ARCHAEOLOGY | HERITAGE | OUTREACH | EDUCATION

# Heritage Impact Assessment
# Old Derry Road over Credit River (Bridge #045002)
# City of Mississauga
# Geographic Township of Toronto
# Regional Municipality of Peel

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**2nd Revised Report**

## EXECUTIVE SUMMARY

Under a contract awarded in April 2020 by McIntosh Perry, Archaeological Research Associates Ltd. was retained to complete a Heritage Impact Assessment for the Old Derry Road Bridge (Bridge # 045002) over the Credit River in the City of Mississauga, Ontario. More specifically, the bridge is located on Old Derry Road between Gazette Gate in the west and Willow Lane in the east. The structure is oriented on a west-east axis and provides vehicular and pedestrian access across the Credit River. It is located within the southwest boundary of the Meadowvale Village Heritage Conservation District. The property contains the bridge, the embankments and part of the Credit River and Old Derry Road.

In May 2019, The Corporation of the City of Mississauga released a Request for Proposals for *Engineering Services for Detailed Condition Survey and Detailed Design for four (4) Bridges*, which outlined work to include the preparation of Bridge Structural Detailed Condition Surveys and Detailed Designs for the four bridge structures, including the Old Derry Road Bridge, in order to develop recommendations and preliminary designs to rehabilitate and/or meet the needs to extend the remaining service life and ensure the structural integrity of each bridge structure is maintained over its life cycle. Upon completion of the Detailed Condition Survey for the Old Derry Road Bridge, it will then be determined if a Municipal Class Environmental Assessment will be required to complete the work for the structure. Based on a more detailed review of the condition of some of the elements, more detailed rehabilitation activities were specified in May 2021.

As required by the City of Mississauga, a Heritage Impact Assessment is complete for this bridge as it has been evaluated to possess cultural heritage value or interest (CHVI) and has been designated under Part V of the *Ontario Heritage Act* part of the Meadowvale Village Heritage Conservation District. The Old Derry Road Bridge is a representative example of a single-span steel eight-panel rivet-connected Parker Camelback (Pratt) pony truss bridge.

The Heritage Impact Assessment approach consisted of the following:

- Background historical research concerning the original construction date and ownership of the bridge;
- Consultation with the City of Mississauga's Heritage Planner;
- Identification of any designated or recognized cultural heritage properties within and adjacent to the subject lands;
- On-site inspection of the bridge;
- A description of the bridge;
- A summary of the cultural heritage value or interest of the property;
- An evaluation of potential project impacts of the proposed development based on the eight conservation options for the bridge; and
- The provision of suggested strategies for the future conservation of the heritage attributes.

McIntosh Perry has developed three renewal options for the bridge that are being considered:

- Option 1 – Do nothing now and full bridge replacement in five years (Bridge Conservation Option 8);
- Option 2 – Rehabilitation, waterproof and pave deck (Bridge Conservation Option 3); and
- Option 3 – Full bridge replacement now (Bridge Conservation Option 8).

Based on the condition of the bridge and financial analysis, the preferred alternative for renewal of the Old Derry Road over Credit River Bridge is Option 2. The proposed rehab of the Old Derry Road Bridge represents a non-substantive alteration as it does not significantly alter the property's appearance. Each of the bridge and HCD heritage attributes will be retained. The Preferred Option of Rehabilitation complies with the Policies and Design Guidelines put out in the City of Mississauga's *Meadowvale Village Heritage Conservation District Plan 2014.*

The following mitigation measures are suggested going forward with the preferred Option 2:

- That from a heritage perspective, Option 2 – Rehabilitation, waterproof and pave deck, which relates to Bridge Conservation Option 3, is the preferred option.
- That the preferred option for the project has been determined to be a non-substantive alteration according to the criteria set out in the City of Mississauga's *Meadowvale Village Heritage Conservation District Plan*
- That since rehabilitation of the existing structure is the preferred option, modifications should be sympathetic and care should be taken to conserve the heritage attributes of the bridge. Specifically:
    - That any coatings applied to the steel truss elements reflect the existing green colour of the bridge;
    - That from a heritage perspective, Option 2: 4-tube railing steel barrier is the preferred option for the replacement of the guardrail system.
    - If the replacement guardrail is to be Option 1: new concrete parapet wall consider having less concrete with a taller rail, if possible, to best retain the views;
    - If the replacement guardrail is to be the Option 2: 4-tube steel railing, that it should be painted in the same green colour as the truss.
    - Consider the least optically intrusive, low-profile steel railing and energy attenuators;
    - Care should be taken when removing the existing guardrail from the truss members, repairs should use like materials and colour as truss;
    - Notwithstanding which Sealant Option is preferred, consider coating the concrete barrier walls with the same concrete sealant as the sidewalk in order to both protect the four concrete barrier walls as well as provide visual continuity across the entire bridge and approach;
    - Any concrete patch repair and/or crack injection should be appropriate in colour, pattern and texture;
    - Replace the bearings at the east abutment with like materials;
    - For end treatment replacement(s) care should be taken when removing the existing guardrail from the existing four concrete barrier walls, fill concrete voids with material appropriate in colour, pattern and texture, consider also the least destructive manner of affixing replacement guardrail to the concrete barrier walls;
    - Care should be taken when choosing the energy attenuator type to be installed at the south barrier ends, low profile is best, if possible; and
    - that care should be taken with heavy machinery when completing repairs and/or paving the approaches and bridge deck so as not to damage any heritage attributes of the bridge.

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## PERSONNEL

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Two-page curriculum vitae for key team members that demonstrate qualifications and expertise to perform cultural heritage work in Ontario are provided in Appendix C.

## GLOSSARY OF ABBREVIATIONS

ARA – Archaeological Research Associates Ltd.
BHR – Built Heritage Resource
CHL – Cultural Heritage Landscape
CHVI – Cultural Heritage Value or Interest
HCD – Heritage Conservation District
HIA – Heritage Impact Assessment
MCEA – Municipal Class Environmental Assessment
MHSTCI – Ministry of Heritage, Sport, Tourism and Culture Industries
MTO – Ministry of Transportation
OHA – Ontario Heritage Act
OHT – Ontario Heritage Trust
O. Reg. – Ontario Regulation
PAMA – Peel Art Gallery, Museum and Archives
PPS – Provincial Policy Statement

## ACKNOWLEDGMENT

*ARA would like to thank Kyle Neill, Senior Archivist at Peel Art Gallery, Museum and Archives (PAMA) for his research assistance with this project.*

## MINIMUM REPORT REQUIREMENTS CHART

| City of Mississauga Minimum Requirements | ARA Equivalent |
|---|---|
| 2.1 Site History | 3.0 Site History |
| 2.2 Description of Existing Structures | 5.0 Existing Conditions |
| 2.2 Statement of Conclusions (Significance and Heritage Attributes of the Cultural Heritage Resource) | 4.0 Cultural Heritage Value or Interest<br>13.0 Mandatory Statement |
| 2.2 Location Map | 1.0 Project Context |
| 2.3 Documentation of Existing Conditions (Current External Photographs) | Appendix A: Study Area Images |
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## 1.0 PROJECT CONTEXT

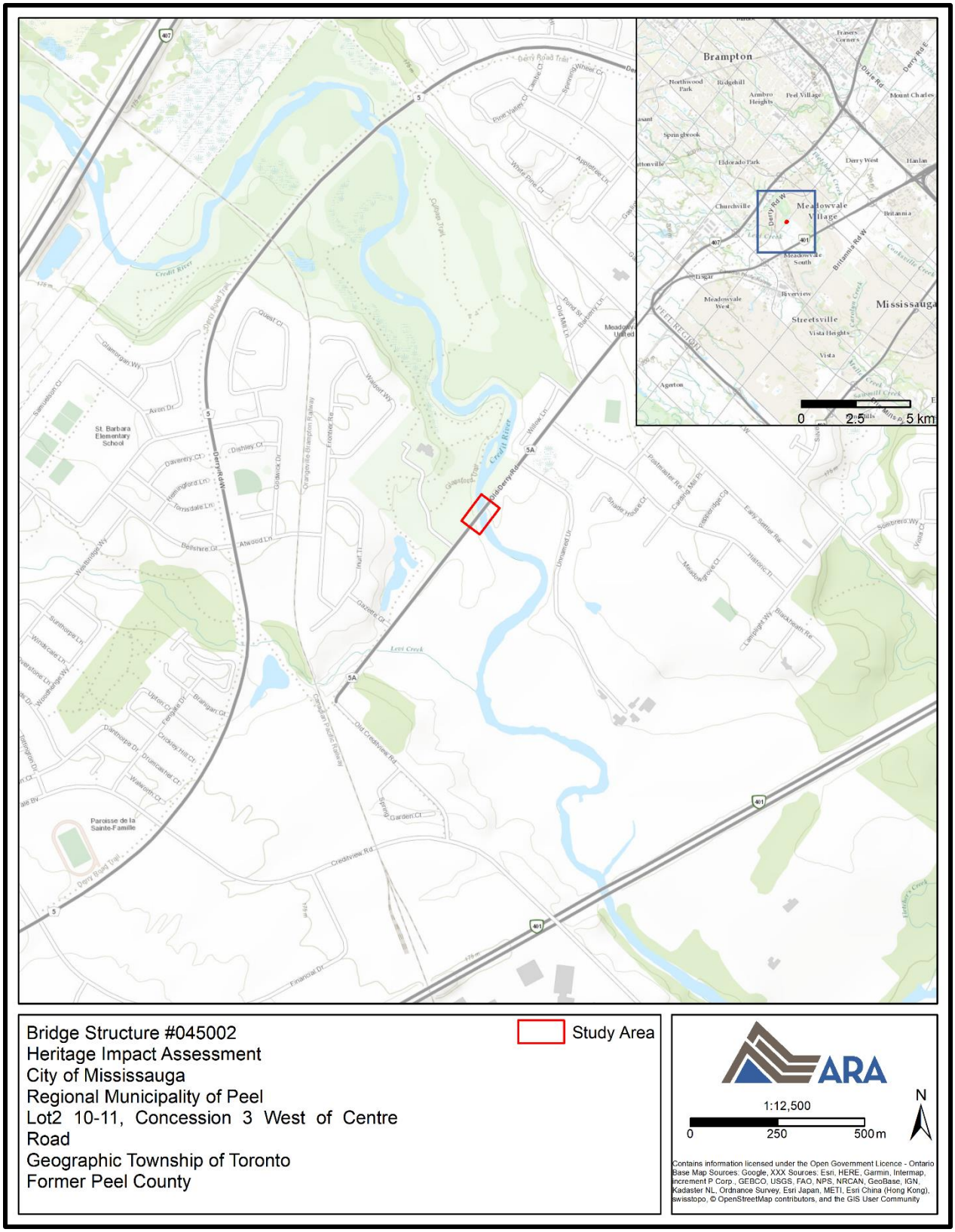
Under a contract awarded in April 2020 by McIntosh Perry, Archaeological Research Associates Ltd. (ARA) was retained to complete a Heritage Impact Assessment (HIA) for the Old Derry Road Bridge (Bridge # 045002) over the Credit River in the City of Mississauga, Ontario. More specifically, the bridge is located on Old Derry Road between Gazette Gate in the west and Willow Lane in the east. The structure is oriented on a west-east axis and provides vehicular and pedestrian access across the Credit River. It is located within the southwest boundary of the Meadowvale Village Heritage Conservation District (HCD). The property contains the bridge, part of the Credit River and Old Derry Road and the embankments.

In May 2019, The Corporation of the City of Mississauga released a Request for Proposals (RFP) for *Engineering Services for Detailed Condition Survey and Detailed Design for four (4) Bridges*, which outlined work to include the preparation of Bridge Structural Detailed Condition Surveys and Detailed Designs for the four bridge structures, including the Old Derry Road Bridge, in order to develop recommendations and preliminary designs to rehabilitate and/or meet the needs to extend the remaining service life and ensure the structural integrity of each bridge structure is maintained over its life cycle (City of Mississauga 2019). Upon completion of the Detailed Condition Survey for the Old Derry Road Bridge, it will then be determined if a Municipal Class Environmental Assessment (MCEA) will be required to complete the work for the structure.

As required by the City of Mississauga, a HIA is being completed for this bridge as it has been evaluated to possess cultural heritage value or interest (CHVI) and has been designated under Part V of the *Ontario Heritage Act* as part the Meadowvale Village HCD. The Old Derry Road Bridge is a representative example of a single-span steel eight-panel rivet-connected Parker Camelback (Pratt) pony truss bridge (referred to going forward as a Pratt pony truss bridge) (Historic Bridges 2020).

The purpose of this assessment is to evaluate potential conservation options and suggest mitigation measures for the bridge and its identified heritage attributes as part of the *Engineering Services for Detailed Condition Survey and Detailed Design for four (4) Bridges* project.

This assessment was conducted in accordance with the aims of the *Planning Act* R.S.O. 1990, c. P.13, *Provincial Policy Statement* (2020), *Ontario Heritage Act*, R.S.O. 1990, c. O.18, *Ontario Heritage Tool Kit* series (MHSTCI 2006), *City of Mississauga Official Plan* (2019a), and the *City of Mississauga Heritage Impact Assessment Terms of Reference* (2017).




**Map 1: Study Area in the City of Mississauga**
**(Produced by ARA under licence using ArcGIS® software by Esri, © Esri)**

## 2.0 POLICY AND APPROACH

The framework for this assessment report is provided by provincial planning legislation and policies as well as municipal Official Plans and guidelines. Section 2 of the *Planning Act* indicates that a council of a Municipality have regard for matters of provincial interest such as: "(d) the conservation of features of significant architectural, cultural, historical, archaeological or scientific interest." Section 3 of the *Planning Act* directs a municipal Council's decisions to be consistent with the *Provincial Policy Statement* (PPS 2020). Policy 2.6.1 states: *"*Significant built heritage resources and significant cultural heritage landscapes shall be conserved" (PPS 2020:31).

With respect to cultural heritage, *The Mississauga Official Plan* Policy 7.4.1 states that "Mississauga's cultural heritage resources reflect the social, cultural and ethnic heritage of the city and, as such, are imperative to conserve and protect. Cultural heritage resources are structures, sites, environments, artifacts and traditions that are of cultural, historical, architectural, or archaeological value, significance or interest" (2019a:7.7). Additionally, Policy 7.4.1.12 states that "the proponent of any construction, development, or property alteration that might adversely affect a listed or designated cultural heritage resource, or which is proposed adjacent to a cultural heritage resource will be required to submit a Heritage Impact Assessment (HIA), prepared to the satisfaction of the City and other appropriate authorities having jurisdiction" (2019a:7.8). The *City of Mississauga Heritage Impact Assessment Terms of Reference* (2017) outlines the required elements for HIAs prepared on properties situated within the City of Mississauga.

By conducting background research, consultation with the local community and completing a field survey for the property, the aims of provincial legislation and policies of the *Mississauga Official Plan* can be met.

