APPENDIX A

ENVIRONMENTAL IMPACT STUDY

Prepared for:

City of Guelph

Mr. Ken VanderWal P.Eng.
Project Engineer - Engineering & Transportation Services
Tel: 519-822-1260 x 2319
Email: ken.vanderwal@guelph.ca

Environmental Study Report - Emma Street to Earl Street Pedestrian Bridge

Submitted by:

Aquafor Beech Ltd.

in association with

Lura & ASi

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Contact:
Rob Amos, MASc, P.Eng
Aquafor Beech Ltd.
Amos.R@aquaforbeech.com
2600 Skymark Avenue
Building 6, Unit 202
Mississauga, ON L4W 5B2
T. 905.629.0099 ext.284; F. 905.629.0089
Aquafor Beech Reference: 65972

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Table of Contents

Appendices

Tables

Figures

1 Introduction

Aquafor Beech Limited (hereafter "Aquafor") was retained by the City of Guelph (hereafter "the City") to undertake a Schedule B Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005), providing a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed. The site location and approximate extents of the study area are shown in **Figure 1-1**.

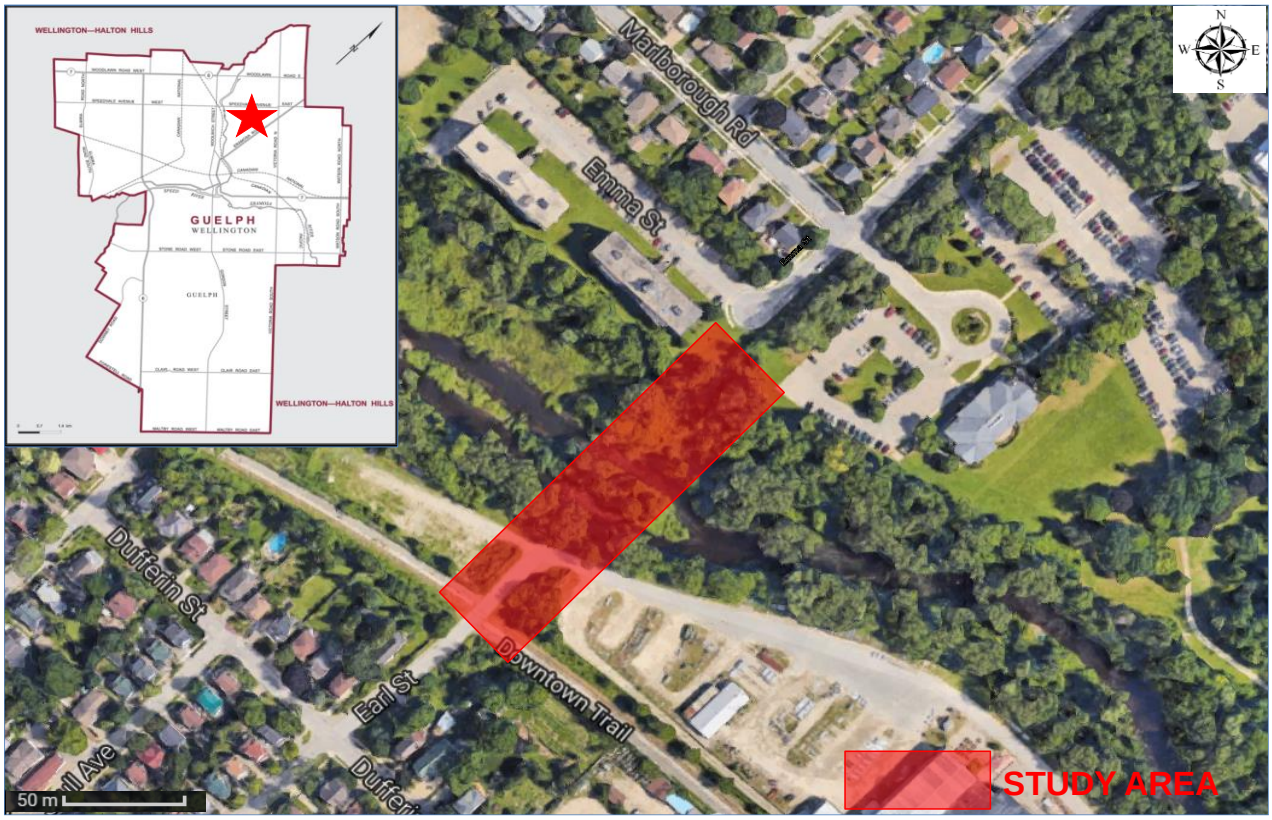


Figure 1-1: Emma Street to Earl Street Study Area

1.1 Ecological Studies in Support of the EA

The *Environmental Assessment Act* was legislated by the Province of Ontario in 1980 to ensure that an Environmental Assessment is conducted prior to the onset of development and development-related (servicing) projects. The *Municipal Class Environmental Assessment* (MCEA, 2015) defines the requirement for documentation of the planning and design process followed in developing Schedule

B projects in order to allow for traceability and transparency in choosing the preferred alternative.

At the onset of this EA study, Aquafor provided a Terms of Reference for Ecological Studies to the City; additional ecological investigation tasks were added to the study at a later date, once data gaps were identified. The purpose of these investigations was to assess the ecological features and functions within the study area and assist in the evaluation of the pedestrian bridge alternatives in the EA from an ecological perspective. Ecological surveys were conducted within the area of the anticipated project footprint, as well as in adjacent lands (those within 120 m).

The key elements of the ecological investigations documented in this report include the following:

1. A review and summary of available background information provided by the City and that which is publicly available (e.g., the Natural Heritage Information Center [NHIC] database, Grand River Conservation Authority [GRCA] fisheries records, wildlife atlases, eBird checklists, etc.).

2. Consultation with the Guelph District Ministry of Natural Resources and Forestry (MNRF) to solicit Species at Risk (SAR) information (N.B.: the Ministry of the Environment, Conservation and Parks [MECP] has since taken over administration of the provincial *Endangered Species Act* [ESA] from the MNRF; references to the MNRF will remain with relation to background review and consultation, but any discussion of permitting or approval from this point forward will refer to the MECP).

3. Completion of the following ecological studies within the study area and adjacent lands:
    a. Classification and evaluation of vegetation communities occurring on lands within 120 m of the study area according to the methods of *Ecological Land Classification for Southern Ontario* (Lee et al., 1998);
    b. Summer season botanical inventory, including a Butternut area search;
    c. Wetland and woodland delineation;
    d. Tree inventory and preservation plan; and
    e. Recording of incidental wildlife observations, potential habitat for Snapping Turtle, and Significant Wildlife Habitat.

4. Completion of SAR screening and Significant Wildlife Habitat (SWH) screening exercises using known habitat information collected through field studies and MNRF data.

5. Mapping and describing the aquatic and terrestrial ecological features and functions of the study area and adjacent lands using primary and secondary data sources. Identify sensitive and/or significant natural heritage features and functions.

6. An evaluation of the potential direct, indirect, and cumulative impacts to the natural heritage system under each of the alternatives put forth in the EA, and a list of recommend mitigation measures as applicable.

7. An overview of applicable City policies and analysis of the project's compliance with those policies.

1.2 Study Area in a City Context

The study area is located within the Speed River valley, between Emma Street and Earl Street in Guelph, Ontario. The Speed River valley is the only north/south ecological corridor in the northern half of the City of Guelph, as illustrated in **Figure 1-2**. The Speed River valley links natural areas associated with the Guelph Lake Conservation Area to the Speed River valley beyond the confluence at the Eramosa River, which links to natural areas east and west. The most prominent natural heritage feature within the study area is the river valley with associated woodlands, wetlands, and open aquatic habitat (i.e., the Speed River itself). The study area is surrounded by residential, institutional, recreational, and industrial (e.g., rail) properties.

Figure 1-2: Study Area in Speed River Valley

2 Proposed Pedestrian Bridge Alternatives

Four scenarios for the pedestrian bridge have been proposed: the Null Alternative, a.k.a. the "do nothing" alternative (**Figure 2-1**); and four design alternatives. In the Null Alternative, a bridge is not built, the trail connection is not completed, and the NHS remains unaffected in its current condition. The key points of the four design alternatives follow below.

Alternative 1 (**Figure 2-2**):

- consists of a ~90 m single-span cable-stayed bridge
- abutments to be constructed above the top of slope but within the limits of the Natural Heritage System (Significant Woodland)
- no new footprint would be required within the river valley and construction would be completed using cranes from the top of slope
- permanent vegetation clearing would be required along new bridge alignment in addition to the existing cleared corridor necessitated by an existing hydro alignment
- highest capital cost to construct of the four alternatives

Alternative 2A (**Figure 2-3**):

- consists of a two-span (~60 m + ~30 m) truss bridge with one new support pier constructed within wetland habitat in the river valley
- bridge alignment would coincide with existing hydro corridor, requiring minor relocation of hydro lines; permanent cleared alignment would be less than is required for Alternative 1
- vegetation removal from the Natural Heritage System would be required to accommodate construction access but permanent clearing is reduced by making use of the existing hydro corridor
- construction access to the valley provides opportunity to remove historic fill and complete habitat restoration activities

Alternative 2B (**Figure 2-4**):

- similar to Alternative 2A but with hydro infrastructure integrated into the bridge so that poles may be removed instead of relocated
- one new support pier constructed within wetland habitat in the river valley, but removal of existing hydro pole footing in same location
- bridge alignment would coincide with existing hydro corridor; permanent cleared alignment would be less than is required for Alternative 2A since pole relocation would not be needed
- vegetation removal from the Natural Heritage System would be required to accommodate construction access but permanent clearing is reduced by making use of the existing hydro corridor

- construction access to the valley provides opportunity to remove historic fill and complete habitat restoration activities

Alternative 3 (**Figure 2-5**)

- consists of a three-span (~30 m each) truss bridge with two support piers located in the river valley
- significant vegetation removal required to accommodate construction
- new permanent footprint in wetland and on island
- new permanent vegetation clearing area required along bridge alignment
- potential for in-water work for access to/construction on the island
- lowest capital cost of the four alternatives

Figure 2-1: Null Alternative

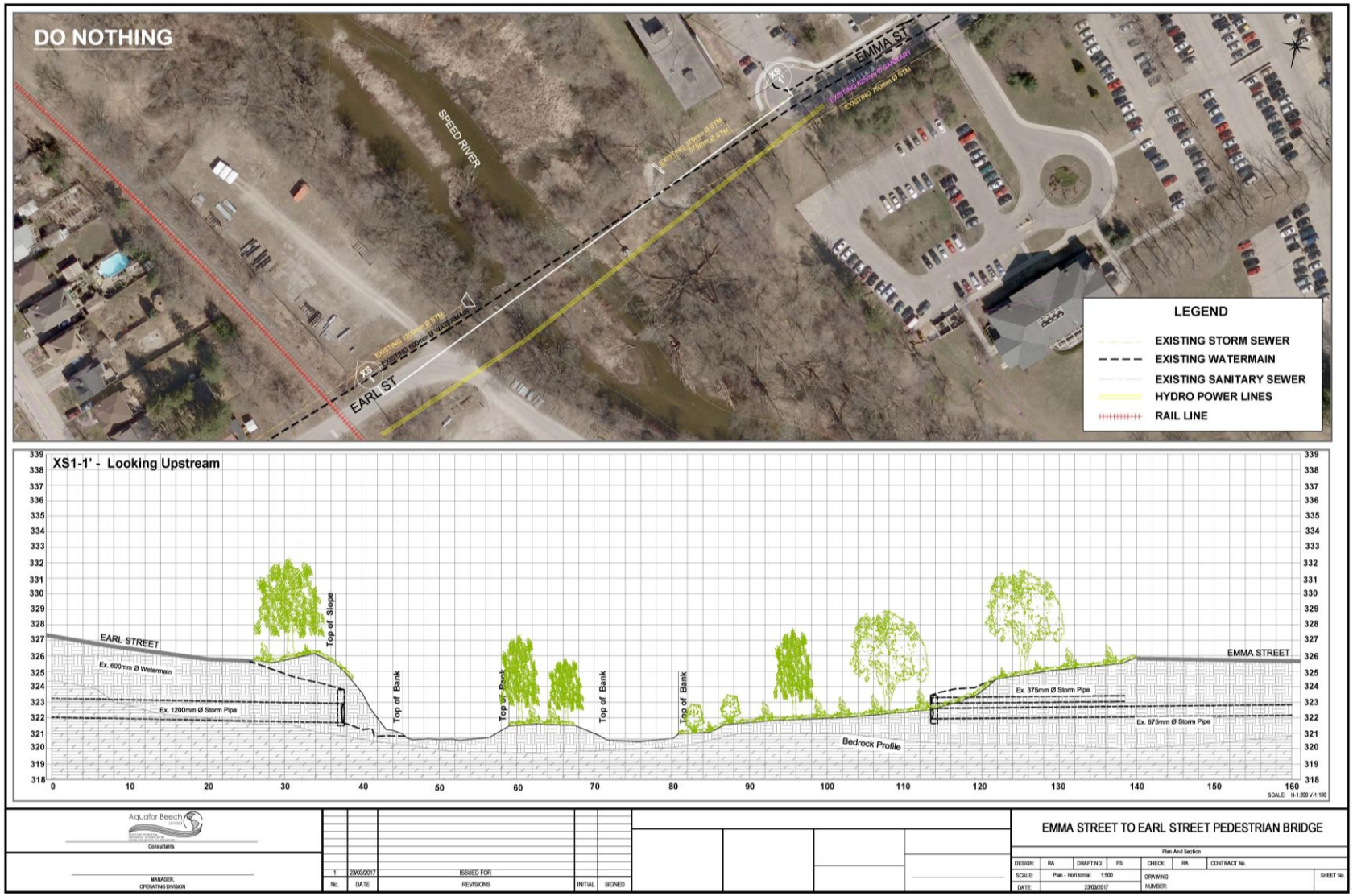


Figure 2-2: Alternative 1, Steel Cable Single Span Bridge

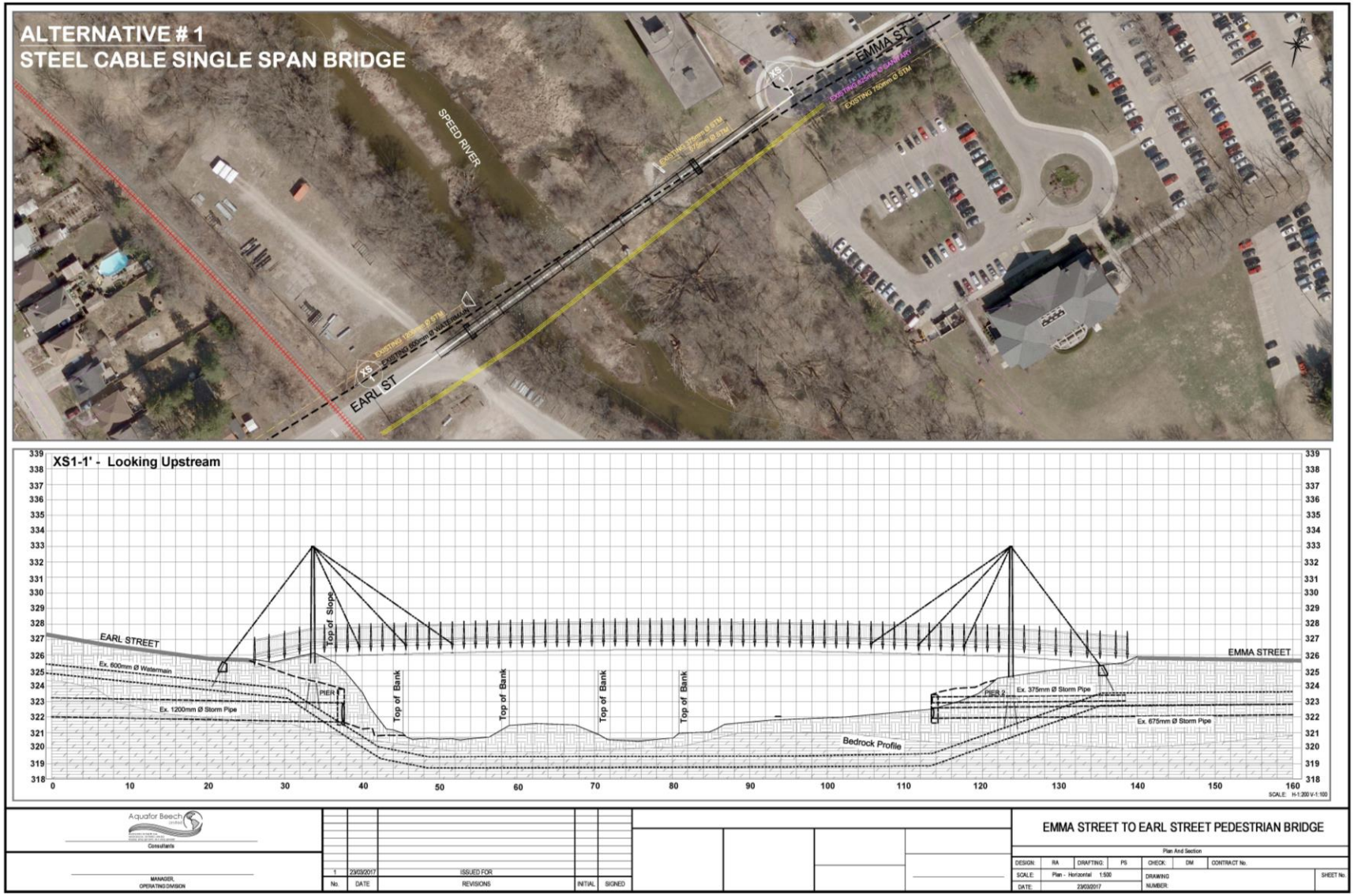


Figure 2-3: Alternative 2A, 2 Span Bridge with Overhead Hydro Relocation

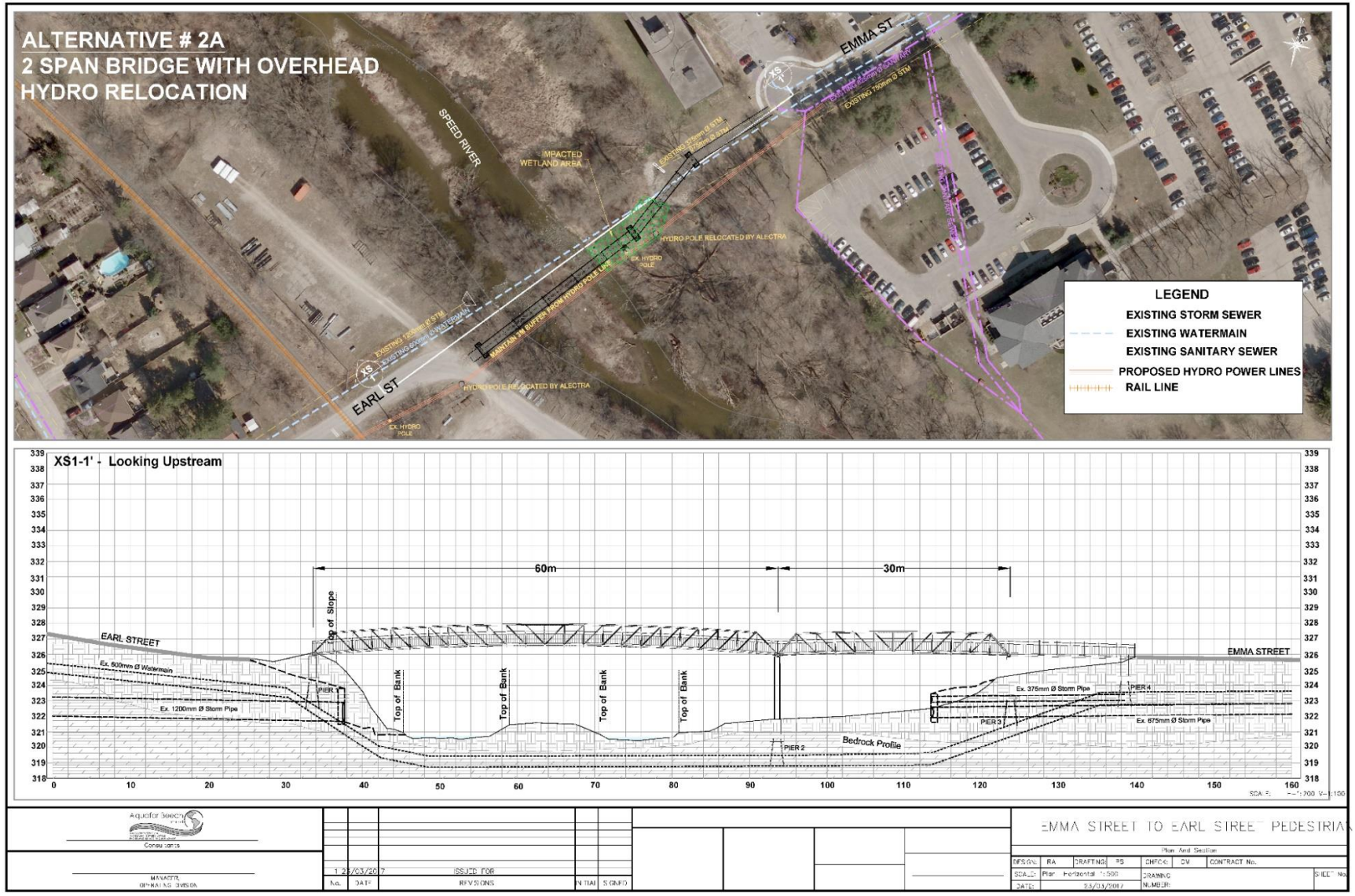


Figure 2-4: Alternative 2B, 2 Span Bridge with Hydro Within Structure

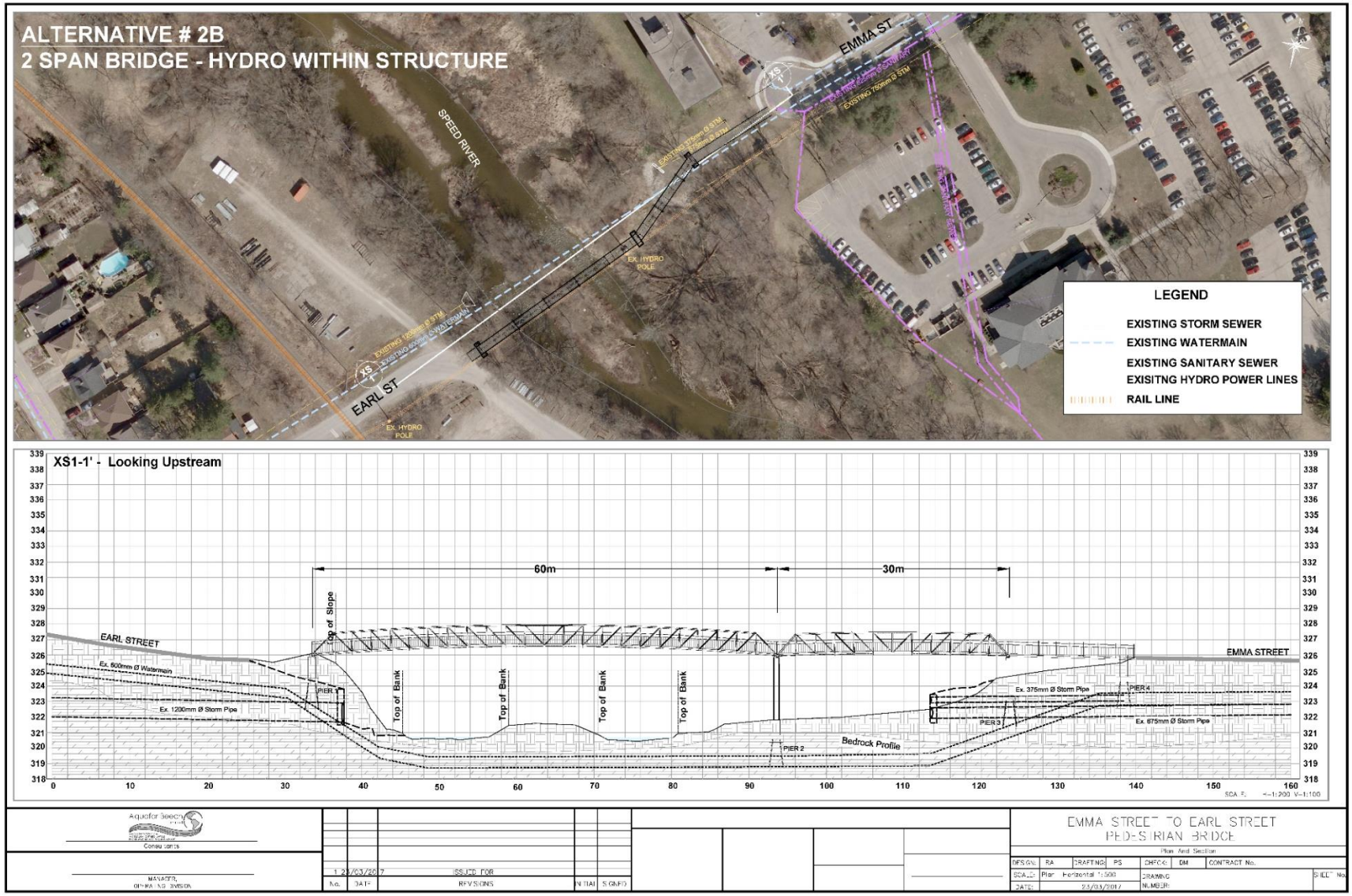
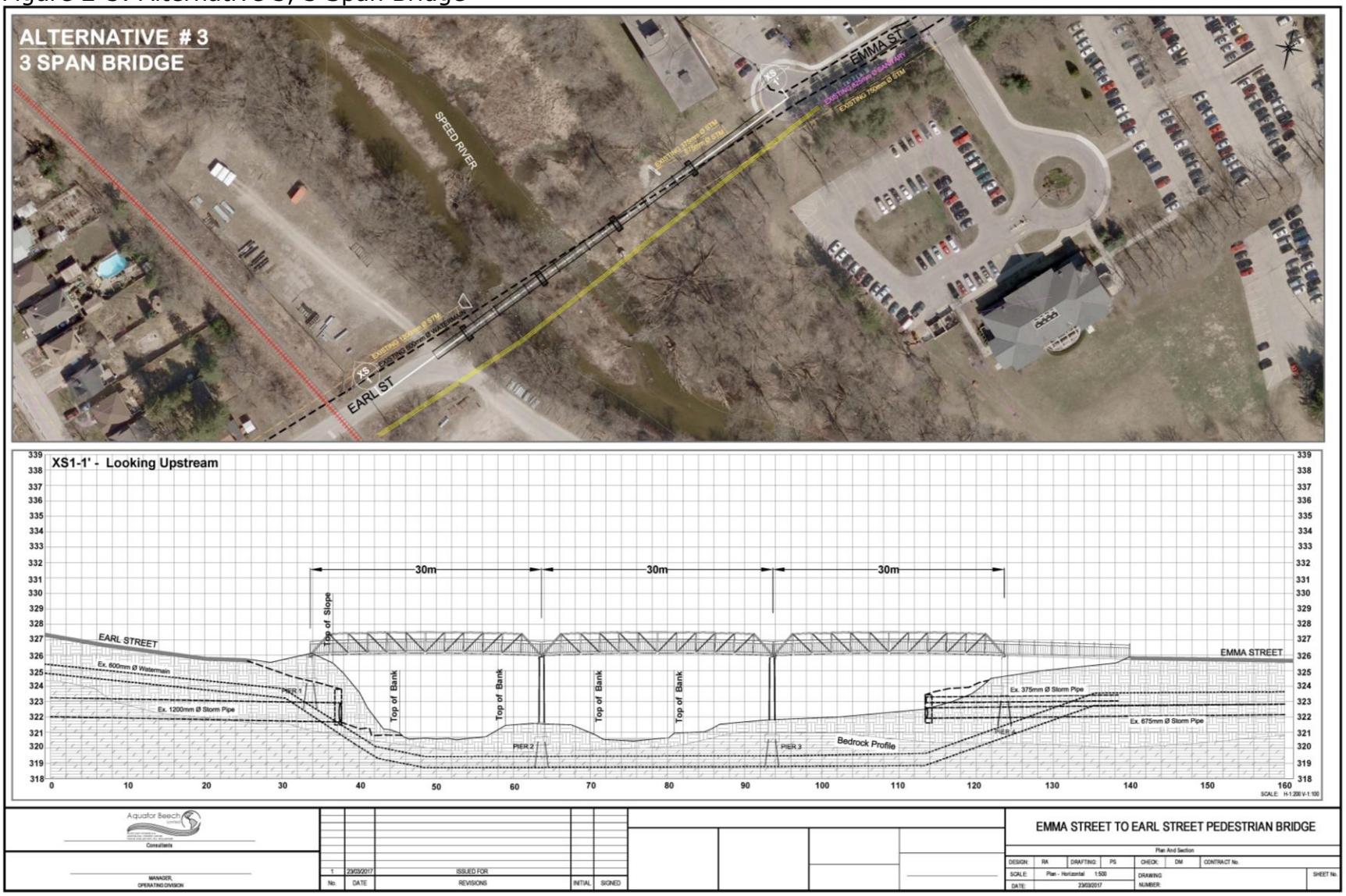


Figure 2-5: Alternative 3, 3 Span Bridge



3 Policy Framework

The following subsections detail the various natural heritage and natural hazard policies relevant to the lands within and adjacent to the study area.

3.1 Provincial Policy Statement

The 2014 Provincial Policy Statement (PPS), disseminated under the Planning Act, directs municipal land-use planning activities related to matters of provincial interest. Section 2.1.2 of the Provincial Policy Statement (PPS) states that:

> "The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features (Ministry of Municipal Affairs and Housing, 2014)."

The PPS supports not only the protection of individual natural heritage features (woodlands, wetlands, valleylands, wildlife habitat, etc.) but also the linkages that connect them into a broader NHS. The NHS approach is effective because it acknowledges that natural heritage features have strong functional ties to one another, and this functionality may be compromised when such features become isolated within a predominately agricultural or urban matrix.

The PPS defines a Natural Heritage System as:

> "A system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional and site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored and areas with the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue (Ministry of Municipal Affairs and Housing, 2014)."

It further defines Natural Heritage Features and Areas as:

> "Features and areas, including significant wetlands, significant coastal wetlands, other coastal wetlands in Ecoregions 5E, 6E and 7E, fish habitat, significant woodlands and significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River), habitat of endangered species and threatened species, significant

wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area."

The NHS approach is a useful method for the protection of natural heritage features and areas because it reinforces an understanding that the elements of the system have strong ecological ties to each other, as well as to other physical features and areas in the overall landscape. The NHS approach also addresses a number of important land use planning concerns, including biodiversity decline, landscape fragmentation, and the maintenance of ecosystem health.

Development, as it pertains to the PPS, means the creation of a new lot, a change in land use, or the construction of buildings and structures, requiring approval under the Planning Act. Development-related policies under Section 2.1 of the PPS relevant to this project are as follows:

2.1.4 Development and site alteration shall not be permitted in:

a) significant wetlands in Ecoregions 5E, 6E and 7E (N.B.: the study area is located in Ecoregion 6E).

