



# Valley Inn Bridge Municipal Class Environmental Assessment

## Project File Report

Prepared for:  
**The City of Hamilton**

Prepared by:  
**Stantec Consulting Ltd**

July 2021



Prepared for:  
City of Hamilton 71 Main Street  
West, 5th Floor  
Hamilton ON L8E 4Y5

Prepared by:  
Stantec Consulting. Ltd.  
200 – 835 Paramount Drive  
Stoney Creek ON L8J 0B4



**Valley Inn Bridge Municipal  
Class Environmental  
Assessment Project File Report**


165001203

July 2021




## SIGN OFF SHEET

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Prepared by   
(signature)


**David Kielstra, MA, EP**

Environmental Planner, Stantec Consulting Ltd.

Reviewed by   
(signature)

**Paula Hohner, M.ScPI, MCIP, RPP**

Associate, Senior Environmental Planner,  
Environmental Team Lead – Transportation, Stantec Consulting Ltd.

Approved by   
(signature)

**Adam Renaud, P.Eng.**

Project Manager, Stantec Consulting Ltd.





# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## Table of Contents

<b>Executive Summary .....</b>	<b>i</b>
<b>1.0 Introduction and Background .....</b>	<b>1</b>
1.1 Background and Previous Studies.....	1
1.2 Study Area.....	2
<b>2.0 Planning Process .....</b>	<b>4</b>
2.1 Municipal Class Environmental Assessment Process .....	4
2.1.1 Determining the Project Schedule .....	7
2.1.2 Part II Order Process.....	7
<b>3.0 Consultation.....</b>	<b>8</b>
3.1 Project Contact List .....	8
3.2 Study Notifications and Website .....	9
3.3 Agency Consultation.....	9
3.4 Indigenous Consultation .....	10
3.5 Public Consultation .....	11
<b>4.0 Inventory of the Natural, Social and Cultural Environment .....</b>	<b>15</b>
4.1 Technical Environment.....	15
4.1.1 Existing Valley Inn Bridge.....	15
4.1.2 Transportation/Traffic .....	15
4.2 Natural Environment.....	16
4.2.1 Terrestrial Ecosystems .....	16
4.2.2 Aquatic Ecosystem .....	17
4.2.3 Source Water Protection .....	19
4.2.4 Summary of Natural Heritage Constraints .....	19
4.3 Socio-Economic Environment.....	20
4.3.1 Existing Land Use.....	20
4.3.2 Provincial Policy Statement.....	20
4.3.3 Other Provincial Land Use Policies .....	21
4.3.4 Region of Halton Official Plan.....	21
4.3.5 City of Hamilton Official Plan .....	22
4.3.6 City of Burlington Official Plan .....	22
4.3.7 Conservation Halton/ Hamilton Conservation Authority.....	23
4.4 Cultural Environment .....	23
4.4.1 Built Heritage.....	23
4.4.2 Archaeology .....	23
<b>5.0 Problem and Opportunity Statement.....</b>	<b>24</b>
<b>6.0 Alternative Solutions.....</b>	<b>25</b>
6.1 Assessment of Alternative Solutions .....	25



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

6.2	Recommended Alternative Solution .....	25
<b>7.0</b>	<b>Environmental Impacts and Proposed Mitigation .....</b>	<b>31</b>
7.1	Overview of Bridge Design and Construction .....	31
7.1.1	Standard Environmental Mitigation Measures .....	32
7.1.2	Erosion and Sediment Control.....	32
7.1.3	Protection of Migratory Birds .....	33
7.1.4	Wildlife Protection.....	33
7.1.5	Protection of Fish and Fish Habitat .....	34
7.2	Cultural Environment .....	35
7.2.1	Archaeological Resources.....	35
7.2.2	Cultural Heritage Resources .....	35
7.3	Waste Management .....	36
7.4	Property .....	36
7.5	Noise .....	36
7.6	Air Quality .....	36
7.7	Climate Change.....	37
<b>8.0</b>	<b>Approvals and Permits .....</b>	<b>38</b>
<b>9.0</b>	<b>Detailed Design Commitments.....</b>	<b>39</b>

## List of Tables

Table 1: Summary of Public Comments .....	13
Table 2: Assessment of Alternative Solutions .....	27
Table 3: Detailed Design Commitments .....	41

## List of Figures

Figure 1 Valley Inn Bridge Study Area Map .....	3
Figure 2: Municipal Class Environmental Assessment Process.....	6

## List of Appendices

Appendix A: Notification Materials  
Appendix B: Correspondence  
Appendix C: Indigenous Community Consultation  
Appendix D: Technical Reports



165001203



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## Executive Summary

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) study for the Valley Inn Bridge to consider opportunities to facilitate use of the crossing by the public. The pedestrian bridge is situated adjacent to the Royal Botanical Gardens, south of York Boulevard/Plains Road West, in the City of Hamilton (see study area map in **Figure 1**).

This study completed Phases 1 and 2 of the EA process as documented in the Municipal Engineers Association (MEA) Municipal Class EA document (October 2000, as amended in 2007, 2011 and 2015). This includes the problem/opportunity statement, development and assessment of alternative solutions (do nothing, repair or replace the bridge), and documentation of the existing natural and social/cultural conditions within the study area.

A preferred alternative solution is also identified following technical review and input received from the public, stakeholders, Indigenous communities, and agencies.

Replacement of the Existing Bridge is identified as the Preferred Alternative Solution. The bridge replacement can be completed according to standard environmental mitigation measures including timing windows, and sediment and erosion control measures identified in this report. The replacement structure will be designed with a historically sympathetic design (such as a truss and wood decking), and a Documentation and Salvage Report has been prepared to support anticipated removal of bridge.

Additional consultation or permit requirements may be required, particularly if in-water work cannot be avoided as there would be potential to impact species at risk or marine archaeology. Permitting requirements outlined in this report will be confirmed with the relevant agencies as part of detailed design based on the final configuration for the Valley Inn Bridge replacement structure.

Mitigation and permitting requirements should be confirmed with the Ministry of the Environment, Conservation and Parks (MECP), Fisheries and Oceans Canada (DFO), and the Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI), and Conservation Halton (CH) if the study area changes to include areas with potential species at risk, or if in-water work cannot be avoided.

This Project File Report has been prepared at the conclusion of the study and will be available for a 30-day public review period.



# **VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT**

July 2021

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# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## 1.0 Introduction and Background

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) study for the Valley Inn Bridge to consider opportunities to facilitate use of the crossing by the public. The pedestrian bridge is situated adjacent to the Royal Botanical Gardens, south of York Boulevard/Plains Road West, in the City of Hamilton (see study area map in **Figure 1**).

This study completed Phases 1 and 2 of the EA process as documented in the Municipal Engineers Association (MEA) Municipal Class EA document (October 2000, as amended in 2007, 2011 and 2015). This includes the problem/opportunity statement, development and assessment of alternative solutions (do nothing, repair or replace the bridge), and documentation of the existing natural, socio-economic, and cultural heritage conditions within the study area. A preferred alternative solution is also identified following technical review and input received from the public, stakeholders, Indigenous communities, and agencies.

This document is the Project File Report which has been prepared at the conclusion of the study and will be available for a 30-day public review period.

### 1.1 Background and Previous Studies

The Valley Inn Bridge was constructed in 1964 and is a modular Bailey bridge that is maintained by the City of Hamilton. The existing bridge previously carried a pedestrian and cyclist trail over Carroll's Bay Marsh however, it has been closed to all traffic due to the current condition.

Prior to the current Municipal Class EA, a 2006 Municipal Class EA study of the Valley Inn Bridge determined that the bridge contained a number of structural deficiencies, including medium to severe corrosion and severe material loss. The rehabilitation carried out in 2003 was emergency repair work intended to be a short-term solution for the bridge (City of Hamilton 2006b). In the interest of pedestrian safety, the bridge has been closed to all traffic since December 2019.

Stantec completed a Cultural Heritage Evaluation Report (CHER) for this bridge in 2017, with results described in **Section 4.4.1**.



# **VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT**

July 2021

## **1.2 Study Area**

The study area is situated on the border between the City of Hamilton and the City of Burlington. The Valley Inn Bridge is located 535 m east of York Boulevard, in the City of Hamilton, and adjacent to the Royal Botanical Gardens (RBG).