### 2.1 Key Concepts

The following concepts require clear definition in advance of the methodological overview; proper understanding is fundamental for any discussion pertaining to cultural heritage resources:

- **Cultural Heritage Value or Interest** (CHVI), also referred to as Heritage Value, is identified if a property meets one of the criteria outlined in O. Reg. 9/06 namely historic or associate value, design or physical value and/or contextual value. Provincial significance is defined under *Ontario Heritage Act* (OHA) *O. Reg*. 10/06.
- **Built Heritage Resource** (BHR) is defined in the PPS as: "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" (2020:41).
- **Cultural Heritage Landscape** (CHL) is defined in the *PPS* as: "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" (2020:42).

It is recognized that the heritage value of a CHL is often derived from its association with historical themes that characterize the development of human settlement in an area (Scheinman 2006). In Ontario, typical themes which may carry heritage value within a community include, but are not limited to: 1) Pre-Contact habitation, 2) early European exploration, 3) early European and First Nations contacts, 4) pioneer settlement, 5) the development of transportation networks, agriculture and rural life, 6) early industry and commerce, and/or 7) urban development. Individuals CHLs may be related to a number of these themes simultaneously.

The *Operational Guidelines for the Implementation of the World Heritage Convention* defines several types of CHLs: 1) designed and created intentionally by man, 2) organically evolved landscapes which fall into two-subcategories (relic/fossil or continuing), and 3) associative cultural landscapes (UNESCO 2008:86). MCL (at the time) *Information Sheet #2 Cultural Heritage Landscapes* (MCL 2006c) repeats these definitions to describe landscapes in Ontario.

- **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" (2020:41-42).
- **Heritage Attributes**, as defined in the OHA, means, in relation to real property, and to the buildings and structures on the real property, the attributes of the property, buildings and structures that contribute to their cultural heritage value or interest" (Government of Ontario 2019).
- **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 2020:49).
- **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 2020:51).

### 2.2 Meadowvale Village Heritage Conservation District Policies

As stated in the *Meadowvale Village Heritage Conservation District Plan*, the conservation of cultural heritage value and character in a district is achieved by managing appropriate change at the individual property level as well as on the larger community scale. The following policies of the HCD plan are relevant to this project (City of Mississauga 2014:23-28):

- Policy 5 a) vii. Retention of all heritage attributes within the HCD and those listed for each individual property;
- Policy 5 c) ensure changes enhance the HCD character;
- Policy 7: Under Part V of the *Ontario Heritage Act*, Council will consider requests to alter a historically and contextually sensitive property in the Village;

- Policy 17: Council is committed to the preservation of entire buildings and will encourage retention and reuse of properties within the district;
- Policy 18: Notwithstanding Policy 16, Council will consider requests for demolition in accordance with Section 41.1 of the Ontario Heritage Act. Council will assess each application to demolish property based on one or more of the following:
    a) condition of property;
    b) the impact to the property's cultural heritage attributes;
    c) the impact to the HCD's heritage attributes;
    d) the replacement building(s) and compliance with the Design Guidelines Section 4.1.3; and
    e) compliance with applicable by-laws.

The following design guidelines outlined in the *Meadowvale Village Heritage Conservation District Plan* are relevant to this project (City of Mississauga 2014:44):

- 4.2.1.17 Public Works
    - Alterations within the public right-of-way, which do not change the materials or appearance, are permitted;
    - The addition of new sidewalks within the public right of way may be installed where required to meet accessibility needs, as appropriate;
    - The addition and/or replacement of street tree plantings will be encouraged;
    - Alterations to parkland which do not alter the appearance, materials, views or vistas of the property are permitted;
    - Signage related to the identification of streets within the Village are permitted;
    - Directional signage, bike route signs and traffic safety signs are permitted;
    - Signage to identify the area as a HCD is permitted;
    - Alterations to structures within the public realm are subject to the Design Guidelines, and
    - The conservation and interpretation of the mill ruins located between Willow Lane and Old Mill Lane are encouraged.

### 2.3 Evaluation of Impacts

Any potential project impacts on identified BHRs or CHLs must be evaluated, including positive and negative indirect impacts. *InfoSheet #5: Heritage Impact Assessments and Conservation Plans* (MHSTCI 2006b:3) provides an overview of several major types of negative impacts, including but not limited to:

- Destruction of any, or part of any, significant heritage attributes;
- 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 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; and
- Land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect an archaeological resource.

### 2.4 Conservation and Mitigation Strategies

If potential impacts to identified heritage bridges are determined, proposed conservation or mitigative/avoidance measures must be recommended. The following conservation options are regarded as appropriate in managing interventions on heritage bridges and are arranged according to level or degree of intervention from minimum to maximum (MTO 2008:19-20):

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

These conservation options “are to be considered in rank order such that Option 1 must be considered before Option 2 can be considered” (MTO 2008:19).

### 2.5 Summary of Approach

The approach outlined herein is supported by the best practices, guidelines and policies of the following:

- *Planning Act* (R.S.O. 1990);
- *Provincial Policy Statement* (2020);
- *Ontario Heritage Act* (R.S.O. 1990);
- *Ontario Heritage Tool Kit* series (MHSTCI 2006);
- *Ontario Heritage Bridge Guidelines* (MTO 2008);
- *The Mississauga Official Plan* (2019a);
- City of Mississauga *Heritage Impact Terms of Reference* (2017);
- *Meadowvale Village Heritage Conservation District Plan* (City of Mississauga 2014); and
- Statement of Cultural Heritage Value (City of Mississauga 2012).

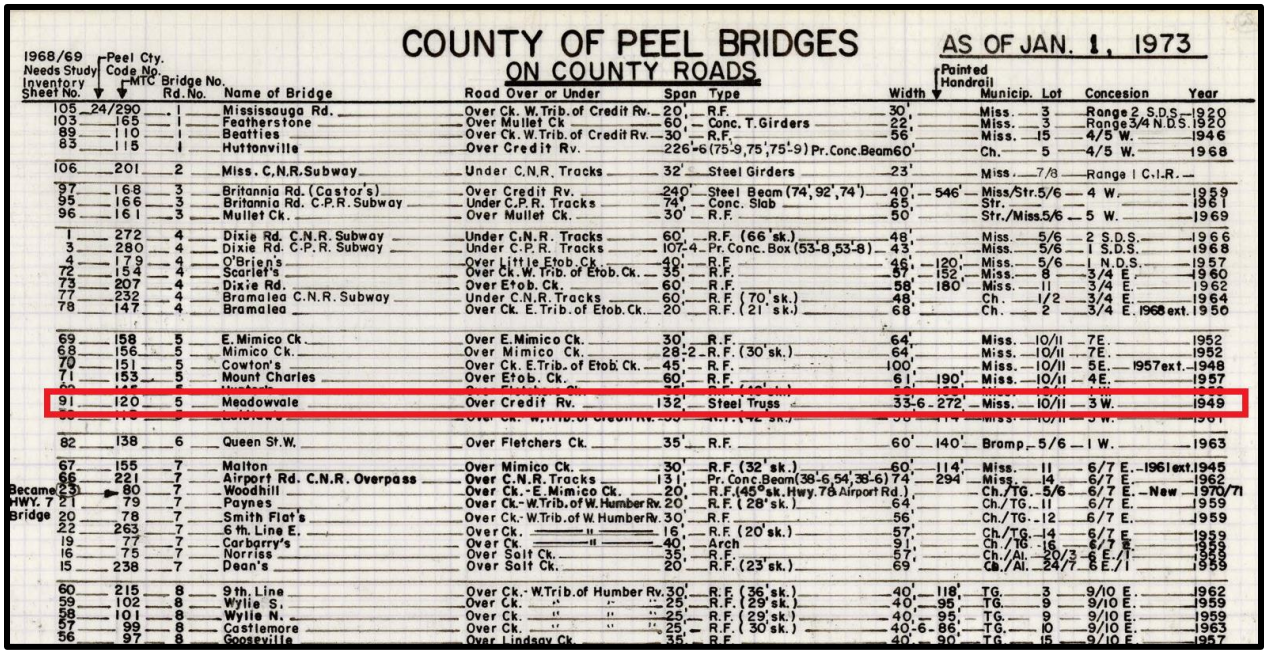
## 3.0 SITE HISTORY

After noticing a discrepancy on the construction date in several sources, the City asked that ARA research the construction date of the current bridge as well as the ownership status at the time of construction. Due to COVID19 there were restrictions in accessing archive materials. However, the Peel Art Gallery, Museum and Archives (PAMA) was able to provide digital materials regarding the history of the bridge.

Frank Sibbald built a wooden bridge at this crossing location in the 1870s. In 1894 the wooden bridge was replaced with an iron bridge after an ice jam (see Figure 1). The current bridge was constructed in 1949, following the washout of the iron bridge (see Figure 2 and Figure 3). The 1949 bridge at Old Derry Road over the Credit River, known as the Meadowvale Bridge, was dedicated by the Premier of Ontario, Thomas Laird Kennedy (see Figure 3 and Figure 4).

The County of Peel inventory indicates the current bridge (which is referred to as “Meadowvale Bridge”) was under county ownership by at least 1973 (see Figure 2).

**Figure 1: The Old Iron Bridge Over the Credit River at Derry Road, ca. 1900**
**(Meadowvale Tweedsmuir History, Volume 2, PAMA)**



COUNTY OF PEEL BRIDGES
ON COUNTY ROADS
AS OF JAN. 1, 1973

| 1968/69 Needs Study Inventory Sheet No. | Peel Cty. Code No. / MTC Bridge No. | Rd. No. | Name of Bridge | Road Over or Under | Span | Type | Width | Painted Handrail | Municip. | Lot | Concesion | Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 105 | 24/290 | 1 | Mississauga Rd. | Over Ck. W.Trib.of Credit Rv. | 20' | R.F. | 30' | | Miss. | 3 | Range 2 S.D.S. | 1920 |
| 103 | 165 | 1 | Featherstone | Over Mullet Ck | 60' | Conc. T. Girders | 22' | | Miss. | 3 | Range 3/4 N.D.S. | 1920 |
| 89 | 110 | 1 | Beatties | Over Ck. W.Trib.of Credit Rv. | 30' | R.F. | 56' | | Miss. | 15 | 4/5 W. | 1946 |
| 83 | 115 | 1 | Huttonville | Over Credit Rv. | 226'-6 (75'-9, 75', 75'-9) | Pr.Conc.Beam | 60' | | Ch. | 5 | 4/5 W. | 1968 |
| 106 | 201 | 2 | Miss. C.N.R. Subway | Under C.N.R. Tracks | 32' | Steel Girders | 23' | | Miss. | 7/8 | Range 1 C.I.R. | |
| 97 | 168 | 3 | Britannia Rd. (Castor's) | Over Credit Rv. | 240' | Steel Beam (74', 92', 74') | 40' | 546' | Miss/Str. | 5/6 | 4 W. | 1959 |
| 95 | 166 | 3 | Britannia Rd. C.P.R. Subway | Under C.P.R. Tracks | 74' | Conc. Slab | 65' | | Str. | | | 1961 |
| 96 | 161 | 3 | Mullet Ck. | Over Mullet Ck. | 30' | R.F. | 50' | | Str./Miss. | 5/6 | 5 W. | 1969 |
| 1 | 272 | 4 | Dixie Rd. C.N.R. Subway | Under C.N.R. Tracks | 60' | R.F. (66' sk.) | 48' | | Miss. | 5/6 | 2 S.D.S. | 1966 |
| 3 | 280 | 4 | Dixie Rd. C.P.R. Subway | Under C.P.R. Tracks | 107'-4 | Pr. Conc. Box (53'-8, 53'-8) | 43' | | Miss. | 5/6 | 1 S.D.S. | 1968 |
| 4 | 179 | 4 | O'Brien's | Over Little Etob. Ck. | 40' | R.F. | 46' | 120' | Miss. | 5/6 | 1 N.D.S. | 1957 |
| 72 | 154 | 4 | Scarlet's | Over Ck. W. Trib. of Etob. Ck. | 35' | R.F. | 57' | 152' | Miss. | 8 | 3/4 E. | 1960 |
| 73 | 207 | 4 | Dixie Rd. | Over Etob. Ck. | 60' | R.F. | 58' | 180' | Miss. | 11 | 3/4 E. | 1962 |
| 77 | 232 | 4 | Bramalea C.N.R. Subway | Under C.N.R. Tracks | 60' | R.F. (70' sk.) | 48' | | Ch. | 1/2 | 3/4 E. | 1964 |
| 78 | 147 | 4 | Bramalea | Over Ck. E. Trib. of Etob. Ck. | 20' | R.F. (21' sk.) | 68' | | Ch. | 2 | 3/4 E. | 1968 ext. 1950 |
| 69 | 158 | 5 | E. Mimico Ck. | Over E. Mimico Ck. | 30' | R.F. | 64' | | Miss. | 10/11 | 7E. | 1952 |
| 68 | 156 | 5 | Mimico Ck. | Over Mimico Ck. | 28'-2 | R.F. (30' sk.) | 64' | | Miss. | 10/11 | 7E. | 1952 |
| 70 | 151 | 5 | Cowton's | Over Ck. E. Trib. of Etob. Ck. | 45' | R.F. | 100' | | Miss. | 10/11 | 5E. | 1957 ext. 1948 |
| 71 | 153 | 5 | Mount Charles | Over Etob. Ck. | 60' | R.F. | 61' | 190' | Miss. | 10/11 | 4E. | 1957 |
| 91 | 120 | 5 | Meadowvale | Over Credit Rv. | 132' | Steel Truss | 33-6 | 272' | Miss. | 10/11 | 3 W. | 1949 |
| 82 | 138 | 6 | Queen St. W. | Over Fletchers Ck. | 35' | R.F. | 60' | 140' | Bramp. | 5/6 | 1 W. | 1963 |
| 67 | 155 | 7 | Malton | Over Mimico Ck. | 30' | R.F. (32' sk.) | 60' | 114' | Miss. | 11 | 6/7 E. | 1961 ext. 1945 |
| 66 | 221 | 7 | Airport Rd. C.N.R. Overpass | Over C.N.R. Tracks | 131' | Pr. Conc. Beam (38'-6, 54', 38'-6) | 74' | 294' | Miss. | 14 | 6/7 E. | 1962 |
| Became (23) | 80 | 7 | Woodhill | Over Ck.-E. Mimico Ck. | 20' | R.F. (45° sk. Hwy. 78 & Airport Rd.) | | | Ch./TG. | 5/6 | 6/7 E. | New 1970/71 |
| HWY. 7 21 | 79 | 7 | Paynes | Over Ck.-W. Trib. of W. Humber Rv. | 20' | R.F. (28' sk.) | 64' | | Ch./TG. | 11 | 6/7 E. | 1959 |
| Bridge 20 | 78 | 7 | Smith Flat's | Over Ck.-W. Trib. of W. Humber Rv. | 30' | R.F. | 56' | | Ch./TG. | 12 | 6/7 E. | 1959 |
| 22 | 263 | 7 | 6th. Line E. | Over Ck. " " | 16' | R.F. (20' sk.) | 57' | | Ch./TG. | 14 | 6/7 E. | 1959 |
| 19 | 77 | 7 | Carbarry's | Over Ck. " " | 40' | Arch | 91' | | Ch./TG. | 16 | 6/7 E. | 1959 |
| 16 | 75 | 7 | Norriss | Over Salt Ck. | 35' | R.F. | 57' | | Ch./Al. | 20/3 | 6 E./1 | 1959 |
| 15 | 238 | 7 | Dean's | Over Salt Ck. | 20' | R.F. (23' sk.) | 69' | | Ch./Al. | 24/7 | 6 E./1 | 1959 |
| 60 | 215 | 8 | 9th. Line | Over Ck.-W. Trib. of Humber Rv. | 30' | R.F. (36' sk.) | 40' | 118' | TG. | 3 | 9/10 E. | 1962 |
| 59 | 102 | 8 | Wylie S. | Over Ck. " " " | 25' | R.F. (29' sk.) | 40' | 95' | TG. | 9 | 9/10 E. | 1959 |
| 58 | 101 | 8 | Wylie N. | Over Ck. " " " | 25' | R.F. (29' sk.) | 40' | 95' | TG. | 9 | 9/10 E. | 1959 |
| 57 | 99 | 8 | Castlemore | Over Ck. " " " | 25' | R.F. (30' sk.) | 40'-6 | 86' | TG. | 10 | 9/10 E. | 1963 |
| 56 | 97 | 8 | Gooseville | Over Lindsay Ck. | 35' | R.F. | 40' | 90' | TG. | 15 | 9/10 E. | 1957 |

**Figure 2: Meadowvale Bridge Construction Date in County of Peel Bridges Inventory, 1973**
**(RPA2000.068 RG13, PAMA)**

**Figure 3: Archival Photo of the Old Derry Road Bridge, Note "1949" Pressed in the Concrete of the End Barrier Wall**
**(Township of Toronto Fonds 1957, PAMA)**

**Figure 4: Archival Photo of Opening of Meadowvale Bridge with Premier Thomas Kennedy at Centre, 1949**
**(Russel Cooper Fonds 1950, PAMA)**

## 4.0 CULTURAL HERITAGE VALUE OR INTEREST

### 4.1 Statement of Cultural Heritage Value or Interest

The following Statement of Cultural Heritage Value or Interest for the Old Derry Road Bridge is included in the *Meadowvale Village Heritage Conservation District – List of Properties* (City of Mississauga 2012:93-95).