2.1.5 Development and site alteration shall not be permitted in:

b) significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
c) significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
d) significant wildlife habitat; and
e) significant areas of natural and scientific interest,

unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

The province recognises that activities on lands adjacent to the above-listed Natural Heritage Features may impact their ecological function. In addition to protecting important Natural Heritage Features, the PPS also contains provisions recognising the importance of adjacent lands:

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

3.2 City of Guelph Official Plan (March 2018 Consolidation)

The City of Guelph's NHS is described in the City's Official Plan (OP) (2018) and consists of a combination of natural heritage features and areas, including:

- Significant Natural Features and Areas
  - Significant Areas of Natural and Scientific Interest (ANSI)
  - Significant Habitat for Provincially Endangered and Threatened Species
  - Significant Wetlands
  - Surface Water Features and Fish Habitat
  - Significant Woodlands
  - Significant Valleyland;
  - Significant Landforms
  - Significant Wildlife Habitat (including Ecological Linkages)
  - Restoration Areas
  - Minimum or established buffers (where applicable)
- Natural Areas
  - Other Wetlands
  - Cultural Woodlands
  - Habitat for Significant Species
  - Established buffers (where applicable)
- Restoration Areas as identified on Schedule 4
- Wildlife Crossings as identified on Schedule 4
- Any minimum buffers associated with these NHS components

The purpose of the NHS is to maintain "biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems within the City of Guelph" (City of Guelph, 2018, p. 27). The NHS is intended to protect natural heritage features and areas for the long term, and maintain, restore and where possible, improve the biodiversity and connectivity of natural heritage features and ecological function of the Natural Heritage System in the long term, while recognizing and maintaining linkages between and among natural heritage features and areas and surface water and groundwater features (City of Guelph, 2018).

Included in the NHS are lands that have been restored and ones that have the potential to be restored to a natural state. Policy objectives outlined in the OP are to balance the needs of development and protect the NHS in perpetuity. To reach this balance, components of the abovementioned NHS need to be described in order to apply appropriate policies to natural areas.

According to background information received from the City of Guelph, the study area contains the following overlapping natural heritage designations:

- Significant Woodlands;

- Significant Wildlife Habitat;
- Significant Valleylands: Undeveloped Portions of the Regulatory Floodplain;
- Surface Water and Fisheries Resources (coolwater);
- Locally Significant Wetlands (City of Guelph defined); and
- Habitat for Significant Species.

Section 7.6 provides an analysis of policies applying to each NHS feature as they relate to the project alternatives.

For the purpose of reviewing the OP's NHS policies, the proposed bridge is considered "essential transportation infrastructure"

Section 4.1.2 of the OP outlines the general permitted uses within and/or adjacent to the Natural Heritage System, and states than an EIS may be required to demonstrate that permitted development/site alteration will have no negative impacts on natural heritage features and areas or their ecological and hydrologic functions. In general, it is the City's policy that development is **not permitted** within Significant Wetlands, Significant Woodlands, or Significant Wildlife Habitat, save for certain specified activities such as passive recreation and conservation/management activities. The construction of a pedestrian bridge (i.e. essential transportation infrastructure), is **not** considered to fall under the permitted passive recreation activity clause as it requires the creation of extensive infrastructure on the site.

3.3 Grand River Conservation Authority Policies

Hazard lands; including but not limited to floodplains, valleys, and all wetlands; and their associated areas of interference are regulated by the Grand River Conservation Authority (GRCA) under the Development, Interference with Wetlands, and Alteration to Shorelines and Watercourses regulation (Ontario Regulation 150/06). Prohibitions and conditions under O. Reg. 150/06 as they relate to hazard lands are as follows:

> 2. (1) Subject to section 3, no person shall undertake development or permit another person to undertake development in or on the areas within the jurisdiction of the Authority that are,
>
> > (b) river or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse, the limits of which are determined in accordance with the following rules:
> >
> > > (i) where the river or stream valley is apparent and has stable slopes, the valley extends from the stable top of bank, plus 15 metres, to a similar point on the opposite side,

(ii) where the river or stream valley is apparent and has unstable slopes, the valley extends from the predicted long term stable slope projected from the existing stable slope or, if the toe of the slope is unstable, from the predicted location of the toe of the slope as a result of stream erosion over a projected 100-year period, plus 15 metres, to a similar point on the opposite side,

(iii) where the river or stream valley is not apparent, the valley extends the greater of,

(A) the distance from a point outside the edge of the maximum extent of the flood plain under the applicable flood event standard, plus an allowance not to exceed 15 metres, to a similar point on the opposite side, and

(B) the distance from a watercourse or the predicted meander belt of a watercourse, expanded as required to convey the flood flows under the applicable flood event standard, plus 15 metres, to a similar point on the opposite side;

(c) hazardous lands;

(d) wetlands; or

(e) other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 metres of all provincially significant wetlands and wetlands greater than or equal to 2.0 hectares in size, and areas within 30 metres of wetlands less than 2.0 hectares in size. O. Reg. 150/06, s. 2 (1); O. Reg. 57/13, s. 1 (1-3).

The study area is located within the regulated river valley, and as such development is prohibited unless it is determined by the GRCA that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. O. Reg. 150/06, s. 3 (1).

The wetlands, valleylands, watercourse, and associated floodplain are regulated by the GRCA, and permits from the GRCA are required for works within lands regulated under Ont. Reg. 150/06. Accordingly, a permit from the GRCA will be required for the proposed bridge construction.

4 Field Survey Methodologies

Ecological field inventories undertaken in support of this project are detailed in

Table 4-1, below. Field inventories were conducted in accordance with the City of Guelph's EIS Guidelines (2014) and accepted data collection protocols.

Table 4-1: Field Survey Methodologies

Task	Survey Date(s)	Methodology
Vegetation Community Survey	September 20, 2016 and November 5, 2018	Vegetation community surveys were completed in accordance with the Ecological Land Classification system for Southern Ontario (Lee et al., 1998). Community boundaries were refined following further delineation and investigation of wetlands.
Botanical Inventory	September 20, 2016	Botanical inventories were undertaken in concert with vegetation community surveys. The area search method was used to identify flora within the study area.
Tree Inventory	September 20, 2016 and April 6, 2018	An ISA-certified arborist inventoried and mapped all trees with a diameter-at-breast-height (DBH) 10 cm and greater within and adjacent to proposed areas of disturbance. Features such as species, crown width, DBH, and overall health were also recorded.
Snake Survey	April 26, June 11, and June 20, 2018	To determine the presence of significant snake species and their habitats within the study area, an active hand search was completed following the Milksnake Survey Protocol (MNRF, 2013). Per the protocol, three survey days are required between late April and late June during warm days between 8°C and 25°C. Each survey day was separated by at least two weeks and spread out over the survey period.
Aquatic Habitat Assessment	N/A	Aquatic habitat was classified by photo interpretation according to the methodologies of the Environmental Guide for Fish and Fish Habitat (MTO, 2009).
Bat Maternity Roost Surveys	September 20, 2016 and April 6, 2018	Bat maternity roost surveys were completed in accordance with the Guelph District MNRF's *Survey Protocol for Species at Risk Bats within Treed Habitats* (2017). Snag trees were initially reviewed during leaf-on conditions, in concert with vegetation community surveys, and then subsequently surveyed during leaf-off conditions per the protocol.

Task	Survey Date(s)	Methodology
Breeding Bird Surveys	June 1 and 21, 2018	Two breeding bird surveys were completed in accordance with the Ontario Breeding Bird Atlas (Cadman et al. 2007) protocol. Per the protocol, surveys were completed more than 15 days apart during the core breeding season, within five hours of dawn and in favourable weather.
Anuran Call Surveys	April 26, May 16, and June 21, 2018	Anuran call surveys were conducted using the methods of Bird Studies Canada's (BSC) Marsh Monitoring Program (MMP) (BSC, 2003). Three calling surveys were undertaken between April and June on nights where ambient temperature was above 5, 10, and 17 degrees Celsius, respectively.
Wetland Delineation	November 5, 2018	Wetland communities were delineated using the methodology of the Ontario Wetland Evaluation System, and staked and surveyed in cooperation with GRCA.
Incidental Wildlife	All survey dates	Incidental wildlife and/or traces of wildlife (e.g., mammals, butterflies, reptiles, and amphibians) were recorded during all field surveys.

5 Existing Conditions within the Study Area

The following subsections detail the results of natural heritage assessments conducted in support of the proposed bridge crossing.

5.1 Geomorphic and Hydraulic Summary of the Speed River

Aquafor's geomorphologist undertook an assessment to define the existing conditions of the Speed River at the bridge proposed location. This assessment is used to provide recommendations regarding span, erosion hazard risks and abutment offsets, and orientation of the bridge in order to maximize the longevity of the bridge with minimal engineering of the river. A summary of the geomorphic observations and hydraulic assessment is provided below.

The Speed River is a cobble bed river, with well-vegetated banks at the location of the proposed pedestrian bridge. The river valley is wide (~90 m), with steep banks that provide the river space to naturally migrate. At this location, there is a large, permanent island that has formed in the centre of the creek, splitting the creek into two branches. The majority of the flow is contained to the south side of the island, where the channel has an approximate bankfull width of 13 m. The bankfull width

along the northern side of the island is approximately 14 m. A long steep riffle has been constructed at this location, created from large cobble and riprap material, which might have been done to protect underlying utilities, or as an erosion protection measure for the storm sewers that discharges along the southern embankment.

A third storm sewer outlet discharges along the northern bank of the channel. The outlets have headwalls, and there is minimal erosion at these locations. The preferred alignment of the bridge should consider the locations of these outfalls, and avoid realigning the sewers if possible.

There was no excessive scour or erosion within the study area. The mature vegetation along the banks suggests that this section of the river is stable, and is not undergoing any significant lateral channel migration. The riffle within the study area is also providing protection against any channel bed scour.

A small groundwater upwelling area was noted along the northern bank of the river (described as a Mineral Shallow Swamp area during vegetation community assessment; see **Section 5.2**). This area is low-lying, making it more subject to flooding. Additionally, the area has soft, wet organic soil which will make it a less desirable location for a bridge foundation. It is recommended that the alignment of the bridge avoid this area.

Aquafor reviewed the existing hydraulic model of the Speed River, provided by the GRCA, to gain an understanding the general hydraulic conditions at the proposed location of the bridge. One of the cross sections (#26398) in the existing model was determined to be very close to the location of the proposed bridge, and the geometry of the cross section was determined to be representative. Therefore, the hydraulic metrics at this location were determined to be representative of the study area. A summary of the hydraulic parameters at this locations are summarized below in Table **5-1** and a plan and cross section showing the estimated water surface profiles are shown in **Figure 5-1**.

Table 5-1: Summary of Hydraulic Parameters at Proposed Bridge Location

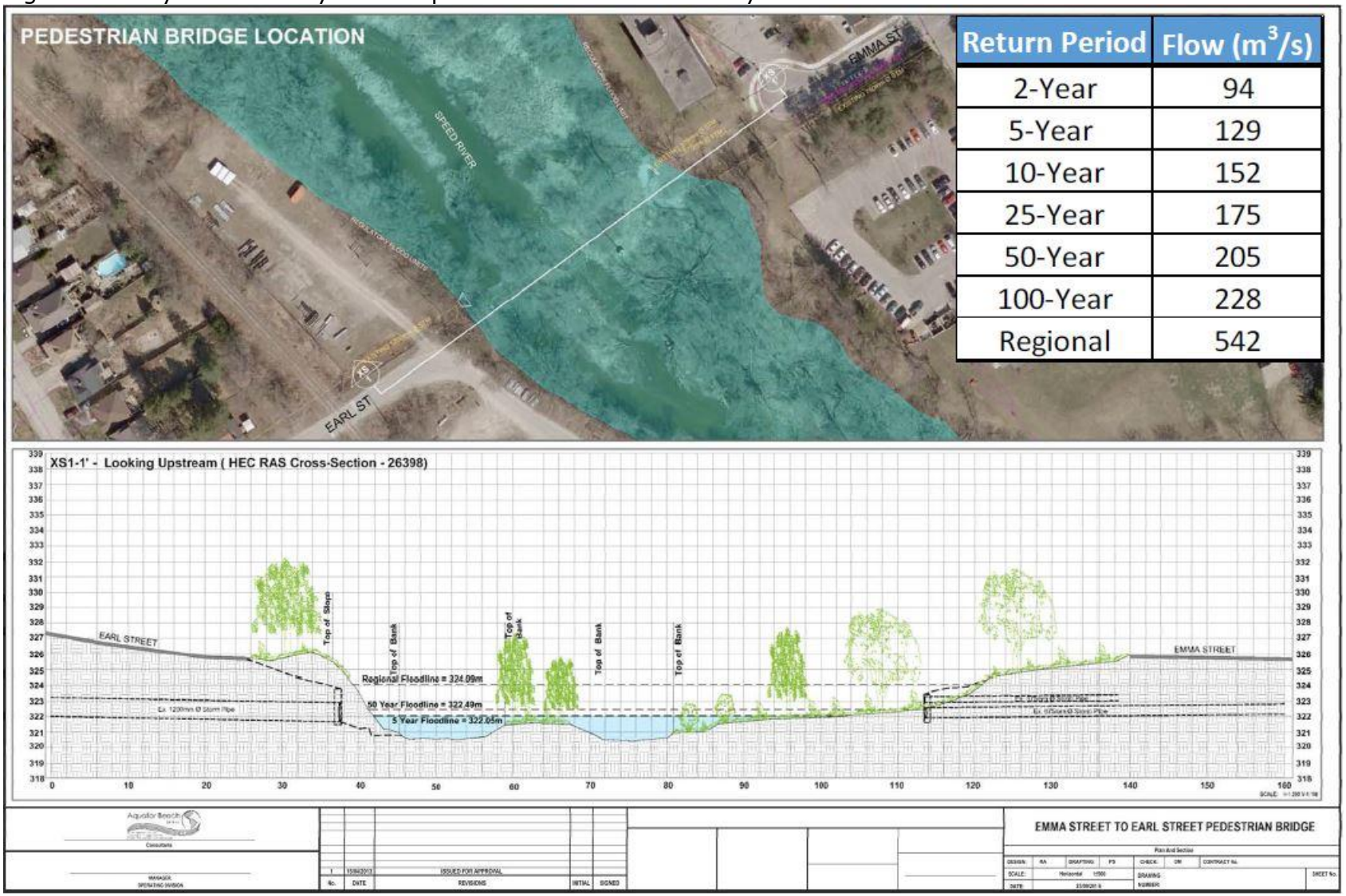
Profile	**Total Flow**	**Water Surface Elevation**	**Average Channel Velocity**	**Average Channel Shear**	**Average Channel Power**
	(m^3/s)	**(m)**	**(m/s)**	**(N/m^2)**	**(N/m s)**
2-year	94	321.82	2.53	55.07	139.08
5-year	129	322.05	2.83	64.79	183.16
10-year	152	322.18	2.97	69.13	205.29
20-year	175	322.32	3.08	72.15	222.13
50-year	205	322.49	3.2	75.08	239.9
100-year	228	322.61	3.27	76.72	250.71

Profile	Total Flow	Water Surface Elevation	Average Channel Velocity	Average Channel Shear	Average Channel Power
	(m^3/s)	(m)	(m/s)	(N/m^2)	(N/m s)
Reg - Orig	542	324.09	3.88	88.87	344.59
Reg - GRHS	480	323.83	3.78	86.74	327.77
Reg GRHS w. spli	480	323.83	3.78	86.74	327.77

As shown in **Figure 5-1**, the results showed that the water surface for all the flood events is expected to span and be contained to the river valley. No event is expected to overtop the embankments onto the surrounding lands or roads. It is recommended that any abutments minimize the encroachment to the channel to ensure that a pinch point is not created, increasing the flood levels.

It was also noted that the average channel velocities at this location are high (>2.5 m/s). Should the abutments or piers be constructed within the flooding limits, it is recommended that ample scour protection be provided to the foundation to protect the structures from being undermined. It would be preventative to place any piers on the island within the centre of the creek, as this will reduce the exposure to flood flows, and provide some additional erosion protection.

Figure 5-1: Hydraulic Study of the Speed River within the Study Area



5.2 Vegetation Communities

Vegetation communities within and approximately 120 m from the anticipated area(s) of impact were classified according to the Ecological Land Classification System for Southern Ontario (Lee et al., 1998). The boundaries of each vegetation community are illustrated on **Figure 5-2**, below. Significant wildlife habitat, which is discussed in **Section 5.8**, is included on the same figure for context.

A total of nine vegetation community polygons were identified, capturing eight distinct community types (**Table 5-2**). According to information available from the NHIC and the City of Guelph's OP, none of the vegetation communities present in the study area are globally, nationally, provincially, or locally rare. On the landscape level, the vegetation communities within the study area are in a river valley system and tablelands. Refer to **Appendix A** for ELC Field Sheets.

Table 5-2: Vegetation Community Descriptions

Polygon No.	Vegetation Community	Description
1	FOD7: Lowland Deciduous Forest	This vegetation community is located on the southern bank of the Speed River. It is immediately adjacent to industrial lands to the south. The community is characterized as a tree-covered deciduous valley slope forest. It is predominantly composed of exotic, invasive, disturbance-tolerant species and is culturally influenced as the valley slope has been shaped by the industrial land developments above the top of bank. The canopy primarily consists of Manitoba maple (*Acer negundo*) and hybrid white willow (*Salix x rubens*). The subcanopy is dominated by European buckthorn (*Rhamnus cathartica*), and has abundant black walnut (*Juglans nigra*), Manitoba maple, and Norway maple (*Acer platanoides*). The understory layer is dominated again by European buckthorn, with Norway maple and choke cherry (*Prunus virginiana ssp. virginiana*) as abundant associates. The ground layer contains garlic mustard (*Alliaria petiolata*), riverbank grape (*Vitus riparia*), thicket creeper (*Parthenocissus inserta*), and orchard grass (*Dactylis glomerata*).

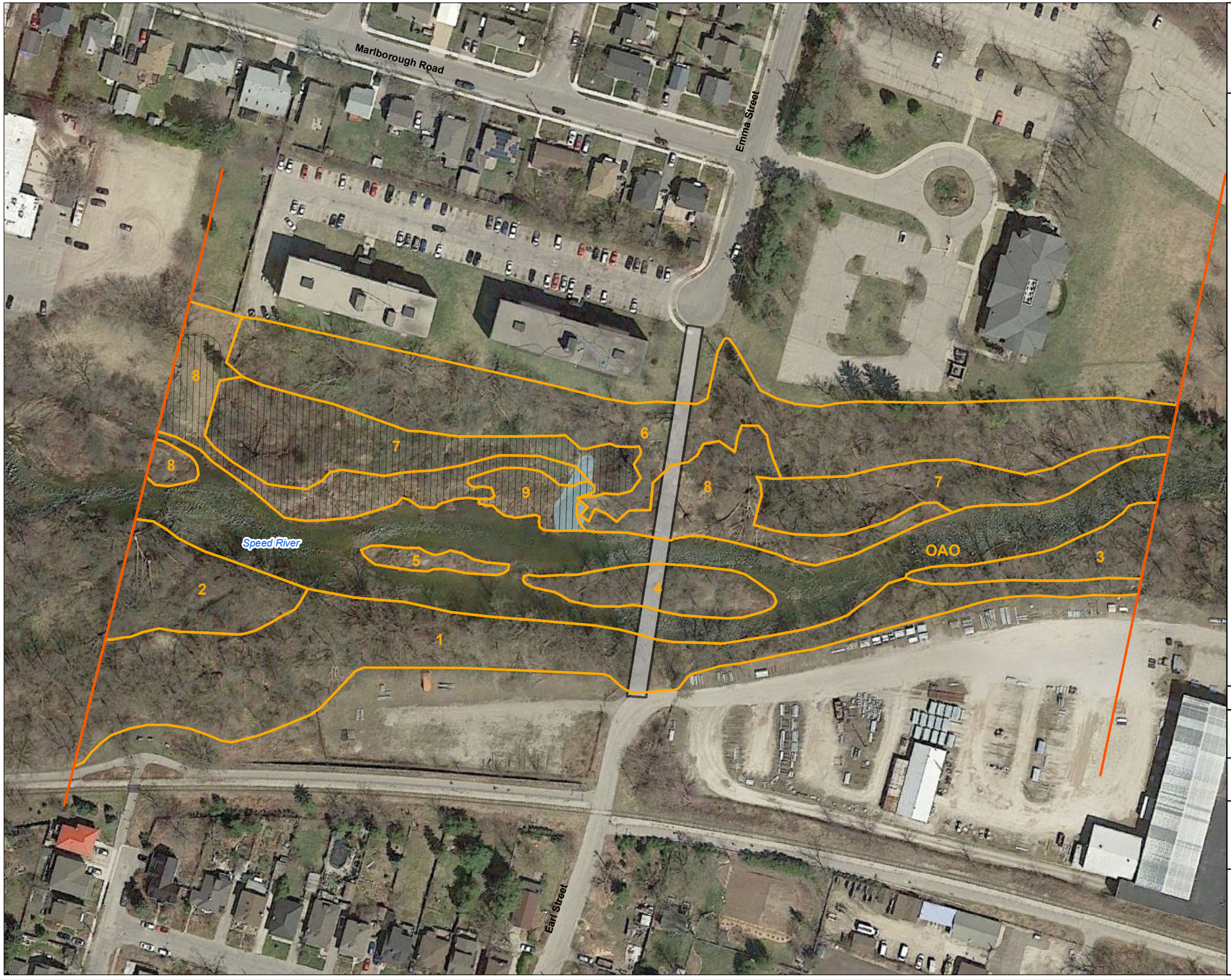
Polygon No.	Vegetation Community	Description
2	SWD4-1: Willow Mineral Deciduous Swamp	ELC polygon 2 is located at the northwest extent of the study site, south of the Speed River in the valley bottomlands, adjacent to ELC polygon 1. It is a riverine-influenced community, naturally flooding in from the river. The soil layers consist of 45 cm of silt loam, followed by 55 cm of coarse sand as would be expected given its location on the landscape. The canopy of this community is dominated by hybrid white willow. The subcanopy has hybrid white willow and green ash (*Fraxinus pennsylvanica*) as an occasional associate. The understory is scattered with European buckthorn, glossy buckthorn (*R. frangula*), gray dogwood (*Cornus foemina ssp. racemosa*), and European highbush cranberry (*Viburnum opulus*). The groundlayer is dominated by reed canary grass (*Phalaris arundinacea*); with spotted Joe-Pye-weed (*Eupatorium maculatum ssp. maculatum*), fowl blue grass (*Poa palustris*), and purple-stem aster (*Symphyotrichum puniceum var. puniceum*) as abundant associates.
3	SWD: Deciduous Swamp	Due to the cultural influences of the river valley, this vegetation community was not able to be described to the vegetation type level. ELC polygon 3 is a riverine-influenced community that is a hybrid white willow dominated deciduous swamp. Manitoba maple is abundant in the canopy, in association with hybrid white willow. Other than hybrid white willow dominating the canopy, Manitoba maple is the most abundant species in the swamp, growing abundantly in all four canopy layers. Winter creeper (*Euonymus fortunei*) is also abundant in the understory.

Polygon No.	Vegetation Community	Description
4	FOD7-4: Fresh-Moist Black Walnut Lowland Deciduous Forest **(Provincial rank: S2S3)**	This community is found on an island in the Speed River. At the time of field investigations, the island was above the high water mark. According to available modelling information, this island vegetation community is flooded every ~5 years. The only two significant plant species documented in the study area were found in this vegetation community: Cut-leaved coneflower (*Rudbeckia laciniata*), and riverbank wild rye (*Elymus riparius*). The FOD7-4 vegetation community type is assigned a provincial rarity rank of S2S3 for Ontario (NHIC, 2015c). MNRF draft Fact Sheet STrD11 from the *Southern Treed Ecosystems of Ontario (Draft)* (Lee, 2006) describes the S2S3 ranked Black Walnut-Green Ash/White Avens Forest in greater detail than the ELC manual (Lee *et al*., 2008). Polygon 4 in the study area has some elements of the rare community (e.g., an abundance of black walnut, which is quite common in disturbed floodplain areas in southern Ontario) but lacks key native species characteristic of the rare community (i.e., black maple [*Acer saccharum ssp. nigrum*], hackberry [*Celtis occidentalis*], bitternut hickory [*Carya cordiformis*], and Virginia knotweed [*Polygonum virginanum*]). Therefore, it is the opinion of Aquafor that Polygon 4 represents a disturbed natural forest of mixed deciduous character that is not the S2S3 ranked community described in NHIC documents. This community has therefore not been treated as a rare vegetation community type for the remainder of this document.
5	SWT2-5: Red Osier Mineral Thicket Swamp	This vegetation community is located on a low-lying island in the Speed River, upstream of the island containing ELC polygon 4. ELC polygon 5 is a riverine community dominated by red-osier dogwood. The ground layer is abundant with Canada goldenrod (*Solidago canadensis*), fowl blue grass, and panicled aster (*Aster lanceolatus ssp. lanceolatus*). Owing to its low relief and evidenced by the low amount of plant diversity found within the community, it is likely that this island is regularly flooded and subject to disturbances caused by ice and other floating objects.

Polygon No.	Vegetation Community	Description
6	FOD7: Lowland Deciduous Forest	This vegetation community is located on the top north slope of the river valley, adjacent to residential and institutional lands to the north. It mirrors ELC polygon 1 in function and form, although Manitoba maple is more abundant than willows in the forest canopy. Associated species include black walnut, hybrid white willow, basswood (*Tilia americana*), and Norway maple; similar in composition to polygon 1. The ground layer is composed of garlic mustard, Canada goldenrod, orchard grass, panicled aster, and wild carrot (*Daucus carota*).
7	SWD4-1 Willow Mineral Deciduous Swamp	ELC polygon 7 is split in two sections, both located on the north side of the Speed River. It lies generally upslope of ELC polygon 8 and downslope of ELC polygon 6. It is a riverine-influenced community, naturally flooding in from the river. A natural ground water seep originates in the west section of ELC polygon 7 and flows downhill into ELC polygons 8 and 9, eventually entering into the river. The soil in this community consists of 20 cm of medium sandy silt, followed by 80 cm of medium sand with small stones. This community is the same type as ELC polygon 2; however, it varies in the plant list. The canopy is dominated by hybrid white willow, with black walnut and Manitoba maple as abundant associates. The subcanopy is abundant with black walnut, with occasional occurrences of basswood and alternate-leaved dogwood (*C. alternifolia*). The understory is abundant with European buckthorn, gray dogwood (*C. foemina ssp. racemose*), and red-osier dogwood (*C. stolonifera*). The ground layer is abundant with spotted joe-pye-weed (*Eupatorium maculatum ssp. maculatum*), Canada goldenrod, white avens (*Geum canadense*), and spotted touch-me-not (*Impatiens capensis*). According to a local resident, two snapping turtles (*Chelydra serpentina*) were observed mating in this community in spring of 2015, and had been seen in the same general location in previous years. Snapping turtles are listed as a species of Special Concern federally and provincially.

Polygon No.	Vegetation Community	Description
8	SWT2 Mineral Thicket Swamp	ELC polygon 8 encompasses most of the northern river bank in the study area. The west section of this community is associated with the seepage area and confirmed snapping turtle habitat that was previously discussed. As this is a thicket swamp, most of the vegetation is found in the understory layer, which is mainly composed of gray and red-osier dogwoods. Other associated species in this layer are European highbush cranberry, glossy buckthorn, and common elderberry (*Sambucus canadensis*). As with the other polygons associated with a riverine system, the soil layers are composed of the top 30 cm as medium sandy loam, with the lower 70 cm as medium sand.
9	MAS2 Mineral Shallow Swamp	This mineral shallow marsh is located in a small pocket on the north bottomlands of the river valley. The groundwater seep flows southward on the eastern end of the polygon. This vegetation community is designated as snapping turtle habitat as identified in field observations. Spotted touch-me-not (*Impatiens capensis*), narrow-leaved cattail (*Typha angustifolia*), reed canary grass, and a dominant ground layer of watercress (*Nasturtium officinale*) are the most abundant species in the community. Watercress is known a groundwater indicator species (Michigan Flora Online, 2011).
9i	MAM2-9 Jewelweed Mineral Meadow Marsh	Within ELC polygon 9 is a Jewelweed Mineral Meadow Marsh inclusion. Spotted touch-me-not (a.k.a. spotted jewelweed) is the dominant species of this inclusion.
-	OAO Open Aquatic	This ELC polygon describes the Speed River. Aquatic plants were not observed in this community.

Emma Street to Earl Street Pedestrian Bridge Municipal Class Environmental Assessment



Legend

- Study Limits
- Confirmed Habitat For Snapping Turtle
- Groundwater Seepage
- Ecological Land Classification Polygons
- Proposed Pedestrian Bridge

ELC Community Number: Community Type

1: FOD7 – Lowland Deciduous Forest
2: SWD4-1 - Willow Mineral Deciduous Swamp
3: SWD-Deciduous Swamp
4: FOD7-4 – Fresh-Moist Black walnut Lowland Deciduous Forest
5: SWT2-5 – Red-osier Mineral Thicket Swamp Type
6: FOD7 – Lowland Deciduous Forest
7: SWD4-1 - Willow Mineral Deciduous Swamp
8: SWT2 – Mineral Thicket Swamp
9: MAS2 (MAM2-9) - Mineral Shallow Marsh (inclusion: Jewelweed Mineral Meadow Marsh)
OAO - Open Water Aquatic

Figure 5.2: Vegetation Communities and Significant Wildlife Habitat

Date: October 2016
Image Source: Google Earth, 2016

0 25 50
Meters

N

Aquafor Beech Limited

5.3 Flora

A summer botanical inventory was conducted during vegetation community assessment surveys using an area search methodology. A total of 118 species of vascular plants was catalogued during this inventory, vegetation community classification surveys, and wetland evaluations within the study area. Of the 107 species identified to the species level, 76 (64%) are native to Ontario and 42 (36%) are introduced species, which is reflective of the disturbed nature of the vegetation communities within the valley corridor. The majority of species recorded have a high range of habitat tolerances, as evidenced by the high proportion of species with low coefficients of conservatism (CC) values. Species with narrow habitat tolerances, of which there were 3, are located within ELC polygon 4.

None of the species recorded during surveys are of global, national, or provincial significance. As previously mentioned, two species recorded during surveys are considered rare in Guelph: cut-leaved coneflower and riverbank wild rye. These species are growing on an island in the middle of the Speed River (ELC polygon 4).

An annotated list of flora recorded within the study area is contained within **Appendix B**.

5.4 Tree Inventory

An ISA-certified arborist conducted an inventory of trees ≥10 cm DBH within and adjacent to anticipated areas of disturbance. Additional trees inventoried during bat maternity roost surveys are also included in the tree inventory. The results of the tree inventory are contained within **Appendix C**.

A tree preservation plan will be developed following the selection of the preferred alternative.

5.5 Aquatic Ecology

Fisheries information solicited from the MNRF indicates that the Speed River is listed as a cool water system. Some MNRF fisheries survey points downstream of the study area yielded records of yellow perch (*Perca flavescens*), largemouth bass (*Micropterus salmoides*), and rock bass (*Ambloplites rupestris*).

5.5.1 Aquatic Habitat Mapping

Aquatic habitat mapping of the Speed River was conducted using the Environmental Guide for Fish and Fish Habitat (MTO, 2009). The study was completed ex-situ using historical information obtained through the Ministry of Natural Resources and Forestry (MNRF) as well as through site photos taken during Aquafor's field studies.