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July 2021

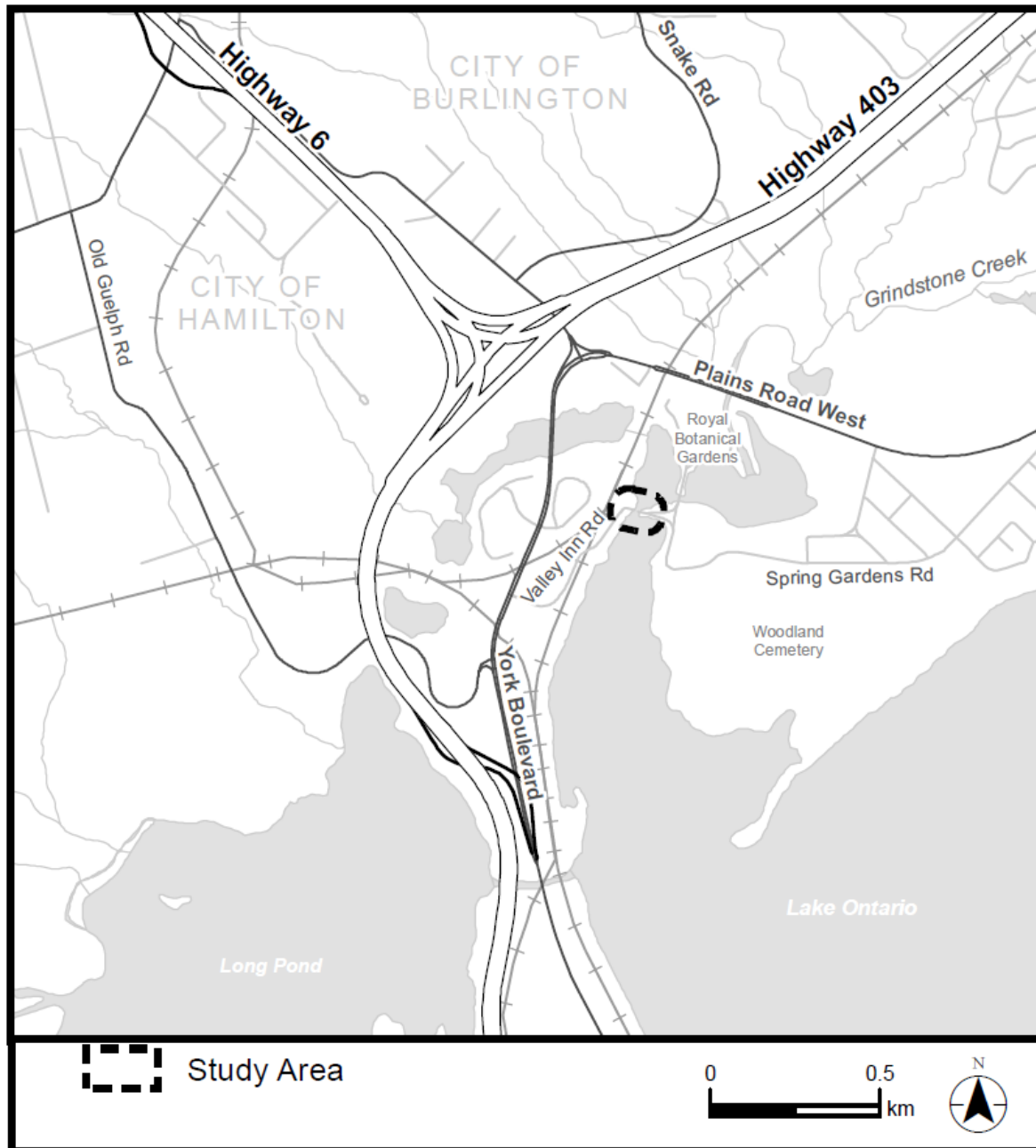


Figure 1 Valley Inn Bridge Study Area Map



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July 2021

## 2.0 Planning Process

### 2.1 Municipal Class Environmental Assessment Process

The MEA Municipal Class EA document provides guidelines approved under the EA Act which protect the environment during the completion of municipal road, sewage and water infrastructure projects. The undertakings are considered pre-approved provided the mandatory environmental planning process as set out in the Class EA document is completed. The Class EA document provides municipalities with a five-phase planning process approved under the EA Act to plan and undertake all municipal infrastructure projects in a manner that protects the environment.

Key components of the Class EA planning process include:

- Consultation with potentially affected parties early and throughout the process;
- Consideration of a reasonable range of alternative solutions;
- Systematic evaluation of alternatives;
- Clear and transparent documentation; and
- Traceable decision-making.

The MEA Class EA document provides a framework by which projects are classified as Schedule A, A+, B, or C based on a variety of factors including the general complexity of the project, level of investigation required, and the potential impacts on the natural, social, cultural, and economic environments that may occur. Each schedule classification requires a different level of documentation and review to be compliant with the EA Act and satisfy the requirements of the Class EA. The proponent is responsible for identifying the appropriate schedule for any given project and reviewing the applicability of the schedule at multiple stages throughout the project.

**Schedule A** projects are limited in scale with minimal anticipated environmental impacts. They are pre-approved and may be implemented without undertaking public consultation or following the planning process as outlined in the Class EA. Examples of Schedule A projects include construction or removal of sidewalks, multi-use pathways or cycling facilities within protected ROWs.

**Schedule A+** projects are similarly pre-approved but require that proponents notify potentially affected parties prior to implementation. An example of a Schedule A+ project includes streetscaping within protected ROWs.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

**Schedule B** projects have the potential for some adverse environmental and social impacts. Proponents are thus required to undertake a screening process involving mandatory contact with potentially affected members of the public, Indigenous communities, and relevant review agencies to ensure that they are aware of the project and that their concerns are addressed. Schedule B projects require the completion of Phases 1 and 2 of the Class EA planning process, which is documented in a Project File and submitted for a mandatory 30-day review period. Examples of Schedule B projects include reconstruction or widening of a roadway with a construction value of less than \$2.4 million, and the construction of a new bridge if less than \$2.4 million.

**Schedule C** projects have the potential for significant environmental impacts and must follow the full planning process specified in the Class EA document, including Phases 1 through 4. The project is documented in an Environmental Study Report (ESR), which is then filed for review by the public, review agencies, and Indigenous communities. Projects generally include the construction of new facilities, and major expansions to existing facilities.

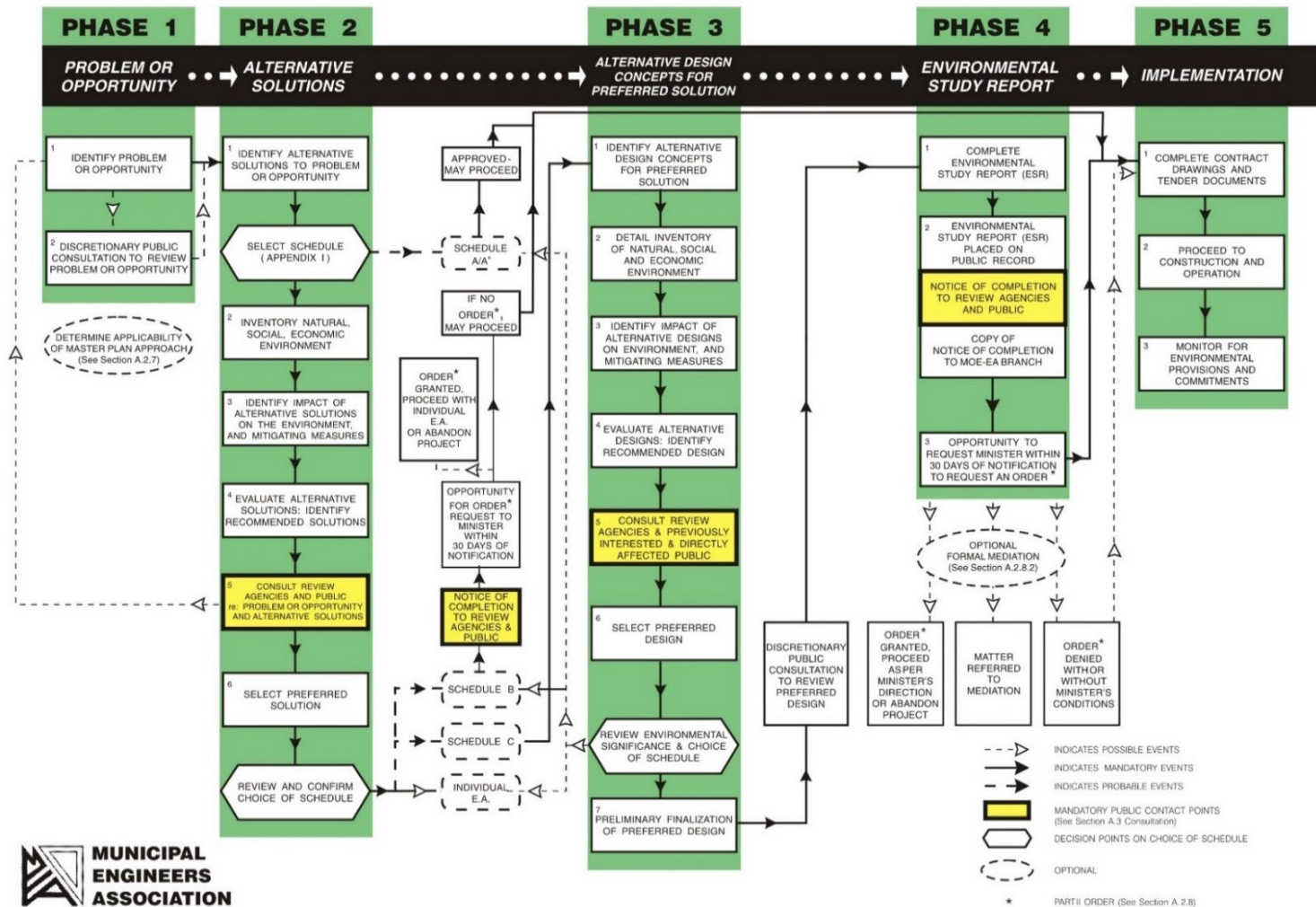
**Figure 2** illustrates the five-phase planning process and identifies the steps considered mandatory for compliance with the requirements of the EA Act.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

Figure 2: Municipal Class Environmental Assessment Process





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July 2021

## 2.1.1 Determining the Project Schedule

Due to the age (>40 years old) and recognized heritage value of the existing structure, Stantec completed this Class EA study as a Schedule B project following Phases 1 and 2 of the EA process.