#### *4.1.1 Historical Background*

A wooden bridge, 110 feet long, was built at this same location by Frank Sibbald in the 1870s. Sibbald used lumber from his steam powered sawmill located on the south side of Old Derry Road approximately where the former gas station sits today. In 1894 the wooden bridge was destroyed by an ice jam and was replaced with an iron bridge. The current bridge was constructed in 1949, following the washout of the iron bridge, and was dedicated by the Premier of Ontario, Thomas Laird Kennedy. The bridge was refurbished in 2007, a project which included the refacing of the concrete support abutments. In this application, the original date stamp of the bridge's construction was lost (City of Mississauga 2012:93-95).

#### *4.1.2 Description of Property*

The iron structured bridge, spanning the east and west side of the Credit River, on Old Derry Road, was designed in the Pratt truss manner which provided a lighter, but strong bridge (see Figure 6). This bridge design was particularly useful in colder climates with heavy winter snow

loads. This was the most prevalent bridge design used over short length water courses between 1870 and 1960 throughout North America. The bridge proved its strength, having survived the power of Hurricane Hazel in 1954 (City of Mississauga 2012:93-95).

### *4.1.3 Statement of Cultural Heritage Value*

The bridge at Old Derry Road and the Credit River has historical significance as it is one of a series of bridges that has provided access to Meadowvale Village at this site since the 1870s. The bridge has architectural significance in its original design, style, and materials. The context is significant as it marks the entryway into the Meadowvale Village HCD from the west access on Old Derry Road and provides views and vistas of the Credit River floodplain and rural character (City of Mississauga 2012:93-95).

### *4.1.4 Heritage Attributes*

The heritage attributes that embody the CHVI of the Old Derry Road Bridge include the:

- Historic bridge, original materials and Parker Camelback (Pratt) Truss bridge design;
- Original location of the bridge over the Credit River as an entry point into the Village HCD; and,
- Views and vistas both to and from the bridge provide an opportunity to experience the landscape within the Credit River floodplain and the meadow-like conditions which retain a rural character (City of Mississauga 2012:93-95).

## 4.2 Meadowvale Village Heritage Conservation District

The following Heritage Character Statement provided in the *Meadowvale Village Heritage Conservation District Plan* (2014:16-18) describes the aspects of the HCD that define the contextual and landscape characteristics of the area.

### *4.2.1 Character*

“The Meadowvale Village HCD is characterized and defined by its inherent heritage value, size, shape, and form adjacent to the Credit River at the intersection of two roadways at Old Derry Road and Second Line West. The relationship of the historic Village to the Credit River has not altered since its founding in the early nineteenth century. The character of the Village is defined by the narrow roads, large diameter trees, open vegetation areas and lack of density in building form. Some of the traditional late nineteenth century landscaping, including simple picket fences, have begun to be reintroduced. Entry points into the Village from the west and north have maintained a rural character. To the west, there are farmlands on the south side of Old Derry Road; open green space to the north; and erected over the Credit River, is the metal Pratt (Parker, “camelback”) truss design bridge c. 1948, all of which contribute to the agricultural past that have surrounded the Village for over a century. To the north, along Second Line West, the west side of the road retains a natural environment, reminiscent of the rural past, which has been conserved as the Meadowvale Conservation Area. The late subdivision homes, of differing scale and form on the east side of Second Line West, are mostly positioned high on the table lands above, retaining a naturalised road right of-way at the street level, enhancing the former rural character” (City of Mississauga 2014:16).

### *4.2.2 Streetscape*

"The Meadowvale Village HCD has maintained a pedestrian friendly scale, with the exception of Old Derry Road, whereby streets have a rural community lane-like appearance with soft shoulders, mature street trees, varied building setbacks and consistency of building size. What was once a commercial core supporting a mill-based village, Old Derry Road has now become mostly residential with a few reminiscent commercial buildings, creating a quieter version of an earlier era" (City of Mississauga 2014:17).

### *4.2.3 Landscape*

"The Village is situated in the low river valley, bordered to the south and east by a shallow ridge that establishes the table lands above the floodplain. The location of the Village, adjacent to the Credit River, illustrates the dependency of the early settlers on the river as a source of water and travel and its proximity to the natural open space of a meadow and vale. These same conditions are not found elsewhere in Mississauga. Native populations, prior to contact with European settlement, inhabited the area for over 10,000 years. The HCD's property plan, street pattern and physical layout have changed very little, although the once rural Village is now within an urban context of the larger City of Mississauga.

The Village and immediate area were farmed for both wood products (sawmill production) and mixed agrarian farming. Today, public lands have become naturalised with a good deal of mature tree growth of both native and non-native species. Private, residential lots also retain many large diameter trees and open vegetated areas that provide a generous spacing around buildings and frame residential lots. Archaeological resources are a significant element of the cultural heritage resources within and around the Village. There is a high potential for pre-contact archaeological resources and known historical resources within the Village. The extant mill ruins, mill race and tail race, remnant mill pond, and other archaeological references, are to be conserved" (City of Mississauga 2014:17-18).

### *4.2.4 HCD Heritage Attributes*

The following heritage attributes of the HCD are relevant to the study area:

> a) significant location, adjacent to the Credit River, in a cultural heritage landscape of integrated natural and cultural heritage elements within the river's low floodplain to the gentle sloping ridge;
> b) an ecological feature and tradition of a floodplain meadow on the Credit River that has existed for hundreds of years;
> d) long term tradition of rural village-like streetscapes without curbs, with no formalized parking, sidewalks (except on Old Derry Road), modest signage and limited modest lighting;
> i) visual identity of rural character roadway entry points to the Village from the west on Old Derry Road and from the north along Second Line West, and the open green space of Old Ridge Park to the south;
> j) individual properties of particular character and significance are identified in *The Meadowvale Village Heritage Conservation District Plan, 2014: Property Inventory*.

### 4.3 Meadowvale Village Cultural Heritage Landscape

The Meadowvale Village HCD (L-HS-2) was recognized in the *City of Mississauga Cultural Heritage Landscape Inventory* (2005) as a Historic Settlement (Village). The following site description was included in Appendix 2: Cultural Landscapes Site Descriptions and Photographic Inventory:

> "Meadowvale is a small scenic enclave containing several buildings dating back to the early and mid nineteenth century. Established in 1831 along the banks of the Credit River as a mill town, the community is now characterized by its extensive stock of heritage structures on original lots, heritage streetscape and mature trees which create a visually distinct community in the middle of the larger City. Meadowvale represents an important period of the development of City of Mississauga and was the first Heritage Conservation District in Ontario. Stimulated by its designation as a heritage conservation district, the community has maintained its heritage character in a manner which allows it to evoke the appearance of a nineteenth century mill town. The cultural landscape thus expressed is of the Mississauga area as it once was. Ironically, the attractiveness of heritage districts such as this has compelled developers to re-think their projects with the result that many new housing developments now attempt to mimic the appearance of communities such as Meadowvale. Thus, the impact of this enclave is much wider than locally and influences current thinking related to the continued development of the community at large" (City of Mississauga 2005:52).

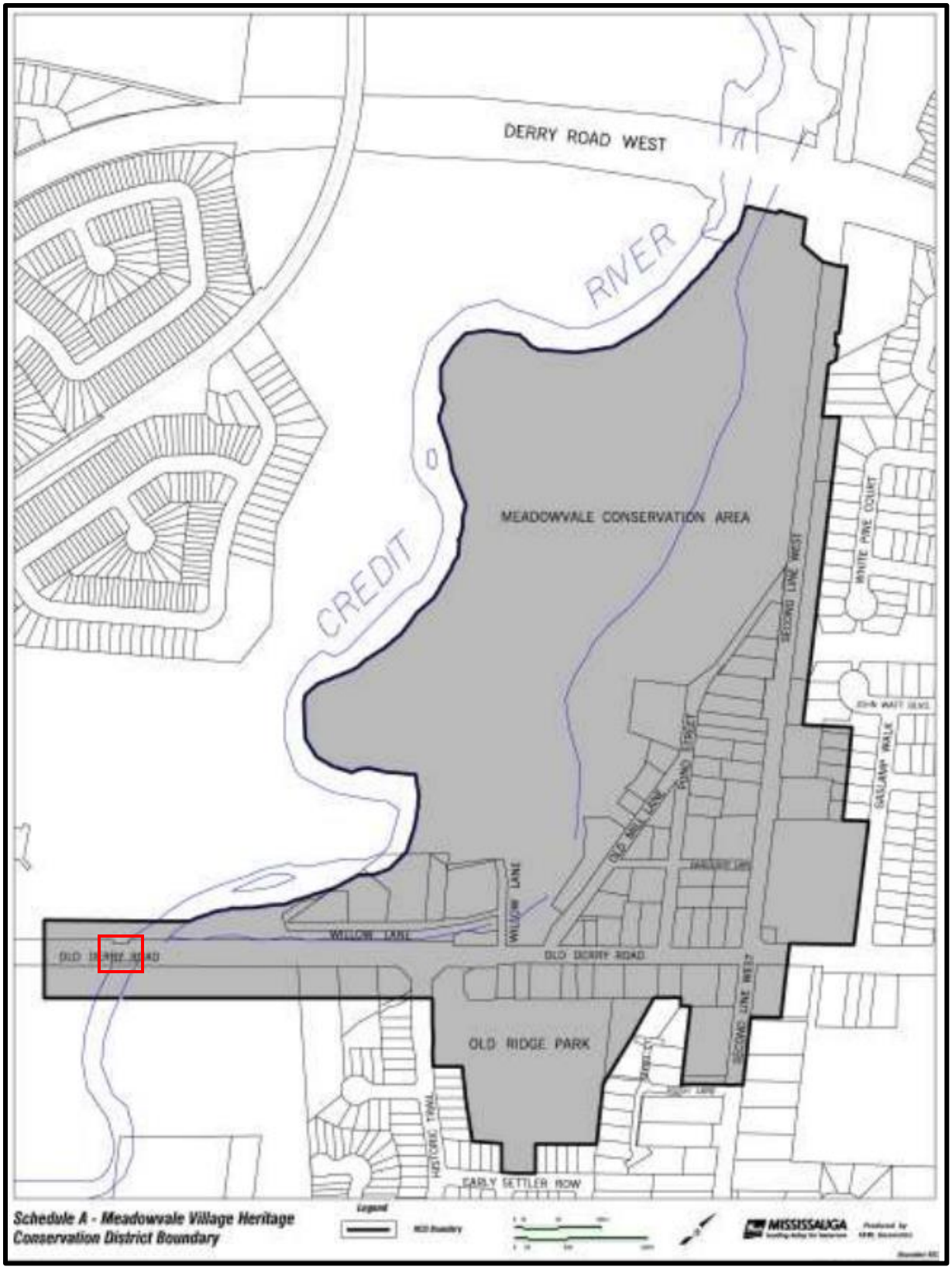



**Figure 5: Meadowvale Village HCD Boundary Map and Location of Old Derry Road Bridge (red box)**
**(City of Mississauga 2012:5)**

## 5.0 EXISTING CONDITIONS

The historic background and physical description of the property at the Old Derry Road Bridge is documented in the Meadowvale Village HCD Plan (City of Mississauga 2012), Historic Bridges website (2012), the Biennial Inspection Report (EMS 2017) and McIntosh Perry's draft Pre-Design Report (2020).

A field survey was conducted on May 27, 2020 to photograph and document the subject property, and to record any features that could enhance ARA's understanding of the setting in the landscape and contribute to the cultural heritage evaluation process. The site visit was conducted on the entire property including landscape features such as the rural road cross-section, views to and from the bridge and elements of the bridge. Photographs from the field survey can be found in Appendix A.

### 5.1 Description

Built in 1949, the Old Derry Road Bridge is a single-span steel eight-panel rivet-connected Parker Camelback (Pratt) pony truss bridge coated in green paint (see Image 4, Image 14; Figure 6). The structure has a west-east orientation and is located on Old Derry Road between Gazette Gate in the west and Willow Lane in the east. The bridge is located in the southwest portion of the Meadowvale Village HCD (see Image 13; Figure 5). The speed limit at this location is 50 km/hr and there is no load limit posted. This bridge carries two lanes of predominantly vehicular traffic across the Credit River in one continuous span with a crossing length of 41.4 m and a maximum clearance of 3 m (EMS 2017:1) (see Image 3). The structure is noted for its very long span length. Pony truss bridges rarely exceed 36.6 m in length, and those that do generally date to after 1925, with many constructed in the 1930s (Historic Bridges 2012). The deck has a travel width of 7 m and an overall width of 10.3 m (EMS 2017). Metal guard rails are affixed to the concrete barrier walls and span the inside of the north and south trusses adjacent to the roadway (see Image 14).

The truss structure is composed of bottom chords, verticals, diagonals, floor beams and stringers and is held together by 4,800 riveted connections (EMS 2017:3-4) (see Image 19-Image 22). The bridge deck is constructed of precast concrete. A cast-in-place sidewalk/curb/median is located on the south side of the bridge (see Image 15). Cast-in-place concrete end barriers are located at each corner of the bridge and exhibit little decoration (see Image 5, Image 6, Image 21, Image 23). A metal railing system spans the south side of the structure (see Image 17).