A mapping zone extending 160 m upstream and 160 m downstream of the proposed pedestrian bridge was examined; the upstream limit is approximately 370 m downstream of the East Speedvale Avenue right-of-way. Surrounding land use is primarily residential with the exception of a manufacturing plant located on the downstream south bank. Furthermore, a recreational trail runs parallel to the river on the south bank.

It is important to note that river flow is controlled by the GRCA and the dam located upstream at Guelph Lake. The average wetted width and depth is therefore variable depending on the controlled flow from this dam. At the time of assessment, water levels were low with an average depth of fewer than 30 cm, due to the drought conditions that occurred in 2016.

5.5.1.1 Upstream Habitat

The upstream section has an observed average wetted width of 20 m during normal flow, although width is variable due to the presence of an instream island. Upstream of the island, the average wetted width was assessed at 18.5 m. Upon splitting at the 9 m-wide island, the north side of the section is wider than the south.

The north bank is natural with little erosion present. A wetland spans nearly the entire north bank of the upstream section with dogwood, willow, cattails, and sedges dominating the banks (Table **5**-**3**, Photo A). Within this bottomland wetland is confirmed habitat for snapping turtle, a SAR (Table **5**-**3**, Photo B). Furthermore, located at the downstream portion of the north bank nearest the proposed bridge is a coldwater seep. The seep flows through cobble sediment within the wetland and is adjacent to the outflow of a storm pipe. The seep empties into the upstream section of the River (Table **5**-**3**, Photos C and D). It was at this located where common carp (*Cyprinus carpio*) were observed during vegetation community field surveys.

The south bank consists of larger, well established deciduous trees with some erosion present at the high water mark as well as near the culvert at the proposed bridge site (Table **5**-**3**, Photos E and F).

Due to the wide nature of the river, overhanging vegetation is poor, with 20% of the channel shaded. The substrate consists of primarily cobble, with some sand and gravel deposits in slower stretches, and boulders observed in small areas. Instream cover is largely provided by cobble and isolated boulders with some large woody debris observed in high flow events (Table **5**-**3**, Photo G). Runs and riffles dominate the upstream section with few pools available for fish refuge. Little instream vegetation was observed although macrophytes and rooted algae were found at the confluence of the coldwater seep and the main channel (Table **5**-**3**, Photos B and C). Residential land use surrounding this section as well as the unauthorized recreational trail on the left bank are possible nutrient or pollution sources. No fish barriers were observed.

5.5.1.2 Downstream Habitat

The downstream section is narrower than the upstream section with an average wetted width of 14.8 m. With a permanent instream island that remains above the High Water Mark (ELC polygon 4), this section begins as a split channel and, upon converging, continues to narrow through the 160 m mapping zone. As with the upstream section, erosion is present on the south bank though it continues to a more stable bank further downstream (Table **5**-**3**, Photo H). With a narrower wetted width and more natural cover provided by established willows, 50% of this section is shaded.

The downstream section has a good combination of runs and riffles with few pools. As with the upstream section, cobble dominates the substrate of the downstream section with some sand and gravel and few boulders. Instream cover is provided by cobble, large woody debris and some overhanging vegetation along the banks (Table **5**-**3**, Photo I). Instream vegetation was limited to small amounts of filamentous algae. Potential nutrient and pollution sources are similar to the upstream section, however at the downstream extent of the south bank is the Armtec Manufacturing plant which could be a contributing factor. No fish barriers were observed.

Table 5-3: Site Photographs

	
Photo A: Upstream section - right bank wetland and Snapping Turtle habitat	Photo B: Upstream section - right bank wetland and groundwater seepage area

Photo C: Upstream section - right bank culvert

Photo D: Upstream section - right bank cold water seep – confluence

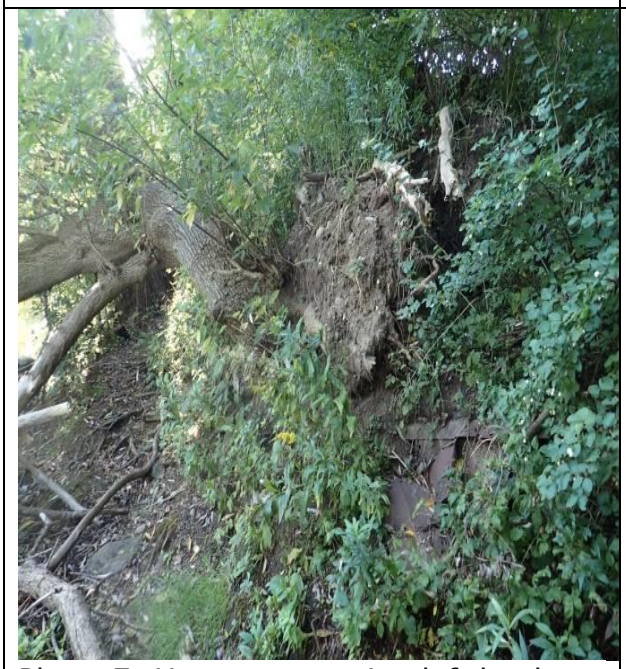


Photo E: Upstream section left bank erosion

Photo F: Upstream section - left bank erosion at concrete spillway (image taken during high flow event)

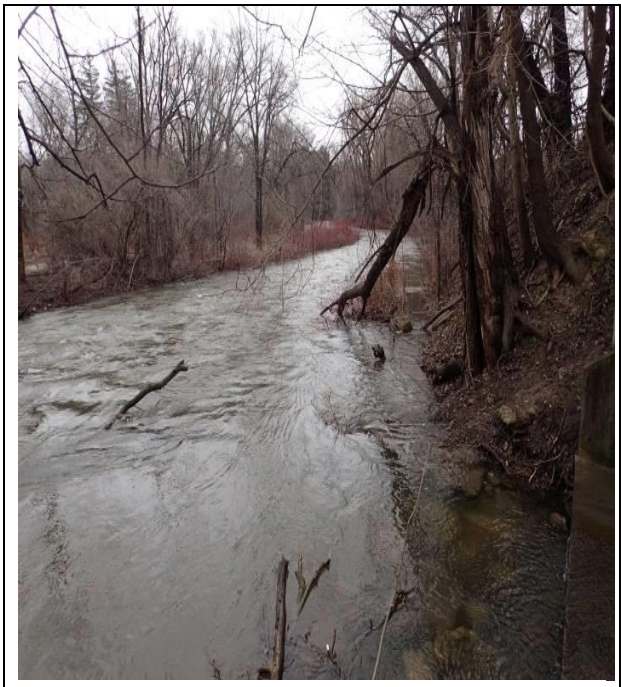


Photo G: Upstream section - left bank woody debris and boulders (image taken during high flow event)

Photo H: Downstream section - left bank erosion

Photo I: Downstream section - left bank looking downstream, large woody debris and overhanging vegetation cover

5.6 Terrestrial Wildlife

Wildlife surveys completed in support of the construction of the pedestrian bridge are described in the following subsections.

5.6.1 Bat Maternity Roost Surveys

Phase 1 and 2 of the Guelph District MNRF's "Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis & Tri-colored Bat" (MNRF, 2017) was completed to identify candidate maternity roosting sites for *Myotis* spp. and *Perimyotis* sp. bats. Phases 3 and 4 of the protocol have not been completed to date. Per the protocol, trees with a DBH 10 cm and greater in various states of decay with snag attributes (e.g., loose bark, knot holes, cracks, etc.) were identified and mapped. In total, **twenty-seven (27) candidate *Myotis* spp. bat maternity roost sites** were documented within 20 m from the anticipated disturbance area. Candidate *Perimyotis* sp. sites were identified by cross-referencing the tree inventory for any maple (*Acer* spp.) > 25cm DBH and any oak trees (*Quercus* spp.) > 10cm DBH. **Fourteen (14) candidate *Perimyotis* sp. sites** were identified taking this approach. An annotated list of candidate *Myotis* spp. and *Perimyotis* sp. maternity roost sites is contained in **Appendix D**; candidate locations are mapped in **Figure 5-3** below.

Figure 5-3: Tree Inventory Showing Potential Bat Habitat Trees (in blue)

5.6.2 Breeding Bird Surveys

Breeding bird surveys were carried out on two separate dates and included a comprehensive area search and a 10-minute point count located centrally on the site. All bird species and individuals seen and heard were recorded, as was all breeding evidence observed for all species. This breeding evidence was used to assign a breeding status (confirmed, probable, possible, or observed). The breeding evidence codes and their abbreviations are contained in **Appendix E**.

The results from the two breeding bird surveys are summarized in **Table 5-4**; the full survey results are also contained in **Appendix E**. A total of 31 species were encountered during the breeding bird surveys, of which breeding was confirmed for two, probable for six, and possible for 21. The remaining two species were observed with no evidence of breeding.

All bird species encountered have been listed in **Table 5-4** with their S-Rank for Ontario, assigned by the NHIC. Of the 31 species, 21 have a rank of S5 indicating that they are Secure (common, widespread or abundant), while nine have a rank of S4 or Apparently Secure (uncommon but not rare; some cause for long-term concern due to declines or other factors). One introduced species (European Starling) is assigned a rank of SNA or Not Applicable, meaning it is not a suitable target for conservation activities.

Eight observed species are identified as species of regional concern according to the Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain, North American Bird Conservation Region 13. These species are designated because they may be vulnerable due to population size, distribution, population trend, abundance and threats. Conversely, the designation of Canada Goose suggests that it may require ongoing management due to a population above the desired level.

Eastern Wood-pewee was observed during the first survey on June 1, 2018. A single male was heard singing near the center of the site. Eastern Wood-pewee is a species of Special Concern under both the federal Species at Risk Act (SARA) and the provincial ESA.

Table 5-4: Summary of Breeding Bird Survey Results

Species Name		**Highest Breeding Evidence**	**Ranking**			
Common Name	**Scientific Name**		Regional Concern	S-Rank	ESA	SARA
American Crow	*Corvus brachyrhynchos*	**Poss (H)**	No	S5B	-	-
American Goldfinch	*Spinus tristis*	**Poss (H)**	No	S5B	-	-

Species Name		Highest Breeding Evidence	Ranking			
Common Name	**Scientific Name**		Regional Concern	S-Rank	ESA	SARA
American Kestrel	*Falco sparverius*	**Obs (X)**	Yes	S4	-	-
American Redstart	*Setophaga ruticilla*	**Poss (S)**	No	S5B	-	-
American Robin	*Turdus migratorius*	**Prob (T)**	No	S5B	-	-
Baltimore Oriole	*Icterus galbula*	**Poss (S)**	Yes	S4B	-	-
Belted Kingfisher	*Megaceryle alcyon*	**Poss (H)**	No	S4B	-	-
Black-capped Chickadee	*Poecile atricapillus*	**Poss (S)**	No	S5	-	-
Blue Jay	*Cyanocitta cristata*	**Poss (H)**	No	S5	-	-
Canada Goose	*Branta canadensis*	**Conf (FY)**	Yes	S5	-	-
Cedar Waxwing	*Bombycilla cedrorum*	**Poss (H)**	No	S5B	-	-
Common Grackle	*Quiscalus quiscula*	**Poss (H)**	No	S5B	-	-
Downy Woodpecker	*Picoides pubescens*	**Poss (H)**	No	S5	-	-
Eastern Wood-Pewee	*Contopus virens*	**Poss (S)**	Yes	S4B	SC	SC
European Starling	*Sturnus vulgaris*	**Poss (H)**	No	SNA	-	-
Gray Catbird	*Dumetella carolinensis*	**Poss (S)**	No	S4B	-	-
Great Crested Flycatcher	*Myiarchus crinitus*	**Poss (H)**	No	S4B	-	-
House Wren	*Troglodytes aedon*	**Prob (T)**	No	S5B	-	-
Killdeer	*Charadrius vociferus*	**Poss (H)**	Yes	S5B S5N	-	-
Mallard	*Anas platyrhynchos*	**Poss (H)**	Yes	S5	-	-
Mourning Dove	*Zenaida macroura*	**Prob (T)**	No	S5	-	-
Northern Cardinal	*Cardinalis cardinalis*	**Prob (T)**	No	S5	-	-

Species Name		Highest Breeding Evidence	Ranking			
Common Name	**Scientific Name**		Regional Concern	S-Rank	ESA	SARA
Northern Flicker	*Colaptes auratus*	**Poss (H)**	Yes	S4B	-	-
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	**Poss (H)**	Yes	S4B	-	-
Red-breasted Nuthatch	*Sitta canadensis*	**Poss (H)**	No	S5	-	-
Red-eyed Vireo	*Vireo olivaceus*	**Prob (T)**	No	S5B	-	-
Red-winged Blackbird	*Agelaius phoeniceus*	**Conf (FY)**	No	S4	-	-
Ring-billed Gull	*Larus delewarensis*	**Obs (X)**	No	S5B S4N	-	-
Song Sparrow	*Melospiza melodia*	**Prob (T)**	No	S5B	-	-
White-breasted Nuthatch	*Sitta carolinensis*	**Poss (H)**	No	S5	-	-
Yellow Warbler	*Setophaga petechia*	**Poss (S)**	No	S5B	-	-

5.6.3 Anuran Call Surveys

Aquafor Beech Limited staff conducted calling amphibian surveys from Earl Street facing the river, using the methods of the Marsh Monitoring Program (MMP) (BSC, 2003).

Surveys were conducted on still nights meeting the appropriate minimum nighttime temperatures. Parameters recorded during each survey include date, time, air temperature, wind speed, degree of cloud cover, and level of precipitation; all parameters are summarized in **Table 5-5**. It should be noted that call surveys were hampered by constant background noise from Speedvale Ave. E and Woolwich St. Amphibian call survey field sheets are located in **Appendix F**.

Table 5-5: Weather Conditions During Amphibian Call Surveys

Date	**Time (24:00)**	**Air Temp (°C)**	**Beaufort Wind Scale**	**Cloud Cover**	**Precipitation**
April 23, 2018	20:40	12	1	30%	none
May 16, 2018	21:10	22	1	none	none
June 21, 2018	22:31	23	1	30%	none

At each call survey station, the intensity and number of calling amphibians were measured using call level and abundance codes, as outlined in the MMP. Codes are as follows:

Level 1: Calls are not simultaneous and calling individuals can be counted;
Level 2: Some calls are simultaneous but individual calls are distinguishable;
Level 3: Calls are continuous and overlapping.

The results of the surveys are detailed in **Table 5-6**. American Toad (*Anaxyrus americanus*) was the only amphibian heard calling during surveys. Based on the presence of this one species, and at low calling frequency, it is concluded that the study area does not contain significant breeding habitat for amphibians. Furthermore, the location of calling seemed to be coming from wetlands in the northwest corner of the study area, outside of anticipated disturbance areas.

Table 5-6: Amphibian Call Survey Results

Date	Species Detected	Call Level Code	Count	Notes
April 23, 2018	No Calls	-	-	Dogs barking; 3 Canada Geese
May 16, 2018	American Toad	2	5	n/a
June 21, 2018	No Calls	-	-	n/a

5.6.4 Snake Surveys

To evaluate the presence of significant snake species and their habitats within the study area, an active hand search was completed following the Milksnake Survey Protocol (MNRF, 2013). Per the protocol, three survey days were conducted between late April and late June during warm days between 8°C and 25°C. Each survey day was separated by at least two weeks and spread out over the survey period. Active hand searches focused on key habitats, such as under rocks, logs, and other objects that may provide cover.

No snakes were observed during the surveys mentioned above. Furthermore, no structures that could potentially be used as hibernacula for snakes were observed within the study area.

5.6.5 Incidental Wildlife Observations

The following table (**Table 5-7**) lists additional wildlife encountered during field surveys as well as observations provided to Aquafor by the public.

Table 5-7: Incidental Wildlife Observations

Species		**Status**					**Vegetation Community**									
Scientific Name	**Common Name**	**SARA**	**ESA**	**G-Rank**	**S-Rank**	**Guelph**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**River**
Birds																
Ardea herodias	Great Blue Heron			G5	S4	R								**x**		
Mammals																
Tamias striatus	Eastern Chipmunk			G5	S5		**x**					**x**				
Sylvilagus floridanus	Eastern Cottontail			G5	S5		**x**									
Sciurus carolinensis	Eastern Gray Squirrel			G5	S5							**x**				
Ondatra zibethicus	Muskrat			G5	S5					**x**				**x**		
Tamiasciurus hudsonicus	Red Squirrel			G5	S5							**x**	**x**			
Fish																
Cyprinus carpio	Common Carp			G5	SNA											**x**
Herpetofauna																
Chelydra serpentina	Snapping Turtle	SC	SC	G5	S3	R									**x**	

Snapping turtle is a species of Special Concern that was observed by local residents within the study area, in wetlands.

A local nature enthusiast present at the first public information session for the EA informed the study team that he had observed great blue heron (rare in the City of Guelph), foraging in the Speed River within the study area. Habitat within the Speed River is suitable as foraging habitat for this species. No nests were observed on or adjacent to the study area.

The remaining species are common locally, provincially, and federally.

5.7 Species at Risk and Species of Conservation Concern

For the purpose of this study, SAR are defined as species listed as Endangered, Threatened, or of Special Concern under the Ontario ESA and/or the federal SARA. Additional Species of Conservation Concern (SOCC) are defined as: species with Global ranks of G1–G3; species with Sub-national/Provincial ranks of S1-S3; and species considered rare within the City of Guelph.

Aquafor solicited natural heritage information from the Guelph District MNRF as well as the MNRF's NHIC Make-a-Map online database to assess the presence of SAR and SOCC within the study area. Correspondence with the MNRF is contained within **Appendix G**.

Correspondence with the MNRF indicated that SAR were not previously recorded within the study area. However, the MNRF did indicate that the study area could potentially support butternut (*Juglans cinerea*) and Endangered bat species. A review of the MNRF's NHIC online database further indicated five records of SOCC within 1 km of the study area. The Ontario Reptile and Amphibian Atlas shows both recent and historical records of four additional species of conservation concern within a 10 km square of the study area. In addition, the Mammals of Ontario Atlas describes the potential for one bat species to be present within the study area. These species, their habitat characteristics, and their likelihood of occurrence within the study area are detailed in **Table 5-8**, below.

Table 5-8: Screening of SAR and SOCC

Species		Status					Last Observed	Source	Characteristics of Preferred Habitat	Likelihood of Occurrence in Study Area	
Scientific Name	**Common Name**	SARA	ESA	G Rank	S Rank	Significant in Guelph				**Presence**	**Rationale**
Celithemis eponina	Halloween Pennant	-	-	G5	S4	*	1924/00/00	NHIC Database	Open lakes and marshes of all kinds, with at least some emergent vegetation (Paulson, 2011).	Unlikely	The botanical composition of the wetlands does not suit the habitat requirements of this species.
Carex careyana	Carey's Sedge	-	-	G5	S2	*	1905/06/08	NHIC Database	Upland deciduous forests, including maple/basswood stands, moist oak to dry oak-hickory woods, open woodlands, and disturbed woodlots (Hipp, 2008). Hilly woodlands, the bases of wooded slopes, shaded areas along the banks of streams, rocky ravines, water run-off areas in rocky woodlands, and areas along woodland paths. This is a conservative species that is found in high quality natural areas (Illinois Wild Flowers, 2016).	Not present	No observations were recorded during botanical surveys.
Juglans cinerea	Butternut	END	END	G4	S2?	*	-	MNRF	Generally grows in rich, moist, and well-drained soils often found along streams. Also found on well-drained gravel sites, especially those made of limestone.	Not present	No observations were recorded during botanical surveys.
Strophostyles helvola	Trailing Wild Bean	-	-	-	S4	-	1924/09	NHIC Database	Damp thickets and shores (Newcomb, 1977)	Not present	No observations were recorded during botanical surveys.
Thamnophis sauritus	Eastern Ribbonsnake	-	SC	G5	S3	*	1990/04/25	NHIC Database	Semi-aquatic, almost always found close to water, such as wetlands and the shorelines of lakes and rivers. Wetlands generally near forests, and tends to be absent from regions with little to no forest cover. Eastern ribbonsnake may rely on forested areas to provide upland habitats that it uses for overwintering and birthing sites (Ontario Nature, 2016).	Unlikely	The botanical composition of the wetlands and anthropogenic influences on the wetlands and forest types does not suit the habitat requirements of this species.
Graptemys geographica	Northern Map Turtle	-	SC	G5	S3	*	1924/07/?	NHIC Database	Inhabit large rivers and lakes with slow-moving water and a soft bottom. They require high-quality water that supports the female's mollusc prey. These turtles may congregate in areas with abundant basking sites (Ontario Nature, 2016).	Unlikely	The river substrate is gravelly to stony; unsuited to this species. Mollusc prey is not present in large quantities in the Speed River.

Species		Status					Last Observed	Source	Characteristics of Preferred Habitat	Likelihood of Occurrence in Study Area	
Scientific Name	**Common Name**	SARA	ESA	G Rank	S Rank	Significant in Guelph				**Presence**	**Rationale**
Emydoidea blandingii	Blanding's Turtle	THR	THR	G4	S3	*	-	Ontario Reptile and Amphibian Atlas	Inhabit shallow lakes, ponds and wetlands with clean water and mucky bottoms. Travel several kilometres between summer habitat and nesting sites or overwintering habitat. Hibernates in the soft bottoms of water bodies. Particularly in the spring, the Blanding's turtle basks on rocks, logs or substrates in sunny locations (Ontario Nature, 2016).	Unlikely	Potentially suitable habitat not found in the study area: the river substrate is gravelly to stony; unsuited to this species.
Chelydra serpentina	Snapping Turtle	SC	SC	G5	S3	*	2015	Guelph resident	Generally inhabits shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping turtles often take advantage of anthropogenic structures including roads (esp. gravel shoulders), dams, and aggregate pits. (MNRF 2016)	**Present**	A local resident living in one of the apartment buildings adjacent to the study area noted that he had seen snapping turtles mating in the bottomland wetlands. Given that suitable habitat for snapping turtle is present within the Speed River valley corridor and the species is easily identified, it is reasonable to assume that the resident's sighting is valid. The City of Guelph has also identified the Speed River corridor as habitat for this species. However, potentially suitable nesting habitat was not observed on the valley slopes, table lands, or islands within the study area.
Ambystoma jeffersonianum	Jefferson / Blue-spotted Salamander Complex	END	END	G4	S2	*	-	Ontario Reptile and Amphibian Atlas	Found in a wide variety of woodland habitats (deciduous, coniferous or mixed forests), as well as swamps. Typically they spend their lives on the forest floor, often living underground in burrows. They breed in permanent swamps or temporary ponds, marshes or even roadside ditches, and overwinter underground in the forest (Ontario Nature, 2016).	Not Present	The habitat requirements of this species are not found within the study area.

Species		Status					Last Observed	Source	Characteristics of Preferred Habitat	Likelihood of Occurrence in Study Area	
Scientific Name	**Common Name**	SARA	ESA	G Rank	S Rank	Significant in Guelph				**Presence**	**Rationale**
Pseudacris triseriata	Western Chorus Frog	NAR	NAR	G5	S4	*	-	Ontario Reptile and Amphibian Atlas	Inhabits forest openings around woodland ponds, in or near damp meadows, marshes, bottomland swamps and temporary ponds in open country, or even urban areas. Breeds in almost any fishless pond with at least 10 centimetres of water, including quiet, shallow, usually temporary waterbodies with vegetation that is submerged or protrudes from the water, and especially in rain-flooded meadows and ditches, and in temporary ponds on floodplains. The western chorus frog overwinters underground or under surface cover, such as fallen logs (Ontario Nature, 2016).	Unlikely	The habitat requirements of this species are not found within the study area.
Myotis lucifugus	Little Brown Myotis	END	END	G5	S4	-	-	Atlas of the Mammals of Ontario, MNRF	Roosts in buildings, barns, caves, rock crevices, hollow trees and under tree bark. Hibernates in buildings, caves and old mines throughout southern Ontario (Kagume, 2008).	**Potentially Present**	Potential maternity roosting sites (trees with cavities, loose bark, snags, and/or crevices) are present within the study area (see **Section 5.6.1**). Overwintering habitat, however, is absent.
Myotis leibii	Eastern Small-footed Bat	END	END	G3	S2S3	*	-	MNRF	Overwintering habitat: caves and mines that remain above 0°. Maternal roosts: primarily under loose rocks on exposed outcrops, crevices, and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark. (MNRF 2016)	**Potentially Present**	Potential maternity roosting sites (trees with cavities, loose bark, snags, and/or crevices) are present within the study area (see **Section 5.6.1**). Overwintering habitat, however, is absent.
Myotis septentrionalis	Northern Myotis	END	END	G4	S3	*	-	MNRF	Overwintering habitat: caves and mines that remain above 0°. Maternal roosts: often associated with cavities in large-diameter trees (22-44 cm DBH). Occasionally found in structures (attics, barns, etc.). (MNRF 2016)	**Potentially Present**	Potential maternity roosting sites (trees with cavities, loose bark, snags, and/or crevices) are present within the study area (see **Section 5.6.1**). Overwintering habitat, however, is absent.

Species		Status					Last Observed	Source	Characteristics of Preferred Habitat	Likelihood of Occurrence in Study Area	
Scientific Name	**Common Name**	SARA	ESA	G Rank	S Rank	Significant in Guelph				**Presence**	**Rationale**
Ardea herodias	Great Blue Heron	-	-	G5	S4	*	2016	Guelph resident	Forages along edges of shallow marshy ponds and rivers. This species is a colonial nester, using trees in swamps and forests in close proximity to water.	**Present**	A local nature enthusiast present at the first public information session for the EA informed the study team that he had observed great blue heron foraging in the Speed River within the study area. Habitat within the Speed River is suitable as foraging habitat for this species. No nests were observed on or adjacent to the study area.
Contopus virens	Eastern Wood-pewee	SC	SC	G5	S4B		2018	Aquafor Beech Limited	Typically lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in intermediate-age mature forest stands with little understory vegetation.	**Present**	Species was documented in the study area during breeding bird surveys.
Rudbeckia laciniata	Cut-leaved Coneflower	-	-	G5	S5	*	2016	Aquafor Beech Limited	River banks and floodplains, thickets and moist forests, swamps (including cedar), wet ditches in (or by) forests and marshy ground.	**Present**	Species was observed during the botanical inventory, on the larger of the two islands in the Speed River (ELC polygon 4). While potentially suitable habitat for this species is present in other wetland communities in the study area, no additional observations were made.
Elymus riparius	Riverbank wild-rye	-	-	G5	S4	*	2016	Aquafor Beech Limited	Usually in moist ground along streams, borders of forests, and river banks; occasionally in somewhat drier places.	**Present**	Species was observed during the botanical inventory, on the larger of the two islands in the Speed River (ELC polygon 4). While potentially suitable habitat for this species is present in other wetland communities in the study area, no additional observations were made.

5.8 Significant Wildlife Habitat Assessment

Significant wildlife habitat (SWH) contributes to the quality and diversity of the City of Guelph's Natural Heritage System.

Aquafor used the MNRF's Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (2015) as a guiding document in determining the presence of SWH within the study area. The complete assessment of all SWH types is provided in **Appendix H**.

SWH categories that were confirmed within the study area consist of a groundwater seep (parts of ELC polygon 7, 8, and 9) as well as habitat for snapping turtle. The groundwater seep is likely part of a larger complex of wetlands within the greater Speed River corridor, some of which could be influenced by groundwater, and thus qualifies as SWH under the category "Specialized Wildlife Habitat: Seeps and Springs".

It is not believed the seep can also act as overwintering habitat for turtles due to substrate constraints (i.e., it is not possible for turtles to bury into the gravel) and lack of water depth. However, snapping turtle was confirmed in the bottomlands on the north side of the river, and it is likely that the species uses the extent of the river itself and all associated wetlands for foraging, shelter, and other uses.

Bat maternity roost sites are potentially present SWH within the study area. Surveys for snags, cavities, and loose bark were undertaken during the leaf-off period. In total, 27 candidate sites are within close proximity to proposed disturbance areas (Refer to **Section 5.6.1**).

In addition to the abovementioned SWH types, the study area was flagged by the MNRF as providing important waterfowl overwintering habitat (in portions of the river that maintain ice-free conditions during the winter) and an ecological linkage for wildlife movement (i.e., the Speed River valley system which connects to the Eramosa River downstream and Guelph Lake Conservation Area upstream).

6 Opportunities and Constraints to Development

The NHS within the study area has multiple overlapping designations that collectively protect all natural lands within the study area as a Core Natural Heritage Feature under the City's Official Plan. Protected natural heritage features present within the study area and their corresponding designations under the City of Guelph Official Plan are detailed in **Table 6-1** and illustrated in **Figure 6-1.** Due to existing development immediately adjacent to Significant Woodlands within the study area, it is not possible to establish buffers around Significant Woodlands at this time.

Table 6-1: Summary of Natural Heritage Features within the Study Area

Feature and Minimum Buffer Requirements	Criteria for Designation	Discussion
Significant Woodland – designation to include a minimum 10 m buffer from dripline.	Woodlands (not identified as cultural woodlands or plantations) 1 ha or greater in size. Woodlands 0.5 ha in size or greater consisting of Dry-Fresh Sugar Maple Deciduous Forest. Woodland types ranked S1 –S3 by the MNRF NHIC.	Forest and swamp communities along the river valley form a contiguous wooded area over 1 ha in size combined, and are associated with a continuously forested river valley system beyond the extent of the study area. Therefore, Significant Woodland in the study area consists of ELC polygons 1-4, 6, and 7. Buffers to the Significant Woodland within the study area are not mapped in this study due to existing development encroachment.
Significant Wildlife Habitat (including ecological linkages) - no minimum buffer cited in policy, appropriate buffers to be determined through an EIS.	Significant wildlife habitat as defined by MNRF's criteria schedules or other suitable source.	As detailed in **Section 5.8**, SWH identified in the study area is: • A groundwater seep approximately 25 m west if the proposed bridge area; • Habitat for snapping turtle throughout the Speed River and associated riparian wetlands; • Waterfowl overwintering habitat in portions of the river that remain ice-free during the winter; and • Potentially suitable habitat (trees) for bat maternity roosting. Buffers applied to SWH would extend into adjacent Significant Woodland (defined above), and are therefore protected by association with that category. Any buffering outside of existing woodlands is constrained by existing development.

Feature and Minimum Buffer Requirements	Criteria for Designation	Discussion
Significant Valleylands - no minimum buffer cited in policy, appropriate buffers to be determined through an EIS.	Undeveloped areas within the regulatory floodplain areas, riverine flooding hazards, and riverine erosion hazards, as identified by the GRCA; the remnant portions of the Speed and Eramosa Rivers, identified by the City, that are relatively undisturbed and represent the quality and diversity of the physical expression of the river system on the landscape and measured to the uppermost break in the slope associated with the valley and including the terraces on the valley slopes.	The majority of the study area is defined on Schedule D to the City's OP as Significant Valleylands: Underdeveloped Portions of the Regulatory Floodplain. Buffers around the Significant Valleylands within the study area are not mapped in this study due to existing development encroachment.