## 2.1.2 Part II Order Process

Interested persons may provide written comments to the City of Hamilton for a response using the following contact information:

Dipankar Sharma, P.Eng, PMP, CAMP  
Senior Project Manager, Asset Management, Public Works  
Engineering Services, City of Hamilton  
Tel: 905-546-2424, Ext. 3016  
Dipankar.Sharma@hamilton.ca

In the event the outstanding concerns relate to potential adverse impacts to constitutionally protected Aboriginal and treaty rights, a Part II Order may be requested from the Ministry of the Environment, Conservation and Parks (MECP).

A Part II Order, if issued, may require a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate, or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry. The request should be sent in writing by mail or by email to:

Minister Jeff Yurek  
Ministry of Environment, Conservation and Parks  
777 Bay Street, 5th Floor  
Toronto ON M7A 2J3  
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch  
Ministry of Environment, Conservation and Parks  
135 St. Clair Ave. W, 1st Floor  
Toronto ON M4V 1P5  
ClassEAnotices@ontario.ca

Requests should also be sent to the City of Hamilton.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## 3.0 Consultation

This section provides a summary of the project consultation and communications.

### 3.1 Project Contact List

A project contact list was created by the City of Hamilton and circulated to Stantec to maintain throughout the project. The list included agencies, stakeholders, Indigenous communities, and those that expressed an interest in the study through consultation with the City. The list was updated throughout the project as requests from the public were received. The contact list included the following organizations:

Municipalities/ Region: City of Hamilton, City of Burlington, Region of Halton

Committees: Keep Hamilton Clean and Green Committee, Hamilton Municipal Heritage Committee, Advisory Committee for Persons with Disabilities

Conservation Authorities: Hamilton Conservation Authority, Conservation Halton

Provincial Agencies: Ministry of Heritage Sport, Tourism and Culture Industries (MHSTCI), Ministry of Transportation (MTO), Ministry of the Environment, Conservation & Parks (MECP), Ontario Provincial Police, Burlington Detachment (OPP), Ministry of Natural Resources and Forestry (MNRF)

Federal Agencies: Indigenous and Northern Affairs Canada/INAC Lands and Trusts Services, Environment Canada, Canadian Center for Inland Waters, Fisheries and Oceans Canada, Environment Canada, Ministry of Indigenous Affairs

Indigenous Communities: Metis Nation of Ontario, Six Nations of the Grand River Territory, Six Nations of the Grand River, Land and Resource Department, Land Use Unit, Six Nations Eco-Centre, Mississaugas of the Credit First Nation, Mississaugas of the Credit First Nation, Department of Consultation and Accommodation (DOCA), Haudenosaunee Confederacy Council, Haudenosaunee Development Institute, Huron-Wendat Nation at Wendake

Stakeholder Groups: Bruce Trail Conservancy, Environment Hamilton, Citizens at City Hall (CATCH), Bay Area Restoration Council, Hamilton Waterfront Trust, Around the Bay Race



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

Utilities: TransCanada Pipelines, Enbridge Pipelines Inc., Canadian Pacific Railway, Bell Canada, Enbridge / Enbridge Pipelines Inc., Hamilton Utilities Corporation, Alectra Utilities, Sun Canadian Pipeline, Cogeco Cable Inc., Source Cable, Imperial Oil Products & Chemical Division, CN Rail, Southern Ontario Railway, Ontario Power Generation, Hydro One, Cogeco, Burlington Hydro Inc.

The project contact list is included in **Appendix B**.

## 3.2 Study Notifications and Website

The City of Hamilton created a dedicated project webpage with project details for public information and comments: [www.Hamilton.ca/ValleyInnEA](http://www.Hamilton.ca/ValleyInnEA).

The City of Burlington also created a link to the project webpage from their construction projects webpage: <https://www.burlington.ca/en/services-for-you/valley-inn-road-bridge.asp>.

The Notice of Study Commencement was mailed to the project contact list on January 12, 2021. The Notice of Study Commencement was published in the following newspapers:

- Hamilton Spectator newspaper January 14 and January 21, 2021
- Burlington Post newspaper January 21 and January 28, 2021

At the conclusion of this study, the Notice of Study Completion will be prepared and circulated to the project contact list and published in the Hamilton Spectator and Burlington post. The Notice of Study Completion will indicate the start of the minimum 30-day public review period.

## 3.3 Agency Consultation

Consultation in Phase 2 of the Class EA study focused on direct correspondence with the key stakeholders for this project. A virtual stakeholder meeting was organized and held on February 10, 2021 with:

- Hamilton Conservation Authority
- Conservation Halton
- Royal Botanical Gardens
- City of Burlington
- Agencies (MNRF, MECP, DFO)



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

The purpose of the meeting was to provide a project overview, an update on fieldwork investigations, and the preliminary evaluation for the project. Stakeholders were given an opportunity to provide input related to their disciplines. The following feedback was provided:

- MECP requested that the project consider a waste management plan for demolition of the existing bridge.
- MECP confirmed that a formal review of the document prior to the 30-day public review was not required for this project since it is not a Schedule C project.
- MECP identified that should any Species at Risk impacts be required, the Proponent should engage with MECP permitting staff further.
- MHSTCI requested a copy of the Heritage Impact Assessment.

Representatives from City of Hamilton, City of Burlington, Halton Region, CH, MECP, MHSTCI, and Royal Botanical Gardens attended the meeting. Representatives from the MNRF, Fisheries and Oceans Canada (DFO), and HCA were invited however they did not attend.

The minutes of the stakeholder meeting are provided in **Appendix B**.

A meeting was held with the Royal Botanical Gardens on March 29, 2021 to provide a project update and an opportunity to address any questions about the approach for the bridge replacement.

A summary of comments received during the project is provided in **Appendix B**.

## 3.4 Indigenous Consultation

An Indigenous engagement protocol exists within the City of Hamilton to guide Indigenous community engagement for all of its projects. The City of Hamilton was responsible for notifications to Indigenous communities for this project.

In response to the Notice of Commencement, a written response from the MECP was received on February 26, 2021 identifying potentially interested Indigenous communities to be consulted as part of this study, including:

- Mississaugas of the Credit First Nation
- Six Nations of the Grand River (both Elected Council and Haudenosaunee Confederacy Chiefs Council)
- Huron-Wendat Nation (only if there are potential archeological impacts)

MECP identified that Huron Wendat is to be consulted if there are potential archaeological impacts but not to the exclusion of the other communities. MECP also confirmed that the other communities are also interested in archaeology.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

The City of Hamilton prepared an introductory engagement letter which was sent to Indigenous communities on December 17, 2020.

The Indigenous community engagement correspondence is provided in **Appendix C**. A summary of the comments is included below:

The Huron-Wendat Nation email on January 14, 2021 acknowledged receipt of the Indigenous engagement letter and inquired about archaeological studies for the project. The City of Hamilton provided the Stage 1 Archaeological Assessment report on February 10, 2021 for review and comment. The community responded February 15, 2021 that they do not have any specific concerns about the report.

The Mississaugas of the Credit First Nation letter dated December 15, 2020 provided an overview of the community's Aboriginal and treaty rights as well as requirements for archaeology in its traditional territory. The City of Hamilton responded December 17, 2020 with a project overview letter and a commitment to share the Stage 1 Archaeological Assessment when it became available. The Stage 1 Archaeological Assessment report was sent, and the review was completed April 19, 2021. The community confirmed that they had no comments on the report. MCFN noted its interest in having Field Liaisons present if any Stage 2 marine assessments are to be completed.

Six Nations of the Grand River provided an email March 18, 2021 which identified its interest in areas of marine archaeology. The community requested a copy of the findings of that report and any updates pertaining to that assessment. The community had no further comments for the project.

## 3.5 Public Consultation

A key component of the MCEA process is public consultation during the process. For this study, public consultation was completed through the City of Hamilton and City of Burlington websites and newspaper notices, with the purpose of:

- Notifying the public that the study was commencing;
- Receiving public input regarding issues related to the Valley Inn Bridge project including the recommended alternative of replacing the bridge, environmental considerations, evaluation criteria; and
- Reviewing the Project File Report during the 30-day comment period.

**Table 1** provides a summary of the 13 public comments received as part of this study and response from the project team.