The east and west abutments and wing walls are constructed of cast-in-place concrete (see Image 9, Image 12, Image 26) and the west retaining wall is a masonry gravity retaining wall (EMS 2017:5) (see Image 25). Both the east and west embankments are of soil (see Image 10). No maker's plate or date stamp were observed on the structure. "Algoma Canada" was pressed into the steel trusses, a steel producer in Ontario since 1901 (Algoma 2020). Monitoring equipment owned by the Credit Valley Conservation Authority is located on the southwest barrier wall (see Image 16). A drainage system including grates that lead to pipes exiting the underside of the bridge were observed.

Cast-in-place concrete abutment ruins of a former bridge were observed northeast of the Old Derry Road Bridge. One abutment was located on both the north and south bank of the Credit River (see Image 33-Image 35). It is possible that this bridge ruin is associated with the former mill whose ruins, mill race, tail race and remnant mill pond are located in this area near Willow Lane and Old Derry Road (City of Mississauga 2014:20).

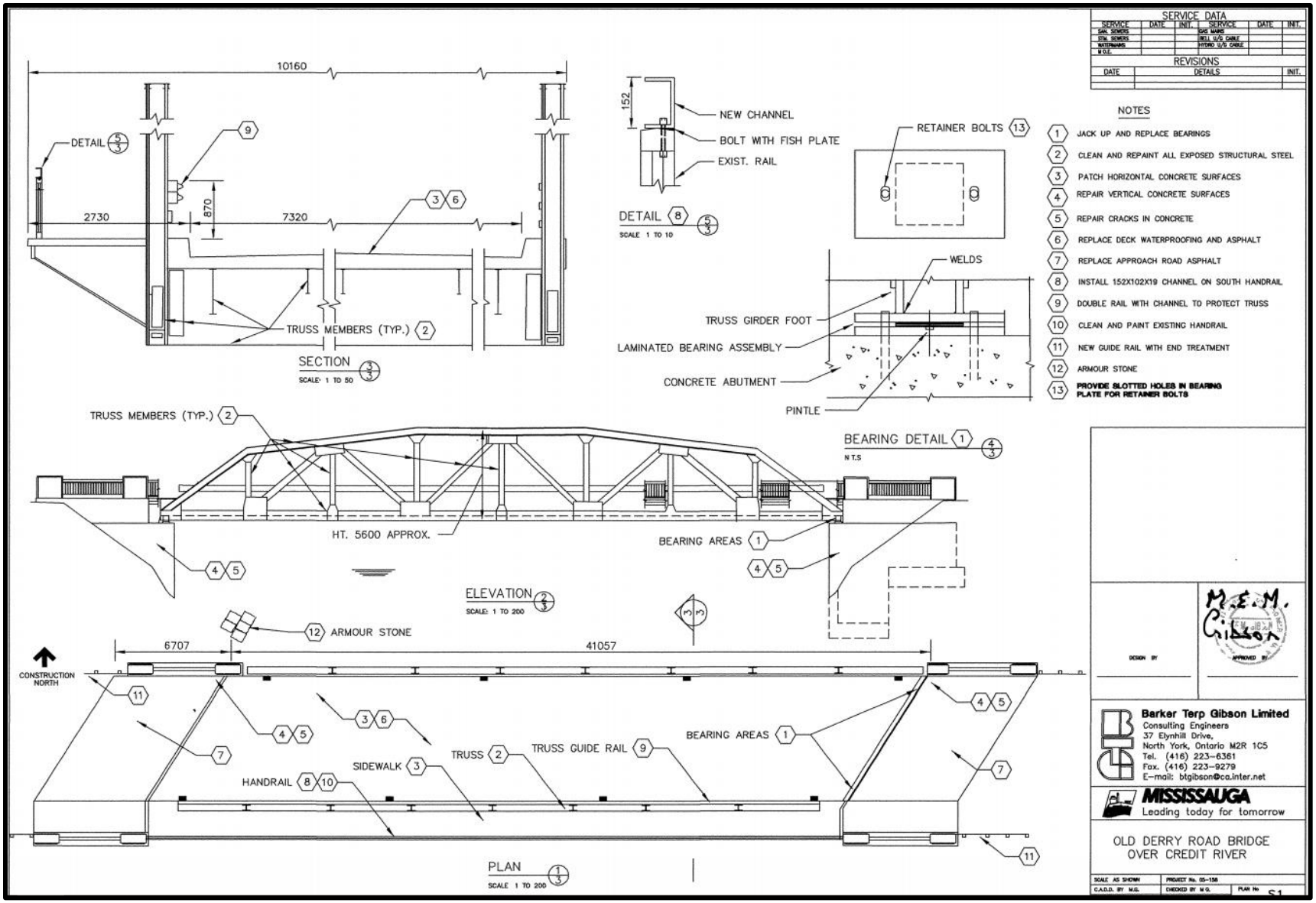



**Figure 6: Old Derry Road Bridge Drawing (details are from 2005 Bridge Rehabilitation)**
**(BTG 2005)**

### 5.2 Physical Condition

A Biennial Inspection Report prepared in September 2017 indicated that the Old Derry Road Bridge underwent rehabilitation in 2005. The scope of the rehabilitation included "replacing the bearings, repainting all structural steel and handrail, patch repairs (deck surface, abutments, wingwalls, end posts and sidewalk), crack repairs (abutments, wingwalls, and end posts), replacement of asphalt at approaches and bridge deck, replacement of waterproofing, installation of a channel on the handrail along the sidewalk to raise height, installation of rail on truss structure for truss protection, and new guiderails with end treatments in appropriate locations" (McIntosh Perry, 2020:4).

A detailed condition inspection was carried out in September 2019 by Bridge Check Canada Ltd., which determined that the bridge remained serviceable (McIntosh Perry 2020a:4). Based on this inspection, McIntosh Perry proposed the following scope of work which could be undertaken to extend the bridge's service life:

- Concrete patch repair and crack injection to the deck, soffit and substructure;
- Concrete patch repair, crack injection and sealing to curbs, sidewalks and concrete end posts;
- Localized coating to structural steel elements at corroded areas;
- Localized repair to steel members embedded in concrete (min 100mm depth of concrete);
- Replacement of expansion joint;
- Replacement of bearings at east abutment;
- Installation of waterproofing on the bridge deck and approach slabs; and
- Paving of approaches and bridge deck (McIntosh Perry 2020a:12).

## 6.0 PROPOSED DEVELOPMENT

In May 2019, The Corporation of the City of Mississauga released a RFP for *Engineering Services for Detailed Condition Survey and Detailed Design for four (4) Bridges*, which outlined work to include the preparation of Bridge Structural Detailed Condition Surveys and Detailed Designs for the four bridge structures, including the Old Derry Road Bridge, in order to develop recommendations and preliminary designs to rehabilitate and/or meet the needs to extend the remaining service life and ensure the structural integrity of each bridge structure is maintained over its life cycle. Upon completion of the Detailed Condition Survey for the Old Derry Road Bridge, it will then be determined if MCEA will be required to complete the work for the structure.

Based on a more detailed review of the condition of some of the elements, more detailed rehabilitation activities were specified. In May 2021, the following items were provided as refined scope. It should be noted that at the time this report was drafted, Item #3 was still under review by the City (McIntosh Perry 2021).

1. Remove deck asphalt and waterproofing system from deck top and approach slabs;
2. Remove expansion joint assemblies and concrete end dams at the east abutment, replace with new expansion joint assemblies and concrete end dams;
3. Remove existing steel beam guardrails and steel beams spacers from steel arch truss and construct a new guardrail system. Option 1: new concrete parapet wall (see Figure 8), or Option 2: 4-tube railing steel barrier (see Figure 9).
4. Install energy attenuator at the south barrier ends (Under review, see Figure 10);

5. Carefully remove concrete sidewalk surrounding steel truss members to remove corrosion in steel truss as directed by the contract administrator. Patch repair removed portion of sidewalk around steel truss;
6. Remove delaminated and deteriorated concrete from deck to parapet walls, sidewalk, approach slabs and curbs and patch repair, use a sealant on the concrete;
7. Remove deteriorated concrete from abutment walls, bearing seat and wingwall and patch repair;
8. Remove deteriorated concrete from deck soffit and fascia and patch repair;
9. Clean and recoat the entire steel trusses, end floor beams and stringer within 1000mm from deck end; and
10. Waterproof deck top and pave deck top and approach slab with HL8 binder coarse and HL3-High Stability top coarse.

**Figure 7: Existing Guiderail affixed to the Truss Members**
**(McIntosh Perry 2021)**

**Figure 8: Example of Guardrail Option 1: Concrete Parapet Wall**
**(McIntosh Perry 2021)**

**Figure 9: Example of Guardrail Option 2: 4-Tube railing Steel Barrier**
**(McIntosh Perry 2021)**

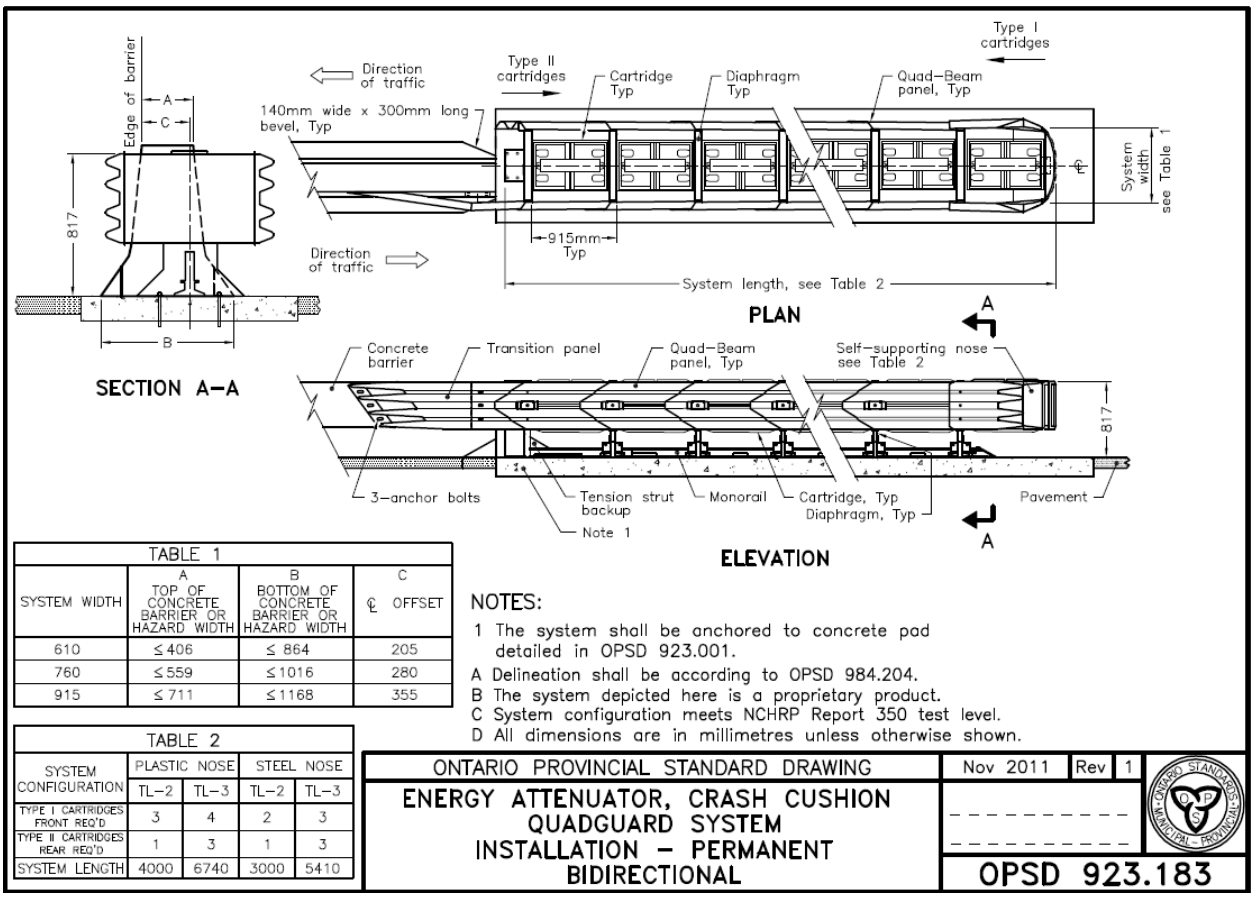



**Figure 10: Guiderail End Treatment at northeast corner of Derry Road Bridge (OPSD 923.183)**

**Figure 11: Colour Option 1, Concrete-like Tone (McIntosh Perry 2021)**

**Figure 12: Colour Option 2, Clear/Transparent**
**(McIntosh Perry 2021)**

## 7.0 CONSULTATION

The MHSTCI's current list of HCDs was consulted and it was confirmed that the Old Derry Road Bridge is located within the boundaries of the Meadowvale Village HCD (MHSTCI 2020). The list of properties designated by the MHSTCI under Section 34.5 of the OHA was consulted. No properties in the study area are listed. The OHT plaque database and the Federal Canadian Heritage Database were searched. The study area is not commemorated with an OHT plaque or a federal designation.

ARA staff contacted the City of Mississauga via email on June 12, 2020 to inquire about heritage interests related to the Old Derry Road Bridge. On June 15, 2020, the City provided direction regarding completion of this HIA in accordance with the *City of Mississauga Heritage Impact Assessment Terms of Reference* (2017) and indicated that Section 2.1 should be addressed through confirmation of the bridge's construction date and original ownership. The City also confirmed that aside from the Part V designation, the Old Derry Road Bridge is not subject to any other forms of recognition and that the City does not hold a municipal heritage easement on the property. Due to confusion over conflicting construction dates for the bridge, the City also shared an archival photo of the bridge dated 1955 that shows the date, "1949," stamped into the concrete barrier end wall of the bridge (see Figure 3).

## 8.0 ANALYSIS OF POTENTIAL IMPACTS

When adverse impacts to cultural heritage resources are unavoidable during planned infrastructure improvement projects, it is necessary to examine the feasibility of mitigation strategies to implement the most appropriate action. As discussed in Section 2.4, there are eight conservation options accepted as best practice when considering interventions to historic bridges. As one moves through the conservation options from one to eight, the impact to the existing bridge increases from limited impacts (i.e., retention or restoration) to bridge removal. The bridge options were evaluated in terms of their impact on the identified heritage attributes of the Old Derry Road Bridge, as well as the relevant heritage attributes of the Meadowvale HCD and CHL (see Table 1).