Feature and Minimum Buffer Requirements	Criteria for Designation	Discussion
Surface Water Features and Fish Habitat – designation to include a 15-30 m minimum buffer as noted; additional buffer requirements, if appropriate, to be determined through an EIS.	Cold and Cool Water Fish Habitat as identified by the MNRF/GRCA and a 30 m minimum buffer. Warm water and undetermined Fish Habitat as identified by the MNRF/GRCA and a 15 m minimum buffer. Permanent and intermittent streams, as identified by the City and/or the MNRF/GRCA and a 15 m minimum buffer. Other features including headwaters, rivers, stream channels, inland lakes and ponds, seepage areas, recharge/discharge areas, springs, wetlands, and associated riparian lands that can be defined by their soil moisture, soil type, vegetation, and topographic characteristics.	The **Speed River** is classified as Cool Water Fish Habitat by the MNRF and as such requires a 30 m minimum buffer. Other surface water features identified within the study area include the following: • A groundwater seep located approximately 25 m west of the proposed bridge location; and • Wetlands (ELC polygons 2, 3, 5, 7, 8, and 9). Buffers around the noted features would extend into adjacent Significant Woodland (defined above), and are therefore protected by association with that category. Any buffering outside of existing woodlands is constrained by existing development.

Feature and Minimum Buffer Requirements	Criteria for Designation	Discussion
Significant Wetlands – designation to include a 15-30 m minimum buffer as noted; additional buffer requirements, if appropriate, to be determined through an EIS.	Provincially Significant Wetlands (PSWs) as identified by the MNRF, and a 30 m minimum buffer. Locally Significant Wetlands (LSWs) and a 15 m minimum buffer. Locally significant wetlands are defined in the OP as "evaluated wetlands (including wetland complexes) of at least 2 ha in size which are not identified as provincially significant, and unevaluated wetlands at least 0.5 ha in size" (City of Guelph, 2014, p36).	Within the study area, ELC polygons 2, 3, 5, 7, 8, and 9 have been identified as wetland ecotypes. As these polygons are contiguous and are over 0.5 ha in size combined, **all wetland ELC polygons qualify as locally significant wetlands.** Buffers around wetland units would extend into adjacent Significant Woodland (defined above), and are therefore protected by association with that category. Any buffering outside of existing woodlands is constrained by existing development.
Habitat for Significant Species - no minimum buffer cited in policy, appropriate buffers to be determined through an EIS.	Wildlife Habitat that supports species considered globally, federally, provincially, and/or locally significant, and which contributes to the quality and diversity of the Natural Heritage System but not to the extent that is determined to be Significant Wildlife Habitat or Significant Habitat of Endangered and Threatened Species. Habitats for plant species shall be included only where the species is growing naturally in the wild (i.e., not planted for horticultural, landscaping, or agricultural purposes).	Three locally rare SOCC were recorded within the study area: • Great blue heron; • Cut-leaved coneflower; and • Riverbank wild-rye. Habitat for the noted species is found in the Speed River and associated riparian wetlands/bottomlands, and on the island in the middle of the river. Buffers around noted habitat locations would extend into adjacent Significant Woodland (defined above), and are therefore protected by association with that category. Any buffering outside of existing woodlands is constrained by existing development.

Emma Street to Earl Street Pedestrian Bridge Municipal Class Environmental Assessment

Legend

- Study Limits
- Proposed Pedestrian Bridge
- Ecological Linkage
- Groundwater Seepage
- Significant Valleylands
- Significant Woodland
- Significant Wetlands, Significant Wildlife Habitat, and Surface Water and Fish Habitat
- Surface Water Features and Fish Habitat Buffer (30m)

Figure 6.1: Natural Heritage Constraints in the Study Area

Date: April 2017
Image Source: Google Earth, 2016

0 25 50
Meters

N

Aquafor Beech Limited

7 Assessment of Potential Impacts

Potential impacts of the proposed pedestrian bridge between Emma Street and Earl Street include not only those impacts associated with the construction of the bridge but those of its long-term operation. **Table 7-1**, below, provides a description and comparison of potential impacts to the NHS associated with the various project alternatives, plus an overview of mitigation measures that would help minimize those impacts. The subsequent sections further discuss general impacts and mitigation measures applicable to all design alternatives.

Alternatives have been ranked in **Table 7-1** to inform the selection of a preferred alternative with respect to the natural environment. Numerical values of 1 (lowest potential impact) to 4 (greatest potential impact) have been provided throughout the analysis.

The Null Alternative has not been included in the following discussion of impacts and mitigation measures, as it is assumed that this option would have no impacts (either positive or negative) on the existing site conditions.

Table 7-1: Comparison of Potential Impacts for Each Design Alternative

Significant Woodlands			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	Removal of trees and permanent, local displacement of woodlands within the footprint of the bridge – new abutments would be built in Significant Woodland above the top of bank, permanent clearing would occur within the valley on the new bridge alignment.	All alternatives require construction of abutments within woodland at the top of bank. Alternative 1 would require permanent clearing of trees along the new bridge alignment. To mitigate for vegetation impacts, a restoration plan should be prepared using native vegetation (see **Section 7.3**). To ensure protection of retained vegetation, a Tree Protection Plan should be prepared (see **Section 7.4**).	3
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	Removal of trees and permanent, local displacement of woodlands within the footprint of the bridge – new abutments would be built in Significant Woodland above the top of bank, but permanent clearing in the valley would be reduced by utilizing the existing cleared hydro corridor (small increase in width to accommodate relocation of poles).	All alternatives require construction of abutments within woodland at the top of bank, but Alternative 2A reduces additional impacts to trees and vegetation within the valley by aligning with the hydro corridor. A small increase in cleared area within the valley would be required due to hydro pole relocation. To mitigate for vegetation impacts, a restoration plan should be prepared using native vegetation (see **Section 7.3**). To ensure protection of retained vegetation, a Tree Protection Plan should be prepared (see **Section 7.4**).	2
Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	Removal of trees and permanent, local displacement of woodlands within the footprint of the bridge – new abutments would be built in Significant Woodland above the top of bank, but permanent clearing in the valley would be minimized by utilizing the existing cleared hydro corridor and putting hydro lines on the bridge to avoid pole relocation.	This alternative is expected to result in the lowest impact to Significant Woodlands. All alternatives require construction of abutments within woodland at the top of bank, but Alternative 2B minimizes additional impacts to trees and vegetation within the valley by aligning with the hydro corridor and eliminating the need to relocate poles. To mitigate for vegetation impacts, a restoration plan should be prepared using native vegetation (see **Section 7.3**). To ensure protection of retained vegetation, a Tree Protection Plan should be prepared (see **Section 7.4**).	1
Alternative 3 – Three-Span Bridge	Removal of trees and permanent, local displacement of woodlands within the footprint of the bridge – new abutments would be built in Significant Woodland above the top of bank, and permanent clearing would occur to accommodate the new abutments within the valley, plus clearing of the new bridge alignment, plus increased construction access requirements to construct the abutment on the island.	This alternative is expected to result in the highest impact to Significant Woodlands. All alternatives require construction of abutments within woodland at the top of bank, but Alternative 3 also requires a high amount of disturbance and permanent footprint within the valley. To mitigate for vegetation impacts, a restoration plan should be prepared using native vegetation (see **Section 7.3**). For the island woodland footing, additional restoration would be required where vegetation is removed due to allow construction access and staging, likely including measures to address soil compaction. The net loss of woodland from the permanent footing on the island cannot fully be mitigated in-situ as no new woodland can be created on the island without displacing existing wetland and aquatic habitat. To ensure protection of retained vegetation, a Tree Protection Plan should be prepared (see **Section 7.4**).	4

Significant Wildlife Habitat: Snapping Turtle			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	Potential to disturb and/or displace snapping turtle habitat through construction – minimal potential disturbance of habitat during vegetation clearing in new bridge alignment; indirect impacts due to construction noise and activity.	This alternative is expected to result in the lowest impact to snapping turtle habitat as it will have minimal direct impacts to habitat (slight disturbance possible during vegetation removal along alignment) and only indirect impacts due to construction above the top of bank. Future maintenance of the abutments will not require disturbance of the valley and the turtle habitat contained within.	1
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	Potential to disturb and/or displace snapping turtle habitat through construction – direct impact to habitat via a new abutment in riparian wetland habitat (permanent footprint approx. 50 m^2); indirect impacts due to construction noise and activity.	Construction work taking place on the north bank and in riparian wetland carries the risk of displacing snapping turtles from habitat and/or causing direct harm to turtles that may enter the work area. However, net loss of wetland habitat has been reduced by siting the new abutment at an existing hydro pole location. Future maintenance of the abutments could necessitate additional disturbance on the north bank (e.g., trampling from inspection personnel, creation of unofficial trails into the valley, and potential erosion from machinery required to maintain/repair potential footing damage from flooding or ice). Mitigation measures during construction should include wildlife exclusion fencing to prevent turtles from entering the work area during the active season.	2 (tie)
Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	Potential to disturb and/or displace snapping turtle habitat through construction – direct impact to habitat via a new abutment in riparian wetland habitat (permanent footprint approx. 50 m^2); indirect impacts due to construction noise and activity.	Construction work taking place on the north bank and in riparian wetland carries the risk of displacing snapping turtles from habitat and/or causing direct harm to turtles that may enter the work area. However, net loss of wetland habitat has been reduced by siting the new abutment at an existing hydro pole location. Future maintenance of the abutments could necessitate additional disturbance on the north bank (e.g., trampling from inspection personnel, creation of unofficial trails into the valley, and potential erosion from machinery required to maintain/repair potential footing damage from flooding or ice). Mitigation measures during construction should include wildlife exclusion fencing to prevent turtles from entering the work area during the active season.	2 (tie)
Alternative 3 – Three-Span Bridge	Potential to disturb and/or displace snapping turtle habitat through construction – direct impact to habitat via a new abutment in riparian wetland habitat (permanent footprint approx. 50 m2) plus disturbance of wetlands and aquatic habitat to allow access to the island.	This alternative is expected to have the highest potential impact to snapping turtle habitat as it has the greatest anticipated footprint and disturbance within the river valley. The construction of a new abutment in wetland habitat would result in a greater net loss of wetland habitat in the study area. Future maintenance of the abutments could necessitate additional disturbance on the north bank and along a route to the island (e.g., trampling from inspection personnel, creation of unofficial trails into the valley, and potential erosion from machinery required to maintain/repair potential footing damage from flooding or ice). Mitigation measures during construction should include wildlife exclusion fencing to prevent turtles from entering the work area during the active season.	4
Significant Wildlife Habitat: Bat Maternity Roosts			
As for Significant Woodland category, above. Removal of trees and other vegetation could potentially impact bat habitat, therefore alternatives which minimize vegetation disturbance and removal also minimize potential wildlife habitat impacts. Compensation habitat (e.g., bat condos, rocket boxes, BrandenBark) may need to be provided on the site depending on the number of trees removed and their suitability as potential habitat. Timing restrictions should be placed on vegetation removal so that trees are not cut during the active season for bats (generally April – October).			

Significant Wildlife Habitat: Seeps and Springs			
None of the proposed alternatives have a permanent proposed footprint in the location where groundwater seepage was observed. It is anticipated that site access and staging requirements can be sited to avoid this feature during construction.			
Significant Wildlife Habitat: Waterfowl Overwintering			
None of the project alternatives will decrease the amount of open-water overwintering habitat for waterfowl on the site. Waterfowl require sight lines and room to take off and land from water; however, open water on the Speed River is plentiful upstream and downstream from the proposed bridge location, and it is not anticipated that a new bridge would restrict the potential for waterfowl to use the area.			
Habitat for Locally Significant Species			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	There are no potential impacts related to significant species (e.g., great blue heron) identified for this alternative as footings and construction areas are restricted to the tableland, away from identified habitat.	No mitigation required.	1
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	Temporary disruption of great blue heron foraging may occur due to proximity of construction activity.	Completing construction during the winter would avoid any impacts to great blue heron, as this species is migratory and largely absent during the winter. However, the river system provides ample foraging habitat away from the construction area so the ability of the species to feed should not be significantly compromised even if winter construction is not feasible. Disturbance will be temporary during construction only.	2 (tie)
Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	Temporary disruption of great blue heron foraging may occur due to proximity of construction activity.	Completing construction during the winter would avoid any impacts to great blue heron, as this species is migratory and largely absent during the winter. However, the river system provides ample foraging habitat away from the construction area so the ability of the species to feed should not be significantly compromised even if winter construction is not feasible. Disturbance will be temporary during construction only.	2 (tie)
Alternative 3 – Three-Span Bridge	Temporary disruption of great blue heron foraging due to proximity of construction activity, plus permanent footprint (i.e., habitat loss) and construction disturbance (i.e., potential for trampling) on the island which is confirmed habitat for cut-leaved coneflower and riverbank wild rye.	Completing construction during the winter would avoid any impacts to great blue heron, as this species is migratory and largely absent during the winter. However, the river system provides ample foraging habitat away from the construction area so the ability of the species to feed should not be significantly compromised even if winter construction is not feasible. Disturbance will be temporary during construction only. Avoidance of locations of cut-leaved coneflower and riverbank wild rye should be attempted. However, should avoidance not be feasible, it is recommended that a qualified expert (e.g. ecologist) transplant or propagate these species into other suitable habitat within the study area, namely sunny spots within ELC polygons 8 and 9 that are free of aggressive grasses. Both species are relatively short-lived perennials that are easily propagated from seed and easily transplanted.	3

Wildlife Habitat - General			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	It is anticipated that most disturbance of wildlife and encroachment onto wildlife habitat will be avoided or minimized with this alternative, since the majority of construction-related activity will occur at the edge of or outside the river valley. However, removal of trees and other vegetation may affect nesting birds and roosting bats if completed during the breeding season.	Timing restrictions on removal of vegetation should be observed to protect migratory birds during the nesting season, in keeping with the requirements of the *Migratory Birds Convention Act.* Mitigation associated with bat habitat was discussed previously under the Significant Wildlife Habitat: Bat Maternity Roosts section.	1
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	This alternative has a larger area of anticipated disturbance within the river valley and associated natural features/habitats. Removal of trees and other vegetation may affect nesting birds and roosting bats if completed during the breeding season.	Timing restrictions on removal of vegetation should be observed to protect migratory birds during the nesting season, in keeping with the requirements of the *Migratory Birds Convention Act.* Mitigation associated with bat habitat was discussed previously under the Significant Wildlife Habitat: Bat Maternity Roosts section. Disturbance (e.g., physical disturbance, construction noise and light, vegetation trampling) within the river valley should be minimized as much as possible. Due to work proposed in and adjacent to wetland/aquatic habitat, it is recommended that temporary wildlife exclusion fencing be installed around the work area in wetland habitat to prevent snapping turtles from entering proposed construction areas.	2 (tie)
Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	This alternative has a larger area of anticipated disturbance within the river valley and associated natural features/habitats. Removal of trees and other vegetation may affect nesting birds and roosting bats if completed during the breeding season.	Timing restrictions on removal of vegetation should be observed to protect migratory birds during the nesting season, in keeping with the requirements of the *Migratory Birds Convention Act.* Mitigation associated with bat habitat was discussed previously under the Significant Wildlife Habitat: Bat Maternity Roosts section. Disturbance (e.g., physical disturbance, construction noise and light, vegetation trampling) within the river valley should be minimized as much as possible. Due to work proposed in and adjacent to wetland/aquatic habitat, it is recommended that temporary wildlife exclusion fencing be installed around the work area in wetland habitat to prevent snapping turtles from entering proposed construction areas.	2 (tie)
Alternative 3 – Three-Span Bridge	This alternative has the highest potential to disrupt wildlife lifecycles during construction (movement, feeding, mating, nesting, overwintering) as it requires the most work to be completed within the river valley and associated natural features/habitats. Removal of trees and other vegetation may affect nesting birds and roosting bats if completed during the breeding season.	Timing restrictions on removal of vegetation should be observed to protect migratory birds during the nesting season, in keeping with the requirements of the *Migratory Birds Convention Act.* Mitigation associated with bat habitat was discussed previously under the Significant Wildlife Habitat: Bat Maternity Roosts section. Disturbance (e.g., physical disturbance, construction noise and light, vegetation trampling) within the river valley should be minimized as much as possible. Due to work proposed in and adjacent to wetland/aquatic habitat, it is recommended that temporary wildlife exclusion fencing be installed around the work area in wetland habitat to prevent snapping turtles from entering proposed construction areas.	4

Soils; Erosion and Sedimentation			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	Soil compaction along vehicle/equipment access routes; soil disturbance causing erosion and sedimentation – the vast majority of disturbance will occur above top of bank.	This alternative requires minimal disturbance of the valley; since no abutments will be constructed in the valley, it is anticipated that required work (vegetation clearing) within the valley may be done without heavy machinery or large vehicle access routes that would compact the soil and expose soil surfaces to increased erosion potential. Utilize appropriate sediment and erosion control measures throughout construction (see **Section 7.5**). Incorporate soil aeration measures into the post-construction restoration plan as required (see **Section 7.3**).	1
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	Soil compaction along vehicle/equipment access routes; soil disturbance causing erosion and sedimentation – disturbance will occur above top of bank, similar to Alternative 1, with additional disturbance on the north side of the valley to construct one abutment.	This alternative requires one abutment to be constructed within the valley on the north side, and this work is expected to require vehicle/machinery access down the valley slope that creates an elevated risk of soil compaction and surface soil erosion in disturbed areas. Utilize appropriate sediment and erosion control measures throughout construction (see **Section 7.5**). Incorporate soil aeration measures into the post-construction restoration plan as required (see **Section 7.3**).	2 (tie)
Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	Soil compaction along vehicle/equipment access routes; soil disturbance causing erosion and sedimentation - disturbance will occur above top of bank, similar to Alternative 1, with additional disturbance on the north side of the valley to construct one abutment.	This alternative requires one abutment to be constructed within the valley on the north side, and this work is expected to require vehicle/machinery access down the valley slope that creates an elevated risk of soil compaction and surface soil erosion in disturbed areas. Utilize appropriate sediment and erosion control measures throughout construction (see **Section 7.5**). Incorporate soil aeration measures into the post-construction restoration plan as required (see **Section 7.3**).	2 (tie)
Alternative 3 – Three-Span Bridge	Soil compaction along vehicle/equipment access routes; soil disturbance causing erosion and sedimentation – disturbance will occur above top of bank, similar to Alternative 1, with extensive disturbance to occur in the valley and on one of the islands.	This alternative is expected to require extensive vehicle and machinery access into the valley in order to construction new abutments on the north bank and the island, creating an elevated risk of soil compaction and surface soil erosion in disturbed areas. Access to the island requires equipment/vehicles to operate in close proximity to the river which increases the risk of sediment input to the watercourse. Utilize appropriate sediment and erosion control measures throughout construction (see **Section 7.5**). Incorporate soil aeration measures into the post-construction restoration plan (see **Section 7.3**).	4
Significant Valleylands			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	It is not anticipated that Alternative 1 will significantly impact (i.e., increase) flooding downstream or on adjacent lands as there is no new footprint within the valley	Proposed construction areas are restricted to the tableland, outside of the designated Significant Valleyland area. No mitigation is anticipated to be required.	1
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	One footing is proposed between the top of bank and toe of slope, close to the 50-year flooding event. Potential to create pinch point and redirect flows, and scour during some flooding events.	It is recommended that any abutments minimize the encroachment to the channel to ensure that a pinch point is not created, increasing the flood levels. It is recommended that ample scour protection be provided to abutment foundations to protect the structures from being undermined.	2 (tie)

Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	One footing is proposed between the top of bank and toe of slope, close to the 50-year flooding event. Potential to create pinch point and redirect flows, and scour during some flooding events.	It is recommended that any abutments minimize the encroachment to the channel to ensure that a pinch point is not created, increasing the flood levels. It is recommended that ample scour protection be provided to abutment foundations to protect the structures from being undermined.	2 (tie)
Alternative 3 – Three-Span Bridge	Two footings are proposed in the valley between the top of bank and toe of slope, approximately within the 5-year and 50-year flooding events. Potential to create pinch point and redirect flows, and scour during some flooding events.	It is recommended that any abutments minimize the encroachment to the channel to ensure that a pinch point is not created, increasing the flood levels. It is recommended that ample scour protection be provided to abutment foundations to protect the structures from being undermined. Placing a pier on the island within the center of the creek may reduce flood exposure, and provide some additional erosion protection.	4
Surface Water Features and Fish Habitat			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	Potential to reduce water quality temporarily if erosion and sedimentation occurs during construction. However, disturbance of existing vegetated areas (and related soil exposure) within the valley is minimized with this alternative. No in-water work will be required for this alternative.	Sediment and erosion control measures must be installed prior to beginning construction and monitored throughout; see **Section 7.5**. Maintain access, staging, and other disturbance outside of the valley to the greatest extent possible.	1
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	Potential to reduce water quality temporarily if erosion and sedimentation occurs during construction. Some access into and disturbance of the river valley is required. It is anticipated that in-water work may be avoided for this alternative.	Sediment and erosion control measures must be installed prior to beginning construction and monitored throughout; see **Section 7.5**. Completing construction that would affect wetlands during the winter would allow soils to be frozen and be less prone to compaction and rutting.	2 (tie)
Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	Potential to reduce water quality temporarily if erosion and sedimentation occurs during construction. Some access into and disturbance of the river valley is required. It is anticipated that in-water work may be avoided for this alternative.	Sediment and erosion control measures must be installed prior to beginning construction and monitored throughout; see **Section 7.5**. Completing construction that would affect wetlands during the winter would allow soils to be frozen and be less prone to compaction and rutting.	2 (tie)
Alternative 3 – Three-Span Bridge	Potential to reduce water quality temporarily if erosion and sedimentation occurs during construction. Access into and disturbance of the river valley, riverbanks, and the island is required. In-water work will be required to access the island.	Sediment and erosion control measures must be installed prior to beginning construction and monitored throughout; see **Section 7.5**. Completing construction that would affect wetlands during the winter would allow soils to be frozen and be less prone to compaction and rutting. It is recommended that any necessary in-water works adhere to coolwater fisheries timing window restrictions (works to occur between July 1st – September 15th). In-water work would need to be completed in an isolated work area and preceded by a fish rescue operation.	4

Wetlands			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	No direct impacts to wetland habitat are anticipated for this alternative.	Proposed construction areas within this alternative are restricted to the tableland, outside of wetlands. Recommended mitigation measures are therefore not applicable.	1
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	Destruction of wetland habitat due to construction of bridge abutment – net impact has been reduced by siting the new abutment at a location previously impacted (filled) for installation of a hydro pole.	Design should ensure placement of abutment overlaps existing fill/disturbance to the greatest extent possible. Local wetland loss (from ELC polygon 7) resulting from construction of the bridge footing cannot be fully mitigated. However, restoration of construction areas using site-appropriate native plants will help offset disturbances to wetland vegetation and increase local biodiversity.	2 (tie)
Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	Destruction of wetland habitat due to construction of bridge abutment – net impact has been reduced by siting the new abutment at a location previously impacted (filled) for installation of a hydro pole.	Design should ensure placement of abutment overlaps existing fill/disturbance to the greatest extent possible. Local wetland loss (from ELC polygon 7) resulting from construction of the bridge footing cannot be fully mitigated. However, restoration of construction areas using site-appropriate native plants will help offset disturbances to wetland vegetation and increase local biodiversity.	2 (tie)
Alternative 3 – Three-Span Bridge	Destruction of wetland habitat due to construction of bridge abutment – new abutment in wetland habitat does not coincide with hydro pole.	Local wetland loss (from ELC polygon 7) resulting from construction of the bridge footing cannot be fully mitigated. However, restoration of construction areas using site-appropriate native plants will help offset disturbances to wetland vegetation and increase local biodiversity.	4
Opportunities for Improvement			
Alternative	**Potential Impact**	**Discussion and Mitigation Recommendations**	**Ranking**
Alternative 1 – Steel Cable Single Span Bridge	Limited potential for habitat improvement or restoration.	This alternative, while having the lowest potential footprint within the river valley, also offers limited opportunity to complete habitat restoration or improvement works. Tree planting should occur in disturbed areas in keeping with a restoration planting plan (see **Section 7.3**).	4
Alternative 2A – Two-Span Bridge (With Hydro Pole Relocation)	Disturbance of/access to the river valley with construction equipment and vehicles offers an opportunity to complete restoration works such as the removal of old fill, removal of invasive/non-native species, and restoration of riparian wetland habitat in the vicinity of disturbance.	The areas that are anticipated to be disturbed for access, staging, and construction on the north side of the river occur in degraded habitat which could be the subject of more extensive restoration. Post-construction grading should emphasize the restoration of riparian topography and a restoration planting plan (see **Section 7.3**) should emphasize the use of native wetland vegetation in keeping with existing habitat along the Speed River.	1 (tie)
Alternative 2A – Two-Span Bridge (With Hydro on Bridge)	Disturbance of/access to the river valley with construction equipment and vehicles offers an opportunity to complete restoration works such as the removal of old fill, removal of invasive/non-native species, and restoration of riparian wetland habitat in the vicinity of disturbance.	The areas that are anticipated to be disturbed for access, staging, and construction on the north side of the river occur in degraded habitat which could be the subject of more extensive restoration. Post-construction grading should emphasize the restoration of riparian topography and a restoration planting plan (see **Section 7.3**) should emphasize the use of native wetland vegetation in keeping with existing habitat along the Speed River.	1 (tie)

Alternative 3 – Three-Span Bridge	While there is potential for habitat improvement associated with this alternative, similar to Alternatives 2A and 2B (i.e., associated with vehicle and equipment access), this potential is considered to be offset by the extent of disturbance associated with this alternative and the permanent new footprint on the island (i.e., an area of disturbance that cannot be mitigated or compensated for due to the presence of the new abutment).	This alternative causes greater disturbance of the river valley than 2A and 2B without offering significantly greater opportunity for restoration of habitat in the same area. Restoration works should occur in disturbed areas in keeping with a restoration planting plan (see **Section 7.3**).	3

7.1 General Mitigation and Timing Considerations – Construction Phase

The following timing recommendations will help avoid or minimize negative impacts associated with construction:

1. It is recommended that vegetation removal occur outside of the breeding season of both migratory birds (protected under the Migratory Birds Convention Act) and bats. The generalized nesting period for birds in southern Ontario extends from April 1st to August 31st in any given year. Bat maternity roosting sites are generally used between April and October. Therefore, **necessary vegetation removal should occur between November 1st and March 31st** to avoid impacts to these two wildlife groups.

2. Should construction equipment need to enter the Speed River or should any other in-water works need to occur, it is recommended that works adhere to coolwater fisheries timing window restrictions (i.e., **in-works to occur between July 1st – September 15th**). In-water work would need to be completed in an isolated work area and preceded by a fish rescue operation.

3. Completing construction that would affect wetlands during the winter would allow soils to be frozen and therefore be less prone to compaction and rutting.

If the above timing window for vegetation removal cannot be met, it may be possible to complete removals within the breeding season by having a qualified individual review the site and confirm that there are no active bird nests or bat maternity roosts present prior to removal. However, this sort of inspection is generally only recommended for isolated trees or small patches of low-complexity habitat, as bird nests are typically cryptic and difficult to spot, and bat roosts an also be difficult to pinpoint in a forested system.

If active bird nests are found within the work area at any point, a temporary Nest Protection Zone should be established around the nest and maintained until all fledged birds have left the vicinity or as advised by a qualified individual (e.g., wildlife biologist). This will ensure that site alteration does not contravene the federal *Migratory Birds Convention Act*.

In addition to the timing windows noted above, the following general mitigation measures should be applied to all of the proposed project alternatives to help avoid or minimize the potential negative impacts:

1. The area of construction disturbance should be kept to a minimum to avoid unnecessary intrusion into the NHS.

2. Works and staging areas should be located as far away from the NHS boundary as possible.

3. All disturbed vegetated areas should be restored using native indigenous species indicative of the disturbed vegetation community type to enhance biodiversity and encourage native species recruitment within the NHS (see **Section 7.3**).

7.2 General Mitigation – Long-term Operation

The long-term operation of the bridge may bring increased foot and bicycle traffic through the area, which could lead to increased litter being deposited in and around the river. Conversely, the creation of a formal trail and bridge crossing may decrease the likelihood for pedestrians to create their own unofficial trails along or across the river, thereby reducing the chances of increased erosion and bank instability related to that disturbance.

To reduce the likelihood of bridge users littering, waste receptacle bins (i.e., garbage, recycling, and compost) should be placed at either end of the bridge. As further disincentive to littering, an interpretive sign could be installed on the bridge providing information on the ecological importance of urban river corridors, including but not limited to the provision of habitat for SAR and other species of conservation concern, and how human activity could potentially harm these systems (e.g., wildlife ingesting litter).

At the detailed design phase, bridge designs should consider options to lesson potential negative impacts from bridge maintenance (i.e., de-icing salt usage and snow removal).

7.3 Site Restoration/Enhancement Opportunities

It is recommended that vegetation removals be mitigated through a restoration plan which uses native, non-invasive plant species suited to the site conditions. Using native vegetation presents an opportunity for native plant recruitment and an increase in species diversity throughout the valleylands, which are currently dominated by exotic species. Some management of invasive/non-native species may be required for a period following construction in order to allow native plants time to establish on the site.

Minor reductions in woodland area could be offset through woodland edge plantings within the tablelands along the valley; however, displacement of existing undisturbed habitat in the valley and within wetlands in order to create

compensation areas is generally not encouraged. Areas that have been disturbed as part of the bridge construction or which have been disturbed/degraded in the past could be subject to improvement works including but not limited to: management/removal of non-native vegetation, restoration of original topography and removal of historic fill, planting of native plant species in keeping with natural habitat found along the Speed River, and installation of bird boxes, bat boxes, or other artificial habitat enhancement measures.

Removed trees should be replanted at a ratio of ten trees planted for every one tree removed since most trees within the study area are mature and canopies are wide. In addition, five shrubs should be planted for each tree planted. Any disturbed areas should be seeded with native wildflowers and grasses indicative of the vegetation community. Due to the disturbed nature of the study area, it is recommended that target vegetation community types are chosen as restoration goals. Based on current conditions, a target community that is suitable for the valley slopes is a Fresh-Moist Willow Lowland Deciduous Forest (FOD7-3). This community is composed of Black Willow (*Salix nigra*), Basswood (*Tilia americana*), Sycamore (*Platanus occidentalis*), Sugar Maple (*Acer saccharum*), White Birch (*Betula papyrifera*), Red Maple (*A. rubrum*), and ferns and wildflowers.

As soil compaction often results from construction activities (e.g., due to the passage of heavy vehicles and equipment along access routes), soil aeration, ripping, or other measures to restore soil post-construction and encourage vegetation growth may be required.

7.4 Tree Protection Plan

Every precaution must be taken to prevent damage to retainable trees (including branches and root systems) from construction activities.

All tree protection measures must be in accordance with specifications outlined by the City of Guelph in the *Part B Linear Infrastructure Standards* (2017) document, and apply to individual trees and proposed planting areas indicated in a Tree Protection Plan (TPP).