# **VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT**

July 2021

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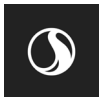


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July 2021

Table 1: Summary of Public Comments

Comment Summary	How Comments were Addressed
<ul style="list-style-type: none"><li>• Replace cross with large pipes/culverts (two comments):<ul style="list-style-type: none"><li>○ Suggestion to use three or four large, corrugated sewer pipes side by side and fill the top with gravel and top off with asphalt. It is cheap and allows both water to flow under and pedestrians to cross over.</li><li>○ Reduce the width of the bridge since vehicular traffic is removed and it is only for pedestrian traffic. Replace the bridge with large culvert(s) with a paved path on top. This should be a much less expensive alternative.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Responses sent that the City will consider the suggestion and file it as part of the EA report.</li><li>• Individuals were sent the website for the project.</li><li>• The suggested design is not suitable for the site given the sensitive habitat, requirement for significant in-water work, and barrier created by the suggested culverts.</li></ul>
<ul style="list-style-type: none"><li>• Around the Bay Race Director noted that they are very interested in rebuilding the Valley Inn Bridge as it is a key element of their 30 K course, and it is a significant part of the race’s 127-year history. They indicated they prefer to have the bridge available by March 2022 for an in-person race.</li></ul>	<ul style="list-style-type: none"><li>• The City of Hamilton response: We should definitely have the bridge ready for 2022, the construction start date will be summer 2021.</li></ul>
<ul style="list-style-type: none"><li>• General comments:<ul style="list-style-type: none"><li>○ The bridge is integral to the community and some form of crossing is needed.</li><li>○ Please get on with it and get her done! Any chance it will be completed by this summer?</li><li>○ Local resident lives on Spring Garden Road and enjoys the area and how it connects people to nature. The individual is excited the bridge will accommodate pedestrian and cyclist access. The individual was upset with the railway barriers restricting cycling access.</li><li>○ Local resident identified the history of the crossing since the 1830s and the bridge offers an essential connection between Hamilton and Burlington for 170 years. The bridge is also on the Around the Bay Road Race route. Firmly believes the historic link should be restored for pedestrian, cyclist, and runner access. The link promotes healthy activities and exercise. The individual applauded the financial support from the McNally Charitable Foundation.</li><li>○ Individual supports the repair or replacement of the bridge for pedestrian and cyclist traffic.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Comments noted by the Project Team.</li><li>• Individuals added to the mailing list and responses were provided with a link to the project website.</li></ul>
<ul style="list-style-type: none"><li>• Why can’t we call the army up and have them do an exercise to replace the bridge? The individual was happy to hear the bridge is going to be replaced and the crossing opened again to pedestrians and cyclists. He was frustrated the bridge has been closed for so long.</li></ul>	<ul style="list-style-type: none"><li>• An explanation was provided about the environmental and design process required in a telephone call with the individual.</li><li>• Comment noted by the project team.</li></ul>
<ul style="list-style-type: none"><li>• RBG Volunteers provided a letter of support for a new pedestrian and cyclist crossing. The group noted that a crossing has been in place since the 1850s and that its closure has severed the link between Burlington and Hamilton.</li></ul>	<ul style="list-style-type: none"><li>• The letter of support was noted by the project team.</li><li>• Thank you for your great insight on the bridge. The project includes the study and review of existing natural, socio-economic, and cultural heritage conditions of the Valley Inn Bridge. Once the evaluation is the complete, our recommendation would be will include one of the following: do nothing, repair or replace the existing bridge.</li><li>• With the current condition of the bridge, the best possible outcome can be repair or replace, this will be concluded upon the completion of the study. Please refer to the following website for constant update about project progress.</li><li>• <a href="https://www.hamilton.ca/city-planning/master-plans-class-eas/valley-inn-bridge">https://www.hamilton.ca/city-planning/master-plans-class-eas/valley-inn-bridge</a></li></ul>
<ul style="list-style-type: none"><li>• Requests to be added to the mailing list and for information about the project.</li></ul>	<ul style="list-style-type: none"><li>• Individuals providing comments were added to the mailing list and provided a link to the project website for more information,</li></ul>
<ul style="list-style-type: none"><li>• Request for existing drawings from the Valley Inn Bridge.</li></ul>	<ul style="list-style-type: none"><li>• Bridge overview and age described in a telephone call with the individual.</li></ul>



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July 2021

## **4.0 Inventory of the Natural, Social and Cultural Environment**

### **4.1 Technical Environment**

The technical environment includes the existing structure as well as reviewing its function within the City of Hamilton and City of Burlington road and trail network.

#### **4.1.1 Existing Valley Inn Bridge**

The Valley Inn Bridge is a Modular Double Single Bailey Truss bridge that was installed in 1964 as a temporary structure after the previous bridge collapsed. Bailey Truss bridges were developed during the Second World War as a standard military bridge type that was portable, quick to erect, and easy to adjust for different loads and spans.

A City of Hamilton OSIM report was reviewed as part of the 2017 Cultural Heritage Evaluation Report. The existing bridge has a total deck length of 30.9 m and an overall structural width of 5 m. The bridge has a posted weight limit of five tonnes but is currently closed to all traffic, including pedestrians. The bridge contains a wood plank deck with wood barrier posts and a steel tube railing atop these posts. The deck is supported by steel I-beams, steel stringers, and steel cross bracing. The truss superstructure of the bridge contains steel chords and steel vertical/diagonals, transverse transoms, and horizontal bracing at the top and bottom of the trusses. The original end posts of the bridge are still in place and are located beside the new timber barriers. The bridge abutments are stone and were part of the previous bridge built in 1897. The bridge was last rehabilitated in 2003.

#### **4.1.2 Transportation/Traffic**

The bridge provides a connection between the City of Hamilton and City of Burlington trail system, including access to the Royal Botanical Gardens.

In 2009, the bridge was permanently closed to vehicle traffic, but permitted its use as a trail for pedestrians and cyclists. The Valley Inn Bridge has been part of the “Around the Bay Road Race” since its inception in the City of Hamilton in 1894; a 30-kilometre race that circles Hamilton Harbour.

In the interest of pedestrian safety, the bridge has been closed to all traffic since December 2019.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## 4.2 Natural Environment

### 4.2.1 Terrestrial Ecosystems

The *Natural Environment Technical Memo* (Stantec 2021) identified natural heritage features assessment and constraints for the potential replacement of the Valley Inn Bridge (the bridge) over Carroll's Bay. The study area includes the bridge crossing location and the area within an approximately 120 m radius of the bridge.

Background documentation and related information sources were reviewed to identify natural heritage features and constraints in the study area. The LIO database search indicates that the study area contains a Winter Waterfowl Concentration Area within Carroll's Bay, and an Area of Natural and Scientific Interest (ANSI), Life Science within the Grindstone Marshes. A desktop background review of species databases identified 27 species at risk (SAR) and 30 Species of Conservation Concern (SOCC) that have been previously documented as occurring in the atlas square associated with the study area or have the potential to occur within the study area.

Stantec conducted a site visit on December 12, 2020 to identify and record existing site conditions. Field investigations conducted included Ecological Land Classification of vegetation communities, migratory bird nest survey, bat habitat assessment, SAR habitat assessments, significant wildlife habitat (SWH) assessments and fish habitat assessments. Surveys were also conducted to assess whether the natural heritage features that were identified through the background data collection process were present in the study area.

#### 4.2.1.1 Vegetation

The study area is located near the Royal Botanical Gardens on lands owned by the City of Hamilton. The surrounding Royal Botanical Gardens lands are comprised of paved recreational trails, mowed lawn, open water, marsh, shoreline, and planted landscape vegetation. Carroll's Bay, Sunfish Pond and Grindstone Marshes are restored wetland habitat that is connected to Lake Ontario and Grindstone Creek.

ELC data is provided in the heritage memo, with features present including Open Water (OA), Shoreline (SH), Shallow Marsh (MAS), Meadow (MEM), Woodland (WO), Forest (FO), Constructed (CV) and Greenlands (such as mowed lawn, trails, and planted landscape trees (CGL).

No bird nests, including Barn Swallow were observed under the bridge, and no suitable bat maternity roost trees directly adjacent to the bridge were noted. Suitable trees in the Forest (FOD) community will not be impacted by the bridge replacement.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

The study area is within the Dundas Valley and Dundas Marsh Important Bird Area (Site Number 0N005).

## 4.2.1.2 Terrestrial Species at Risk

Potential habitat for ten SAR (including four bat species referenced collectively as SAR bats) was identified in the Valley Inn Bridge study area during the SAR habitat assessment. Of these ten species, one (Blanding's Turtle) is likely to be present within the Project Footprint.

## 4.2.1.3 Significant Wildlife Habitat

The following are the results of the SWH assessment:

- Confirmed SWH based on habitat suitability, field observations and background data sources: waterfowl stopover and staging area (aquatic ecosites OA/MASM1-1), raptor wintering area (ecosites FODM2-4 and WODM5-1), shorebird migratory stopover area (ecosites SHSM1-3 and SHSM1-8), and migratory landbird stopover areas (ecosites FODM2-4 and WODM5-1).
- Candidate SWH based on habitat suitability but not confirmed through habitat use studies: bat maternity colonies, turtle wintering areas, snake hibernaculum, wetland amphibian breeding habitat, marsh breeding birds habitat, amphibian movement corridor, potential habitat for SOCC (Gray-headed Prairie Coneflower, Wild Four o'clock, Redhead, Black-crowned Night-Heron, Bald Eagle, Red-headed Woodpecker, Eastern Wood-Pewee, Eastern Musk Turtle, Northern Map Turtle, Snapping Turtle).

## 4.2.2 Aquatic Ecosystem

The *Natural Environment Technical Memo* (Stantec 2021) identified fish and fish habitat features and constraints for the potential replacement of the Valley Inn Bridge (the bridge) over Carroll's Bay. The study area includes the bridge crossing location and the area within an approximately 120 m radius of the bridge.

Background documentation and related information sources were reviewed to identify natural heritage features and constraints in the study area.

Carroll's Bay has a warmwater thermal regime. The Bay is within the River Mouth Management Zone described in the *Hamilton Harbour and Watershed Fisheries Management Plan*. The fish community of the river mouth (of Grindstone Creek) and Carroll's Bay are dominated by sunfishes and bluntnose minnows. The river mouth of Grindstone Creek provides significant spawning and nursery habitat for Northern Pike (*Esox lucius*). Carroll's Bay is considered part of Lake Ontario and supports the



## VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

following fish species, varying with the time of year: Alewife (*Alosa pseudoharengus*), Bowfin (*Amia calva*), Common Carp (*Cyprinus carpio*), Yellow Perch (*Perca flavescens*), White Perch (*Morone americana*), Largemouth Bass (*Micropterus salmoides*), Northern Pike, Brook Silverside (*Labidesthes sicculus*), Common Shiner (*Luxilus cornutus*) and Fathead Minnow (*Pimephales promelas*).

