse.

If a member fails to disclose a conflict of interest, then the matter may be brought forward for consideration by an alternate member. A majority vote would determine if the member is in a conflict position and would be subject to the Code.

SECTION 5: ABUSE OF ROLE

No member of the public shall use the influence of their role as it relates to participating on an advisory committee and/or board for any purpose other than for the exercise of their official duties.

SECTION 6: HARASSMENT

Harassment includes, but is not limited to, any behavior, conduct, form of imagery or comment by any person that is directed at or is offensive to another person on the protected grounds of discrimination: age, ancestry, colour, race, citizenship, ethnic origin, creed, disability, family status, marital status (including single status), gender identity, gender expression, receipt of public assistance (in housing only), record of offences (in employment only), sex (including pregnancy and breastfeeding), sexual orientation and sexual harassment and any other grounds under the provisions of the Ontario Human Rights Code and the Respect in the Workplace Policy.

In accordance with the Ontario Human Rights Code, the Occupational Health and Safety Act and the City’s Respect in the Workplace Policy, all persons will be treated with dignity and respect in an environment free of discrimination and harassment.
Members will abide by the Corporate Values and Behaviours as guiding principles and are attached as Appendix A.

Harassment, whether it occurs inside or outside the workplace, but is related to the activities of elected office, is considered to be inappropriate behavior for the purpose of this Code of Conduct.

SECTION 7: ROLE OF THE INTEGRITY COMMISSIONER

The City shall appoint an Integrity Commissioner under Section 223.3 of the Municipal Act who is an independent officer and is responsible for carrying out his or her functions in accordance with the Municipal Act.

Should a member breach any part of the Code of Conduct, the Integrity Commissioner will be called upon to investigate and review the matter.

SECTION 8: COMPLIANCE AND INTERPRETATION

Compliance

Members will do their utmost to uphold the virtues contained in the Code of Conduct. If a member observes or is credibly informed of a possible contravention of this Code, that member has an obligation to proactively address the contravention.

Interpretation

Members seeking clarification of any part of this Code of Conduct should consult directly with the staff liaison who will receive clarification from the City Clerk or designate.

SECTION 9: REVIEW

Each member appointed to a committee and/or board shall receive a copy of this Code of Conduct.

To ensure that this Code remains relevant and current, staff will review any significant legislative or internal policy changes for possible impact to the Code and report where necessary.
Appendix A
Corporate Core Values and Behaviours

Interactions at the City of Cambridge are guided by the Corporate Core Values and Behaviours established in 2014.

RESPECT
We will...
Have mutual and fair understanding of the wants, needs and expectations of others
Practice open, honest and sincere communication

INTEGRITY
We will...
Conduct ourselves in a professional manner with emphasis on effective communication, accountability for actions, and a strong moral compass
Be committed to maintaining a safe, trusting, and supportive environment
Demonstrate professionalism, good judgement, and personal leadership

SERVICE
We will...
Strive to provide timely, respectful and knowledgeable responses focusing on communication information in a friendly and accessible manner to all
Seek feedback and use it to enhance and continually improve our services
Demonstrate genuine enthusiasm and take pride in our work to achieve common goals
Demonstrate hard work and dedication in an effort to enhance community pride

INCLUSIVENESS
We will...
Commit, to welcome, learn and understand
Foster an environment of respect and a sense of belonging for all