Tree Protection Zones (TPZs) shall be determined for all trees within and adjacent to proposed disturbance areas. For trees in the NHS, the minimum TPZs are as follows:

Diameter of Trunk (Centimeters, measured 1.4 meters above grade (DBH))	Potential Rooting Area (PRA) for all trees and TPZ for trees in NHS[2], parks, open spaces and other significant natural heritage areas.[1]
<10	2.4
10-29	3.6
30-40	4.8
41-50	6.0
51-60	7.2
61-70	8.4
71-80	9.6
81-90	10.8
91-100	12.0
>100	12 cm per 1 cm DBH

[1] – *Or dripline plus 1 m, whichever is greater.*
[2] – *Natural Heritage System*

It should be noted that many trees within and adjacent to proposed disturbance areas have asymmetrical shapes (e.g., Manitoba maple and willows) that could be pruned in a way that leaves major portions of the tree intact, and growing away from the proposed bridge corridor(s). A Certified Arborist should be retained to design appropriate tree protection measures that allow for maximum tree retention (preferably native species) within the study area.

7.5 Erosion and Sediment Controls

An erosion and sediment control (ESC) plan should be prepared for this site in order to minimize erosion of disturbed soil and transport of sediment into downstream systems (i.e., the Speed River). It is recommended that the construction contractor selected for this project be required to prepare the plan, detailing their proposed site access strategy, staging areas, best management practices, ESC methods, etc., and submit this plan for review and approval by the City, the Contract Administrator, and/or other appropriate reviewer prior to beginning construction.

Prevention of erosion should be the primary focus of the ESC strategy, as it is often easier and more effective to prevent sediment from being suspended in the first place than to remove it from suspension or control its movement. Ground disturbance and vegetation removal should therefore be minimized to the greatest extent possible, especially on valley slopes, and exposed soil should be covered with temporary or permanent erosion controls as soon as possible once final grade is achieved. Application of seed and cover on valley slopes, bottomlands, or other high-sensitivity areas may require the use of advanced cover products such as a bonded fiber matrix which will adhere to the soil surface, reduce erosion, and encourage growth of the selected seed mix.

7.6 DFO Regulatory Review

The federal *Fisheries Act* requires that projects avoid causing the death of fish and the harmful alteration, disruption or destruction of fish habitat unless authorized by the Minister of Fisheries and Oceans Canada (DFO). This applies to work being conducted in or near waterbodies that support fish at any time during any given year or are connected to waterbodies that support fish at any time during any given year.

For works proposed at a site where fish and fish habitat have the potential to be affected, the works should be cross-referenced with the DFO "Projects Near Water" online service to determine if a request for regulatory review under the federal *Fisheries Act* is required (Department of Fisheries and Oceans, 2019). Within the service, the Minister details steps for determining if a project requires regulatory review. Steps include "Measures to protect fish and fish habitat" as well as "Waterbodies where review isn't required" (Department of Fisheries and Oceans, 2019). The detailed design package should include a detailed mitigation plan to reduce the potential of causing the death of fish and the harmful alteration, disruption or destruction of fish habitat, including all mitigation measures set forth by the DFO. Should all mitigation measures outlined in this online service be applied to the works, the DFO states that a request for regulatory review is **not** required. In projects where impacts to fish and fish habitat cannot be fully mitigated using the DFO measures, and the project does not fall within waterbodies where regulatory review isn't required or the scope of the project is not covered under standards and code of practice, proponents are asked to submit a request for review to their region's Fish and Fish Habitat Protection Program office. The proponent is responsible for completely implementing the protection measures in order to comply with the Federal *Fisheries Act.*

Design alternatives as discussed above were cross-references with the DFO "Projects Near Water" online service on November 21, 2019 to determine if the project requires regulatory review. Results are discussed hereafter.

7.6.1 Design Alternative 1: Single Span Bridge

This alternative involves a clear-span bridge, with no footings and therefore no need for fill below the High Water Mark (**Figure 2-2**). The online service outlines works where impacts to fish and fish habitat can be avoided if the measures to protect fish and fish habitat are undertaken as a part of the activity. Clear span bridges are included in this list of activities.

Should the design of the Emma Street to Earl Street Pedestrian Bridge meet the aforementioned criteria; it is the opinion of Aquafor that DFO Review is not necessary if the measures to protect fish and fish habitat outlined by the DFO are undertaken as a part of the activity.

7.6.2 Design Alternative 2A and 2B: Two-span Bridge

These two alternatives involve similar two-span bridges, with one footing located on the north bank. **Figure 2-3** and Figure **2-4** show the design with the footing located well above the north bank. The north bank was defined by bankfull properties using inflection points, debris lines, and established vegetation as marks on the land. Therefore, the footing is above the highwater mark and will not result in works within fish habitat. The online service outlines works where impacts to fish and fish habitat can be avoided if the measures to protect fish and fish habitat are undertaken as a part of the activity. Clear span bridges are included in this list of activities. As this alternative includes a single footing above the high water mark and not within the wetted width it should be regarded as a clear span bridge as outlined in the online service.

Should the design of the Emma Street to Earl Street Pedestrian Bridge meet the aforementioned criteria; it is the opinion of Aquafor that DFO Review is not necessary if the measures to protect fish and fish habitat outlined by the DFO are undertaken as a part of the activity.

7.6.3 Design Alternative 3: Three-span Bridge

This alternative involves a three-span bridge, with one footing located on the north bank and another footing located on an instream island. **Figure 2-5** shows the design with both footings located above the top of bank. However, while the footing on the instream island will be above the top of bank, the online service outlines that works should at all times be carried out on land. It goes on to state the following:

> **You [proponents] can prevent the harmful alteration, disruption or destruction of fish habitat by avoiding:**
>
> - **Fording of the watercourse**
> - **Disturbing or removing materials from the banks, shoreline or waterbody bed**
> - **Building structures in areas that:**
>   - **May result in erosion and/or scouring of the stream bed or banks;**
>   - **Are inherently unstable, like:**
>   - **Bends**
>   - **Meanders**
>   - **Floodplains**

Conducting works on an instream island will likely result in fording of the watercourse to gain access to the work area, will therefore result in the disturbance of materials from the shoreline and/or waterbody bed, and will also result in a structure built in an area that is not recommended bye the DFO as listed above.

Should Alternative 3 be carried forward as the design of the Emma Street to Earl Street Pedestrian Bridge, it is the opinion of Aquafor that DFO Review **is** necessary.

8 Policy Analysis

As detailed in **Section 3.2**, there are a number of overlapping environmental designations present within the study area. According the City of Guelph's OP, development within most Natural Heritage categories is prohibited save for certain permitted uses for which it must be reasonably demonstrated that there will be no negative impacts on the natural heritage features and areas to be protected, or their ecological and hydrological functions. Similarly, it must also be demonstrated that there will be no negative impacts to established buffers and lands adjacent to natural heritage features and areas.

The GRCA prohibits development within valleys and wetlands and lands which could interfere with the hydrologic function of a wetland, unless it is determined that that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. O. Reg. 150/06, s. 3 (1). As such, a permit from the GRCA would be required to construct any of the four design alternatives.

As detailed above in **Section 7**, many of the potential negative impacts to significant woodlands, SWH, valleylands, surface water features and fish habitat, wetlands, and habitat for significant species are mitigatable through best management practices and post-construction site restoration. Alternative 1 has the benefit of having no new permanent footprint within the valley but is nevertheless expected to have greater impact to vegetation than Alternative 2A or 2B due to the proposed alignment of the bridge. Alternative 3 has additional disturbance and permanent footprint required on the island and the associated habitat of rare plant species.

Table 8-1 lists each policy relating to each NHS feature, and shows which alternative design meets that policy, below. In summary:

- The proposed bridge does not fall into one of the general permitted uses for lands within the Natural Heritage System.
- None of the three proposed design alternatives meet the City's policy requirements for Significant Woodlands.
- Alternatives 2 and 3 additionally do not meet the City's policy requirements for Significant Wetlands and Significant Wildlife Habitat.

In brief, **none of the three design alternatives fully meet the current development policies of the City of Guelph as defined in the OP**. Due to site constraints, all of the bridge designs have a permanent footprint within the NHS.

Table 8-1: Applicable Policy Analysis

Policy	Relevant Clauses	Compliance		
		Alternative 1	**Alternative 2A and 2B**	**Alternative 3**
4.1.2 - General Permitted Uses	1. Development and site alteration shall not be permitted within the Natural Heritage System, including minimum or established buffers, except for the following uses: i) legally existing uses, buildings or structures; ii) passive recreational activities; iii) low impact scientific and educational activities; iv) fish and wildlife management; v) forest management; vi) habitat conservation; and vii) restoration activities.	X	X	X
	3. The above uses may be further limited or expanded upon through the specific policies of the Significant Natural Areas (4.1.3) and Natural Areas (4.1.4).			
	6. Permitted development and site alteration within and/or adjacent to natural heritage features and areas (as outlined in Sections 4.1.3 and 4.1.4) shall be required to demonstrate, through an EIS or EA to the satisfaction of the City, in consultation with the GRCA, the Province and Federal government, as applicable, that there will be no negative impacts on the natural heritage features and areas to be protected, or their ecological and hydrologic functions.			
4.1.3.4 – Significant Wetlands	3. Development and site alteration shall not be permitted within Significant Wetlands, or established buffers except for uses permitted by the General Permitted Uses of Section 4.1.2.	√	X	X
	6. In addition to the General Permitted Uses of Section 4.1.2, the following additional uses may be permitted within the established buffers to Significant Wetlands, subject to the requirements of 4.1.2.7, where it has been demonstrated through an EIS or EA, to the satisfaction of the City, in consultation with the GRCA and/or the MNR, that there will be no negative impacts on the Significant Wetland or its ecological and hydrologic functions: i) essential linear infrastructure and their normal maintenance; and ii) stormwater management facilities and structures and their normal maintenance, where low impact development measures have been implemented to the extent possible outside the buffer and provided they are located a minimum distance of 15 m from a PSW and 7.5 m from a LSW.			
4.1.3.5 – Surface Water Features and Fish Habitat	4. Development and site alteration shall not be permitted within Surface Water Features and Fish Habitat or established buffer, except for uses permitted by the General Permitted Uses of Section 4.1.2.	√	√	√
	5. In addition to the General Permitted Uses of Section 4.1.2, the following additional uses may be permitted within Surface Water Features, Fish Habitat and established buffer, subject to the requirements under 4.1.2.7 and 4.1.2.8: i) essential linear infrastructure and their normal maintenance; ii) essential transportation infrastructure and their normal maintenance; iii) flood and erosion control facilities or other similar works and their normal maintenance; and iv) stormwater management facilities and structures and their normal maintenance.			
	6. These additional uses may only be permitted where it has been demonstrated through an EIS, EA or subwatershed plan, to the satisfaction of the City, in consultation with the MNR and/or the GRCA, and/or the Department of Fisheries and Oceans (DFO), that: i) there will be no negative impacts on the water resources, fish habitat or related ecological and hydrologic functions; ii) there will be no net loss of fish habitat, and no harmful alteration, disruption, or destruction of fish habitat; iii) where authorization for the harmful alteration, disruption, or destruction of fish habitat has been obtained from DFO under the Fisheries Act using the guiding principle of no net loss of productive capacity, and the impact of development on fish habitat will be avoided or fully mitigated; and if not, the loss of fish habitat will be adequately compensated for through a compensation plan approved by the GRCA and/or the DFO; and iv) all applicable protocols or policies of the provincial and federal government have been met.			
	4. Development and site alteration shall not be permitted within Significant Woodlands and established buffers except for uses permitted by the General Permitted Uses of Section 4.1.2.	X	X	X

Policy	Relevant Clauses	Compliance		
		Alternative 1	Alternative 2A and 2B	Alternative 3
4.1.3.6 – Significant Woodlands	6. In addition to the General Permitted Uses of Section 4.1.2, essential linear infrastructure and stormwater management facilities and structures, and their normal maintenance, may be permitted in the established buffers to Significant Woodlands, subject to the requirements of 4.1.2.7, where it has been demonstrated through an EIS or EA study, to the satisfaction of the City that there will be no negative impacts on the feature or its ecological and hydrologic functions.			
4.1.3.7 – Significant Valleylands	3. Development and site alteration shall not be permitted within Significant Valleylands and established buffers except for uses permitted by the General Permitted Uses of Section 4.1.2.	√	√	X
	4. In addition to the General Permitted Uses of Section 4.1.2 the following additional uses may be permitted within Significant Valleylands and established buffers, subject to the requirements of 4.1.2.7 and 4.1.2.8, where it has been demonstrated through an EIS or EA, to the satisfaction of the City, and where applicable the GRCA, that there will be no negative impacts on the natural characteristics of the valley features or its ecological or hydrologic functions, nor will there be increased susceptibility to natural hazards: i) essential linear infrastructure and their normal maintenance; ii) essential transportation infrastructure and their normal maintenance; iii) flood and erosion control facilities or other similar works; iv) renewable energy systems; and v) stormwater management facilities and structures and their normal maintenance in accordance with the surface water features and fish habitat policies of this Plan.			
4.1.3.9 – Significant Wildlife Habitat (including Ecological Linkages)	3. Development and site alteration shall not be permitted within Significant Wildlife Habitat (including Ecological Linkages) or the established buffers, where applicable, except for uses permitted by the General Permitted Uses of Section 4.1.2.	√	X	X
	4. Development and site alteration may be permitted on adjacent lands to Significant Wildlife Habitat (including Ecological Linkages) where it has been demonstrated through an EIS or EA to the satisfaction of the City, and GRCA where applicable, that there will be no negative impacts to Significant Wildlife Habitat or its ecological functions.			
	5. In addition to the General Permitted Uses of Section 4.1.2, the following additional uses may be permitted within Significant Wildlife Habitat (including Ecological Linkages) and its established buffers, subject to the requirements of 4.1.2.7 and 4.1.2.8, where it has been demonstrated through an EIS or EA, to the satisfaction of the City, in consultation with the GRCA and/or MNRF where appropriate, with consideration for the MNRF's technical guidance that there will be no negative impacts to the Significant Wildlife Habitat or to its ecological functions: i) Essential linear infrastructure and their normal maintenance; ii) flood and erosion control facilities and their normal maintenance; and iii) water supply wells, underground water supply storage and associated small scale structures (e.g., pumping facility).			
4.1.4.4 – Habitat for Significant Species	3. Development, site alteration and essential linear infrastructure may be permitted within all or portions of the Habitat for Significant Species and any established buffers, subject to the requirements of 4.1.2.7 and 4.1.2.8, and where it has been demonstrated through an EIS or EA, to the satisfaction of the City, and the GRCA and/or MNR where appropriate, that there will be no negative impacts on the habitat or its ecological functions.	√	√	X
	4. Notwithstanding policy 4.1.4.4.3, development, site alteration and essential linear infrastructure may be permitted where it is demonstrated that: i) the species is common and relatively widespread at the regional scale or the reasons for the species' decline cannot be mitigated by local habitat protection (e.g., disease); and ii) all reasonable efforts to protect the habitat in situ have been explored but are not feasible in the context of the proposed development.			

9 Conclusion: Ranking of Alternatives

It is recognized that the Null Alternative would have no impact on natural heritage features or functions in the study area. However, it would also not address the stated need for a trail linkage at this location nor would it provide any opportunity to improve upon the existing condition. The Null Alternative is therefore not considered further in this assessment.

Given the potential impacts to natural heritage features and functions as outlined above, Aquafor attempted to rank the four bridge design alternatives from an ecological perspective in order of least impactful/most preferred to most impactful/least preferred. However, as was discussed in **Table 7-1**Error! Reference source not found., the comparison of potential effects of the four alternatives is not entirely straightforward.

Alternative 1 has no new permanent footprint within the Speed River Valley and would not require the access of any heavy machinery into the valley, but it necessitates clearing a corridor of vegetation along the new bridge alignment which affects both tree cover in Significant Woodland and the associated wildlife habitat. Conversely, Alternatives 2A and 2B require construction of a new permanent bridge abutment in the valley on the north side, but minimize vegetation clearing along the alignment by following an existing hydro corridor; the footprint of the new abutment is further reduced, particularly in Alternative 2B, by placing the abutment at the location of an existing hydro pole (i.e., a location which has already been subject to disturbance and placement of fill).

Further, impacts associated with Alternatives 2A and 2B may potentially be offset by a restoration plan that takes advantage of the fact that equipment and vehicles will need to access the valley to construct the new bridge abutment, as well as the fact that these alternatives have significantly lower capital cost than Alternative 1. The study area is noted to have been previously disturbed (e.g., in association with stormwater infrastructure) and to contain a high proportion of non-native plant species. An ambitious restoration plan in this area could enhance riparian wetlands and create a net benefit to habitat in the long term.

From an ecological perspective, both Alternatives 1 and 2A/2B may therefore be considered viable alternatives with potential to be carried forward. Both have benefits and drawbacks with respect to potential impacts and the associated mitigation measures that should be applied. Alternative 2B should be considered more preferred than Alternative 2A, however, due to its slightly lower footprint within riparian wetlands.

Regardless of the above, Alternative 3 has the largest potential impact to natural heritage features and functions, and although it has some potential for valleyland/wetland restoration (similar to Alternative 2A/2B) the increased risk to aquatic habitat and the permanent, non-mitigable footprint on the island is

considered to counterbalance this potential for restoration. Alternative 3 is not recommended for further consideration in this study.

10 References

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APPENDIX B

CONSULTATION SUMMARY

City of Guelph Emma to Earl Street Pedestrian Bridge Municipal Class EA

Engagement and Communications Plan

Prepared by Lura & Aquafor for:
The City of Guelph

September 2016

Table of Contents

1. Project Background

The City of Guelph has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005) and will provide a connection to the Downtown Trail. The purpose of the Class EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

The EA will be conducted as a Schedule 'B' project in accordance with the "Municipal Class Environmental Assessment" document (Municipal Engineers Association, October 2000, as amended in 2007, 2011 and 2015), under Ontario's *Environmental Assessment Act*. The process includes public and review agency consultation, an evaluation of alternatives, an assessment of potential environmental impacts of the proposed improvements, and identification of reasonable measures to mitigate any adverse impacts.

2. Public Engagement Objectives

The public engagement approach outlined in this plan is designed to ensure that City of Guelph residents, as well as key stakeholder groups, have an opportunity to learn about and participate in the EA. The objectives of the engagement process include:

- Ensure that local residents and stakeholders (neighbourhood and ratepayer groups, local businesses, municipal and agency staff, trail users and cyclists, among others) have the opportunity to learn about and participate in the EA process, to the extent that they are willing and/or able to do so;
- Provide interesting and stimulating opportunities for learning and feedback, which will enable residents and stakeholders to be engaged in meaningful discussion about the proposed alternatives for a pedestrian bridge and potential impacts; and
- Ensure resident and stakeholder feedback is fully documented and considered in the evaluation of alternatives and proposed recommendations emerging from the EA.

3. Overview of Public Engagement Activities

The public engagement activities proposed to be included as part of the EA process are outlined below. A more detailed breakdown of the target audiences, tasks, roles and timelines associated with each activity is provided in the table in Section 4.

Public Information Centres (2 plus 1 optional PIC)

Working closely with the City, our team will design and deliver two Public Information Centres (PICs) to enable feedback from the broader public and stakeholders as part of the EA process. These meetings are envisioned to include an open house component with display boards, as well as an interactive workshop format that includes a presentation and facilitated feedback sessions.

PIC #1: The first PIC will introduce the Municipal Class EA process to the public and enable participants to review background data and study area information. A site walk could be included as part of this first consultation session, if possible. Participants will also be able to provide input on the problem/opportunity statement, issues and concerns in the study area, the evaluation criteria and preliminary alternatives for the pedestrian bridge style and location.

PIC #2: The second PIC will enable participants to learn about and provide input on the evaluation process and results and the Project Team's preliminary preferred alternative for the pedestrian bridge style and location.

Optional PIC #3: An additional PIC may be scheduled if needed after the second PIC to address any remaining public concerns or to present revised information based on public and stakeholder input.

The Lura and Aquafor Beech team will design and facilitate the PICs and develop the presentation materials, displays, agendas and feedback mechanisms (likely a Discussion Guide or Feedback Form) for each PIC and prepare a summary report on the input received. All display boards and presented materials will be developed to meet City style guidelines and comply with provincial accessibility standards.

Pop-up Consultations in the Community (optional)

Following PIC #1, our team will confer with City staff to assess whether the PIC format was effective in facilitating the desired level of involvement of City residents and stakeholders in the early stages of the EA. As an optional format to augment or replace PIC #2, "pop-up" engagement events could be used to obtain input from Guelph residents in community locations (e.g., at scheduled City events or at the Guelph Farmer's Market). "Pop-ups" could be considered in the event that participation/attendance at PIC #1 is low.

Stakeholder Meetings (6) and Notification

Stakeholder Meetings: Individual meetings with key stakeholder groups and agencies will be held as appropriate during the EA to allow for in-depth discussions on the background data, issues and concerns in the study area, the evaluation criteria, and alternatives. We have budgeted for 6 half day meetings with community stakeholder groups and relevant agencies and committees during the EA process.

Where appropriate, several stakeholder organizations with similar interests could be invited to attend one combined meeting. We will also explore the opportunity to attend previously scheduled meetings being held by stakeholder groups/committees to present and discuss the EA at a time most convenient to them.

Our team will work with City staff to identify stakeholders to be offered a meeting, confirm the timing and participants for the meetings, develop the meeting format and presentation materials, and summarize the meeting outcomes. A preliminary list of stakeholders identified for meetings follows below:

- Grand River Conservation Authority
- Ministry of Natural Resources and Forestry
- Ministry of the Environment and Climate Change
- City of Guelph River Systems Advisory Committee
- City of Guelph Environmental Advisory Committee
- Heritage Guelph
- North Riverside Neighbourhood Group
- Exhibition Park Neighbourhood Group
- Guelph Coalition for Active Transportation
- Speed River Cycling Club
- Guelph Off Road Bicycling Association
- Guelph Hiking Trail Club
- Friends of Homewood Grounds
- Trout Unlimited Canada
- Izaak Walton Fly Fishing Club

As noted above, we will confer with City staff to determine whether multiple stakeholder organizations with similar interests (e.g., active transportation) could be invited to attend one meeting. We will also determine which organizations will be invited to attend the PICs, instead of being offered an individual stakeholder meeting.

Stakeholder/Agency Notification: At the outset of the project, our team will began creating a project mailing list. This list has been added to following the release of the Notice of Study Commencement, and will be a living document as we include persons with an interest in the project identified at PICs and other engagement events.

Those on the mailing list will receive notification of PICs and engagement opportunities throughout the project. An agency notification list will be developed as a subset of the overall project mailing list. At appropriate points during the EA process, agencies will receive notification of engagement events and/or provided with the opportunity to provide comments. A preliminary list of agency stakeholders is provided below, with the comprehensive list appended to the end of the document.

Provincial Agencies
- Grand River Conservation Authority
- Ministry of Natural Resources and Forestry
- Ministry of the Environment and Climate Change
- Ministry of Aboriginal Affairs
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Tourism and Culture
- Ministry of Transportation

Federal Agencies
- Canadian Environmental Assessment Agency
- Department of Fisheries and Oceans
- Environment Canada
- Indian and Northern Affairs

Utilities
- Enbridge Pipelines
- Union Gas
- Hydro One

Online Engagement

Face-to-face consultations through the PICs will be mirrored in online formats to allow for web-based participation. Lura will work with the City's Engagement Department staff to develop online engagement surveys/questionnaires in tandem with each PIC using the City's MindMixer platform or another suitable online feedback tool. Discussion Guides and display panels from public meetings can also be posted online.

Communications and Social Media

Our team will draft key notices including the Notice of Study Commencement, PIC notices and Notice of Completion. We understand that City staff will be responsible for advertising and promotion of engagement activities (including posting/delivery of notices, use of portable signs, and use of the City's social media channels) as well as media relations during the course of the project.

Our team will also track and respond to public concerns/comments/correspondence received during the EA.

Engagement Reporting

Lura will provide a summary of the results of the engagement and communications program for inclusion in the overall Project File. This will include a description of all consultation and communications activities that have occurred as part of the project, the level of engagement and

outcomes and how the engagement process has helped to shape the final recommendations. Summaries/minutes from each PIC and other stakeholder engagement meetings will also be prepared and included as appendices in the engagement summary report.

4. Key Engagement and Communication Activities – Roles and Timing

Activity	Target Audience	Tasks	Task Lead	Timeline
Notice of Commencement	Residents and stakeholders	Prepare and distribute/publish notice	Consulting Team / City	Complete
Public Information Centres (2, + optional PIC)	Residents and stakeholders	Prepare PIC notice Book meeting venue Distribute/post PIC notice & publicize meeting (inc. signs) Design session and prepare materials Present/facilitate meeting Prepare meeting summary	Consulting Team City City Consulting Team Consulting Team Consulting Team	PIC #1: October 2016 PIC #2: Timing to be confirmed
Social Media Promotion	Residents and stakeholders	Draft content for social media promotion of PICs Post social media content and monitor responses	City Corporate Communications City Corporate Communications	Postings made 1-2 weeks prior to PICs
Online Engagement	Residents and stakeholders	Set up feedback surveys on City MindMixer account Incorporate feedback into consultation summary	Consulting Team (Lura) / City Consulting Team	In parallel with PICs for 2-3 weeks
Stakeholder Meetings (6)	Key stakeholder organizations	Identify/confirm stakeholder meeting participants Book meetings (times and rooms) and invite participants	City/ Consulting Team City	September 2016

Activity	Target Audience	Tasks	Task Lead	Timeline
		Design meeting agendas and prepare materials Facilitate meetings Prepare meeting summaries/minutes	Consulting Team Consulting Team Consulting Team	
Engagement Summary Report	EA participants and Project File	Draft summary report	Consulting Team	To be confirmed
Notice of Completion	Residents and stakeholders	Prepare and distribute/publish notice	Consulting Team /City	To be confirmed

5. Preliminary Contact List of Stakeholders

No.	Title	First Name	Last Name	Job Title	Organization	Address	City	Province	Postal Code	Email
Response to Notice of Commencement										
1	Ms.	Jennifer	Passay	Manager of Planning	Upper Grand District School Board	500 Victoria Road North	Guelph	ON	N1E 6K2	
2	Ms.	Donna	Serrati		Region of Waterloo / Resident	60 Emma Street	Guelph	ON	N1E 1T7	
3	Ms.	Lynn	Chidwick		Resident	197 Dufferinm Street	Guelph	ON	N1H 4B3	
4	Ms.	Helen	Hansen		Resident	170 Metcalfe St	Guelph	ON	N1H 6H9	
5	Mr	Mike	Marcolongo		Resident	-				lizandmichele@yahoo.ca
6	Mr	Luke	Weiler		Resident	-				lweiler@gmail.com
7	Mr	Bill	Mungall		Guelph Hiking Trail Club					wmungall0809@rogers.com
8	Dr	T	Berto			-				aberto@uoguelph.ca
9	Ms.	Ashley	Rye	Planner	Grand River Conservation Authority	400 Clyde Rd	Cambridge	ON	N1R 5W6	arye@grandriver.ca
Relevant EA Stakeholders / Agencies										
10				EA Coordinator,West Central Region	MOECC	1 Stone Road W	Guelph	ON	N1G 4Y2	
11	Ms.	Louise	Knox	Director Ontario Regional Office	Canadian Environmental Assessment Agency	55 St. Clair Avenue Room 907	Toronto	ON	M4T 1M2	
26	Mr.	Vic	Gillman	Area Manager, Fisheries and Habitat Management - Ontario	Department of Fisheries and Oceans, Bayfield Institute	867 Lakeshore Road P.O. Box 5050	Burlington	ON	L7R 4A6	
27	Ms.	Ann	Newman	Crossings Coordinator, Enbridge Pipelines Inc.	Enbridge Pipelines Ltd.	801 Upper Canada Drive P O Box 128	Sarnia	ON	N7T 7H8	
28	Mr.	Robert	Dobos	Head of Environmental Assessment Section, Great Lakes and Corporate Affairs, Environment Canada	Environment Canada	867 Lakeshore Road, P.O. Box 5050	Burlington	ON	L7R 4A6	
42	Mr.	Rick	Schatz	Senior Real Estate Co-ordinator	Hydro One Network Inc.	185 Clegg Road	Markham	ON	L3R 5Z5	
43	Mr.	Brian	McCormick	Manager, Environmental Services & Approvals	Hydro One Networks Inc	483 Bay Street, North Tower 12th Floor	Toronto	ON	M5G 2P5	

No.	Title	First Name	Last Name	Job Title	Organization	Address	City	Province	Postal Code	Email
44	Ms.	Josee	Beauregard		Indian & Northern Affairs	25 Eddy Street,	Gatineau	QC	K1A 0H4	
46	Ms.	Nancy	Kuehnbaum	President	Izaak Walton Fly Fishing Club	2400 Dundas Street W Unit 6, Ste 283	Mississauga	ON	L5K 2R8	
49	Ms.	Heather	Levecque	Manager, Consultation Unit	Ministry of Aboriginal Affairs	160 Bloor St. East, 9th floor	Toronto	ON	M7A 2E6	
50	Mr.	David	Cooper	Manager, Agricultural Land Use	Ministry of Agriculture and Food	1 Stone Road W	Guelph	ON	N1G 4Y2	
51	Ms.	Tamara	Anson-Cartwrig	Heritage Conservation Advisor, Heritage and Libraries Branch	Ministry of Culture	400 University Avenue, 4th Floor	Toronto	ON	M7A 2R9	
52	Mr.	Malcolm	Horne	Archaeology Review Officer	Ministry of Culture	400 University Avenue, 4th Floor	Toronto	ON	M7A 2R9	
53	Mr.	James	O'Mara	Director	Ministry of Enviroment, Environmental Assessment and Approvals Branch	2 St. Clair Avenue West, Floor 12A	Toronto	ON	M4V 1L5	
55	Mr.	Steven	Strong	District Planner	Ministry of Natural Resources & Forestry	51 Bloomington Rd W	Aurora	ON	L4G3G9	
56	Ms.	Melinda	Thompson	Species at Risk Biologist	Ministry of Natural Resources & Forestry	50 Bloomington Rd W	Aurora	ON	L4G3G8	
57	Mr.	Dan	Delaquis	Environmental Resource Planner/EA Coordinator- Air, pesticides & Environmental Planning	Ministry of the Environment	5775 Yonge Street, 9th Floor	Toronto	ON	M2M 4J1	
58	Mr.	Dan	Minkin	Environmental Resource Planner/EA Coordinator- Air, pesticides & Environmental Planning	Ministry of the Environment	5775 Yonge Street, 8th Floor	Toronto	ON	M2M 4J1	
59	Ms.	Teresa	Wagner	Heritage Planner	Ministry of Tourism and Culture	401 Bay St. Suite 1700	Toronto	ON	M7A 0A7	
60	Mr.	Tom	Hewitt	Manager, Corridor Management Office	Ministry of Transportation	1201 Wilson Ave, 7th Fl, Bldg D	Downsview	ON	M3M 1J8	
65	Mr.	Francois	Lachance	Senior Adviser, Aboriginal and Ministry Relationships Branch	Ontario Ministry of Aboriginal Affairs	160 Bloor St. E, 9th Floor	Toronto	ON	M7A 2E6	
66	Ms.	Carol	Neumann	Rural Planner, Environmental and Land Use Policy	Ontario Ministry of Agriculture, Food and Rural Affairs	6484 Wellington Road 7	Elora	ON	N0B 1S0	
68	Ms.	Pam	Wheaton	Director, Policy and Relationships Branch	Ontario Secretariat for Aboriginal Affairs	720 Bay Street, 4th Floor	Toronto	ON	M5G 2K1	
79	Mr.	Bob	Thomson	Chair, Ontario Council, Greg Clark Chapter	Trout Unlimited Canada	P.O. Box 1014, Station Q	Toronto	ON	M5T 2P2	
80	Mr.	Joseph	Marra	Assistant General Counsel	Union Gas Limited	50 Keil Drive North, P.O. Box 2001	Chatham	ON	N7M 5M1	

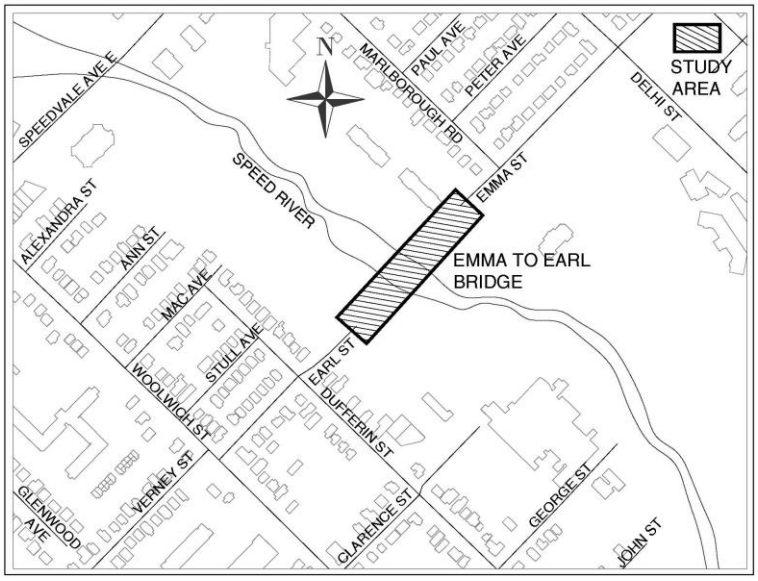
NOTICE OF STUDY COMMENCEMENT: Municipal Class Environment Assessment
Emma Street to Earl Street Bridge over the Speed River

The study

The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed. The site location and approximate extents of the study area are shown on the map.