Royal Botanical Gardens completed a fish community survey in Carroll's Bay in June 2009 and the following fish species were captured: Bluegill (*Lepomis macrochirus*), Gizzard Shad (*Dorosoma cepedianum*), Largemouth Bass, Logperch (*Percina caprodes*), Pumpkinseed (*Lepomis gibbosus*), Round Goby (*Neogobius melanostomus*), White Perch and Yellow Perch.

Historically, Carroll's Bay supported a number of mussel species including, but not limited to: Paper Pondshell (*Utterbackia imbecillis*), Giant Floater (*Pyganodon grandis*), Eastern Ellipito (*Elliptio complanata*) and Zebra Mussel (*Dreissena polymorpha*). A goal of the Fisheries Management Plan for the River Mouth Management Zone was to increase the spawning capacity for fish species from Hamilton Harbour, such as Northern Pike and Largemouth Bass, and to reduce Carp and Goldfish populations.

There are records of the following aquatic species at risk in Carroll's Bay within 200 m upstream and downstream of the Valley Inn Bridge: Spotted Gar (*Lepisosteus oculatus*), Lilliput (*Toxolasma parvum*), Eastern Pondmussel (*Ligumia nasuta*) and Mapleleaf (*Quadrula quadrula*). American Eel (*Anguilla rostrata*) may also occur in Carroll's Bay.

Stantec conducted a site visit on December 12, 2020 to identify and record existing site conditions. Field investigations conducted included a review of the study area upstream and downstream of the bridge.

Natural conditions continue approximately 50 m upstream of the bridge before reaching a partially submerged constructed partition that separates Sunfish Pond from Carroll's Bay. The south (east) shoreline consists mainly of large, quarried rock associated with the bridge and a mix of cobble, gravel, and sand. Farther east the shoreline becomes naturalized and well vegetated with cattail and shrub species.

Downstream of the bridge Carroll's Bay is wide and long and is considered Lake Ontario proper. The west bank is well-vegetated and stable due to restoration by CN Rail in 2016/2017. There was little to no riparian cover along the southside of the walking trail leading to the bridge. Once the shoreline turns south (approximately 75 m east of the bridge) vegetation becomes dense with mature trees and shrubs.

No fish were observed during the December 2020 field investigation; however, empty mussel shells were observed in the exposed substrate downstream (south) of the bridge. The shells were identified as Giant Floater (*Pyganodon grandis*) and Quagga mussels (*Dreissena bugensis*).



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

As indicated by the background data, Carroll's Bay provides habitat for a diverse fish community and provides habitat for a range of life stages. Carroll's Bay and Sunfish Pond appear to offer suitable spawning and nursery habitat for game fish such as Northern Pike, Largemouth Bass and Yellow Perch.

## 4.2.2.1 Aquatic Species at Risk

Aquatic SAR species potentially present based on background data and habitat suitability include American Eel and Lilliput.

Habitat within the permanently wetted areas of Carroll's Bay and Sunfish Pond provide potential habitat for Lilliput. American Eel may also use habitat within the study area. DFO records are indicative of records of Spotted Gar; however, supporting documents do not indicate they have been identified in the study area.

## 4.2.3 Source Water Protection

Source Protection Plans are mandated under the *Clean Water Act, 2006* to provide policies related to significant threats to municipal drinking water sources and policies to protect those drinking water sources.

The Halton-Hamilton Source Protection Region includes the study area for the Valley Inn Bridge. Vulnerable Area mapping was reviewed regarding Intake Protection Zones, and other potential hazards.

Hamilton Harbour and the study area are identified as part of Intake Protection Zone IPZ-3 for the Woodward Lake Ontario-based water supply located near the Hamilton beach. The Source Protection Region website identifies that "Intake protection zone three, IPZ-3, is an area where modelling has demonstrated that contaminants released during an event may be transported to the intake and cause an adverse effect. The IPZ-3 lies outside of an IPZ-1 and IPZ-2." IPZ-3 is noted as being non-operational.

There are no groundwater drinking water sources noted in the Source Protection Plan mapping.

## 4.2.4 Summary of Natural Heritage Constraints

- Terrestrial SAR species potentially present based on background data and habitat suitability in Sunfish Pond and Grindstone Marshes: Blanding's Turtle.
- Confirmed SWH based on habitat suitability, field observations and background data sources: waterfowl stopover and staging area (aquatic; ecosites OA/MASM1-1), raptor wintering area (ecosites FODM2-4 and WODM5-1), shorebird migratory stopover area (ecosites SHSM1-3 and SHSM1-8), and migratory landbird stopover areas (ecosites FODM2-4 and WODM5-1).



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

- Candidate SWH based on habitat suitability but not confirmed through habitat use studies: bat maternity colonies, turtle wintering areas, snake hibernaculum, wetland amphibian breeding habitat, marsh breeding birds habitat, amphibian movement corridor, potential habitat for SOCC (Gray-headed Prairie Coneflower, Wild Four o'clock, Redhead, Black-crowned Night-Heron, Bald Eagle, Red-headed Woodpecker, Eastern Wood-Pewee, Eastern Musk Turtle, Northern Map Turtle, Snapping Turtle).
- Aquatic SAR species potentially present based on background data and habitat suitability: American Eel, and Lilliput. Habitat within the permanently wetted areas of Carroll's Bay and Sunfish Pond provide potential habitat for Lilliput. American Eel may also use habitat within the study area. DFO records are indicative of records of Spotted Gar; however, supporting documents do not indicate they have been identified in the study area.

## 4.3 Socio-Economic Environment

### 4.3.1 Existing Land Use

The project study area contains a mix of open space, natural areas, and the transportation right of way. Land use designations are not expected to change as a result of this project. All improvement activities will be undertaken within the City of Hamilton right-of-way and there will be no temporary or permanent property impacts.

### 4.3.2 Provincial Policy Statement

The Provincial Policy Statement (PPS 2020) is issued under Section 3 of the *Planning Act*. Section 3 of the Act states decisions affecting planning matters "shall be consistent with" the PPS. The improvements are consistent with the PPS Section 1.5 "Public Spaces, Recreation, Parks, Trails and Open Space" in the following ways:

- The improvements are planning a pedestrian crossing that is to be safe, meet the needs of pedestrians, foster social interaction, and facilitate active transportation and community connectivity.
- The bridge will provide a full range and equitable distribution of publicly accessible built and natural settings for recreation, including facilities, parklands, public spaces, open space areas, trails and linkages, and, where practical, water-based resources.
- The location of the bridge provides opportunities for public access to shorelines.
- The bridge does not impact provincial parks, conservation reserves, and other protected areas.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

The PPS requires that Proponents consider the significant resources protected by Section 2 of the PPS, when planning for corridors and rights-of-way. Significant resources potentially affected by the proposed improvements include significant wildlife habitat and archaeological resources. Investigations related to terrestrial ecosystems (including significant wildlife habitat), cultural resources and archaeological resources have been undertaken and are described in this Project File Report.

## 4.3.3 Other Provincial Land Use Policies

The study area is located in the Greater Golden Horseshoe (GGH) where land use must also adhere to Provincial-level land use policy documents under the *Places to Grow Act*. These policies include A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020 (the “Growth Plan”), the Greenbelt Plan, 2017, and the Oak Ridges Moraine Conservation Plan, 2017.

The Growth Plan includes policies such as in Section 4.2.4 and Section 4.2.5 that uphold the protection of lands adjacent to key hydrologic and key natural features and promote publicly-accessible parkland, open space, and trails. The document also promotes interconnection of developments with existing or proposed parks and trails.

The current project adheres to these policies by maintaining the connectivity of existing parkland, Open Space, and trails, including shoreline areas while also developing within an existing right of way to avoid environmental impacts to sensitive habitat.

The study area is located in the “Settlement Area outside the Greenbelt” and is therefore not subject to the *Greenbelt Plan, 2017*.

## 4.3.4 Region of Halton Official Plan

The Region of Halton Official Plan (Office Consolidation 2018) encourages the development of trails within the Regional Natural Heritage System, of which a portion is identified as Royal Botanical Gardens Lands near the study area identified as a “Key Feature” near the study area (Map 1G Official Plan).

The Regional Official Plan encourages the development of trails within the Regional Natural Heritage System provided that the trails are located on publicly owned land or the Bruce Trail, the trails and associated activities do not impact negatively on ecologically sensitive areas or resource uses such as agricultural operations, proper regard is given to issues such as trespassing, and adjacent potentially affected trails are consulted.

The existing structure is located in the City of Hamilton, while areas to the east of the structure are part of the City of Burlington. Work will remain within the City of Hamilton/City of Burlington right of ways.



# **VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT**

July 2021

## **4.3.5 City of Hamilton Official Plan**

The study area is located at the northern edge of the Urban Hamilton Official Plan (2009, as effective 2013). Schedule B of the Natural Heritage System of the Urban Hamilton Official Plan (City of Hamilton 2013) identifies the Project Footprint and surrounding study area as a “Core Area” which includes the Hamilton Harbour. Areas surrounding the bridge are also identified as a Local Natural Area – Environmentally Significant Area.