**Table 1: Evaluation of Potential Impacts of Bridge Improvement Options on Heritage Attributes**

| Rank Order | Conservation/Mitigation Options | Destruction, Removal or Relocation | Alteration | Shadows | Isolation | Director or Indirect Obstruction | Change in Land Use | Soil Disturbance |
|---|---|---|---|---|---|---|---|---|
| 1 | **Retention of existing bridge with no major modifications undertaken** | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. |
| 2 | **Restoration of missing or deteriorated elements where physical or documentary evidence (i.e., photographs or drawings) can be used for their design** | No impact to heritage attributes. | May result in physical changes to the Pratt pony truss bridge design. As a whole, the heritage attributes would be retained. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. |
| 3 | **Retention of existing bridge with sympathetic modification** | No impact to heritage attributes. | May result in some physical changes to the single-span Pratt pony truss bridge, specifically the truss structural members and the cast-in-place concrete barrier end walls. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. |
| 4 | **Retention of existing bridge with sympathetically designed new structure in proximity** | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | Would impact views and vistas both to and from the bridge as well as the visual identity of the rural character roadway entry to the Village from the west on Old Derry Road. | No impact to heritage attributes. | Construction of a new bridge would result in soil disturbance. |
| 5 | **Retention of existing bridge no longer in use for vehicular purposes but adapted for pedestrian walkways, cycle paths, scenic viewing, etc.** | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | The bridge is currently being used for vehicular and pedestrian access, therefore there would be a change in use. | No impact to heritage attributes. |

| Rank Order | Conservation/Mitigation Options | Destruction, Removal or Relocation | Alteration | Shadows | Isolation | Director or Indirect Obstruction | Change in Land Use | Soil Disturbance |
|---|---|---|---|---|---|---|---|---|
| **6** | **Relocation of bridge to an appropriate new site for continued use (see option 4) or adaptive re-use (see option 5)** | Relocation of the bridge would result in an impact to its location over the Credit River. | Relocation would result in alteration as the bridge will likely require rehabilitation and/or modification to adapt to a new use and/or location. There would be some physical changes to the Pratt pony truss bridge design and cast-in-place concrete barrier end walls. | No impact to heritage attributes. | Relocation would result in the destruction of the bridge's contextual heritage attributes, specifically its original location over the Credit River as an entry point into the Meadowvale Village HCD from the west. It will be isolated from its setting in the landscape. | Views and vistas both to and from the bridge would be altered as a result of a new location, as would the visual identity of the rural character roadway entry to the Village from the west on Old Derry Road. | If adaptive re-use is chosen, the use may change. | Removal of the bridge will result in soil disturbance. |
| **7** | **Retention of bridge as a heritage monument for viewing purposes only** | No impact to heritage attributes. | Use as a heritage monument may result in alteration to the bridge as it would be rehabilitated or modified to accommodate a new use. | No impact to heritage attributes. | No impact to heritage attributes. | No impact to heritage attributes. | Adaptation of the bridge to a heritage monument would result in a change of use. | No impact to heritage attributes. |
| **8** | **Bridge removal and replacement with a sympathetically designed structure** | Removal of the bridge will result in the destruction of all heritage attributes. | Removal of the bridge will result in the destruction of all heritage attributes.<br><br>Impacts can be minimized if the new bridge retains its contextual relationship (i.e., original location;) and visual connection to the landscape (i.e., single-span Pratt pony truss bridge design. | No shadows will be created as all heritage attributes will be removed. | Removal of the bridge will result in the destruction of all heritage attributes. | Some impacts to views can be mitigated if the new bridge retains a similar scale, location and incorporates sympathetic design elements (i.e., similar design of extant Pratt pony truss bridge). | The vehicular and pedestrian use of the crossing will be maintained through the construction of a new bridge. | Removal of the bridge and construction of a new bridge will result in soil disturbance. |

From a heritage perspective, the options that retain the physical truss structure in its current location are the most desirable (Options 1-5 and 7). If the bridge is to be retained or reused (Options 1-7), the heritage attributes should be conserved. If the bridge is to be moved (Options 6-7), the heritage attributes related to the bridge's historic fabric (i.e., trusses) should be reinstated in the new location. Those options that remove the current bridge for adaptive reuse (Option 6) or remove the bridge completely (Option 8) and replace it with a new bridge, could maintain several of the bridge's design and contextual attributes through the application of mitigation measures.

## 9.0 ALTERNATIVES CONSIDERED

### 9.1 Alternatives Considered

A number of alternatives have been considered to aid in the evaluation of the bridge's future, including both pedestrian access options and renewal options.

#### *9.1.1 Renewal Options*

Due to the functional role that bridges play in transportation networks, there are often competing interests. McIntosh Perry has developed three renewal options for the bridge that are being considered:

- Option 1 – Do nothing now and full bridge replacement in five years (Bridge Conservation Option 8);
- Option 2 – Rehabilitation, waterproof and pave deck (Bridge Conservation Option 3); and
- Option 3 – Full bridge replacement now (Bridge Conservation Option 8).

The feasibility of these options and their relationship to the bridge conservation options have been summarized in Table 2.

**Table 2: Viability of Conservation/Mitigation Options**

| Rank Order | Conservation/Mitigation Alternatives | Viable? (Y/N) | Project-Specific Rationale |
|---|---|---|---|
| 1 | Restoration of missing or deteriorated elements where physical or documentary evidence (e.g., photographs or drawings) can be used for their design | N | Not viable as renewal work is required to extend the bridge's service life. |
| 2 | Retention of existing bridge with no major modifications undertaken; | N | Not viable as the structure's remaining serviceable life is estimated at five years. |
| **3** | **Retention of existing bridge with sympathetic modification** | **Y** | **Based on financial analysis and the condition of the bridge, rehabilitation to extend its service life is the recommended option (Option 2).** |
| 4 | Retention of existing bridge with sympathetically designed new structure in proximity | N | Not viable as renewal work is required to address structural and safety concerns. |
| 5 | Retention of existing bridge no longer in use for vehicular purposes but adapted for pedestrian walkways, cycle paths, scenic viewing, etc. | N | Not viable as a vehicular bridge is required to carry traffic over the Credit River in this location of Old Derry Road. |

| Rank Order | Conservation/Mitigation Alternatives | Viable? (Y/N) | Project-Specific Rationale |
|---|---|---|---|
| 6 | Relocation of bridge to an appropriate new site for continued use (see 4) or adaptive re-use (see 5) | N | Not viable as the bridge will require rehabilitation to ensure it meets safety requirements.<br><br>Reuse would require rehabilitation and/or modification to adapt the bridge to a new use and/or location. There would be some physical changes to the Pratt pony truss design and cast-in-place concrete barrier end walls. |
| 7 | Retention of bridge as a heritage monument for viewing purposes only | N | It is not feasible to leave the bridge in place as a monument as rehabilitation could extend its serviceable life. |
| 8a | Salvage of elements/members of bridge for incorporation into new structure or for future conservation work or displays; and | Y | As a result of Option 1: Do nothing now and full bridge replacement in five years, and Option 3: Full bridge replacement now, investigation into the salvage of elements/members of the bridge would be feasible. |
| 8b | Full recording and documentation of the structure if it is to be demolished | Y | As a result of Option 1: Do nothing now and full bridge replacement in five years, and Option 3: Full bridge replacement now, investigation into the full recording and documentation of the bridge would be feasible. |

From a heritage perspective, Option 2 – Rehabilitation, waterproof and pave deck, which relates to Bridge Conservation Option 3, is the recommended alternative.

Based on the condition of the bridge and financial analysis, the preferred alternative for renewal of the Old Derry Road over Credit River Bridge is Option 2 (McIntosh Perry 2020:12).

### *9.1.2 Pedestrian Access Options*

The RFP for this project issued by the City of Mississauga requested that the consultant examine the "feasibility of incorporating 2.0 m wide multi-use paths on both sides of the structure [Bridge # 045002] and recommend and incorporate as part of the bridge work" (City of Mississauga 2019b:20).

Based on records provided to McIntosh Perry, the current sidewalk located on the south side of the structure was installed in 2005 (C. Stewart, Personal Communication June 12, 2020b). McIntosh Perry reviewed options that would allow a sidewalk or other pedestrian access to be added to the north side of the structure. In discussions with the City of Mississauga, the following options were explored (C. Stewart, Personal Communication June 12, 2020b):

- Cantilevering a sidewalk on the north side of the bridge.
    - Due to a lack of existing structure information, the design of this option would be difficult and costly to obtain sizing of all members in order to design the addition.

    - Due to the heritage status of the structure, it was uncertain what type of installation would be permitted as it would likely alter the appearance of the bridge.
    - The service life of the new structure would be limited to that of the existing structure, resulting in inefficient costing.
    - As a result of the above factors, this option was not recommended.
- Constructing a separated pedestrian structure to the north of the Old Derry Road Bridge, either on its own abutments or as an extension of the existing abutment.
    - Although this option was achievable, it was found to be prohibitively costly and was subsequently not recommended.

Based on the above discussions, it is likely that pedestrian access will remain only via the existing sidewalk on the south side of the bridge (C. Stewart, Personal Communication June 12, 2020b).

### *9.1.3 Guardrail Options*

The existing guiderail system is too low and would not protect the bridge from vehicle impact (see Figure 7). In addition, the existing guiderail is attached to the bridge's truss members and does not protect the bridge from a serious vehicle impact. A 1.05m high guiderail is recommended in accordance with the current design standard. An 'end treatment' that is similar to the one at the northeast corner will likely be proposed (see Figure 10).

Option 1: new concrete parapet wall (see Figure 8) is a heavier option which takes up a larger footprint while also being a solid characteristic which may obscure views for pedestrians and drivers.

Option 2: 4-tube railing steel barrier (see Figure 9), while also presenting more of a screen to views than the current guardrail, provides breaks between the tubes providing more opportunity for better views than is offered by Option 1. This option also provides the opportunity to blend in with the existing truss. The metal rail system can be painted in a sympathetic manner in order to be less visually intrusive.

A decision on the preferred option has not yet been made by the project team. Option 2: 4-tube railing steel barrier is the preferred option from a heritage perspective.

### *9.1.4 Concrete Coating Options*

A concrete sealer is proposed to be applied on the existing concrete sidewalk, to protect it from further freeze-thaw damage as well as protecting the reinforcing members inside the sidewalk from corrosion caused by winter salt application. Two colours are proposed: Sealant Option 1: light grey – similar to concrete's natural tone (see Figure 11); or Sealant Option 2: clear – it will have a shiny surface but transparent in colour (see Figure 12).

The benefits of the opaque light grey sealant is that it will render the concrete portions of the bridge more uniform in appearance. It could also be applied to the existing concrete barrier walls at each of the bridge's four corners. This would pull the aesthetic of the bridge together. In addition, if the preferred Guardrail option is the concrete parapet wall, this concrete could also be sealed with the same colour sealant.

Alternately, Option 2: Clear sealant will retain the historic appearance and character of the concrete; showing the history of the bridge's wear and tear, paying homage to the longevity of the

structure through its various repairs, scars and patina (from exposure and/or the ghost of previous ferrous metals previously affixed.

A decision on the preferred option has not yet been made by the project team. Option 2: Clear sealant is the preferred option from a heritage perspective.

## 10.0 PREFERRED OPTION – IMPACTS DETAIL

This section will describe Option 2 in more detail as described in the McIntosh Perry 2020 report, as well as the more detailed scope of work provided in May 2021 (McIntosh Perry 2021). This section will also address in more detail, the specific impacts of the preferred option on the heritage attributes of the Meadowvale Village Heritage Conservation District as well as the Heritage Attributes of the bridge itself, as listed in the *Meadowvale Village Heritage Conservation District Plan, 2014*. Option 2 for this bridge aligns with Bridge Conservation Option 3.

### 10.1 Heritage Attributes of the Old Derry Road Bridge – Impacts

The heritage attributes of the Old Derry Road Bridge as outlined in Section 4.1 are listed in Table 3, with an analysis of potential impacts from the proposed preferred option.

**Table 3: Impact of Option 2 on Derry Road Bridge Heritage Attributes**

| Heritage Attributes of Derry Road Bridge | Impact of Option 2 |
|---|---|
| Historic bridge, original materials and Parker Camelback (Pratt) Truss bridge design | The bridge is to remain. Some original materials are to be rehabilitated like, corroded steel elements, fill cracks in concrete sidewalk and end posts. Replacement of existing guardrail with either Option 1: concrete parapet or Option 2: steel 4-tube railing barrier (preferred heritage option) may alter the current appearance of the Pratt pony truss bridge design. Option 2: steel 4-tube railing barrier (preferred heritage option) will have less visual impact. In addition, energy attenuators to be installed at the south barrier ends on the deck may also alter the appearance at the south end of the bridge. |
| Original location of the bridge over the Credit River as an entry point into the Village HCD | The original location will not change and will remain as an entry point to the Village HCD. |
| Views and vistas both to and from the bridge provide an opportunity to experience the landscape within the Credit River floodplain and the meadow-like conditions which retain a rural character | Since the truss and all major visible elements of the bridge. will remain with minor interventions, views to and from the bridge will be unchanged. There are no anticipated impacts to the floodplain or meadow-like conditions. |

### 10.2 Related Heritage Attributes of the Bridge as part of the Heritage Conservation District – Impacts

The heritage attributes relevant to the subject property within the HCD (as outlined in Section 4.2) are listed in Table 4 with an analysis of potential impacts from the proposed preferred option.

**Table 4: Impact of Option 2 on Meadowvale HCD Heritage Attributes**

| Relevant Heritage Attributes of the Meadowvale HCD | Impact of Option 2 |
|---|---|
| Significant location, adjacent to the Credit River, in a cultural heritage landscape of integrated natural and cultural heritage elements within the river's low floodplain to the gentle sloping ridge; | The preferred option will not remove the bridge from its current location, nor will this work alter the landscape of natural and cultural heritage elements within the river's low floodplain |
| An ecological feature and tradition of a floodplain meadow on the Credit River that has existed for hundreds of years; | The preferred option will not alter the ecological feature and tradition of the floodplain meadow on the Credit River |
| A land pattern that retains the layout and plan of generous lots and pedestrian oriented narrow roadways of the 1856 Bristow Survey, spatial organization of narrow streets with soft vegetation and no shoulders, large diameter trees and a visual relationship which blends from public to private space among front and side yards void of privacy fencing | The preferred option will not negatively affect pedestrian oriented narrow roadways or the spatial organization of narrow streets as the rehabilitation of the bridge will only involve some repairs that will be done in a sympathetic manner to retain the road width and sidewalk. |
| Visual identity of rural character roadway entry points to the Village from the west on Old Derry Road and from the north along Second Line West, and the open green space of Old Ridge Park to the south. | The preferred option will not alter the visual identity of rural character roadway entry points to the Village from west on Old Derry Road. The bridge is to be retained and repaired to appear the same with similar coloured paint on the steel truss and like-coloured concrete repairs to the concrete members. Replacement of the existing guardrail with either Option 1:concrete parapet or Option 2: steel 4-tube railing barrier (preferred heritage option) may alter the "Visual identity roadway entry points to the Village." In addition, the proposed addition of energy attenuator at the south barrier ends may also alter visual identity of the bridge. The planned repairs will renew the look of the bridge as a welcoming gateway to the Village of Meadowvale. |

### 10.3 Alteration Type according to City HCD Plan

The proposed rehabilitation is an alteration, and according to the City of Mississauga (2014:30-33), can be characterized as one of two types, according to the HCD Plan:

a) Non-substantive Alterations which would require a Clearance to Alter Process; or,

b) Substantive Alterations which would require a Heritage Property Permit Process.

The proposed rehab of the Old Derry Road Bridge represents a non-substantive alteration as it does not significantly alter the property's appearance. Each of the bridge and HCD heritage attributes will be retained.

### 10.4 Potential Positive Impacts

Currently, there is a modern guardrail that was added to the bridge. It is currently affixed to the bridge. In addition to not meeting safety standards, the guardrail poses a risk to the truss itself since it is directly affixed to the truss members. A positive impact will be the removal of this

guardrail and replacement with a guardrail that will protect the trusses from vehicular impact damage.