The process

The EA will be conducted as a Schedule 'B' project in accordance with the "Municipal Class Environmental Assessment" document (Municipal Engineers Association, October 2000, as amended in 2007, 2011 and 2015), under the Ontario Environmental Assessment Act. The process includes public and review agency consultation, an evaluation of alternatives, an assessment of potential environmental impacts of the proposed improvements, and identification of reasonable measures to mitigate any adverse impacts.



How to participate

Late this summer, neighbourhood businesses, residents, community members and interested parties will be invited to attend an open house to review and discuss the EA study. Details will be advertised in the Guelph Mercury Tribune and on **guelph.ca** and circulated to neighbourhood residents and businesses.

For more information

Please contact one of our project team members if you have questions or comments, or would like to be added to the project mailing list.

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

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

This notice first issued July 14, 2016.

INFORMATION BULLETIN

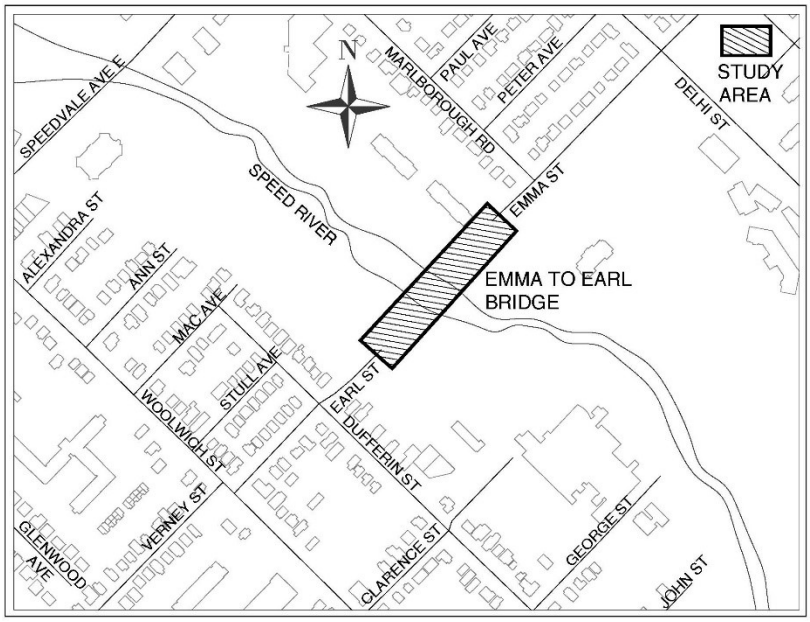
City seeks input on Emma Street to Earl Street pedestrian bridge at open house October 25th, 2016

Guelph, Ont., October 5th, 2016 – The City of Guelph is looking for community input on the design and construction of a cycling and pedestrian bridge over the Speed River, connecting the North Riverside neighborhood at Emma Street to the downtown trail at Earl Street.

The open house will be held on Tuesday, October 25th from 6:00pm to 9:00 p.m. at the Evergreen Centre - 683 Woolwich St, Guelph, ON N1H 3Z1.

A bridge in this location is recommended in the Guelph Trail Master Plan (2005). The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

The community is invited to review and discuss the Class EA study at the open house. Feedback can also be submitted through an online survey available at guelph.ca/haveyoursay. The input received will help the City identify preferred type of bridge, how the bridge will be used, and any impacts the bridges may have on individuals, the neighbourhoods, and the environment. The survey closes November 8th, 2016.



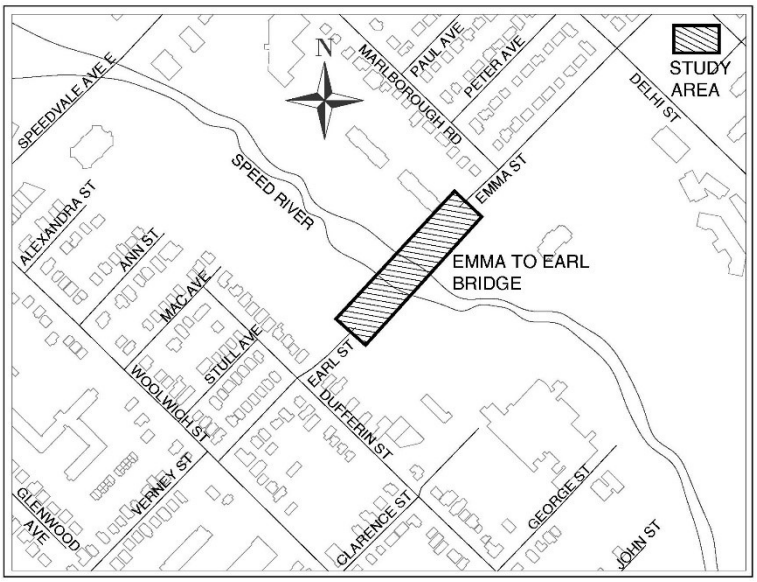
For more information

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

NOTICE – Public Open House

Emma Street to Earl Street Bridge over the Speed River

The City of Guelph is hosting an **open house** to review and discuss a Class Environmental Assessment (EA) study for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. The site location and approximate extents of the study area are shown on the map.



When & Where:
Tuesday October 25th, 2016
6:00pm – 9:00 p.m.
Evergreen Centre
683 Woolwich St, Guelph, ON N1H 3Z1

Why come to the open house?

This is your opportunity to view project information. We invite you to talk with City staff and consultants working on the project so that you can ask questions and provide input.

About the project

A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

For more information:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

This notice first issued October 5th, 2016.

City Hall
1 Carden St
Guelph, ON
Canada
N1H 3A1

T 519-822-1260
TTY 519-826-9771

guelph.ca

City of Guelph Emma to Earl Street Pedestrian Bridge Municipal Class EA

Public Information Centre #1 Summary Report

Prepared by Lura & Aquafor for:
The City of Guelph

November 2016

This report was prepared by Lura Consulting. Lura is providing independent community consultation services as part of the Emma to Earl Street Pedestrian Bridge Environmental Assessment. The report presents the key discussion points and outcomes from the October 25, 2016 public information centre, and is not intended to provide a verbatim transcript. If you have any questions or comments regarding the report, please contact either:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
519-822-1260 extension 2338
andrew.janes@guelph.ca

Or

Leah Winter
Consultant
Lura Consulting
416-536-7653
lwinter@lura.ca

Table of Contents

1. Project Background

The City of Guelph has initiated a Municipal Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005) and will provide a connection to the Downtown Trail. The purpose of the Class EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

The EA will be conducted as a Schedule 'B' project in accordance with the "Municipal Class Environmental Assessment" document (Municipal Engineers Association, October 2000, as amended in 2007, 2011 and 2015), under Ontario's *Environmental Assessment Act*. The process includes public and review agency consultation, an evaluation of alternatives, an assessment of potential environmental impacts of the proposed improvements, and identification of reasonable measures to mitigate any adverse impacts.

City staff and the consultant team began working on the EA in September 2016. The project team is being led by Aquafor Beech, an engineering and environmental services firm. Lura Consulting is providing independent community consultation services for the study.

2. Public Information Centre #1

This public information centre (PIC) was the first of a series of PICs to be hosted by the City of Guelph as part of the Emma to Earl Street Pedestrian Bride EA. The PIC took place on October 25, 2016 from 6:30 – 9:00 pm at the Evergreen Centre, 683 Woolwich Street, Guelph. The PIC was widely publicized through distribution of a notice to the project mailing list, delivery of the notice to residents in the study area, a large movable sign located in the study area, and promotion on the City's website and via social media. A copy of the notice is included in Appendix A.

The PIC was designed to:

- Present information on existing conditions (natural, social, environment);
- Discuss alternatives for the bridge;
- Present the study process and timelines; and
- Seek community feedback on existing conditions, community interests and opportunities.

The PIC format consisted of an open house where participants had the opportunity to view display boards that focused on various aspects of the EA. A copy of the boards can be found on the City of Guelph website: http://guelph.ca/2016/10/emma-earl-bridge-open-house-info/

Members of the EA project team and City staff were available at the open house to answer questions informally and respond to feedback. A Comment Form (included in Appendix B) was distributed to attendees to either complete during the open house or submit following the meeting. The Comment Form was also provided in an online survey format and made available on the City's website until November 15, 2016. Fifty-five people participated at the PIC.

3. Summary of Participant Feedback

The feedback received from participants was focused on the draft Problem/Opportunity statement, draft evaluation criteria, issues or concerns related to the study, and preliminary bridge types. Questions on each of these topics were included on the Comment Form, which also provided an opportunity for participants to submit additional comments on any other aspect of the project.

During the PIC, many participants took the opportunity to provide written input by completing a Comment Form. Following the PIC, the comment period remained open for three weeks until November 15, 2016. Thirty completed Comment Forms were received, either handed in at the PIC or submitted online. The project team also received an additional 10 comments related to the study by email.

The following is a summary of all feedback received during the comment period.

I. Draft Problem/Opportunity Statement

The draft Problem/Opportunity Statement for the study was presented to community members for feedback. The draft statement is provided below:

> *The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.*

Many participants expressed general agreement with the draft Problem/Opportunity Statement. However, a few individuals raised some concern regarding the need for the study. A request was made for further analysis and information regarding the need for the bridge, who the users would be, and the catchment area for users.

Concerns and suggested changes to the draft statement are summarized below:

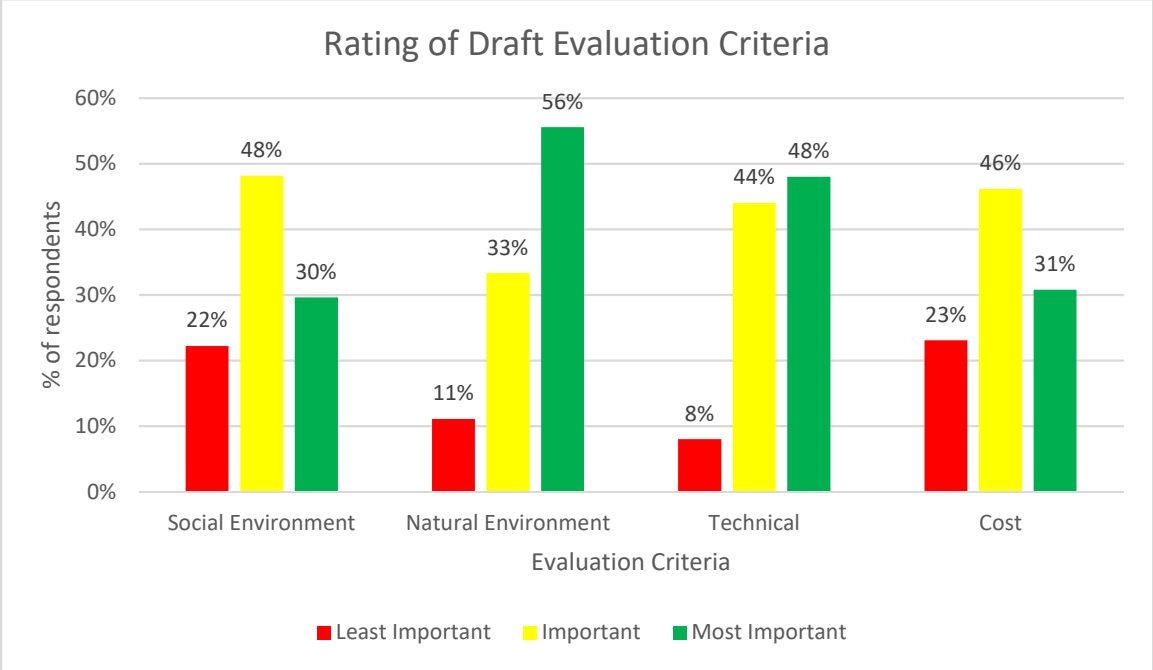
- Reference to the Guelph Trail Master Plan in the statement is misleading given that the Emma to Earl bridge was identified as a long-term goal rather than an immediate priority.
- If the EA is going to determine whether a bridge is warranted, additional detail will be required including a cost-benefit analysis in comparison with other infrastructure projects.
- The bridge should be described as being both a pedestrian and cycling bridge and the ultimate bridge design should account for this.
- Include recognition that the bridge should have the least impact on the natural environment, including the plant and animal communities in the area.
- Include recognition that the bridge will provide a car free route for cyclists and pedestrians traveling between downtown and the north-east corner of the city.

II. Draft Evaluation Criteria

Draft evaluation criteria are proposed to be used to evaluate the various alternatives for the type and location of the Emma Street to Earl Street pedestrian bridge and identify a recommended solution. Draft

criteria were categorized into: Social Environment; Natural Environment; Technical; and Cost. Community members were asked to rate each of the criteria as most important, important or least important.

Each of the criteria were rated by the majority of participants as either important or most important, with the Natural Environment criteria rated as most important by 56% of respondents. The results of this question are provided in the graph below.



Additional evaluation criteria suggested by participants are summarized below.

Social Environment

- Social impact on the adjacent neighbourhoods
- Accessibility
- Safety (e.g., lighting, conditions of bridge in rain/snow, potential for increased illegal activity along the trail)
- Health benefits / incentive for active transportation
- Enjoyment / views of the river
- Connectivity to existing and planned trail network for pedestrians and cyclists
- Impact on active transportation demand on Delhi St., Speedvale Ave. and Woolwich St. (i.e., alternative routes for pedestrians and cyclists)

Natural Environment

- Biodiversity (animals, plants, aquatic species)

Technical

- Use of sustainable materials and construction methods

III. Issues and Concerns

Community members were asked to share any issues or concerns that the project team should be aware of in moving forward with the study. The main concerns raised in the feedback were related to wildlife/natural habitat impacts, impacts on the adjacent neighbourhood, the need for additional safe active transportation connections, the safety of bridge users given the location near the Armtec property, and the study scope and rationale. A summary of feedback is provided below:

Environmental Impacts

- There was a concern that the assessment of wildlife impacts appears to be limited/incomplete. A question was raised regarding whether an inventory of affected species beyond turtles and fish was conducted. It was noted that community members have seen beavers, muskrats, minks, herons, kingfishers, woodpeckers, and ducks in the area.
- There was a preference by a few participants to reconsider enhancing the Speedvale Ave bridge to accommodate pedestrians and cyclists rather than disrupting a pristine natural area by constructing a new bridge.
- It was noted by one participant that a new bridge in the proposed location contradicts policies in place to naturalize the river.
- There was a concern that the bridge crossing will result in more dumping of garbage into the river.

Impacts on the Adjacent Neighbourhood

- A few participants indicated that greater consideration needs to be given to the negative social impacts on the adjacent neighbourhood. It was noted that illegal activity currently takes place on the existing trail (e.g., vandalism, drug use, theft, littering, dogs off-leash). With the introduction of the bridge crossing there is concern that these issues will be exacerbated.
- Appropriate lighting for safety and security of bridge users was suggested.

Trail Network Connectivity

- It was suggested by some participants that the overall connectivity of active transportation routes should be improved. This includes facilitating a safe crossing over Speedvale Ave on the east side of the river and a connection to the Speedriver Trail. Similarly, there was a concern regarding safety for pedestrians and cyclists at the corner of Delhi St. and Emma St. A crosswalk was suggested to provide a safer way for bridge users to cross at this intersection.
- Accessibility for all bridge users is a concern given the slope of the terrain.

Proximity of the Bridge to the Armtec Property

- A few issues were raised regarding the proposed location of the bridge adjacent to the Armtec property:
    - It was suggested that a “guarded sidewalk” on the north side of Earl St would be required to protect bridge users from truck traffic entering and leaving the Armtec site.
    - Any future bridge should be located such that truck movement across Earl St between the two Armtec properties can be maintained as a straight crossing.
    - The bridge should be planned in coordination with the Guelph Hiking Trail Club which is working with Armtec to install/maintain a side trail off the main Trans Canada Trail along the bank of the river on Armtec property.

Study Scope and Planning Rationale

- It was suggested by one participant that the study area should be expanded north of the Speedvale Ave Bridge, west to Dufferin St and east to Marlborough Rd in order to properly assess the bridge's impacts.
- A few participants indicated that a demand analysis for the bridge should be conducted to understand who the bridge users would be and where they are travelling.
- It was noted by a few participants that there are other trail/cycling infrastructure investments that are a higher priority and City funds would be better utilized on other projects.

IV. Preliminary Bridge Types

Preliminary bridge types were identified by the project team at the open house. A summary of the feedback received on the bridge alternatives is provided below:

- There was a preference for a steel truss or steel cable bridge. Cost efficiencies and the aesthetics of the bridge were noted as key considerations.
- There was support for a single span or two-span bridge to reduce the environmental impact of the bridge.
- There was support for a simple and more natural bridge aesthetic rather than a grand appearance.
- It was noted that the upper beam of the bridge should not be placed in the sight line of the users of the bridge in order to enable views of the river.
- There was support from many participants for the bridge design to be wide enough to accommodate both pedestrians and cyclists travelling in both directions (e.g., demarcation of lanes may be required).

V. Additional Comments

Additional comments provided by participants are summarized below:

- A number of community members indicated support for the Emma to Earl Street bridge as it provides greater connectivity between communities and downtown, improves the trail system for pedestrians and cyclists, and encourages active transportation by providing a safer alternative to Speedvale Ave and Eramosa Rd.
- There was support for constructing the pedestrian bridge as soon as possible and prior to the reconstruction of Speedvale Ave.
- It was emphasized that consideration of environmental impacts should remain a priority throughout all project phases.
- It was noted that there may be some inaccuracies in the environmental data presented (e.g., the study area is a known foraging site for turtles).
- Mitigation measures on private property were requested by one participant due to an anticipated increase in pedestrian and cyclist traffic along Earl St (e.g., a fence around property and greening of boulevard).

- A request was made for the EA study to be put on hold until the Trail Master Plan Update is completed in order to ensure any new bridge connection supports the plans and priorities for the overall trail network.

4. Next Steps

The project team will consider all feedback received in order to refine the Problem/Opportunity Statement, evaluation criteria, and existing conditions. The evaluation of preliminary alternatives will take place during December 2016 and the next PIC will occur in early 2017.

Appendix A – PIC Notice

(to be inserted into final PDF)

Appendix B – Comment Form

(to be inserted into final PDF)

Class EA for Emma St to Earl St Pedestrian Bridge

City of Guelph

October 25, 2016

Sign in Sheet

Name	Address	Phone Number	E-mail
Lynn Chidwick	[redacted]		
Carol McMullen			
Mike Fortin			
Peter Knowles			
Joyce Golan			
Bakiss LAURENT			
Geoff Gilmour			
MIKE DARMON			
Yvette Tendick			
Donna Serrati			

Name	Address	Phone Number	E-mail
Suzanne Gates	[redacted]		
Anna Roehrig			
Tuula Canin			
Preston Clark			
Stephen Brady			
MARTIN RONDA			
Beth Fams			
Luke Weiler			
Fran Tymchyshen			
~~Doug~~ Andrew Forbes			
Allan Ferguson			
Patrick Sheridan			
Sara McConnell			

Name	Address	Phone Number	E-mail
GARY & LIZ LUCK	[redacted]		
Katie Jones			
HANDEEP Sandhu & JUAN FALTZ			
Nadine Ryan Dermod Moore			
RUTH & TERRY DOCHERTY			
Duka Amies			
Wanita Smith Matt Fairfull			
Kate Vsetula			
Graeme Sheffield			
Michael Bennett			
Bill Mungall			
MARTIN COLLIER			

Class EA for Emma St to Earl St Pedestrian Bridge

City of Guelph

October 25, 2016

Sign in Sheet

Name	Address	Phone Number	E-mail
LT Petrie	[redacted]		
Mary VanderWoude			
Lee Fair			
Patrick Hearne			
Dianne Winfield			
Russ Maoulis			
Susan Boyle			
JEFF HUBER			
Scott Frederick			

Name	Address	Phone Number	E-mail
Patti Phillips	[redacted]		
Beverly Ann Woods			

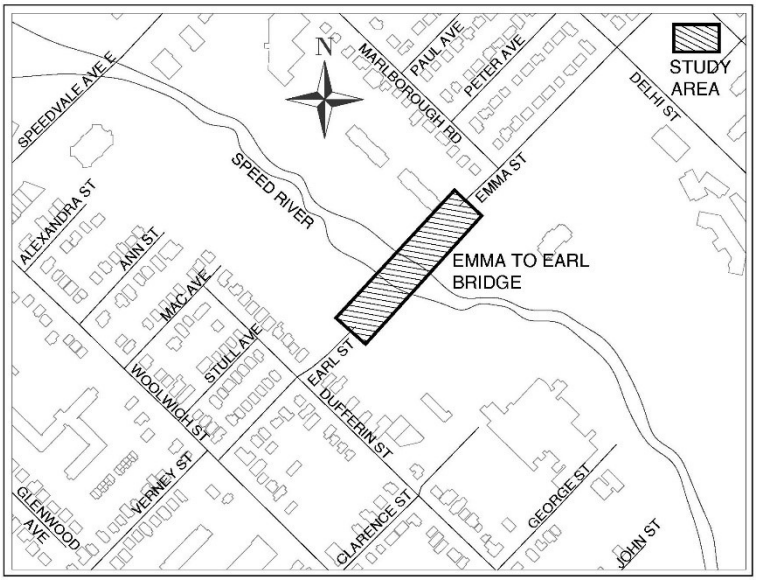
Notice of Public Open House

Emma Street to Earl Street Bridge over the Speed River

TO Local residents and businesses

The City of Guelph is hosting an open house to review and discuss a Class Environmental Assessment (EA) study for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. The site location and approximate extents of the study area are shown on the map.

Wednesday June 7th, 2017
6:00pm – 8:00 p.m.
Evergreen Centre
683 Woolwich St, Guelph, ON
N1H 3Z1



Why come to the open house?

This is your opportunity to view project information, and review the project team's evaluation of the alternatives and their recommended preferred alternative.

We encourage you to ask questions about plans for the existing bridge and to provide comments and feedback to City staff and consultants at the open house.

About the project

A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

For more information:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

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

This notice first issued May 10th, 2017.

City of Guelph Emma to Earl Street Pedestrian Bridge Municipal Class EA

Public Information Centre #2 Summary Report

Prepared by Lura & Aquafor Beech for:
The City of Guelph

June 2017

This report was prepared by Lura Consulting. Lura is providing independent community consultation services as part of the Emma to Earl Street Pedestrian Bridge Environmental Assessment. The report presents the key discussion points and outcomes from the June 7, 2017 Public Information Centre, and is not intended to provide a verbatim transcript. If you have any questions or comments regarding the report, please contact either:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
519-822-1260 extension 2338
andrew.janes@guelph.ca

Or

Alex Lavasidis
Consultant
Lura Consulting
416-536-0184
alavasidis@lura.ca

Table of Contents

1. Project Background

The City of Guelph has initiated a Municipal Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005) and would provide a connection to the Downtown Trail. The purpose of the Class EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

The Class EA is being conducted as a Schedule 'B' project in accordance with the "Municipal Class Environmental Assessment" document (Municipal Engineers Association, October 2000, as amended in 2007, 2011 and 2015), under Ontario's *Environmental Assessment Act*. The process includes public and review agency consultation, an evaluation of alternatives, an assessment of potential environmental impacts of the proposed improvements, and identification of reasonable measures to mitigate any adverse impacts.

City staff and the consultant team began working on the EA in September 2016. The project team is being led by Aquafor Beech, an engineering and environmental services firm. Lura Consulting is providing independent community consultation services for the study.

2. Public Information Centre #2

This Public Information Centre (PIC) was the second in a series of PICs hosted by the City of Guelph as part of the Emma to Earl Street Pedestrian Bridge EA. The PIC took place on June 7, 2017 from 6:00 – 8:00 pm at the Evergreen Centre, 683 Woolwich Street, Guelph. The PIC was widely publicized through distribution of a notice to the project mailing list, delivery of the notice to residents in the study area, a large movable sign located in the study area, and promotion on the City's website and via social media. A copy of the notice is included in Appendix A.

The PIC was designed to:

- Present information on existing conditions (natural, social, environment);
- Seek community feedback on existing conditions and results of background studies conducted by the project tea;
- Present four alternatives and one Preferred Alternative for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River; and
- Seek community feedback on the evaluation of alternatives for the bridge and the Preferred Alternative outcome.

The PIC format consisted of an open house where participants had the opportunity to view display boards covering various aspects of the EA. These display boards provided information on existing conditions and four alternatives for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. These alternatives include: Alternative 1 – Steel Cable Single Span Bridge; Alternative 2 –Two-Span Steel Truss Bridge; Alternative 3 – Three-Span Steel Truss Bridge; and Null Alternative / Do Nothing (as required under a Municipal Class Environmental Assessment). A copy of the

display boards can be found on the City of Guelph website: http://guelph.ca/living/construction-projects/emma-street-earl-street-bridge-improvements/.

Members of the EA project team and City staff were available at the open house to answer questions informally and respond to feedback. A comment form (included in Appendix B) was distributed to attendees to either complete during the open house or submit following the meeting. The comment form was also posted on the City's website along with a copy of the display boards. Members of the public were encouraged to email in their comments until June 21, 2017. Thirty-three people attended the PIC on June 7th.

3. Summary of Participant Feedback

During the PIC, many participants took the opportunity to provide written input by completing a comment form. Following the PIC, the comment period remained open for two weeks until June 21, 2017. Twenty-six completed comment forms were received, either handed in at the PIC or submitted online.

The feedback received from participants is summarized below under five themes: existing conditions, evaluation criteria, preliminary evaluation of alternatives, preferred alternative, and additional feedback.

Existing Conditions

Background studies were completed by the project team to better understand existing conditions in the study area. Display panels summarizing the key results from the background studies were presented to community members for feedback. Background studies included topography and utilities, hydrology and hydraulics, tree inventories, fisheries and aquatic habitat, natural heritage assessment, terrestrial natural heritage, wildlife observations, species at risk, source water protection, and geology.

Most participants did not comment on the existing conditions information presented. Of the five comments received, one participant expressed support for the existing conditions presented, while others expressed concern over what was missing, including:

- A more explicit explanation as to why the bridge is being considered and what it will link.
- An explanation of the site's history.
- A more complete wildlife observations list (including minks, beaver, common mergansers, hooded mergansers, buffleheads, redheads, goldeneyes, and pileated, downy, hairy and red-bellied woodpeckers).
- A neighbourhood safety study around the site to identify solutions and causes for increased crimes along the trail, and in adjacent neighbourhoods.

Evaluation Criteria

A list of criteria used to evaluate the four alternatives was provided to participants on the display boards. Criteria were categorised into: physical and natural; social and cultural; technical; and economic and costing, and are listed in the table below.

Physical and Natural Criteria	Technical Criteria
· Hydraulics and flooding · Aquatic habitat · Terrestrial Habitat	· Impacts on existing infrastructure · Lifespan of work
Social and Cultural Criteria	Economic and Costing Criteria
· Public safety · Landowner impacts · Benefits to community · Cultural and archaeological impacts	· Capital costs (engineering, land and construction) · Annual operating and maintenance costs · Life cycle cost

Of the nine comments received regarding evaluation criteria, several participants expressed support for the criteria presented. Other participants expressed concern over what was missing and suggested additional evaluation criteria. A summary of feedback is provided below:

Social and Cultural Criteria

- Many participants identified a lack of consideration for the safety impacts of the proposed bridge on the neighbourhood. Participants noted that crime increased in other neighbourhoods after trails were installed, and that the existing trail is already the site of criminal activity. Participants suggested criteria be adjusted to more accurately evaluate the safety impacts of the potential increase in crime (both violent and non-violent) as a result of the proposed bridge. A participant also suggested that safety criteria should include the increased risk involved with crossing the Armtec Plant on Earl Street.
- One participant noted that 'enhancing active transportation and connectivity' was missing from the evaluation criteria.

Physical and Natural Criteria

- Participants suggested greater focus on the impacts of the proposed bridge on wildlife, including fish habitat.

Economic and Costing Criteria

- Participants cited that Guelph has many important projects in need of funding, and that they would like to see criteria that compare the efficacy and impacts of this project to other initiatives (including alternative cycling bridges, increased funding to policing, and other uses).
- One participant noted that life cycle cost evaluation criteria was missing from the evaluation.
- One participant noted that the cost of installing sidewalks along Earl Street was not considered.
- One participant commented that Armtec land appropriation and Speedvale alterations may be required, which would impact capital costs.
- One participant commented that operation and maintenance costs related to policing, lighting, snow removal, habitat care, and garbage cleanup were not considered.

Other Feedback on Criteria

- One participant was concerned that come criteria were evaluated based on the current state of the neighbourhood, which may not be accurate due to the imminent changes and safety upgrades that are set to occur on the Speedvale bridge.
- One participant was concerned that there was a lack of trip and demand data to support the creation of a bridge, which may be underused by cyclists.

Preliminary Evaluation of Alternatives

A Preliminary Alternative Evaluation Overview was presented. Community members were asked to share any feedback on the preliminary scoring of the alternatives or commentary provided by the project team. A summary of feedback is provided below:

- Some participants suggested the project should not proceed until other plans and projects are completed, including:
    - An update of the Trails Master Plan;
    - Addressing the problematic connections at Speedvale and Eramosa;
    - Reconstruction of the Speedvale bridge.
- Some participants commented that they wanted to see the costs of each alternative shared more explicitly to allow for proper comparison and evaluation.
- Participants suggested the following issues were inadequately addressed in the evaluation:
    - Public safety impacts due to potential increases in violent and non-violent crime;
    - Tree loss;
    - Increased capital costs necessitated by new sidewalks and trail access;
    - Increased operating costs due to increased policing and security needs;
    - The impact on homeowners due to increased pedestrian traffic and trespassing on private property on Homewood;
    - Rationale for prioritizing this project over other City projects;
    - The upgrades required at the Speedvale crossing.
- One participant suggested the ranking scale be adjusted to represent negative impact as negative numbers, and no impact as zero.
- One participant suggested the Null Alternative option should be ruled out.