Core areas are locations that maintain the ecological functionality and connectivity of the natural system. The City also encourages the protection and restoration of core areas and natural areas adjacent to Core areas. The intent of the Natural Heritage System Core areas policy is to ensure that all development or site alteration within or adjacent to them shall not negatively impact their natural features or their ecological functions. Vegetation removal is generally not permitted and appropriate vegetation protection zones are applied to all Core Areas (Section C.2.0).

Utilities, municipal infrastructure, and transportation facilities are among the land uses permitted in all land use designations in the City of Hamilton (Section 3.2.1).

The project adheres to the City of Hamilton Official Plan as it is permitted as a transportation facility within all land uses. The bridge will also be removed and constructed to minimize vegetation removal requirements through the use of a crane to lift the existing bridge for removal and then to replace the existing bridge overtop of the existing bridge abutments.

## **4.3.6 City of Burlington Official Plan**

The City of Burlington Official Plan (City of Burlington 2008, Updated 2019) designates the area as part of its Urban Planning Area. Schedule B of the City of Burlington Official Plan describes areas near the study area as “Greenlands” (Royal Botanical Gardens) or “Residential-Low Density”.

Section 6.0 of the Official Plan guides planning for natural features, including “Greenlands”. Greenlands are defined as those lands which together form a permanent natural resource base consisting of natural features and open space areas that are ecologically sensitive.

The Official Plan permits usage of Greenlands activities such as non-intensive recreational uses such as nature viewing, and essential transportation and utility facilities.





# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

The existing structure is located in the City of Hamilton, while areas to the east of the structure are part of the City of Burlington. Work will remain within the City of Hamilton Right of Way.

## 4.3.7 Conservation Halton/ Hamilton Conservation Authority

The project location straddles the Hamilton Conservation Authority (HCA) and Conservation Halton (CH) watershed boundary. In correspondence with HCA in January 2021, HCA confirmed that CH will take the lead on correspondence for this project and HCA will provide input through CH as necessary. Development within Conservation Halton's Regulation Limit is subject to the policies outlined in Ontario Regulation 162/06 under the *Conservation Authorities Act*; and further correspondence with the Conservation Authorities will be required in the next phase of the project to confirm permitting requirements.

## 4.4 Cultural Environment

### 4.4.1 Built Heritage

A Cultural Heritage Evaluation Report (CHER) was completed for this bridge in 2017 and determined that the bridge has moderate heritage value as a Class C structure when evaluated against Ontario Regulation (O. Reg.) 9/06 and the Hamilton Bridge Guideline. In addition, the Valley Inn Bridge is situated adjacent to the Royal Botanical Gardens (RBG), a National Historic site that is recognized under the *Historic Sites and Monuments Act*.

### 4.4.2 Archaeology

A Stage 1 Archaeological Assessment was completed for the study area, including background research and a property inspection on December 11, 2020. Previous archaeological investigations have occurred in the study area in 2007, 2009, and 2010. The current Stage 1 assessment determined that the study area has been previously assessed and does not retain potential for the identification and documentation of archaeological resources. No further archaeological assessment is required for the land-based portions of the study area.

Portions of the study area within Carroll's Bay retain potential for the identification of marine archaeological resources. It is anticipated that impacts to Carroll's Bay will be confirmed as part of the Project's detailed design phase. The potential for marine archaeological resources will be evaluated using the MHSTCI's Criteria for Evaluating Marine Archaeological Potential Checklist during detailed design. Consultation and engagement will continue with interested Indigenous communities during detailed design as it relates to the project and future archaeological assessment.



July 2021

## **5.0 Problem and Opportunity Statement**

Due to the current condition of the Valley Inn Bridge, pedestrian and cyclist access has been restricted. The bridge links the City of Hamilton and City of Burlington and has the potential to provide active transportation connectivity if rehabilitated or replaced. If not addressed, the existing bridge will be unable to provide a safe, efficient, and cost-effective crossing for pedestrians and cyclists.



July 2021

## **6.0 Alternative Solutions**

As part of Phase 2 of the Municipal Class EA process, alternative solutions are identified and evaluated against the Problem/Opportunity Statement. The following Alternative Solutions were developed and assessed:

- Do Nothing – Maintain the bridge in its existing condition and do not proceed with any modifications. The bridge will not support pedestrians or cyclists.
- Remove the Existing Bridge – Remove the existing bridge and do not have a crossing in this location. Cyclists and pedestrians would be directed to Plains Road.
- Rehabilitation of the Existing Bridge – Rehabilitate the existing bridge and related infrastructure to accommodate pedestrian and cycling.
- Replace the Existing Bridge – Replace the existing bridge with a new bridge to accommodate pedestrian and cycling.

### **6.1 Assessment of Alternative Solutions**

A number of factors and criteria were identified to evaluate environmental impacts of the project and alternatives, and included:

- Natural Environment – This group of criteria impacts to environmental features, wildlife and species at risk, watercourses, and the consideration of climate change.
- Social/Cultural – This group of criteria includes impacts on existing and future land use, active transportation, archaeological and cultural heritage resources, and health and safety considerations.
- Technical – This group of criteria includes structural requirements.
- Cost – This group of criteria includes the consideration for both capital costs, and long-term operations and maintenance costs.

**Table 2** provides a summary of the assessment of alternative solutions.

### **6.2 Recommended Alternative Solution**

Based on the assessment of alternatives, replacing the existing bridge is identified as the recommended Alternative Solution. This alternative includes the removal of the existing bridge and construction of a new bridge. The design of the new bridge will be completed in the next phase of the study.



# **VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT**

July 2021

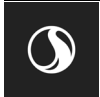
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July 2021

Table 2: Assessment of Alternative Solutions

Evaluation Criteria Components	Do Nothing – Maintain the Bridge in its current condition	Remove Bridge	Rehabilitation of the Existing Bridge	Replace the Existing Bridge
Natural Environment	The bridge condition would remain as is. No impacts to the natural environment are anticipated.	Potential impacts and disruption to species at risk (SAR), wildlife habitat and fish habitat during bridge removal/demolition. Environmental mitigation measures are available to address potential impacts to the natural environment during removal/demolition.  Potential for long-term improvements to wildlife and fish habitat, as removal presents potential for the natural habitat to be restored.	Potential impacts to SAR, wildlife habitat and fish habitat during bridge rehabilitation. Environmental mitigation measures are available to address potential impacts to the natural environment.  Potential for continued long-term impacts to wildlife and fish habitat due to ongoing maintenance to the existing bridge.  Construction, including potential in-water works, would be completed in accordance with applicable environmental approvals/permits.	Potential impacts to SAR, wildlife habitat and fish habitat during bridge replacement. Environmental mitigation measures are available to address potential impacts to the natural environment.  Potential for long-term improvements to wildlife and fish habitats. A new bridge will require less maintenance to the structure.  Construction, including potential in-water works, would be completed in accordance with applicable environmental approvals or permits, as required based on detail design requirements.
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social/Cultural Environment	No change to the identified cultural heritage value or interest (CHVI) of the structure.  The existing bridge is closed to all modes of transportation and travelers would be required to continue with current, inefficient routes.	The existing bridge has identified CHVI, which would be impacted as a result of removal of the structure. Mitigation options are recommended to incorporate salvaged bridge components into new structures, future conservation work, or displays to commemorate the existing bridge prior to demolition.	Rehabilitation of the existing bridge with safety modifications has the highest potential to maintain the CHVI of the structure.  Rehabilitation of the bridge would provide a safe and efficient pedestrian and cyclist path. Anticipated ongoing maintenance of the structure	The existing bridge has identified CHVI, which would be impacted as a result of removal of the structure. Mitigation options are recommended to replace the structure using sympathetic bridge design features in recognition of the bridge’s heritage value, and/or construct a new bridge with replication of the appearance. Bridge components from the



VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

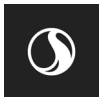
July 2021

Evaluation Criteria Components	Do Nothing – Maintain the Bridge in its current condition	Remove Bridge	Rehabilitation of the Existing Bridge	Replace the Existing Bridge
		No crossing provided to all modes of transportation and travelers would be required to continue with current, inefficient routes.	may require additional closures of the bridge to pedestrians and cyclists.	existing structure may be salvaged for incorporation into the new structure, future conservation, or displays.  Replacement of the bridge would provide a safe and efficient pedestrian and cyclist path.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Technical Environment	The bridge would remain as is, and structural problems would not be addressed.	Removal of the structure does not address the problem/opportunity to provide a safe and efficient trail crossing.	Rehabilitation of the existing structure would temporarily address structural concerns. The bridge would require ongoing maintenance and would lead to the eventual replacement of the structure once it reaches its end-of-life.	Replacement of the existing structure with a new bridge addresses all structural needs and would ensure a safe and reliable structure over the long-term.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cost	Ongoing costs would be required for maintenance and may not preclude structural failure.	Demolition costs would be required to remove the existing bridge and safely restore the area.	Ongoing maintenance costs would be required and would be higher than if the bridge remained closed.  Rehabilitation does not provide a long-term cost-effective solution for the crossing.	Replacement of the existing bridge with a new structure would present the most significant upfront costs. Long-term maintenance costs are reduced by using current bridge design standards.  Funding for replacement of the structure has been secured.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

Evaluation Criteria Components	Do Nothing – Maintain the Bridge in its current condition	Remove Bridge	Rehabilitation of the Existing Bridge	Replace the Existing Bridge
Overall	<p>Do Nothing does not address the problem/opportunity to provide a safe and efficient bridge crossing for pedestrians and cyclists.</p> <p>This alternative is not recommended to be carried forward.</p>	<p>Removal of the existing structure would eliminate a CHVI structure and does not address the problem/opportunity to provide a safe and efficient bridge crossing for pedestrians and cyclists.</p> <p>This alternative is not recommended to be carried forward.</p>	<p>Rehabilitation of the existing bridge crossing maintains CHVI and provides a short-term solution for use of the structure. Long-term operating costs and continued maintenance become cost prohibitive, and inevitably leads to the eventual replacement of the structure.</p> <p>This alternative is not recommended to be carried forward.</p>	<p>Replacement of the bridge crossing will incorporate design elements of the existing bridge CHVI into a new structure. This alternative addresses the problem/opportunity to provide a safe and efficient bridge crossing for pedestrians and cyclists and provides the most feasible and cost-effective short-term and long-term solution.</p> <p>This alternative is carried forward as the preferred solution.</p>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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July 2021

## **7.0 Environmental Impacts and Proposed Mitigation**

The potential impacts to natural features that might reasonably be expected to occur as a result of the proposed bridge replacement are identified and discussed in this section.