## 11.0 MITIGATION MEASURES

Since Option 1 and 3 are not being carried forward in preference of Option 2, this section will only include mitigation measures for the preferred option. In addition, this section examines Option 2 through the lens of the policies of the Meadowvale Village Heritage Conservation District Plan 2014.

### 11.1 General Mitigation

The results of McIntosh Perry's draft Pre-Design Report have recommended that rehabilitation is the most feasible renewal option for the existing structure (McIntosh Perry 2020:12). As noted in the McIntosh Perry pre-design report, the rehabilitation work to be completed on the bridge should maintain the size, shape and colour of the heritage elements including the steel truss components, handrails and concrete end posts (McIntosh Perry 2020:15). Modifications should be sympathetic, and care should be taken to conserve the heritage attributes of the bridge. Specific considerations should include:

1) That any coatings applied to the steel truss elements reflect the existing green colour of the bridge;
2) That from a heritage perspective, Option 2: 4-tube railing steel barrier is the preferred option for the replacement of the guardrail system.
3) If the replacement guardrail is to be Option 1: new concrete parapet wall consider having less concrete with a taller rail, if possible, to best retain the views;
4) If the replacement guardrail is to be the Option 2: 4-tube steel railing, that it should be painted in the same green colour as the truss.
5) Consider the least optically intrusive, low-profile steel railing and energy attenuators;
6) Care should be taken when removing the existing guardrail from the truss members, repairs should use like materials and colour as truss;
7) Notwithstanding which Sealant Option is preferred, consider coating the concrete barrier walls with the same concrete sealant as the sidewalk in order to both protect the four concrete barrier walls as well as provide visual continuity across the entire bridge and approach;
8) Any concrete patch repair and/or crack injection should be appropriate in colour, pattern and texture;
9) Replace the bearings at the east abutment with like materials;
10) For end treatment replacement(s) care should be taken when removing the existing guardrail from the existing four concrete barrier walls, fill concrete voids with material appropriate in colour, pattern and texture, consider also the least destructive manner of affixing replacement guardrail to the concrete barrier walls;
11) Care should be taken when choosing the energy attenuator type to be installed at the south barrier ends, low profile is best, if possible; and
12) that care should be taken with heavy machinery when completing repairs and/or paving the approaches and bridge deck so as not to damage any heritage attributes of the bridge.

### 11.2 Meadowvale Village Heritage Conservation District Plan, 2014

The Meadowvale HCD is characterized and defined by "its inherent heritage value, size, shape, and form adjacent to the Credit River at the intersection of two roadways at Old Derry Road and Second Line West" (City of Mississauga 2014:16). The Plan notes in the Heritage Character Statement the importance of the village's relationship with the river that has been unaltered since early 19th century. Other elements by which the HCD is defined that are related to the subject property include: narrow roads, village entry points from the west and the north, and naturalized road right-of-way, all of which enhance the former rural character and agricultural past. Specifically, the subject bridge is noted for its location as an entry point, erection over the Credit River, metal Pratt (Parker, camelback) truss design.

#### *11.2.1 Policies*

As noted in Section 2.2, the following policies outlined in the *Meadowvale Village Heritage Conservation District Plan* are relevant to this project (City of Mississauga 2014:23-28 and 44) and are examined in Table 5 for mitigative purposes.

**Table 5: Analysis of Meadowvale HCD Policies**

| Relevant Meadowvale HCD Policies | Discussion |
|---|---|
| Policy 5 a) vii. Retention of all heritage attributes within the HCD and those listed for each individual property | All heritage attributes will be retained with the preferred option. Refer to Section 10.1 for general mitigation measures. |
| Policy 5 c) ensure changes enhance the HCD character | There will be no changes to the character of the HCD as the bridge will be rehabilitated. A refreshed deck and repainted truss (in the same colour palate) may enhance the HCD character. In addition, replacing the existing guardrail will help better protect the truss members of the bridge. Refer to Section 10.1 for general mitigation measures. |
| Policy 7: Under Part V of the *Ontario Heritage Act*, Council will consider requests to alter a historically and contextually sensitive property in the Village | The proposed activities have been determined to be non-substantive alterations. |
| Policy 17: Council is committed to the preservation of entire buildings and will encourage retention and reuse of properties within the district | The bridge is remaining and the current use will be retained. No mitigation required. |
| Policy 18: Notwithstanding Policy 16, Council will consider requests for demolition in accordance with Section 41.1 of the Ontario Heritage Act. Council will assess each application to demolish property based on one or more of the following: a) condition of property; b) the impact to the property's cultural heritage attributes; c) the impact to the HCD's heritage attributes; d) the replacement building(s) and compliance with the Design Guidelines Section 4.1.3; and e) compliance with applicable by-laws | The bridge will not be demolished with the preferred option. No mitigation required. |

The preferred option complies with the polices of the *Meadowvale Village Heritage Conservation District Plan.*

### *11.2.2 Design Guidelines*

Pursuant to the HCD Plan Section 4.2 Design Guidelines, it has been established that the proposed work to the Old Derry Road Bridge is Non-Substantive Alterations and that the work is being commissioned by public officials undertaking a public works project (City of Mississauga Assignment no. PRC001573). As such, the design guidelines in 4.2.1 of the HCD Plan are to be followed for this proposed work (City of Mississauga 2014:36). Specifically, *4.2.1.17 Public Works* guidelines should be followed (City of Mississauga 2014:44).

**Table 6: Analysis of Meadowvale HCD Guidelines**

| Relevant Meadowvale HCD Guidelines | Discussion |
|---|---|
| Alterations within the public right-of-way, which do not change the materials or appearance, are permitted. | With the preferred option, the appearance of the bridge will not change. Any materials to be replaced (steel members, asphalt deck, concrete crack fill, expansion joints) will be replaced with like materials in medium, colour and form. Installation of a new rail system across the truss structure for truss protection, and new guiderails (i.e., Option 1: new concrete parapet wall or Option 2: 4-tube railing steel barrier) with end treatments in appropriate locations are proposed - this work may alter the appearance of the truss itself to a minor degree. Option 2: 4-tube railing steel barrier is more visually sympathetic to the bridge and will result in less visual impact If similar material and steel member shape and proportions are used in the design, this will help further mitigate the visual impact. |
| The addition of new sidewalks within the public right of way may be installed where required to meet accessibility needs, as appropriate. | The scope of work includes sidewalk patch repairs only. |
| The addition and/or replacement of street tree plantings will be encouraged. | Not applicable for this proposed work. |
| Alterations to parkland which do not alter the appearance, materials, views or vistas of the property are permitted. | Since the bridge is remaining, and all repairs will be done with like material, views and vistas will be conserved. |
| Signage related to the identification of streets within the Village are permitted. | Additional signage is not part of the proposed scope of work. |
| Directional signage, bike route signs and traffic safety signs are permitted. | Additional signage is not part of the proposed scope of work. |
| Signage to identify the area as a HCD is permitted. | Additional signage is not part of the proposed scope of work. |
| Alterations to structures within the public realm are subject to the Design Guidelines as listed above. | Alterations meet Design Guidelines. |
| The conservation and interpretation of the mill ruins located between Willow Lane and Old Mill Lane are encouraged. | Not applicable for this proposed project. |

The Preferred Option of Rehabilitation, as a non-substantive alteration, complies with the Design Guidelines put out in the City of Mississauga's *Meadowvale Village Heritage Conservation District Plan 2014.*

## 12.0 SUMMARY STATEMENT AND CONSERVATION RECOMMENDATIONS

Of the three renewal options, Option 2 Rehabilitation, waterproof and pave deck (Bridge Conservation Option 3) was chosen over Options 1 and 3.

The proposed rehab of the Old Derry Road Bridge represents a non-substantive alteration as it does not significantly alter the property's appearance. Each of the bridge and HCD heritage attributes will be retained. The preferred option meets the policies and design guidelines as outlined in the *Meadowvale Village Heritage Conservation District Plan 2014.*

The following mitigation measures are suggested going forward with the preferred Option 2:

- That from a heritage perspective, Option 2 – Rehabilitation, waterproof and pave deck, which relates to Bridge Conservation Option 3, is the preferred option.
- That the preferred option has been determined to be a non-substantive alteration according to the criteria set out in the City of Mississauga's *Meadowvale Village Heritage Conservation District Plan*
- That since rehabilitation of the existing structure is the preferred option, modifications should be sympathetic and care should be taken to conserve the heritage attributes of the bridge. Specifically:
    - That any coatings applied to the steel truss elements reflect the existing green colour of the bridge;
    - That from a heritage perspective, Option 2: 4-tube railing steel barrier is the preferred option for the replacement of the guardrail system.
    - If the replacement guardrail is to be Option 1: new concrete parapet wall consider having less concrete with a taller rail, if possible, to best retain the views;
    - If the replacement guardrail is to be the Option 2: 4-tube steel railing, that it should be painted in the same green colour as the truss.
    - Consider the least optically intrusive, low-profile steel railing and energy attenuators;
    - Care should be taken when removing the existing guardrail from the truss members, repairs should use like materials and colour as truss;
    - Notwithstanding which Sealant Option is preferred, consider coating the concrete barrier walls with the same concrete sealant as the sidewalk in order to both protect the four concrete barrier walls as well as provide visual continuity across the entire bridge and approach;
    - Any concrete patch repair and/or crack injection should be appropriate in colour, pattern and texture;
    - Replace the bearings at the east abutment with like materials;
    - For end treatment replacement(s) care should be taken when removing the existing guardrail from the existing four concrete barrier walls, fill concrete voids with material appropriate in colour, pattern and texture, consider also the least destructive manner of affixing replacement guardrail to the concrete barrier walls;
    - Care should be taken when choosing the energy attenuator type to be installed at the south barrier ends, low profile is best, if possible; and
    - that care should be taken with heavy machinery when completing repairs and/or paving the approaches and bridge deck so as not to damage any heritage attributes of the bridge.

It should be noted that choosing to rehabilitate a truss bridge of this age over demolition is a benefit. These structures were ubiquitous across the landscape a generation ago. Since then,

they have steadily disappeared as structural deficiency, maintenance costs and simple “age” has rendered them obsolete. For each individual demolition, there were solid reasons available as to why such options were a necessity. Yet, in aggregate, such decisions have meant that structures of this type and age have virtually disappeared from the provincial heritage landscape.

Positive impacts are possible as this project presents an interpretive opportunity as outlined in Section 4.4 Recommendations of the HCD Plan. In anticipation of a district-wide interpretation plan, the research presented in this report can be used to inform interpretation of the Old Derry Road Bridge gateway to the village. The removal of the existing engaged guardrail system and replacement with a system independent of the truss members will serve to protect the truss bridge.

## 13.0 MANDATORY STATEMENT

The Old Derry Road Bridge is designated under Part V of the *Ontario Heritage Act* as it is included within the boundary and is a representative example of a single-span steel eight-panel rivet-connected Parker Camelback (Pratt) pony truss bridge. The full Statement of Cultural Heritage Value or Interest for the Old Derry Road Bridge is found in Section 4.1.

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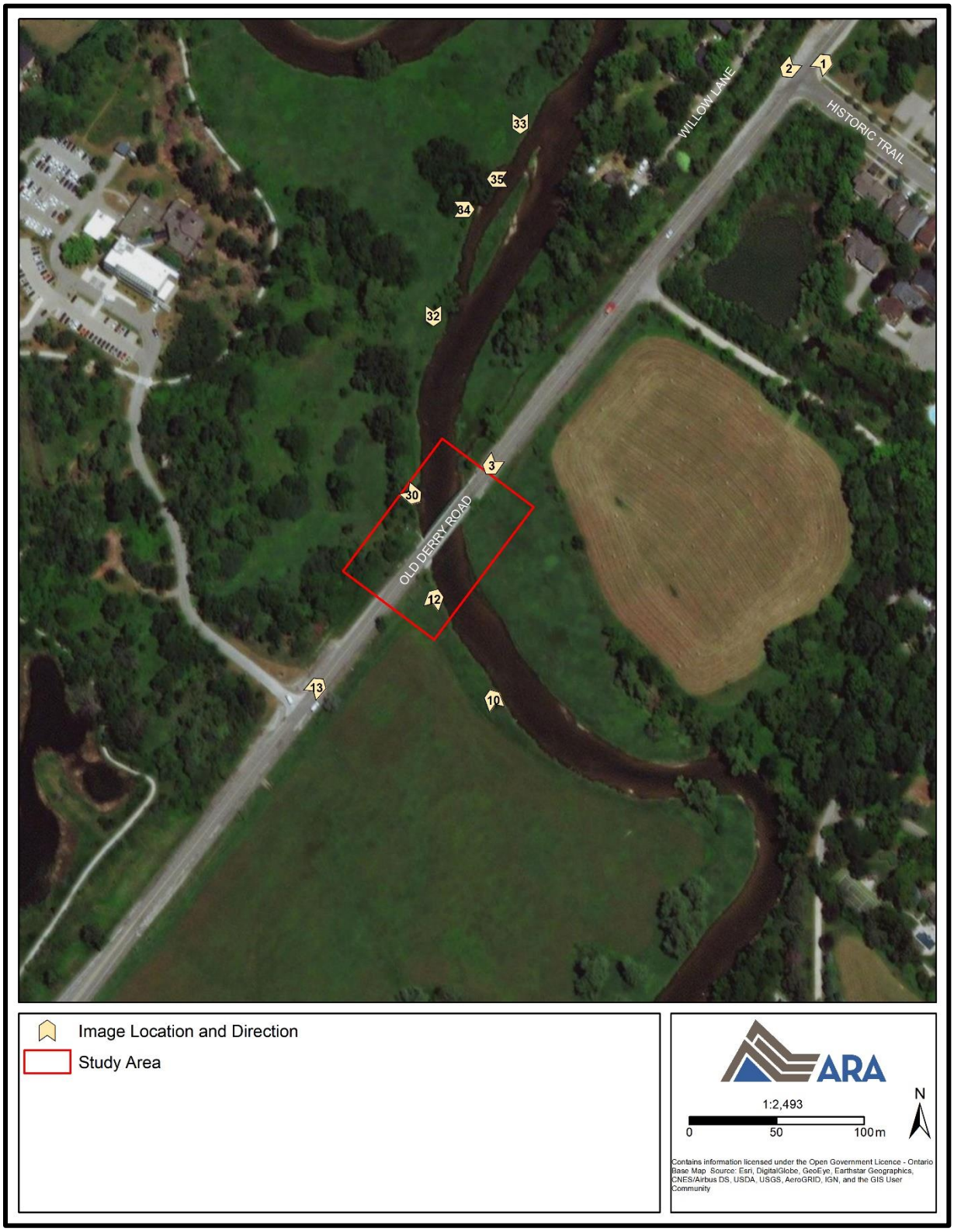
## Appendix A: Study Area Images




**Map 2: Photo Location Map of the Study Area - Overview**
**(Produced by ARA under licence using ArcGIS® software by Esri, © Esri)**


**Map 3: Photo Location Map of the Study Area - Detail**
**(Produced by ARA under licence using ArcGIS® software by Esri, © Esri)**