Preferred Alternative

The preliminary scoring of the alternatives by the project team suggested Alternative 1 – Steel Cable Single Span Bridge as the preferred alternative. Community members were asked to provide their feedback on whether or not they supported the outcome and the reason for their decision.

Twenty-four participants provided feedback about the preferred alternative. A summary of the feedback received is provided below:

- Almost half of the participants supported the preferred alternative. Participants in support of the preferred alternative stated that they supported the choice because:
    - There is a significant need for cycling and pedestrian access between east and west neighbourhoods (alternative to Speedvale) and expanding the active transportation network in Guelph;

  - It allows for the lowest impact on the surrounding environment;
  - Any bridge is better than no bridge;
- A few participants were comfortable with either Alternative 1 or 2..
- Just over half of the participants expressed their disapproval of the preferred alternative and provided the following justification:
  - Participants disapproved of the high cost associated with the preferred alternative, as it is the most expensive option. One participant also commented that many costs were not factored into the pricing evaluation including installing and maintaining sidewalks, policing, lighting, environmental protection, and cleanup.
  - Participants commented that there are other projects that the City should prioritize ahead of this project, including an update of the Trails Master Plan, addressing the unsafe crossing at Speedvale and Eramosa, extending trails to get cyclists off roads, installing curb cuts for cyclists, and other cycling issues. Further, participants commented that the case for prioritizing this project over others is not clear.
  - One participant suggested that there is not enough demand to justify the construction of the bridge.
  - One participant shared technical concerns that the span length of the preferred alternative is too long and will be prone to sideway swaying in the future.
  - One participant disapproved of the preferred alternative (and all of the bridge options) because they were said to be aesthetically unattractive.
  - Participants disapproved of the evaluation criteria, and therefore the evaluation outcome, with one participant commenting that the scope of the EA is too narrow overall to produce a well-informed evaluation of alternatives.
  - One participant stated that the preferred alternative would produce too much environmental disruption (including increased garbage, dumping, and habitat disturbance).
  - Participants disapproved of how safety considerations were factored into the preferred alternative. Participants noted that the negative impacts on neighbourhood and trail user safety due to the necessary crossing at the Armtec Plant, and the potential rise in crime were not adequately considered. One participant also commented that current safety impacts of the Speedway for cyclists should not have been factored into the evaluation as the street is set to be widened, and therefore made safer for cyclists.
- Many of those stating concern about the preferred alternative expressed support for the Null Alternative:
  - These participants stated the Null Alternative would have no negative impact on crime rates and public safety.
  - These participants noted that the Null Alternative was no-cost. Some participants suggested that this would allow for other City projects to be prioritised and funded. One participant suggested the City instead refocus its efforts on Speedvale Avenue and the existing Trans-Canada Trail, while another suggested spending the proposed funds on social programs and policing.
  - These participants preferred that the Null Alternative option had the lowest impact on landowners and the environment.
- One participant preferred Alternative 3 – Three-Span Steel Truss Bridge.

Additional Comments

Additional comments provided by participants, not included in the summary elsewhere, are summarized below:

Engagement During the EA

- Two participants were displeased with the engagement process between the City and the public, commenting that:
    - There was a lack of communication between City staff and citizens;
    - There was a lack of notification of the second PIC (for those who attended the first PIC);
    - Incorrect phone numbers were provided on City advertisements;
    - There was a lack of access to public comments from the first PIC; one participant expressed concern that they will not be provided with public comments from the second PIC until after the EA documentation has been filed;
    - The open house format of the PIC limited citizen interaction and was biased towards the project team's evaluation results (the PICs framed the project in a way that misled residents to think the bridge was approved, and that consultation was to discuss where and what type of bridge to construct);
    - Previously requested origin-destination trip data was not provided;
    - Not enough time was allotted to citizens to respond to RSAC minutes, pertaining to this bridge proposal;
    - Sample size was not provided when referencing certain studies and surveys

Safety Concerns

- One participant noted that the neighbourhood by the existing trail had issues with crime in the 1990s and were told there was no capacity to increase security in the area; they suggest that if crime rises with the installation of a bridge, there will still be no capacity to add security, making the neighbourhood unsafe. The participant also noted that current security issues are mismanaged as neither the police and the city are taking responsibility for issues occurring in the neighbourhood.
- One participant suggested safety on the existing trail needs to be addressed, especially at night and for women.
- One participant noted that the removal of benches from a section of trail near the proposed bridge site resulted in less congregation and improved feelings of safety in the neighbourhood
- One participant noted that the City has long intended to light the existing trails, and that this safety feature has yet to be installed.
- One participant suggested the City take immediate action to make Speedvale Ave safer by installing large, visible, signalized crosswalks with rumble strips on the west side of the bridge, adding traffic lights to Marlborough, and adding rumble strips to the east and west of the red crosswalk zone.

Overall Questions and Concerns

- One participant questioned how many users the bridge was expected to have and who would benefit from the bridge.
- One participant expressed concern that there was no specific cost or timeline outlined for the project.

- One participant inquired how much money was being spent on the study and survey.
- One participant stated that there are too many bridges within a short span to justify this Emma to Earl bridge (including Speedvale Bridge and Norwich Bridge).

Other Alternatives

- One participant questioned why the Norwich Bridge was not being retrofit instead.
- A participant suggested that the Speedvale Avenue bridge would be a better option fiscally, and for cyclists than the Emma to Earl bridge proposal.

Support for Bridge Construction

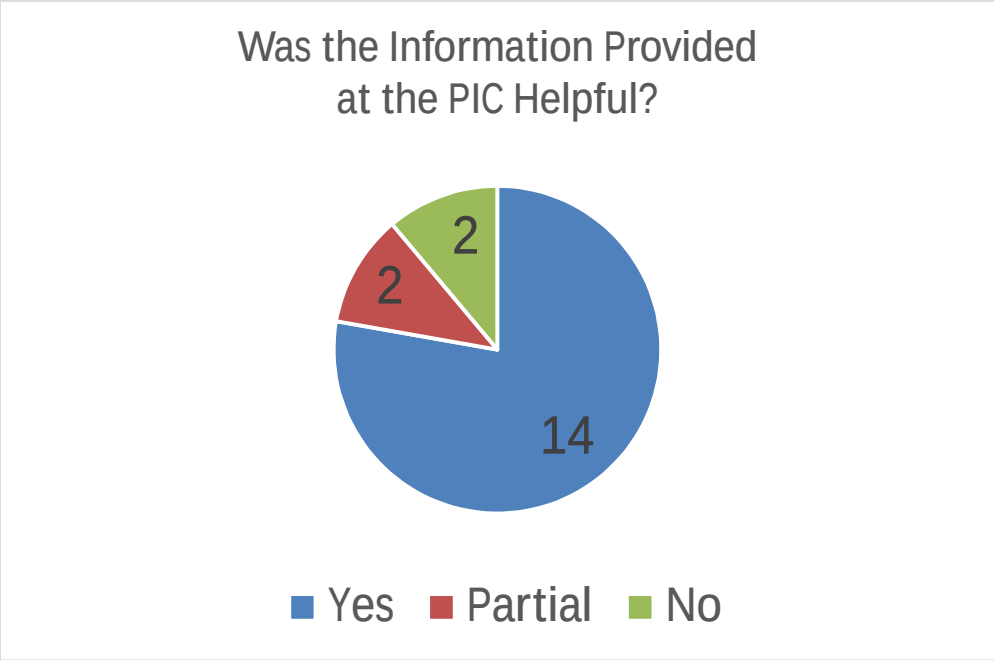
- Some participants expressed their desire to have the bridge built as soon as possible.
- One participant who supported a bridge alternative noted that the bridge would increase pedestrian and cyclist access to the hospital.

Other Suggestions and Comments

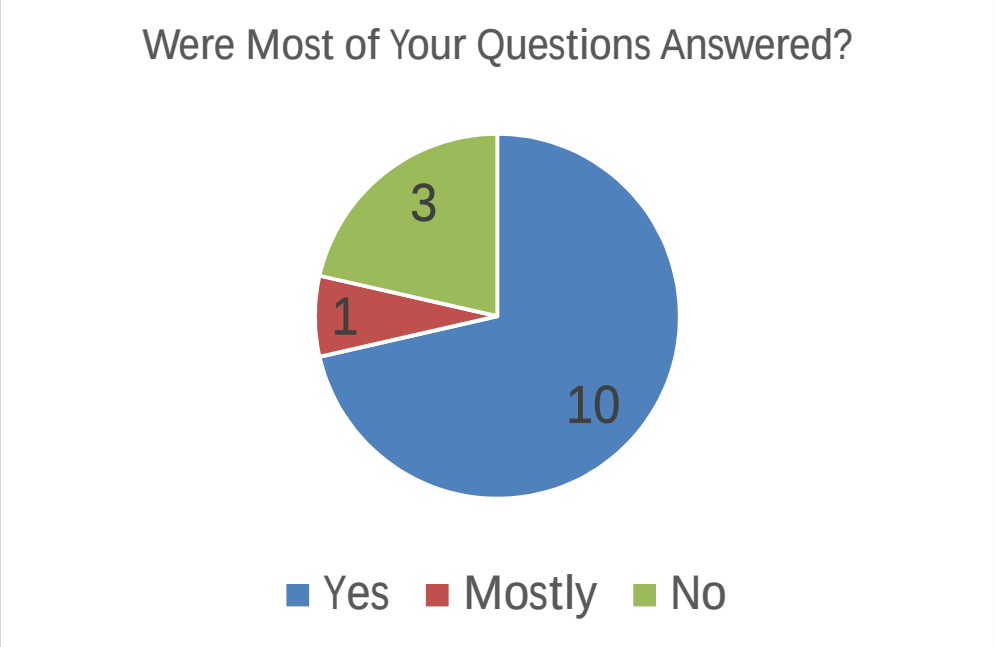
- One participant commented that if the bridge is built, sidewalks are not necessary on Dufferin due to very low levels of car traffic. The participant suggested a walking/biking chevron painted on the road instead.
- One participant disapproves of the plan to close existing trail infrastructure at Goldie Mill.

Feedback on PIC Materials and Format

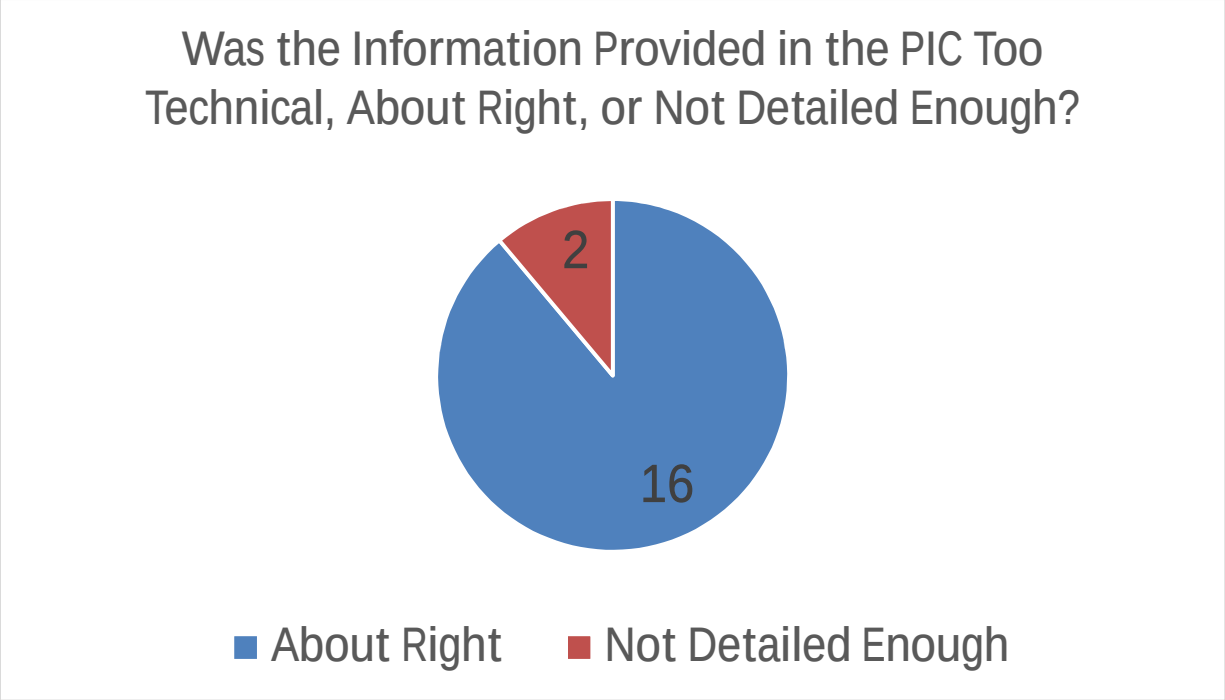
Participants were asked to comment on whether or not the information provided at the PIC was helpful. Of eighteen respondents, fourteen said yes, two said partially, and two said no.



Participants were asked if most of their questions were answered. Of fourteen respondents, ten said yes, one said mostly, and three said no.



Participants were asked if the information provided at the PIC was too technical, about right, or not detailed enough. Of eighteen respondents, sixteen said information provided was about right, and two said it was not detailed enough.



4. Next Steps

The project team will consider all feedback received in order to refine the evaluation of alternatives and recommended a final preferred alternative. A final preferred alternative, preliminary design, identification of appropriate mitigation efforts, and identification of approvals required will be available in the fall of 2017.

Appendix A – PIC Notice

Notice of Public Open House

Emma Street to Earl Street Bridge over the Speed River

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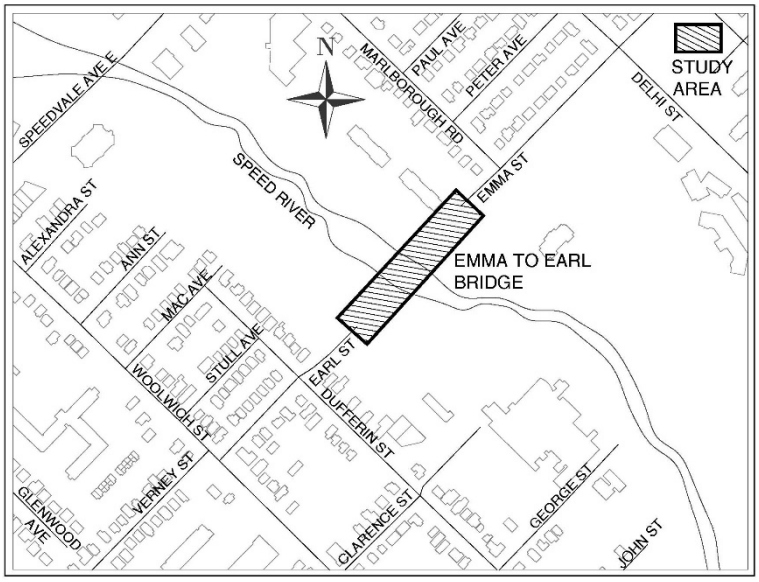


Why come to the open house?

This is your opportunity to view project information, and review the project team's evaluation of the alternatives and their recommended preferred alternative.

We encourage you to ask questions about plans for the existing bridge and to provide comments and feedback to City staff and consultants at the open house.

About the project

A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

For more information:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

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

This notice first issued May 10th, 2017.

Appendix B – Comment Form

Emma Street to Earl Street Bridge – Class Environmental Assessment

Public Information Centre #2
June 7, 2017, 6:00 p.m. – 8:00 p.m.
Evergreen Centre, 683 Woolwich St, Guelph

COMMENT FORM

Contact Information (optional):

Name: _____

Address: _____

Telephone Number: _____

Email: _____

o Add my Email Address to the Project Notification List

1. Existing Conditions

Background studies have been completed by the project team to better understand existing conditions in the study area. Please review the display panels summarizing the key results from the background studies listed below and let us know if you feel anything important has been missed or if you have any questions or concerns:

· Topography and utilities · Hydrology and hydraulics · Tree inventories · Fisheries and aquatic habitat · Natural heritage assessment	· Terrestrial natural heritage · Wildlife observations · Species at risk · Source water protection · Geology

2. Evaluation of Alternatives

Four alternatives have been identified and evaluated for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. These alternatives include: Alternative 1 – Steel Cable Single Span Bridge; Alternative 2 – Two-Span Steel Truss Bridge; Alternative 3 – Three-Span Steel Truss Bridge; and Null Alternative / Do Nothing (as required under a Municipal Class Environmental Assessment).

a) **Evaluation Criteria** – Please review the list of criteria below that have been used to evaluate the four alternatives and let us know if you feel anything important has been missed or if you have any questions or concerns.

Physical and Natural Criteria · Hydraulics and flooding · Aquatic habitat · Terrestrial Habitat	**Social and Cultural Criteria** · Public safety · Landowner impacts · Benefits to community · Cultural and archaeological impacts
Technical Criteria · Impacts on existing infrastructure · Lifespan of work	**Economic and Costing Criteria** · Capital costs (engineering, land and construction) · Annual operating and maintenance costs · Life cycle cost

b) **Preliminary Alternative Evaluation –** Please review the panels entitled "Preliminary Alternative Evaluation" and "Preliminary Alternative Evaluation Overview". Do you have any feedback on preliminary scoring of the alternatives or commentary provided by the project team?

c) **Preferred Alternative** – The preliminary scoring of the alternatives by the project team suggests Alternative 1 – Steel Cable Single Span Bridge as the preferred alternative. Do you support this outcome? Why or why not?

3. Additional Comments

Please share any additional comments that you have regarding any aspect of the study.

4. PIC / Information Summary

Was the information provided helpful to you?

Were all your questions answered?

Was the information provided:

☐ too technical ☐ about right ☐ not detailed enough

Thank you for your comments!

Please return completed forms to the Registration Table. Or if you would like more time, please return by June 21, 2017 to either contact listed below:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 Ext. 1236
amos.r@aquaforbeech.com

Personal information, as defined by the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA) is collected under the authority of the Municipal Act, 2001, and in accordance with the provisions of MFIPPA. Personal information on this form will be used to inform the Emma to Earl Street Bridge project. If you have questions about this collection; use, and disclosure of this information, contact the City of Guelph's Access, Privacy and Records Specialist at 519-822-1260 extension 2349 or jennifer.slater@guelph.ca

May 17, 2017
River System Advisory Committee

Item **Emma to Earl Pedestrian Bridge Study**
Ecological Studies (January 30, 2017)
Component of Schedule B Class EA

Proposal The City of Guelph (City) has initiated Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. The EA study will determine if a pedestrian bridge is needed at this location and if so, the style of bridge to be constructed.

Location The site location is within the City's right-of-way, across the river to join Emma to Earl Street. The study area includes the river valley corridor in the vicinity of ends of Emma and Earl street as well as 120 m upstream and downstream. See Attachments 1 and 2.

Background

- The Guelph Trail Master Plan (2005) examined network routing and identified locations where future bridge structures would be required, including a bridge in this location to provide a connection to the Downtown Trail. See Attachment 3.
- The 2009 Cycling Survey (n=400) identified Bullfrog Pond Mall at Stevenson Street and Eramosa Road as one of the top 5 cycling destinations in the City after Downtown, the University of Guelph and Stone Road Mall.
- The Cycling Master Plan Proposed Cycling Network (February 2012) shows proposed on-street bike lanes along Speedvale Avenue East for the whole width of the City. See Attachment 4.
- In 2015, Engineering Services undertook a road design project for Speedvale Avenue East from Manhattan Court to Woolwich Street. A preliminary design of a four lane road with bicycle lanes and sidewalks on both sides of the street was completed and resulted in significant property impacts to the adjacent land owners along Speedvale Avenue.
- Through extensive public consultation, the conclusion reached by staff was that it was not preferable to widen the road enough to include on-street bike lanes or other on-street infrastructure without significant cost and property impacts and that an alternative cycling route should be explored to join Emma Street to Earl Street/TransCanada Trail by means of a bridge.
- On July 20, 2015, Council determined that the 2009 Bike Policy and 2013 Cycling Master Plan would be amended to reroute the bike lanes identified for Speedvale Avenue from Manhattan Court to Woolwich Street to an alternate location on Emma Street.
- On that same date, staff were directed to commence an Environmental Assessment for a pedestrian bridge across the Speed River from the west end of Emma Street to the east end of Earl Street.
- In July 2016, A Notice of Study Commencement was issued to inform the public that the Environmental Assessment had been initiated.
- On October 25, 2016 a Public Information Centre was held to obtain community feedback on existing conditions, community interests and opportunities.
- Since then, technical studies in support of the EIS have been carried out.

Ecological Studies and Hydraulic Analyses were undertaken by Aquafor Beech Ltd.

Comments Environmental Planning Staff have reviewed the Ecological Studies in Support of the Proposed Emma to Earl Street Pedestrian Bridge Study dated January 30, 2017 and prepared by Aquafor Beech Ltd and offer the following comments for the committee's consideration.

1. **Context:** The following context, obtained through discussions with the City's Transportation Demand Management Program Manager, should be considered:

a) In providing the Emma-Earl bridge, cyclists could have a continuous network of either paved trail or on-road bike lanes* that are mostly flat and low-stress to connect them between Bullfrog Pond Mall and Downtown. Cyclists from east of the river will have a safe and comfortable route to access the Trans-Canada Trail network without having to use a busy arterial road with no cycling infrastructure, or going significantly out of their way to access the trail safely.

* Emma and Earl streets are low volume residential streets. The volumes and speed of traffic are sufficiently low that the majority of cyclists of all abilities are comfortable riding in mixed traffic without dedicated lanes

b) Without the Emma-Earl Bridge, cyclists either have to travel along Stevenson Street with some long and steep grades or along Speedvale Ave with high volumes and speeds and no cycling facilities east of the river to connect them to Stevenson or any alternative north-south routes.

2. **Characterization:** The site is characterized as follows:

a) The Speed River Valley and its associated wetlands, woodlands and fish & wildlife habitats is the most prominent natural heritage feature within the study area and is the only north-south ecological linkage connecting the Guelph Lake Conservation Area to the confluence of the Speed and Eramosa Rivers, and beyond.

b) The wetlands within the study area are locally significant and provide significant wildlife habitat.

c) The woodlands within the study area are Significant Woodlands. There are invasive species throughout the valley and predominantly in the woodland communities which presents opportunity for enhancement through management. A tree inventory was undertaken however it is not clearly legible. It should be noted that some of the trees on the valley wall are mature, large diameter trees which provide extensive cover.

d) The Speed River is managed as a coolwater system and is direct fish habitat. There are two islands within the river in the study area, one of which provides habitat for significant species (two plant species). The Speed River is a cobble bed river with well-vegetated banks within the study area, and is not undergoing any significant lateral channel migration. There is a riffle within the study area which provides protection to existing servicing which is present under the river. Average channel velocities are high through this reach of the river, and all flood events, up to and including regional, are contained within the valley. There are three storm outfalls in the river within the study area.

e) Significant Wildlife Habitats confirmed within the study area include: a seepage area on the north bank, snapping turtle habitat throughout the Speed river and

valley bottom lands. In addition and based on City policy, the ecological linkage (i.e., river valley) is considered SWH for its function as a movement corridor.

f) Through one botanical inventory (September 20, 2016), 107 plant species were identified, 64% of which are native to Ontario. Three plant species had narrow habitat tolerances and were located on the island (ELC polygon 4) within the river.

g) Habitat for Significant Species include: cut-leaved coneflower and riverbank wild-rye. While staff appreciate that Great Blue Heron utilize the river in this location, habitat for significant species would require evidence of breeding.

h) There is potential for bat habitat within the study area which would require further study to inform detailed design and ensure the City's compliance with the Endangered Species Act.

3. <u>Constraints and Opportunities:</u>

a) The report provides good context in terms of characterizing existing functions, however there is a lack of recommended buffers in relation to the proposal which would be helpful to confirm constraints. For example, is the OP minimum buffer of 15 m to locally significant wetland adequate in relation to the proposed transportation infrastructure project? What buffer width should be provided to SWH features and significant valleylands, if any?

b) While the City's OP does provide flexibility for the application of buffers existing developed areas, opportunities for restoration are also sought. Where there is currently vegetation within buffers to Significant Woodlands as opposed to infrastructure or buildings/parking, these areas should be noted as buffers within the study area. See Attachment 5.

c) The report should provide the context of constraints from a policy perspective. For example, according to policy, the abutments should be located outside of the most outer Significant Natural Area (SNA), significant woodlands an its buffer.

d) While the 5-yr, 50-yr and Regional flood elevations are provided to assist with the impact analysis, flooding levels between the 5-yr and 50-yr events are not provided and so it is not clear whether they were considered in the analysis. It would be helpful to understand where the 10 and 25-yr event flooding levels are.

4. <u>Impact and Policy Analysis:</u> There are three alternatives that are considered and which are analyzed for impacts. The following comments attempt to summarize the impact analysis and implications of each alternative.

a) General comments:

- Please provide metrics associated with each proposed alternative (i.e., hectares of woodland and wetland lost, estimated number of trees removed, etc.)
- It is not clear how dewatering would not potentially impact the seep area for alternative 2 and 3 given the footing location relative to groundwater flow direction and level.
- Is there a two-span bridge option where footings/abutments would not be required within wetlands and buffers or SWH?
- Remove the reference to 3:1 trees and 5:1 shrubs as compensation approach and replace with – a Vegetation Compensation Plan should

be developed during detailed design and should meet the City's minimum requirements through consultation with the Environmental Planner.

- The policy comparison table is appreciated and useful however additional analysis text would be beneficial.

b) Alternative 1: Single Span Bridge -

The single-span bridge would require abutments at both ends of the valley and presents the least amount of intrusion into the NHS, and little to no risk to geomorphic and hydraulic functions. The impact assessment identifies removal of Significant Woodlands as well as construction and operational disturbance. The scale and duration of impacts associated with this option are much less than the others. This is the only option where mitigation and compensation can be applied to result in an overall benefit to the NHS. From a policy perspective, this alternative fails to meet one of the applicable policies, however if an offsetting principle is applied, OP policy goals and objectives of the Natural Heritage System can be fulfilled through this option.

c) Alternative 2: Two-span Bridge -

The two-span bridge option would require abutments at both ends of the valley as well as a footing on the north valley wall. The footing is proposed within locally significant wetlands and significant wildlife habitat and is somewhere between the 5-yr and 50-yr flooding limit. The hydraulic analysis indicates that footings within flooding limits would require "ample scour protection". The impact analysis doesn't clearly reflect impacts associated with scour protection (i.e., permanent loss of habitat). The scale and duration of construction and operational impacts for this option are considerably more intense than Alternative 1 and are not able to be fully mitigated (i.e., wetland loss, impacts to SWH). The alternative does not meet a number of the City's NHS policies, and presents potential future issues to geomorphic and hydraulic processes (i.e., flooding may become more frequent and intense in an area with channel velocities that are already considered to be high and with a lack of SWM control between the north city limit and the site). The maintenance of the bridge would require continued disturbance within the valley to ensure the footing is well protected and not being undermined.

d) Alternative 3: Three-span Bridge –

The three-span bridge includes all impacts associated with alternative 2 and in addition includes a footing on the large island which is an important feature within the river valley from a geomorphic and natural heritage perspective. The island provides Habitat for Significant Species.). The scale and duration of construction and operational impacts for this option are more intense than Alternatives 1 & 2 and are not able to be fully mitigated (i.e., wetland loss, impacts to SWH). In addition to the impacts to the natural system, a footing on the island would result in a social impact to those who use the river for recreation such as canoe and kayak. This alternative is furthest from meeting City NHS policy with an increase in lack of ability to meet policy over Alternative 2.

5. **Preferred Alternative:** From a NHS perspective, Alternative 1 is the preferred alternative as it presents the least amount of impacts and includes options to mitigate and compensate. This alternative avoids risk to geomorphic and hydraulic processes and is the only alternative which in staff's opinion meets

the spirit and intent of City NHS policy. The Project File report should be clear in communicating the difference between Alternative 1 (Span Bridge) and the other Alternatives (Two or Three Span Bridges) from geomorphic, hydraulic and natural heritage perspectives.

Additional information from the Ecological Studies which would be useful to inform the Project File include:

- Additional flood information (i.e., 10 yr and 25 yr);
- Metrics to quantify impacts to natural heritage system (i.e., hectares of wetland and SWH lost, estimated number of trees lost, etc.);
- Additional detail related to the footprint of the proposed footing in the valley (i.e., short-term and long-term disturbance to install footing within the valley and what constitutes ample scour protection);
- Refinement of buffer recommendations.

6. <u>Recommendations:</u>

a) The following Technical Studies and Plans are required to inform detailed design:

- Feature delineation;
- Surveys for bat habitat during leaf off period;
- Detailed Tree Inventory and Preservation Plan that seeks to preserve mature large caliper trees which provide substantial canopy cover;
- Detailed floral inventory that covers the disturbance area in detail;
- Detailed Mitigation Plans for short-term and long-term impacts including avoidance such as keeping the area of construction disturbance to a minimum, etc.;
- Detailed Restoration and Enhancement Plans including invasive species management, woodland management, habitat enhancements and vegetation compensation.

b) Mitigation measures to be incorporated into future technical studies are outlines in Table 7.1 and on page 48 of the Ecological Studies report and includes items such as timing windows, including garbage receptacles, and considering options to minimize impacts from bridge maintenance (i.e., lighting and de-icing).