### **7.1 Overview of Bridge Design and Construction**

The design of the new bridge will be completed in the next phase of the Project. Generally, the existing abutments will be left in place and new abutments will be built behind the structure. The new bridge will be constructed in sections off-site and a crane will be used to lift the bridge pieces into position. No in-water work is anticipated to be required, and the Project Footprint will be limited to the existing right-of-way.

Based on the existing conditions of the study area and preliminary design drawings, the replacement of the existing Valley Inn Bridge has the potential to impact:

- Terrestrial species at risk potentially present in Sunfish Pond and Grindstone Marshes: Blanding's Turtle.
- Confirmed Significant Wildlife Habitat: waterfowl stopover and staging area (aquatic; ecosites OA/MASM1-1), raptor wintering area (ecosites FODM2-4 and WODM5-1), shorebird migratory stopover area (ecosites SHSM1-3 and SHSM1-8), and migratory landbird stopover areas (ecosites FODM2-4 and WODM5-1).
- Candidate Significant Wildlife Habitat: bat maternity colonies, turtle wintering areas, snake hibernaculum, wetland amphibian breeding habitat, marsh breeding birds habitat, amphibian movement corridor, potential habitat for species of conservation concern (Gray-headed Prairie Coneflower, Wild Four o'clock, Redhead, Black-crowned Night-Heron, Bald Eagle, Red-headed Woodpecker, Eastern Wood-Pewee, Eastern Musk Turtle, Northern Map Turtle, Snapping Turtle).
- Aquatic species at risk potentially present: American Eel, and Lilliput.

Although the area of impact during construction is limited to a relatively small area, due to the presence of species at risk, MECP engagement will be required once the final design details of the bridge and construction staging are confirmed.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## 7.1.1 Standard Environmental Mitigation Measures

The following standard mitigation measures/best practices are provided to reduce potential impacts to natural heritage features during construction:

- Delineate the Project Footprint with tree protection fencing prior to construction to reduce impacts to adjacent natural features.
- Wash, refuel, and/or service equipment a minimum of 30 m from surface waters to reduce the risk of deleterious substances from entering surface waters. Check machinery regularly for fluid leaks.
- Develop a Spill Management Plan and have it on site for implementation in the event of an accidental spill. Keep an emergency spill kit on site.
- Thoroughly clean construction machinery prior to entering the site to reduce the potential for establishment of highly invasive species such as Phragmites. No Phragmites was observed in the study area, however it is known to be present in Hamilton Harbour and extensive control measures have been undertaken by RBG in the Grindstone Marshes to eliminate the species from this area.
- To reduce the potential for spread of insect pests such as the Emerald Ash Borer, trees cut should be disposed of on site (either through spreading of wood chips or trees cut and sawed into logs).

## 7.1.2 Erosion and Sediment Control

An erosion and sediment control (ESC) plan should be developed and employed during construction to reduce the risk of erosion and the entry of sediment into surface water and other natural features. Mitigation included in the plan should include the following measures:

- Implement project-specific temporary ESC measures prior to starting work (e.g., silt fence and/or sediment logs).
- Keep additional ESC materials available on site to provide a contingency supply in the event of an emergency.
- Monitor and maintain erosion and sediment controls, as required. Controls are to be removed only after the soils of the construction area have stabilized and vegetation cover has re-established.
- Stabilize materials requiring stockpiling (fill, topsoil, etc.) and keep a safe distance (> 30 m) from watercourses.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## 7.1.3 Protection of Migratory Birds

The *Migratory Bird Convention Act* (MBCA) provides legal protection of migratory birds and their nests in Canada. Construction timing must consider restrictions imposed by the MBCA. To avoid damaging or disturbing bird nests and contravening the MBCA, the timing of any vegetation clearing should occur outside of the primary nesting period. The primary nesting period (PNP) identified for southern Ontario is April 1 - August 31, although nesting also infrequently occurs outside of this period (Environment Canada 2014). Vegetation removal during this core nesting period is not recommended; however, if required, a nest survey must be carried out by a qualified person in simple habitats such as an urban park, a vacant lot with few possible nest sites, a previously cleared area, or a structure (Government of Canada 2019). If a migratory bird nest is located within the work area at any time, a no-disturbance buffer will be delineated. This buffer will be maintained for the entire duration of the nest activity, which will be determined using periodic checks by the avian biologist. The radius of the buffer generally varies from 5 m - 60 m depending on the sensitivity of the nesting species. The Project will not resume within the nest buffer until the nest is confirmed to be no longer active.

## 7.1.4 Wildlife Protection

The following mitigation measures are recommended to avoid impacts to wildlife during construction:

- A visual search of the work area will be conducted before work commences each day, particularly for the period when most wildlife is active (generally April 1 to October 31). Visual inspections will locate and avoid snakes, turtles, and other ground dwelling wildlife such as small mammals. Visual searches will include inspection of machinery and equipment left in the work area overnight prior to starting equipment.
- If wildlife is encountered, work at that location will stop, and the animal(s) will be permitted reasonable time to leave the work area on their own.
- Contractors should be made aware of the turtle nesting period (May 15 to September 15) and potential for turtle nesting during construction. Sediment fencing should be installed along the limits of the work zone to reduce the potential for turtles to enter the construction area. Installation of sediment fencing will occur before May 15 or after September 15 (i.e., outside of turtle nesting season) to restrict the movement of nesting turtles into the work zone.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

- If installation of fencing occurs during the turtle nesting season, the area shall be searched for evidence of turtles or nests prior to installation of fencing. Further specifications for reptile exclusion fencing should follow Best Practices Technical Note – Reptile and Amphibian Exclusion Fencing (MNR 2013) and Best Management Practices for Mitigating the Effects of Road Mortality on Amphibian and Reptile Species at Risk in Ontario (MNR 2016). The exclusion fencing is to be maintained around the work area for the duration of the turtle nesting activity period and checked daily to identify any repairs that may be needed. Fencing shall be repaired immediately.
- If a nesting turtle is encountered during construction at any time, the turtle should not be disturbed. Work in the area must stop until the turtle has completed nesting and/or vacated the area. The nest site should be noted (but not marked) and the City, RBG and MECP should be contacted for direction. Turtle nests are protected under the *Fish and Wildlife Conservation Act* (FWCA); therefore, a confirmed nest should not be disturbed.
- Any sediment and erosion control measures, such as fencing or blanket, utilized on the site during construction, will avoid products with plastic mesh due to risk of entanglement of snakes or other wildlife.
- Any observations of species at risk or species of conservation concern (e.g., Blanding's Turtle) should be reported to MECP and MNR within 48 hours. Species at risk should not be handled, harassed, or moved in any way, unless they are in immediate danger.

## 7.1.5 Protection of Fish and Fish Habitat

Potential impacts to aquatic habitat during construction will be mitigated through site control measures, such as previously mentioned sediment and erosion controls, and measures to prevent the entry of substances and debris into the water.

If in-water work is required, consultation with DFO and MECP will be required during detailed design due to the presence of species at risk and associated habitat.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## 7.2 Cultural Environment

### 7.2.1 Archaeological Resources

Portions of the study area within Carroll's Bay retain potential for the identification of marine archaeological resources. Impacts to Carroll's Bay are not anticipated but this will be confirmed during the detailed design phase. If in-water work is deemed to be required, the potential for marine archaeological resources will be evaluated using the MHSTCI's Criteria for Evaluating Marine Archaeological Potential Checklist during detailed design.

Consultation and engagement will continue with interested Indigenous communities during detailed design as it relates to the project and future archaeological assessment.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33*, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Government and Consumer Services is also immediately notified.

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

### 7.2.2 Cultural Heritage Resources

The Cultural Heritage Impact Assessment (CHIA) for Valley Inn Bridge determined that the proposed removal and replacement of the bridge would have direct impacts on the heritage attributes identified for the bridge. The CHIA recommended documentation, salvage, and commemoration of the bridge as an appropriate mitigation measure along with replacement of the Valley Inn Bridge with a historically sympathetic design.

A Documentation Report was prepared to fulfill the documentation, salvage, and commemoration recommendation of the CHIA. The following recommendations were made to fulfill the documentation, salvage, and commemoration recommendation.