**Image 1: View to Meadowvale Village HCD from Old Derry Road, East of Bridge**
**(May 27, 2020; View looking Northeast)**

**Image 2: View to Old Derry Road Bridge from Derry Road at Historic Trail in Meadowvale Village HCD**
**(May 27, 2020; View looking Southwest)**

**Image 3: Old Derry Road Bridge, Southwest Approach**
**(May 27, 2020; View looking Southwest)**

**Image 4: Detail of Old Derry Road Bridge, Southwest Approach**
**(May 27, 2020; View looking Southwest)**

**Image 5: Detail of Old Derry Road Bridge Northeast Barrier Wall**
**(May 27, 2020; View looking North)**

**Image 6: Detail of Old Derry Road Bridge Southeast Barrier Wall**
**(May 27, 2020; View looking East)**

**Image 7: Detail of South Side of Old Derry Road Bridge Truss and Sidewalk**
**(May 27, 2020; View looking Southwest)**

**Image 8: End Post Detail, South Side of Old Derry Road Bridge**
**(May 27, 2020; View looking North)**

**Image 9: Detail From Southeast Corner to Abutment and North Side of Old Derry Road Bridge**
**(May 27, 2020; View looking Southwest)**

**Image 10: South Side of Old Derry Road Bridge**
**(May 27, 2020; View looking North)**

**Image 11: View to Credit River from South Side of Old Derry Road**
**(May 27, 2020; View looking Southeast)**

**Image 12: Old Derry Road Bridge West Abutment and South Wing Wall**
**(May 27, 2020; View looking Northeast)**


**Image 13: View to the Meadowvale Village HCD and Old Derry Road Bridge, Northeast Approach**
**(May 27, 2020; View looking Northeast)**

**Image 14: Detail of Old Derry Road Bridge, Northeast Approach**
**(May 27, 2020; View looking Northeast)**

**Image 15: Detail of Old Derry Road Bridge South Sidewalk and Barrier Wall**
**(May 27, 2020; View looking Northeast)**

**Image 16: Detail of Southwest Barrier Wall and Monitoring Equipment**
**(May 27, 2020; View looking Southeast)**

**Image 17: Detail of End Post, South Truss and Sidewalk**
**(May 27, 2020; View looking Northeast)**

**Image 18: Detail of Old Derry Road Bridge Southwest End Post**
**(May 27, 2020; View looking Southwest)**

**Image 19: Detail of Diagonal and Vertical Members and Rivets, South Side**
**(May 27, 2020; View looking North)**

**Image 20: Detail of Top Chord Connection, South Side of Old Derry Road Bridge**
**(May 27, 2020; View looking North)**

**Image 21: Detail of Old Derry Road Bridge Northwest Barrier Wall**
**(May 27, 2020; View looking Northwest)**

**Image 22: Detail of North Side Truss Web**
**(May 27, 2020; View looking North)**

**Image 23: Detail of Northwest Barrier Wall and North Wing Wall**
**(May 27, 2020; View looking Southeast)**

**Image 24: Detail of North Side Truss Web**
**(May 27, 2020; View looking Northeast)**

**Image 25: Detail of Masonry Gravity Retaining Wall, Northwest Side of Old Derry Road Bridge**
**(May 27, 2020; View looking Southeast)**

**Image 26: Detail of Old Derry Road Bridge Stringers and West Abutment**
**(May 27, 2020; View looking South)**

**Image 27: Detail of West Abutment Ballast Wall**
**(May 27, 2020; View looking South)**

**Image 28: Detail of Floor Beams and Stringers, Underside of Old Derry Road Bridge**
**(May 27, 2020; View looking Northeast)**

**Image 29: Underside Detail of Stringers, Old Derry Road Bridge**
**(May 27, 2020; View looking Southeast)**

**Image 30: North Side of Old Derry Road Bridge**
**(May 27, 2020; View looking Southeast)**

**Image 31: View to Credit River from North Side of Old Derry Road**
**(May 27, 2020; View looking North)**

**Image 32: Old Derry Road Bridge Viewed from West Bank of Credit River**
**(May 27, 2020; View looking South)**

**Image 33: Abutment Ruins Northeast of Old Derry Road Bridge on Banks of Credit River**
**(May 27, 2020; View looking Southwest)**

**Image 34: Detail of Abutment Ruin, South Bank of Credit River**
**(May 27, 2020; View looking Southeast)**

**Image 35: Detail of Abutment Ruin (Concealed by Vegetation), North Bank of Credit River**
**(May 27, 2020; View looking North)**

# Appendix B: Option 2 – Proposed Work Specifics

## 3.6 Recommended Option

Based on the condition of the bridge and financial analysis, the preferred alternative for renewal of the Old Derry Road over Credit River Bridge is **Option 2 – Rehabilitation, Waterproofing and paving of deck**.

The work is expected to extend the service life of the existing structure by 15-20 years. The initial capital cost is estimated at $880,000 ($765,000 construction, and $115,000 contingency costs).

Given the current condition of the existing bridge, it is recommended the renewal be completed within the next 1 to 5 years.

### 3.6.1 *Proposed Work*

The scope of work could include, but not limited to:

- Concrete patch repair and crack injection to the deck, soffit and substructure;
- Concrete patch repair, crack injection and sealing to curbs, sidewalks and concrete end posts;
- Localized coating to structural steel elements at corroded areas;
- Localized repair to steel members embedded in concrete (min 100mm depth of concrete);
- Replacement of expansion joint;
- Replacement of bearings at east abutment;
- Installation of waterproofing on the bridge deck and approach slabs; and
- paving of approaches and bridge deck.

*Superstructure*

Guidelines for selecting the proper rehabilitation method were followed as per the Structure Rehabilitation Manual. All unsound and delaminated concrete from the deck surface will be removed and patched and the deck will be waterproofed and paved.

The soffit is in relatively fair to good condition. All unsound and delaminated concrete would be removed and patched to original dimensions, with overbuild where concrete cover is substandard.

The steel truss was found to be in good condition with light corrosion and some paint flaking. Areas with corrosion or paint flaking would be locally repaired and recoated.

The expansion joint at the east end of the structure was found to be in fair condition with rusting, damaged sections of the steel armouring and cracks and spalls of the concrete end dam. The expansion joint will be removed and replaced.

The existing asphalt on the deck was measured between 65 and 95 mm deep, which will be removed in order to repair the concrete deck top. After repair, a 90 mm of asphalt and waterproofing will be placed on the concrete deck.

*Sidewalks, curbs and end posts*

Based on the condition survey, 4.0% of the sidewalk was estimated to be delaminated, spalled, or severely scaled and above 40.0% light scaled. The curbs were found to be in poor-to-fair condition and 8.0% of the curbs were estimated to be delaminated, spalled. The end posts were found to be in fair-to-good condition with crack and patches. All unsound and delaminated concrete would be removed and patched to original dimensions.

Steel handrail at the south sidewalk was found in fair-to-good condition with light corrosion and paint flaking. Areas with corrosion or paint flaking would be cleaned and recoated.

*Substructure*

The abutment walls, ballast walls and bearing seats were found to be in fair to good condition, with delaminations, spalls, patches, light and severe scaling and wet areas. Based on the guidelines for selecting the proper rehabilitation method in the Structural Rehabilitation Manual, concrete patch repair and crack injection would be the selected method of repair.

The wingwalls were found to be in fair to good condition, with medium cracks, wide cracks, delaminations, spalls, patches, and medium scaling. Based on the Structural Rehabilitation Manual, concrete patching and crack injection is the recommended method of rehabilitation.

It is recommended that the elastomeric bearings at east abutment will be replaced.

## Appendix C: Key Team Member Two-Page Curriculum Vitae

Paul J. Racher, MA, CAHP
Principal - Management and Senior Review (MSR) Team
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### Biography

Paul Racher is a Principal of ARA. He has a BA in Prehistoric Archaeology from WLU and an MA in anthropology from McMaster University. He began his career as a heritage professional in 1986. Over the three decades since, he has overseen the completion of several hundred archaeological and cultural heritage contracts. Paul has years of experience related to linear transportation and rail projects, notably through the work to complete a Cultural Heritage Inventory for the Region of Waterloo's Stage 2 LRT from Kitchener to Cambridge, Ontario. He holds professional license #P007 with the MHSTCI. Paul is a former lecturer in Cultural Resource Management at WLU. He is a professional member of the Canadian Association of Heritage Professionals (CAHP) and the Past President of the Ontario Archaeological Association (OAS).

### Education

| | |
|---|---|
| 1992-1997 | PhD Programme, Department of Anthropology, University of Toronto.<br>Supervisors: E.B. Banning and B. Schroeder. Withdrawn. |
| 1989-1992 | M.A., Department of Anthropology, McMaster University, Hamilton, Ontario. Thesis titled: "The Archaeologist's 'Indian': Narrativity and Representation in Archaeological Discourse." |
| 1985-1989 | Honours B.A., Wilfrid Laurier University, Waterloo, Ontario.<br>Major: Prehistoric Archaeology. |

### Professional Memberships and Accreditations

| | |
|---|---|
| Current | MHSTCI Professional Licence (#P007).<br>Professional Member of the Canadian Association of Heritage Professionals (CAHP), Volunteer on the ethics committee.<br>Member of the Ontario Archaeological Society (OAS), Volunteer on the Professional Committee.<br>Associate of the Heritage Resources Centre, University of Waterloo.<br>RAQS registered with MTO. |

### Work Experience

| | |
|---|---|
| Current | **Vice-President, Operations, Archaeological Research Associates Ltd.**<br>Responsible for winning contracts, client liaison, project excellence, and setting the policies and priorities for a multi-million dollar heritage consulting firm. |
| 2000-2011 | **Project Manager/Principal Investigator, Archaeological Research Associates Ltd.**<br>Managed projects for a heritage consulting firm. In 10 field seasons, managed hundreds of projects of varying size. |
| 2008-2011 | **Part-Time Faculty, Wilfrid Laurier University.**<br>Lecturer for Cultural Resource Management course (AR 336). In charge of all teaching, coursework, and student evaluations. |

| | |
|---|---|
| 1995 | **Field Archaeologist, University of Toronto.**<br>Served as a supervisor on a multinational archaeological project in northern Jordan. |
| 1992-1995 | **Teaching Assistant, University of Toronto.**<br>Responsible for teaching and organizing weekly tutorials for a number of courses. |
| 1991-1994 | **Part-Time Faculty, Wilfrid Laurier University.**<br>Lectured for several courses in anthropology. Held complete responsibility for all teaching, coursework, and student evaluations. |
| 1992-1996 | **Partner in Consulting Company, Cultural Management Associates Incorporated.**<br>Supervised several archaeological contracts in Southern Ontario. Participated in a major (now published) archaeological potential modeling project for MTO. |
| 1989-1991 | **Partner in Consulting Company, Cultural Resource Consultants.**<br>Managed the financial affairs of a consulting firm whilst supervising the completion of several contracts performed for heritage parks in central Ontario. |
| 1988-1991 | **Principal Investigator/Project Director, Archaeological Research Associates Ltd.**<br>Oversaw the completion of large contracts, wrote reports, and was responsible for ensuring that contracts were completed within budget. |
| 1988 | **Assistant Director of Excavations, St. Marie among the Hurons, Midland, Ontario.**<br>Duties included crew supervision, mapping, report writing and photography. |
| 1986-1987 | **Archaeological Crew Person, Archaeological Research Associates Ltd., Waterloo, Ontario.**<br>Participated in background research, survey, and excavation on a number of Archaeological sites across Ontario. |

Kayla Jonas Galvin, MA, MCIP, RPP, CAHP
Heritage Operations Manager
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**Biography**

Kayla Jonas Galvin, Archaeological Research Associates Ltd.'s Heritage Operations Manager, has extensive experience evaluating cultural heritage resources and landscapes for private and public-sector clients to fulfil the requirements of provincial and municipal legislation such as the *Environmental Assessment Act*, the *Standards & Guidelines for the Conservation of Provincial Heritage Properties* and municipal Official Plans. She served as Team Lead on the MHSTCI's Historic Places Initiative, which drafted over 850 Statements of Significance and for *Heritage Districts Work!*, a study of 64 heritage conservation districts in Ontario. Kayla was an editor *of Arch, Truss and Beam: The Grand River Watershed Heritage Bridge Inventory* and has worked on Municipal Heritage Registers in several municipalities. Kayla has drafted over 150 designation reports and by-laws for the City of Kingston, the City of Burlington, the Town of Newmarket, Municipality of Chatham-Kent, City of Brampton and the Township of Whitchurch-Stouffville. Kayla is the Heritage Team Lead for ARA's roster assignments for Infrastructure Ontario and oversees evaluation of properties according to *Standards & Guidelines for the Conservation of Provincial Heritage Properties*. Kayla is a Registered Professional Planner (RPP), Member of the Canadian Institute of Planners (MCIP), professional member of the Canadian Association of Heritage Professionals (CAHP) and sits on the board of the Ontario Association of Heritage Professionals.

**Education**

| | |
|---|---|
| 2016 | MA in Planning, University of Waterloo. Thesis Topic: *Goderich – A Case Study of Conserving Cultural Heritage Resources in a Disaster* |
| 2003-2008 | Honours BES University of Waterloo, Waterloo, Ontario<br>Joint Major: Environment and Resource Studies and Anthropology |

**Professional Memberships and Accreditations**

| | |
|---|---|
| Current | Professional Member, Canadian Association of Heritage Professionals (CAHP)<br>Member of the Canadian Institute of Planners (MCIP)<br>Professional Member, Ontario Professional Planners Institute (OPPI)<br>Board Member, Ontario Association of Heritage Professionals. |

**Work Experience**

| | |
|---|---|
| Current | **Heritage Operations Manager, Archaeological Research Associates Ltd.**<br>Oversees business development for the Heritage Department, coordinates completion of designation by-laws, Heritage Impact Assessments, Built Heritage and Cultural Heritage Landscape Assessments, and Cultural Heritage Resource Evaluations. |
| 2009-2013 | **Heritage Planner, Heritage Resources Centre, University of Waterloo**<br>Coordinated the completion of various contracts associated with built heritage including responding to grants, RFPs and initiating service proposals. |
| 2008-2009, 2012 | **Project Coordinator–Heritage Conservation District Study, ACO**<br>Coordinated the field research and authored reports for the study of 32 Heritage Conservation Districts in Ontario. Managed the efforts of over 84 volunteers, four staff and municipal planners from 23 communities. |

2007-2008 **Team Lead, Historic Place Initiative, Ministry of Culture**
Liaised with Ministry of Culture Staff, Centre's Director and municipal heritage staff to draft over 850 Statements of Significance for properties to be nominated to the Canadian Register of Historic Places. Managed a team of four people.

**Selected Professional Development**

2019 OPPI and WeirFoulds Client Seminar: Bill 108 – More Homes, More Choice, 2019
2019 Annual attendance at Ontario Heritage Conference, Goderich, ON (Two-days)
2019 Information Session: Proposed Amendments to the OHA, by MHSTCI
2018 Indigenous Canada Course, University of Alberta
2018 Volunteer Dig, Mohawk Institute
2018 Indigenizing Planning, three webinar series, Canadian Institute of Planners
2018 Cultural Heritage, Archaeology and Planning Symposium
2018 Transforming Public Apathy to Revitalize Engagement, Webinar, MetorQuest
2018 How to Plan for Communities: Listen to the Them, Webinar, Canadian Institute of Planners
2017 Empowering Indigenous Voices in Impact Assessments, Webinar, International Association for Impact Assessments
2017 Capitalizing on Heritage, National Trust Conference, Ottawa, ON.
2016 Cultural Heritage, Archaeology and Planning Symposium
2016 Heritage Rising, National Trust Conference, Hamilton
2016 Ontario Heritage Conference St. Marys and Stratford, ON.
2016 Heritage Inventories Workshop, City of Hamilton & ERA Architects
2015 Cultural Heritage, Archaeology and Planning Symposium
2015 City of Hamilton: Review of Existing Heritage Permit and Heritage Designation Process Workshop.
2015 Leadership Training for Managers Course, Dale Carnegie Training

**Selected Publications**

2018 "Conserving Cultural Heritage Landscapes in Waterloo: An Innovative Approach." *Ontario Association of Heritage Professionals Newsletter*, Winter 2018.
2018 "Restoring Pioneer Cemeteries" *Ontario Association of Heritage Professionals Newsletter.* Spring 2018. *In print.*
2015 "Written in Stone: Cemeteries as Heritage Resources." *Municipal World*, Sept. 2015.
2015 "Bringing History to Life." *Municipal World*, February 2015, pages 11-12.
2014 "Inventorying our History." *Ontario Planning Journal*, January/February 2015.
2014 "Mad about Modernism." *Municipal World*, September 2014.

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**Biography**

Lindsay Benjamin is practiced at providing professional planning recommendations and expertise on complex studies, research projects, cultural heritage impact and archaeological assessments. Through her work as a Cultural Heritage Planner, Lindsay researched, drafted and implemented policies for the Regional Official Plan and other planning documents regarding the recognition, review and conservation of cultural heritage resources, including archaeological resources, heritage bridges, cultural heritage landscapes and scenic roads. She was the Primary Author of *Arch, Truss and Beam: The Grand River Watershed Heritage Bridge Inventory*, served as a Team Lead on the MHSTCI's Historic Places Initiative that drafted over 850 Statements of Significance, and was Series Editor for Phase 2 of *Heritage Districts Work!* a study of 32 heritage districts in Ontario. Lindsay has developed cultural heritage landscape inventories, heritage property tax relief programs, worked on Municipal Heritage Registers and drafted designation by-laws in several municipalities. She holds a Master of Applied Environmental Studies degree from the University of Waterloo School of Planning, is a Registered Professional Planner (RPP), Member of the Canadian Institute of Planners (MCIP) and is a professional member of the Canadian Association of Heritage Professionals (CAHP).

**Education**

| | |
|---|---|
| 2013 | MAES, University of Waterloo, Waterloo, ON, Focus: Planning. |
| 2009 | Post-Graduate Diploma, Centennial College, Toronto, ON<br>Publishing & Professional Writing |
| 2007 | Honours BES, University of Waterloo, Waterloo, ON<br>Major: Urban Planning, Co-op. Distinction: Dean's Honours List |

**Professional Memberships and Accreditations**

| | |
|---|---|
| Current | Canadian Association of Heritage Professionals (CAHP), Professional Membership |
| Current | Ontario Professional Planners Institute (OPPI), Professional Member |
| Current | Member of the Canadian Institute of Planners (MCIP) |

**Work Experience**

| | |
|---|---|
| 2017-2020 | **Project Manager - Heritage, Archaeological Research Associates Ltd.**<br>Coordinate the completion of heritage projects, including the evaluation of the cultural heritage value or interest of a variety of cultural heritage resources. |
| 2013-2017 | **Cultural Heritage Planner, Region of Waterloo**<br>Planned and implemented Arts, Culture and Heritage initiatives that support creativity and quality of life in the Region of Waterloo. Researched, developed and implemented Regional cultural heritage policies and programs. Fulfilled Regional and Provincial cultural heritage and archaeological review responsibilities under the Planning Act and Ontario Heritage Act. |
| 2009-2013 | **Heritage Planner, Heritage Resources Centre, University of Waterloo**<br>Facilitate the completion of various cultural heritage contracts by undertaking archival research, site visits, report writing, liaising with municipal staff and stakeholders and coordinating project scheduling and budgetary responsibilities. |

2006-2007 **Project Manager, Heritage Resources Centre, University of Waterloo**
Established the process of nominating heritage properties to the National Register of Historic Places. Primary liaison between all stakeholder groups, responsible for motivating each group to participate and provide funding. Drafted over 130 Statements of Significance for properties to be nominated to the National Register. Managed a team of five employees.

2005-2006 **Heritage Conservation Easement Planning Assistant, Ontario Heritage Trust**
Supported easement acquisitions through researching the historical and architectural value of potential acquisitions and extensive photo documentation. Screened and processed activity requests from property owners and stakeholders relating to the easement program. Conducted site visits to monitor conservation easement sites and prepared condition assessment reports.

**Selected Professional Development**

2019 OPPI and WeirFoulds Client Seminar: Bill 108 – More Homes, More Choice
2019 Annual attendance at Ontario Heritage Conference, Goderich, ON
2015-2019 Cultural Heritage, Archaeology and Planning Symposium
2018 How to Plan for Communities: Listen to the Them, Webinar, CIP
2013-2017 Ontario Heritage Planners Network Workshops
2017, 2016 National Trust for Canada Conference
2012 Heritage Impact Assessments Workshop, Region of Waterloo
2012 National Trust for Historic Preservation Conference and Conducting Historic Building Assessments Workshop, Spokane, WA
2012 Canadian Institute of Planners National Conference, Banff, ON

**Awards**

2014 Heritage River Award, Watershed Awards & Canadian Heritage River Celebration, Grand River Conservation Authority
2009 A. K. (Alice King) Sculthorpe Award for Advocacy - ACO

**Publications**

2019 "Journey Through German Mills." *Waterloo Historical Society Annual Volume*. Volume 106 – 2018.
2018 "Conserving Cultural Heritage Landscapes in Waterloo: An Innovative Approach." *Ontario Association of Heritage Professionals Newsletter*, Winter 2018.
2017 Historic Interpretive Plaque - Village of German Mills
2016 Historic Interpretive Plaques - West Montrose Covered Bridge; Huron Road Bridge

**Volunteer Experience**

2017-2019 Lieutenant Governor's Ontario Heritage Awards Jury Member

Sarah Clarke, BA
Research Manager
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**Biography**

Sarah Clarke is Archaeological Research Associates Ltd.'s Heritage Research Manager. Sarah has over 12 years of experience in Ontario archaeology and 10 years of experience with background research. Her experience includes conducting archival research (both local and remote), artifact cataloguing and processing, and fieldwork at various stages in both the consulting and research-based realms. As Team Lead of Research, Sarah is responsible for conducting archival research in advance of ARA's archaeological and heritage assessments. In this capacity, she performs Stage 1 archaeological assessment site visits, conducts preliminary built heritage and cultural heritage landscape investigations and liaises with heritage resource offices and local community resources in order to obtain and process data. Sarah has in-depth experience in conducting historic research following the *Ontario Heritage Toolkit* series, and the *Standards and Guidelines for Provincial Heritage Properties*. Sarah holds an Honours B.A. in North American Archaeology, with a Historical/Industrial Option from Wilfrid Laurier University and is currently enrolled in Western University's Intensive Applied Archaeology MA program. She is a member of the Ontario Archaeological Society (OAS), the Society for Industrial Archaeology, the Ontario Genealogical Society (OGS), the Canadian Archaeological Association, and is a Council-appointed citizen volunteer on the Brantford Municipal Heritage Committee. Sarah holds an R-level archaeological license with the MHSTCI (#R446).

**Education**

| | |
|---|---|
| Current | MA Intensive Applied Archaeology, Western University, London, ON. Proposed thesis topic: Archaeological Management at the Mohawk Village. |
| 1999–2010 | Honours BA, Wilfrid Laurier University, Waterloo, Ontario<br>Major: North American Archaeology, Historical/Industrial Option |

**Professional Memberships and Accreditations**

| | |
|---|---|
| Current | Member of the Ontario Archaeological Society |
| Current | Member of the Society for Industrial Archaeology |
| Current | Member of the Brant Historical Society |
| Current | Member of the Ontario Genealogical Society |
| Current | Member of the Canadian Archaeological Association |
| Current | Member of the Archives Association of Ontario |

**Work Experience**

| | |
|---|---|
| Current | **Team Lead – Research; Team Lead – Archaeology, Archaeological Research Associates Ltd.**<br>Manage and plan the research needs for archaeological and heritage projects. Research at offsite locations including land registry offices, local libraries and local and provincial archives. Historic analysis for archaeological and heritage projects. Field Director conducting Stage 1 assessments. |

2013-2015 **Heritage Research Manager; Archaeological Monitoring Coordinator, Archaeological Research Associates Ltd.**
Stage 1 archaeological field assessments, research at local and distant archives at both the municipal and provincial levels, coordination of construction monitors for archaeological project locations.

2010-2013 **Historic Researcher, Timmins Martelle Heritage Consultants Inc.**
Report preparation, local and offsite research (libraries, archives); correspondence with the MHSTCI; report submission to the MHSTCI and clients; and administrative duties (PIF and Borden form completion and submission, data requests).

2008-2009 **Field Technician, Archaeological Assessments Ltd.**
Participated in field excavation and artifact processing.

2008-2009 **Teaching Assistant, Wilfrid Laurier University.**
Responsible for teaching and evaluating first year student lab work.

2007-2008 **Field and Lab Technician, Historic Horizons.**
Participated in excavations at Dundurn Castle and Auchmar in Hamilton, Ontario. Catalogued artifacts from excavations at Auchmar.

2006-2010 **Archaeological Field Technician/Supervisor, Wilfrid Laurier University.**
Field school student in 2006, returned as a field school teaching assistant in 2008 and 2010.

**Professional Development**

2019 Annual attendance at Ontario Heritage Conference, Goderich, ON
2018 Cultural Heritage, Archaeology and Planning Symposium
2018 Grand River Watershed 21st Annual Heritage Day Workshop & Celebration
2018 Mississaugas of the New Credit First Nation Historical Gathering and Conference
2017 Ontario Genealogical Society Conference
2016 Ontario Archaeological Society Symposium
2015 Introduction to Blacksmithing Workshop, Milton Historical Society
2015 Applied Research License Workshop, MHSTCI
2014 Applied Research License Workshop, MHSTCI
2014 Heritage Preservation and Structural Recording in Historical and Industrial Archaeology. Four-month course taken at Wilfrid Laurier University, Waterloo, ON. Professor: Meagan Brooks.

**Presentations**

2018 *The Early Black History of Brantford.* Brant Historical Society, City of Brantford.
2017 *Mush Hole Archaeology.* Ontario Archaeological Society Symposium, Brantford.
2017 *Urban Historical Archaeology: Exploring the Black Community in St. Catharines, Ontario.* Canadian Archaeological Association Conference, Gatineau, QC.

**Volunteer Experience**

Current Council-appointed citizen volunteer for the Brantford Municipal Heritage Committee.

Jacqueline McDermid, BA
Technical Writer
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**Biography**

In the spring of 2018, Jacqueline completed a six-month contract with the Ministry of Transportation as a Heritage Specialist for Central Region, returning to her permanent position at ARA in the Fall 2018 where she had been the acting Heritage Team Lead for the year previous. As the lead, she directed the preparation and oversaw the submission of deliverables to clients. Currently, she is the Heritage Team Technical Writer and Researcher, where she continues to research and evaluate the significance of cultural heritage resources using *Ontario Regulation 9/06* and *10/06*, most recently completing designation reports for the City of Burlington, City of Kingston and Town of Newmarket and the Town of Whitchurch-Stouffville. Further, Jacqueline has overseen the completion of many Built Heritage and Cultural Heritage Landscape Studies as well as Heritage Impact Assessments including reports for a proposed aggregate pit, road widening, the LRT in the Region of Waterloo and a National Historic Site in St. Catharines. As well as being a proficient technical writer, Jacqueline is skilled at writing in approachable language demonstrated by my crafting of 30 properties stories and 35 thematic stories for Heritage Burlington's website. She holds an Honours Bachelor of Arts in Near Eastern Archaeology from Wilfrid Laurier University. In addition to heritage experience, Jacqueline also has archaeological experience working as field crew, as an Assistant Lab Technician and archaeological technical writer.

**Education**

2000-2007 Honours B.A., Wilfrid Laurier University, Waterloo, Ontario
Major: Near Eastern Archaeology

**Work Experience**

2015-Present **Technical Writer and Researcher – Heritage, Archaeological Research Associates Ltd., Kitchener, ON**
Research and draft designation by-laws, heritage inventories, Heritage Impact Assessments, Built Heritage and Cultural Heritage Landscape Assessments, and Cultural Heritage Resource Evaluations using Ontario Regulation 9/06, 10/06 and the Ontario Heritage Bridge Guidelines.

2018 **Environmental Planner – Heritage Ministry of Transportation, Central Region** – Six-month contract.
Responsibilities included: project management and coordination of MTO heritage program, managed multiple consultants, conducted and coordinated field assessments and surveys, estimated budgets including $750,000 retainer contracts. Provided advice on heritage-related MTO policy to Environmental Policy Office (EPO) and the bridge office.

2017-2018 **Acting Heritage Team Lead – Heritage Archaeological Research Associates Ltd., Kitchener, ON**
Managed a team of Heritage Specialists, oversaw the procurement of projects, retainers; managed all Heritage projects, ensured quality of all outgoing products.

2014-2015 **Technical Writer – Archaeology, Archaeological Research Associates Ltd., Kitchener, ON**
Report preparation; correspondence with the MHSTCI; report submission to the Ministry and clients; and administrative duties (PIF and Borden form completion).

2012-2013 **Lab Assistant, Archaeological Research Associates Ltd., Kitchener, ON**
Receive, process and register artifacts.

2011-2012 **Field Technician, Archaeological Research Associates Ltd., Kitchener, ON**
Participated in field excavation and artifact processing.

2005-2009 **Teaching Assistant, Wilfrid Laurier University, Waterloo, ON**
Responsible for teaching and evaluating first, second, third- and fourth-year student lab work, papers and exams.

2005-2007 **Lab Assistant, Wilfrid Laurier University – Near Eastern Lab, Waterloo, ON**
Clean, Process, Draw and Research artifacts from various sites in Jordan.

**Selected Professional Development**

2019 OPPI and WeirFoulds Client Seminar: Bill 108 – More Homes, More Choice
2019 Annual attendance at Ontario Heritage Conference, Goderich, ON (Two-days)
2019 Information Session: Proposed Amendments to the OHA, MHSTCI
2018 Indigenizing Planning, three webinar series, Canadian Institute of Planners
2018 Cultural Heritage, Archaeology and Planning Symposium
2018 Transforming Public Apathy to Revitalize Engagement, Webinar, MetorQuest
2018 How to Plan for Communities: Listen to the Them, Webinar, CIP
2017 Empowering Indigenous Voices in Impact Assessments, Webinar, International Association for Impact Assessments
2015 Introduction to Blacksmithing (One day)
2015 Leadership Training for Managers Course, Dale Carnegie Training