# **VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT**

July 2021

The preferred approach is a blended commemoration approach that combines documentation, commemoration, and salvage to mitigate the impacts arising from the removal and replacement of the Valley Inn Bridge. Therefore, the following recommendations are made:

- The Documentation Report and the accompanying photo log and photos sent via FTP should be retained on file with the City of Hamilton and a copy should be deposited at the Local History and Archives Collection at the Hamilton Public Library. This will create a public record of the Valley Inn Bridge that will be accessible to the public.
- The blended commemoration approach should incorporate the display of the salvaged materials alongside the three interpretive panels prepared as part of the Documentation Report. The panels and salvaged components should be displayed in close proximity to the original location of the bridge. As the Bailey Truss design is inherently modular, displaying a section or sections of salvaged modular panels will aid in the interpretation and understanding of the Bailey Truss Bridge design.

## **7.3 Waste Management**

The City of Hamilton has an existing contract with a waste management company to dispose of the existing bridge following its removal. A Waste Management Plan will be prepared by the Contractor in accordance with the existing contract to ensure that the bridge is properly disposed in accordance with industry practices.

## **7.4 Property**

Property acquisition is not required to implement the replacement of the bridge. Construction access within the City of Burlington will be determined in detailed design.

## **7.5 Noise**

The contractor will be required to abide by the municipal noise control by-laws and ensure that all construction equipment is kept in good working order to limit additional noise. The contractor shall also ensure that the idling of construction equipment is kept to a minimum. Additional noise control measures will be addressed during detailed design and included in the construction contract.

## **7.6 Air Quality**

During construction, best management practices will be applied to mitigate any air quality impacts caused by construction dust (non-chloride dust suppressants).



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## 7.7 Climate Change

The MECP's guide, *Consideration of Climate Change in the Environmental Assessment Process*, outlines two approaches for consideration and addressing climate change in project planning including:

- Reducing a project's impact on climate change (climate change mitigation).
- Increasing the project's and local ecosystem's resilience to climate change (climate change adaptation).

The City of Hamilton has committed to addressing climate change. The City of Hamilton developed the Hamilton Community Climate Change Action Plan in 2015 to improve climate change resiliency in areas that include transportation. The City of Hamilton Transportation Master Plan (2018) summary actions also includes a significant emphasis addressing climate change through corporate greenhouse gas emission fleet changes, but also by promoting the use of active transportation. This includes promoting the interconnectivity of trails, increasing the share of daily trips using walking and cycling, and building bicycle lanes and related infrastructure. The plan also encourages regional coordination to promote a greenway network within natural, rural, and urban areas of the City.

More recently, City Council declared a Climate Change Emergency in 2019 and directed staff to identify and investigate actions to achieve net-zero carbon emissions by 2050.

The City is in the process of developing a Community Energy and Emissions Plan with baseline information completed in December 2020. The City has committed to identifying opportunities for climate change adaptations to help prepare, prevent, or reduce the vulnerability of social, economic, built and natural systems to climate change. It will also include climate mitigation measures, of which an action listed was using active or public transportation among others.

The proposed replacement of the Valley Inn Bridge provides the opportunity to reduce the project's impact on climate change through the identification of an efficient active transportation network. The bridge will provide connectivity to the trail system and encourage active forms of transportation (e.g., pedestrian and cycling). The design of the new bridge over Carroll's Bay will raise the deck height of the structure, which accommodates known flooding in the area. A new bridge will also incorporate current bridge design standards.



# VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT

July 2021

## 8.0 Approvals and Permits

Permit requirements will be confirmed during detailed design. A summary of permits and approvals required for the project is provided below:

### Conservation Authorities Act (CH)

Development within Conservation Halton's Regulation Limit is subject to the policies outlined in Ontario Regulation 162/06 under the *Conservation Authorities Act*. The City will facilitate the follow up and coordination of regulatory permit submissions for the necessary permit(s) during detailed design.

### Endangered Species Act (MECP)

Blanding's Turtle (species at risk) is known to exist in the study area and individuals may be encountered during construction. The provincial *Endangered Species Act* (ESA) prohibits the killing, harming, harassing, capturing, or taking of a living member of a species listed as Threatened, Endangered or Extirpated by the Species at Risk in Ontario (SARO) list (O. Reg 230/08) (S.9), or the damage to habitat of similarly designated species (S.10). An exception is where a permit is issued under S.17(2) of the same act or the Activity is registered under Ontario Regulation 242/08. Consultation with MECP is required during detailed design and upon completion of design drawings in order to confirm mitigation measures and determine authorization requirements, if any.

Due to the potential presence of American Eel, Lilliput and possibly Spotted Gar, MECP shall be consulted if in-water work is required, to determine authorization requirements for provincially regulated aquatic species at risk.

### Fisheries Act (DFO)

In-water work is not anticipated for the replacement of the bridge. If plans are revised during detailed design and the need for in-water work is identified, design details and construction methods will require the submission of a Request for Review form to DFO under the *Fisheries Act*.

### Species at Risk Act

If the need for in-water work is identified, DFO consultation would determine if a SARA Permit is needed for the project, due to the potential presence of Spotted Gar and Lilliput. DFO screens projects for SAR impacts through the Request for Review form discussed above.





July 2021

## 9.0 Detailed Design Commitments

Many of the environmental concerns related to this project will be mitigated as part of the detailed design process. The anticipated impacts and proposed mitigation measures have been described in **Section 7.0**.

**Table 3** provides a list of specific commitments to be carried forward to Phase 5 of the Municipal Class EA process, Implementation (detailed design and construction). The specific commitments refer to permitting requirements, or specific actions to be taken by the contractor as part of detailed design. Unless otherwise stated, the Contractor must also adhere to the mitigation measures outlined in **Section 7.0**.

The City of Hamilton will work with CH, DFO, MECP and MNRF during the detailed design and implementation phases to obtain required permits.



# **VALLEY INN BRIDGE MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROJECT FILE REPORT**

July 2021

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July 2021

Table 3: Detailed Design Commitments

ID#	Detailed Design Commitments
1	<b>Protection of Fish and Fish Habitat</b>
	<ul style="list-style-type: none"><li>• If in-water work is required, develop, and implement a project-specific fish relocation plan and mussel relocation plan to relocate fish and mussels from within an in-water work area. The Contractor must obtain a Licence to Collect Fish for Scientific Purposes from the MNRF prior to the commencement of in-water work.</li><li>• If work is required below the normal high-water level, submit a Request for Review to DFO for review under the Fisheries Act and for screening under the Species at Risk Act.</li></ul>
2	<b>Species at Risk</b>
	<ul style="list-style-type: none"><li>• Consultation with MECP during detailed design and upon completion of design drawings in order to confirm mitigation measures and determine authorization requirements, if any.</li><li>• Targeted surveys for plants and wildlife are recommended if the project footprint changes.</li><li>• Due to the potential presence of American Eel, Lilliput and possibly Spotted Gar, MECP is to be consulted if in-water work is required, to determine authorization requirements for provincially regulated aquatic species at risk.</li></ul>
3	<b>Property Restoration</b>
	<ul style="list-style-type: none"><li>• Consultation with RBG is recommended to obtain input on post-construction restoration measures.</li></ul>
4	<b>Sediment and Erosion Control</b>
	<ul style="list-style-type: none"><li>• An Erosion and Sediment Control (ESC) Plan should be developed and employed during construction to reduce the risk of erosion and entry of sediment into surface water and other natural features.<ul style="list-style-type: none"><li>○ Implement project-specific temporary ESC measures per prior to starting work (e.g., silt fence and/or sediment logs).</li><li>○ Keep additional ESC materials available on site to provide a contingency supply in the event of an emergency.</li><li>○ Monitor and maintain erosion and sediment controls, as required. Controls are to be removed only after the soils of the construction area have stabilized and vegetation cover has re-established.</li><li>○ Stabilize materials requiring stockpiling (fill, topsoil, etc.) and keep a safe distance (&gt; 30 m) from watercourse.</li></ul></li></ul>
5	<b>Archaeology</b>
	<ul style="list-style-type: none"><li>• If in-water work is required at Carroll's Bay, the potential for marine archaeological resources will be evaluated using the MHSTCI's Criteria for Evaluating Marine Archaeological Potential Checklist.</li><li>• Consultation and engagement will continue with interested Indigenous communities during detailed design as it relates to the project and further archaeological assessment. The City of Hamilton will contact Indigenous communities to arrange an on-site monitor as part of the fieldwork, if required.</li></ul>
6	<b>Cultural Heritage</b>
	<ul style="list-style-type: none"><li>• Retain the Documentation Report, the accompanying photo log and photos sent via FTP on file with the City of Hamilton and deposit a copy at the Local History and Archives Collection at the Hamilton Public Library.</li><li>• Incorporate the display of the salvaged bridge materials alongside the three interpretive panels prepared as part of the Documentation Report. The panels and salvaged components should be displayed in close proximity to the original location of the bridge.</li></ul>
7	<b>Waste Management Plan</b>
	<ul style="list-style-type: none"><li>• The Contractor will be responsible for preparing a Waste Management Plan during detailed design to identify the approach to properly disposing of removed materials.</li></ul>





# **APPENDIX A:**

## **Notification Materials**





## **APPENDIX B: Correspondence**







# **APPENDIX C:**

## **Indigenous Community Consultation**





# **APPENDIX D: Technical Reports**