Suggested Motion

THAT the River System Advisory Committee conditionally support the selection of Alternative 1: Single span bridge as the preferred bridge alternative as it is the only option that ensures the long term protection of the NHS and it meets the goals and objectives of City policy; and

THAT the Project File for the Environmental Assessment clearly indicate, through scoring of alternatives, that Alternative 1: Single Span Bridge is preferred from a natural environment technical perspective and that the report include the following information based on updates to the Ecological Studies, as needed:

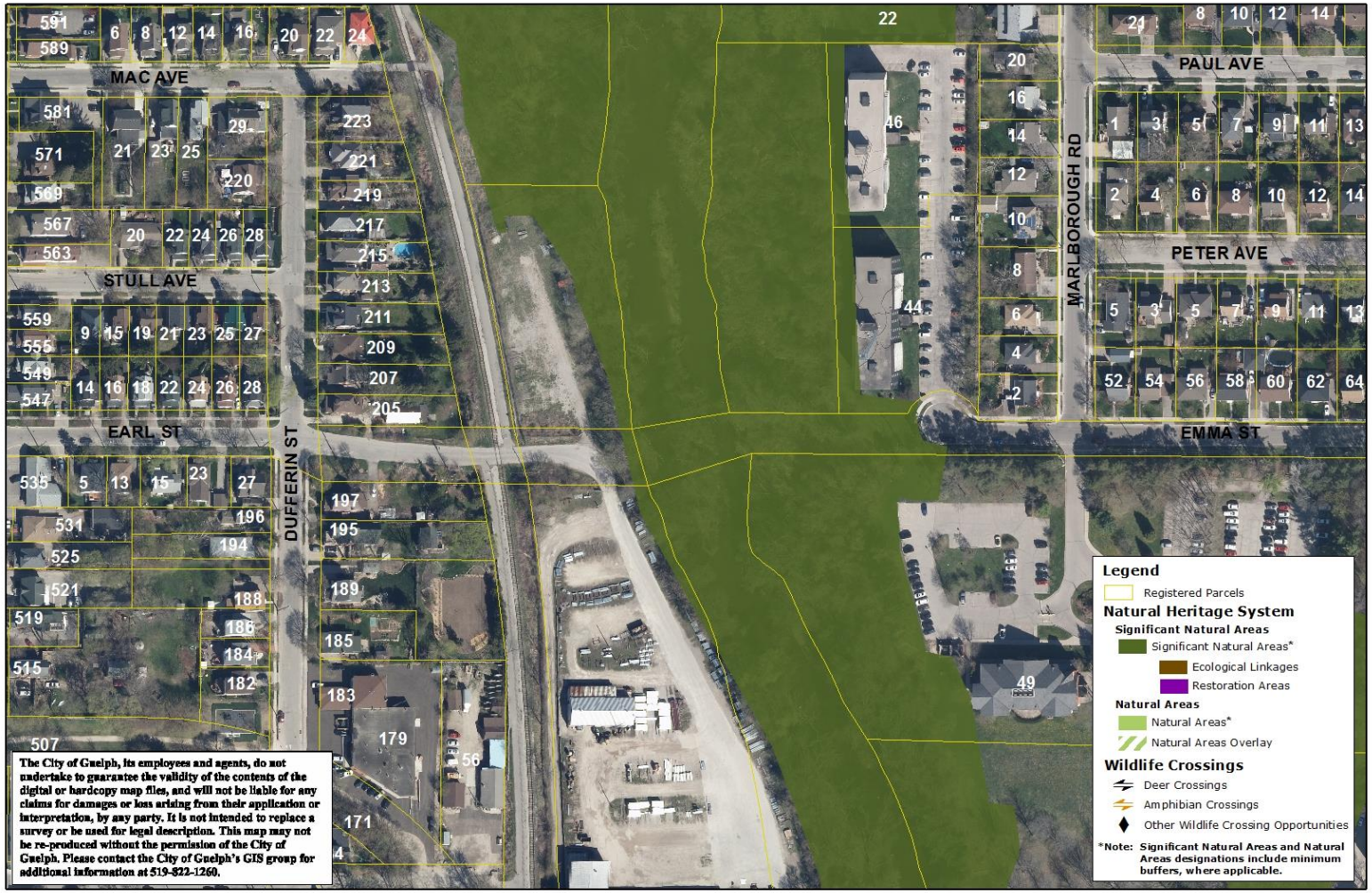
- **Additional flood information (i.e., 10 yr and 25 yr);**
- **Metrics to quantify impacts to natural heritage system (i.e., hectares of wetland and SWH lost, estimated number of trees lost, etc.);**

- **Additional detail related to the footprint of the proposed footing in the valley (i.e., disturbance to install footing within the valley and what constitutes ample scour protection);**
- **Refinement of buffer recommendations; and**

THAT the following studies are undertaken to inform detailed design:

- **Feature delineation;**
- **Surveys for bat habitat during leaf off period;**
- **Detailed Tree Inventory and Preservation Plan that seeks to preserve mature large caliper trees which provide substantial canopy cover;**
- **Detailed floral inventory that covers the disturbance area in detail;**
- **Detailed Mitigation Plans for short-term and long-term impacts;**
- **Detailed Restoration and Enhancement Plans.**

Attachment 1- Natural Heritage System



Attachment 1- Ecological Land Classification

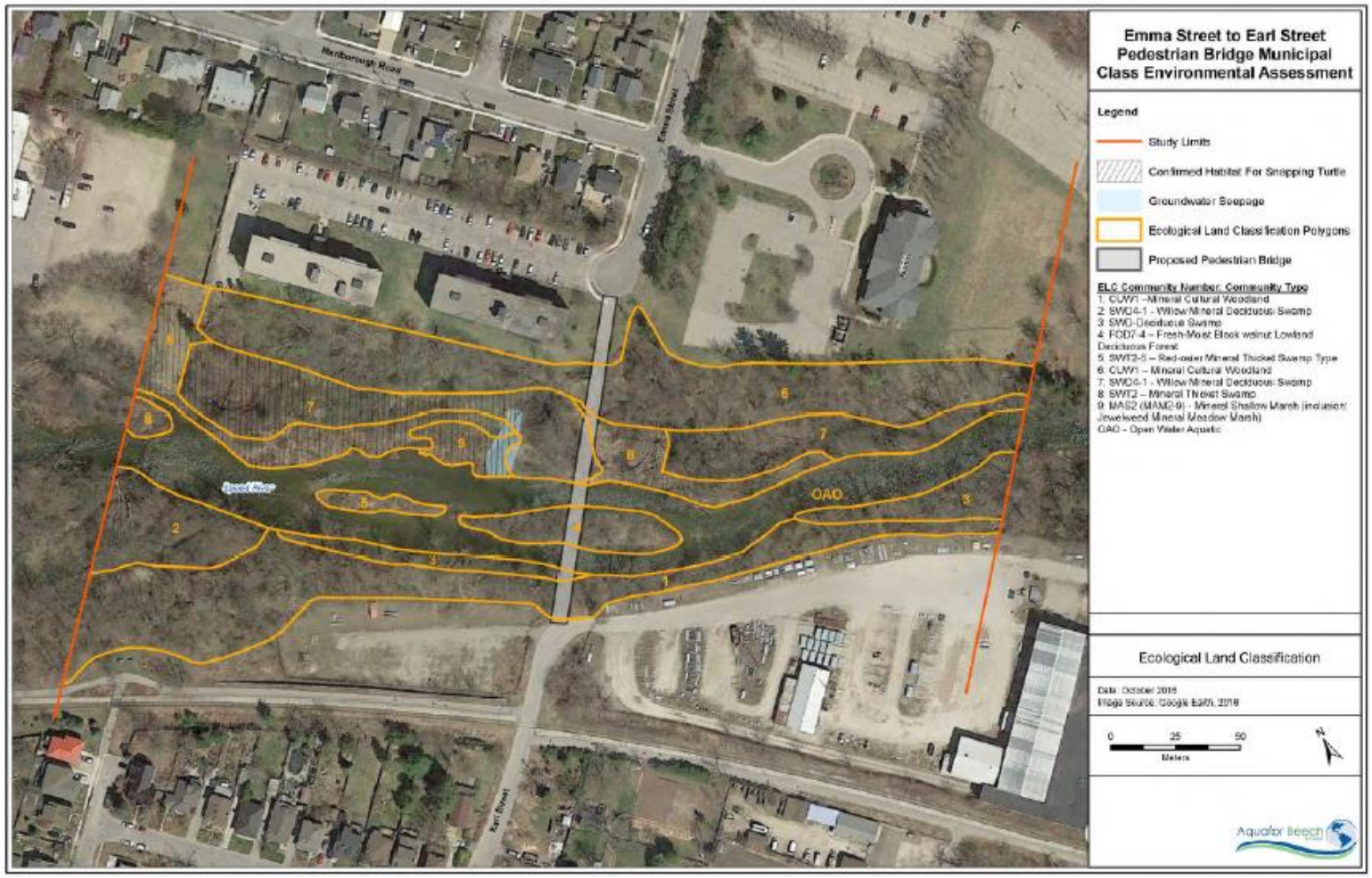
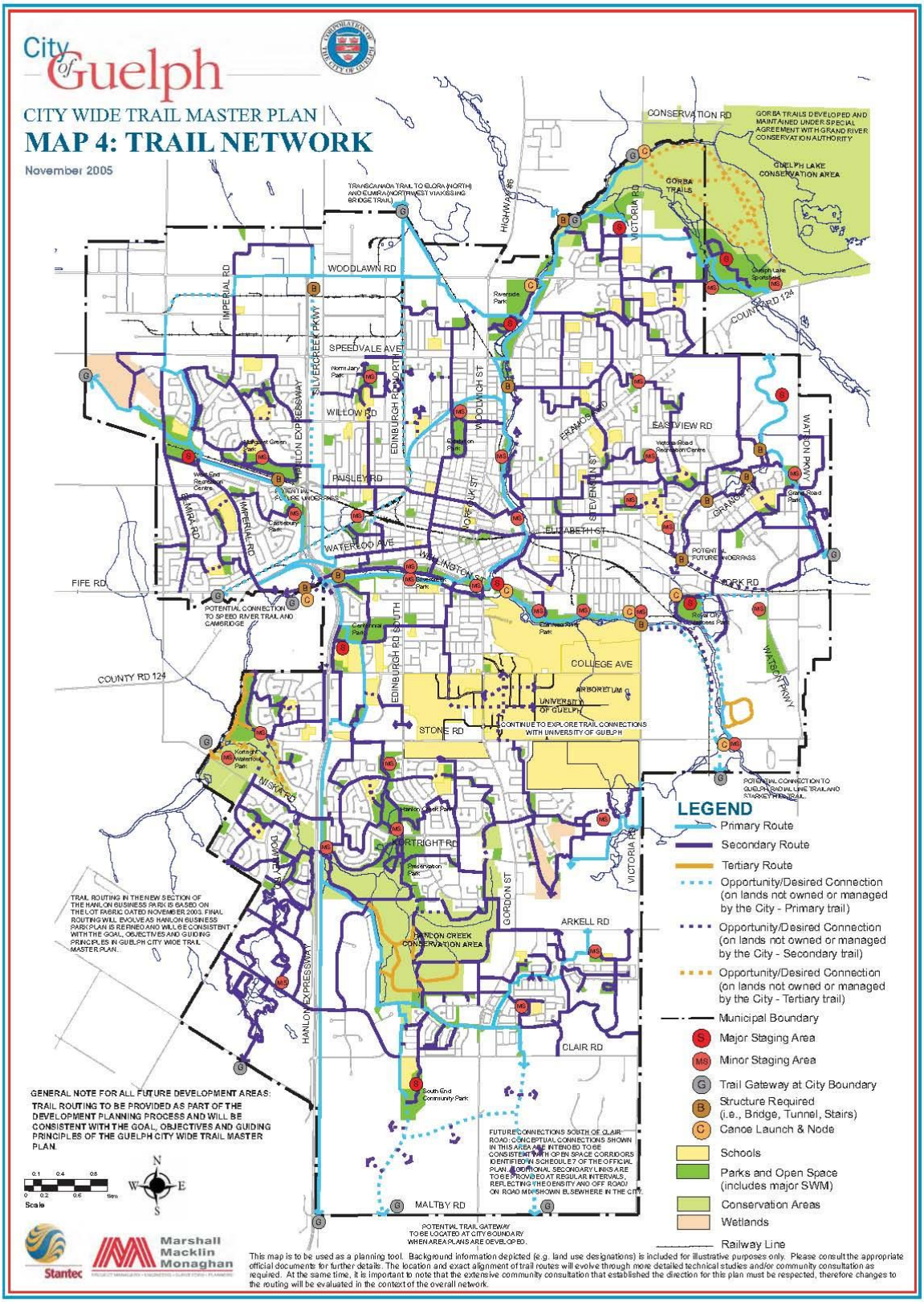
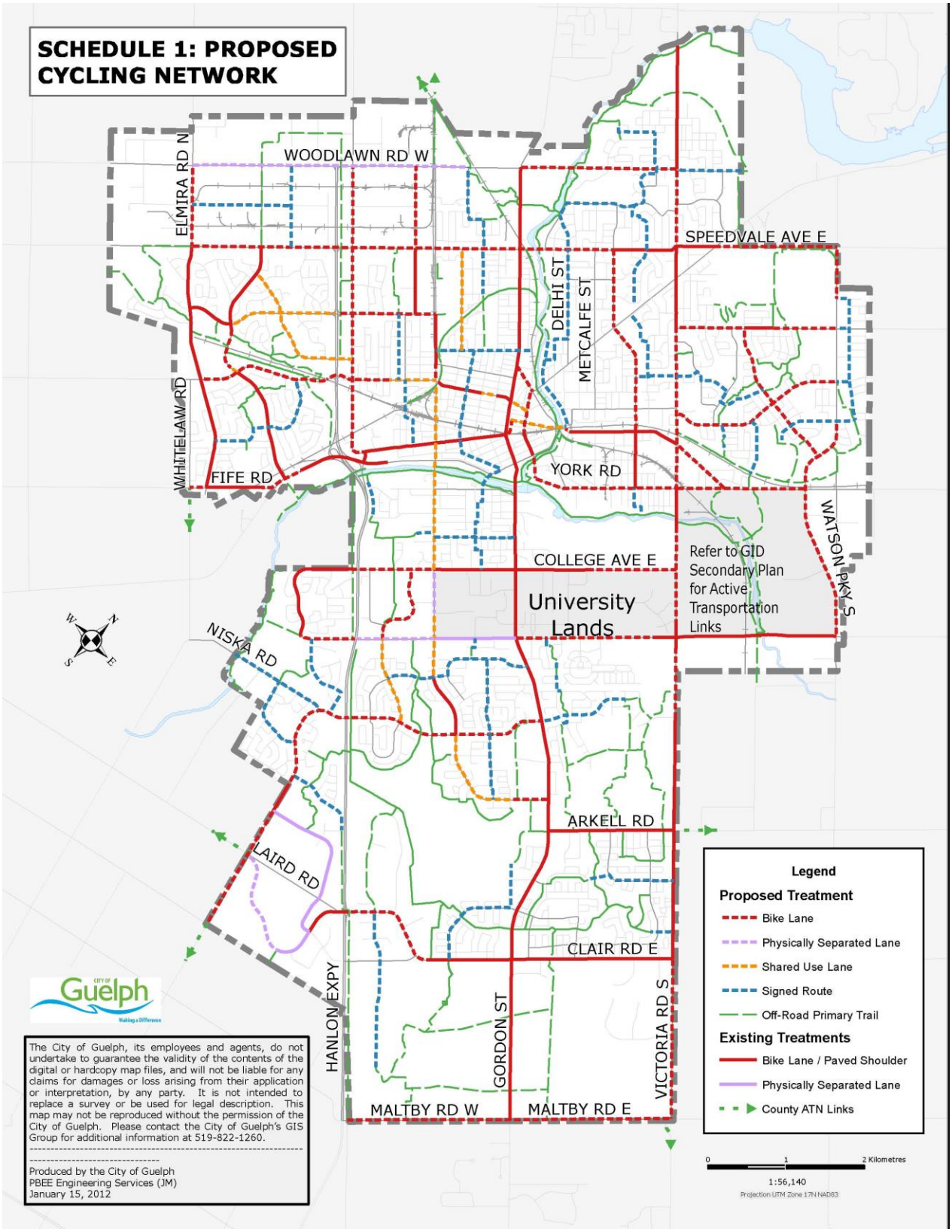


Figure 5.2: Vegetation Communities and Significant Wildlife Habitat

Attachment 3 – Guelph Trail Master Plan



Attachment 4 – Proposed Cycling Network



Attachment 5 – Constraints and Opportunities

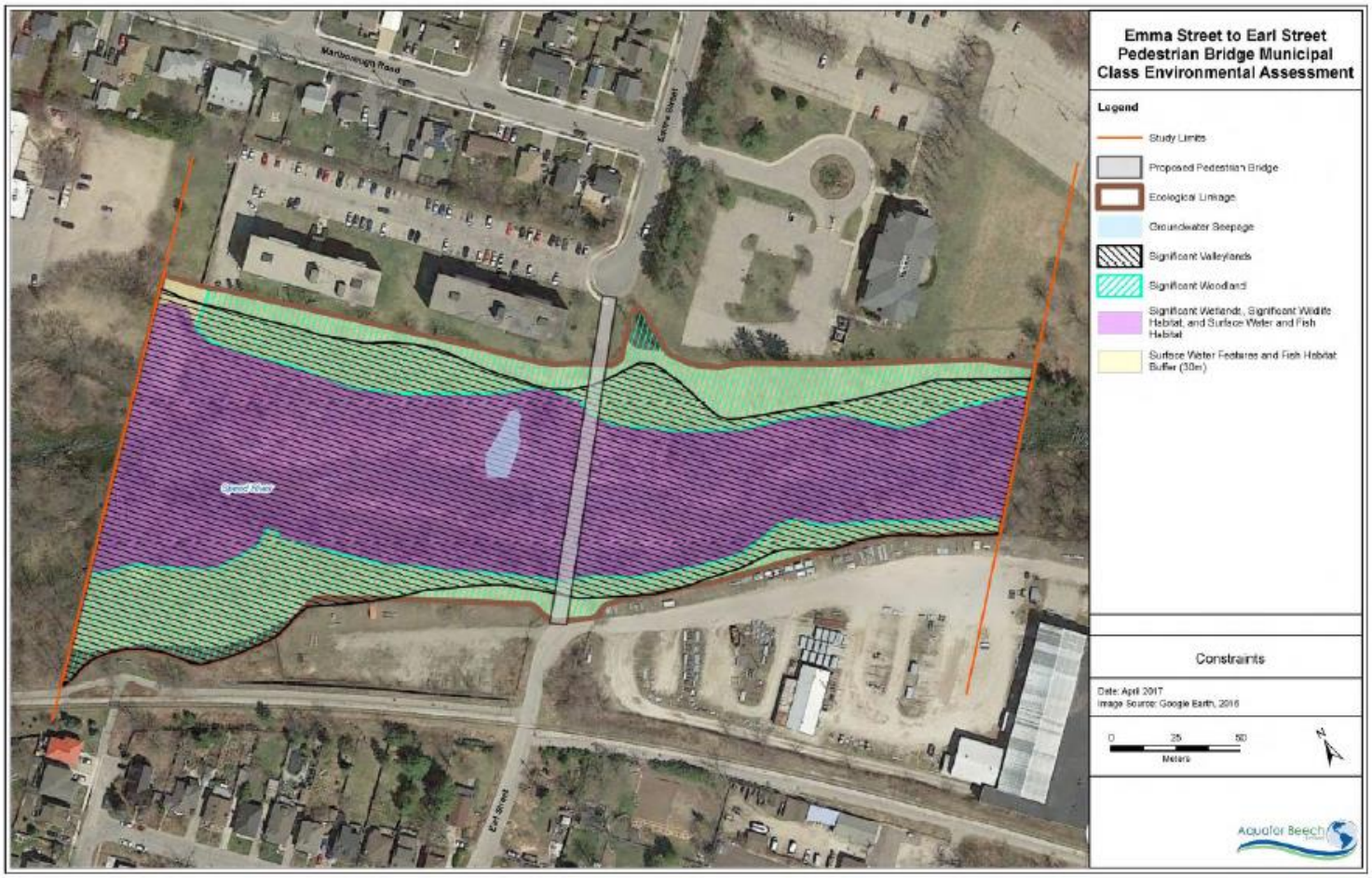


Figure 6.1: NHS Features within the Study Area

February 11th, 2019

Attn: Mr. Ken VanderWal P.Eng., Project Engineer,
City of Guelph, Engineering and Transportation Services
Tel: 519.822.1260 x 2319 Email: ken.vanderwal@guelph.ca

cc: Ms. Leah Lefler
City of Guelph, Environmental Planner
Tel: 519.822.1260 Email: Leah.Lefler@guelph.ca

Re: Draft RSAC Report for Emma to Earl EA

Dear Ken and Leah,

Please find a draft RSAC report for the Emma to Earl Pedestrian Bridge Update.

Item

Emma to Earl Pedestrian Bridge Study
Update to Preferred Alternative Recommendation
Component of Schedule B Class EA

Proposal

The City of Guelph (City) has initiated Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. The EA study will determine if a pedestrian bridge is needed at this location and if so, the style of bridge to be constructed.

Location

The site location is within the City's right-of-way, extending across the Speed River from Emma Street to Earl Street, as shown in **Figure 1**. The study area extends across the river corridor, defined as a Significant Natural Area within the City's Natural Heritage system, as shown in **Figure 2**.

Background

The Guelph Trail Master Plan (2005) examined network routing and identified locations where future bridge structures would be required, including a bridge in this location to provide a connection to the Downtown Trail, as illustrated in **Figure 3**.

The 2009 Cycling Survey (n=400) identified Bullfrog Pond Mall at Stevenson Street and Eramosa Road as one of the top 5 cycling destinations in the City after Downtown, the University of Guelph and Stone Road Mall.

The Cycling Master Plan Proposed Cycling Network (February 2012) shows proposed on-street bike lanes along Speedvale Avenue East for the whole width of the City, as shown in Figure 4.

In 2015, Engineering Services undertook a road design project for Speedvale Avenue East from Manhattan Court to Woolwich Street. A preliminary design of a four lane road with bicycle lanes and sidewalks on both sides of the street was completed and resulted in significant property impacts to the adjacent land owners along Speedvale Avenue.

Through extensive public consultation, the conclusion reached by staff was that it was not preferable to widen the road enough to include on-street bike lanes or other on-street infrastructure without significant cost and property impacts and that an alternative cycling route should be explored to join Emma Street to Earl Street/TransCanada Trail by means of a bridge.

On July 20, 2015, Council determined that the 2009 Bike Policy and 2013 Cycling Master Plan would be amended to reroute the bike lanes identified for Speedvale Avenue from Manhattan Court to Woolwich Street to an alternate location on Emma Street.

On that same date, staff were directed to commence an Environmental Assessment for a pedestrian bridge across the Speed River from the west end of Emma Street to the east end of Earl Street.

In July 2016, A Notice of Study Commencement was issued to inform the public that the Environmental Assessment had been initiated.

On October 25, 2016 a Public Information Centre was held to obtain community feedback on existing conditions, community interests and opportunities.

On May 17th, 2017 this project was presented to the River Systems Advisory Committee (RSAC), with four alternatives including: Null Alternative / Do Nothing; Alternative 1 – Steel Cable Single Span Bridge; Alternative 2 –Two-Span Steel Truss Bridge; Alternative 3 – Three-Span Steel Truss Bridge.

RSAC conditionally supported the selection of a single span bridge as the preferred bridge alternative, with recommendations for further ecological studies to be incorporated in the Project File.

On June 5th, 2017 a second Public Information Centre was held to present four alternatives for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River, as well as seek community feedback on the evaluation of alternatives for the bridge and the Preferred Alternative outcome.

Twenty-four participants provided feedback about the Preferred Alternative. Half of the participants supported the preferred alternative. Participants in support of the preferred alternative stated that they supported the choice because:

- *There is a significant need for cycling and pedestrian access between east and west neighbourhoods (alternative to Speedvale) and expanding the active transportation network in Guelph;*
- *It allows for the lowest impact on the surrounding environment;*
- *Any bridge is better than no bridge;*

The other half of the participants expressed their disapproval of the preferred alternative and provided the following justification:

- *Participants disapproved of the high cost associated with the preferred alternative, as it is the most expensive option. One participant also commented that many costs were not factored into the pricing evaluation including installing and maintaining sidewalks, policing, lighting, environmental protection, and cleanup.*
- *Participants commented that there are other projects that the City should prioritize ahead of this project, including an update of the Trails Master Plan, addressing the unsafe crossing at Speedvale and Eramosa, extending trails to get cyclists off roads, installing curb cuts for cyclists, and other cycling issues. Further, participants commented that the case for prioritizing this project over others is not clear.*
- *One participant suggested that there is not enough demand to justify the construction of the bridge.*
- *One participant shared technical concerns that the span length of the preferred alternative is too long and will be prone to sideway swaying in the future.*
- *One participant disapproved of the preferred alternative (and all of the bridge options) because they were said to be aesthetically unattractive.*
- *Participants disapproved of the evaluation criteria, and therefore the evaluation outcome, with one participant commenting that the scope of the EA is too narrow overall to produce a well-informed evaluation of alternatives.*
- *One participant stated that the preferred alternative would produce too much environmental disruption (including increased garbage, dumping, and habitat disturbance).*
- *Participants disapproved of how safety considerations were factored into the preferred alternative. Participants noted that the negative impacts on neighbourhood and trail user safety due to the necessary crossing at the Armtec Plant, and the potential rise in crime were not adequately considered. One participant also commented that current safety impacts of the Speedway for cyclists should not have been factored into the evaluation as the street is set to be widened, and therefore made safer for cyclists*

Comments

Environmental Planning Staff have reviewed the Ecological Studies in Support of the Proposed Emma to Earl Street Pedestrian Bridge Study dated January 30, 2017, and have visited the site with GRCA and Aquafor staff to undertake additional environmental inventories, notably staking of the wetlands. Additional

1. Context:

The following context, obtained through discussions with the City's Transportation Demand Management Program Manager, should be considered:

a) In providing the Emma-Earl bridge, cyclists could have a continuous network of either paved trail or on-road bike lanes* that are mostly flat and low-stress to connect them between Bullfrog Pond Mall and Downtown. Cyclists from east of the river will have a safe and comfortable route to access the Trans-Canada Trail network without having to use a busy arterial road with no cycling infrastructure, or going significantly out of their way to access the trail safely.

*Emma and Earl streets are low volume residential streets. The volumes and speed of traffic are sufficiently low that the majority of cyclists of all abilities are comfortable riding in mixed traffic without dedicated lanes

b) Without the Emma-Earl Bridge, cyclists either have to travel along Stevenson Street with some long and steep grades or along Speedvale Ave with high volumes and speeds and no cycling facilities east of the river to connect them to Stevenson or any alternative north-south routes.

2. Chracterization:

a) The Speed River Valley and its associated wetlands, woodlands and fish & wildlife habitats is the most prominent natural heritage feature within the study area and is the only north-south ecological linkage connecting the Guelph Lake Conservation Area to the confluence of the Speed and Eramosa Rivers, and beyond.

b) The wetlands within the study area are locally significant and provide significant wildlife habitat. These wetlands have been staked and surveyed, and are presented within

c)

d) The woodlands within the study area are Significant Woodlands. There are invasive species throughout the valley and predominantly in the woodland communities which presents opportunity for enhancement through management. A tree inventory was undertaken, and is included in . It should be noted that some of the trees on the valley wall are mature, large diameter trees which provide extensive cover.

e) The Speed River is managed as a coolwater system and is direct fish habitat. There are two islands within the river in the study area, one of which provides habitat for significant species (two plant species). The Speed River is a cobble bed river with well-vegetated banks within the study area, and is not undergoing any significant lateral channel migration. There is a riffle within the study area which provides protection to existing servicing which is present under the river. Average channel velocities are high through this reach of the river, and all flood events, up to and including regional, are contained within the valley. There are three storm outfalls in the river within the study area.

f) Significant Wildlife Habitats confirmed within the study area include: a seepage area on the north bank, snapping turtle habitat throughout the Speed River a valley bottom lands. In addition and based on City policy, the ecological linkage (i.e., river valley) is considered SWH for its function as a movement corridor.

g) Through botanical inventories, 107 plant species were identified, 64% of which are native to Ontario. Three plant species had narrow habitat tolerances and were located on the island within the river.
h) Habitat for Significant Species include: cut-leaved coneflower and riverbank wild-rye. While staff appreciate that Great Blue Heron utilize the river in this location, habitat for significant species would require evidence of breeding.
i) Bat habitat exists within the study area which will require further study to inform detailed design and ensure the City's compliance with the Endangered Species Act.

3. Opportunities & Alternatives:

The two alternatives being carried forward for further analysis inlcude:

Alternative 1: Single Span Bridge (Figure 7)

The single span bridge would entail abutments at both ends of the valley, which presents the least amount of intrusion into the NHS, and little to no risk to geomorphic and hydraulic functions. The impact assessment identifies removal of Significant Woodlands as well as construction and operational disturbance. The scale and duration of impacts associated with this option are less than Alternative 2. From a policy perspective, this alternative fails to meet all applicable policies, as the bridge abutments would be inset into the Natural Heritage System (Mineral Cultural Woodlands), and require some clearing of trees within close proximity of the planform arrangement of the bridge. Impacts may be offset through specific arrangement of the bridge to limit removals of mature trees, as well as compensation planting of new trees within the NHS.

Alternative 2: Two Span Bridge Through Hydro Corridor (Figure 8)

The two span bridge option would require abutments at both ends of the valley, similar to that of Alternative 1, as well as a central abutment closer to the top of channel bank, within the locally significant wetland. The alignment of this alternative has been defined to limit impacts to vegetation or wildlife habitat, as it coincides with the previously disturbed corridor which is actively maintained by Guelph Hydro (Alectra). Relocation of two existing hydro poles away from the bridge would be included within this alternative,

Figure 1. Emma to Earl Pedestrian Bridge Study Area.

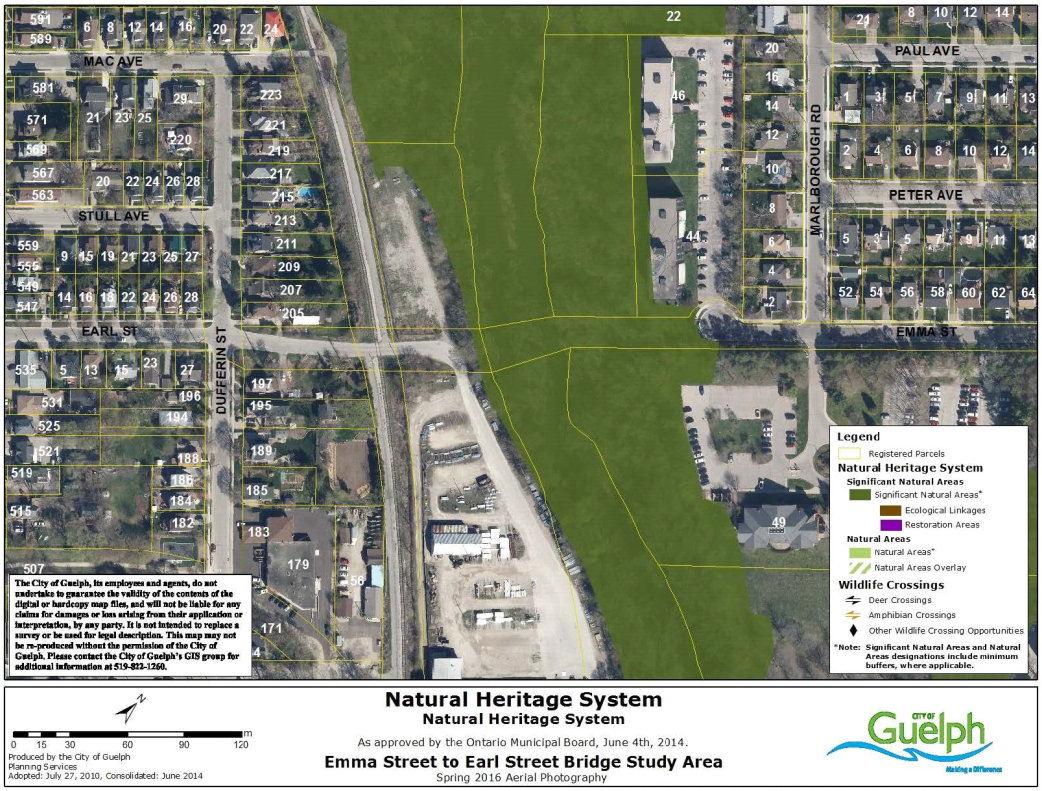


Figure 2. Study Area Natural Heritage System and Property Parcels.

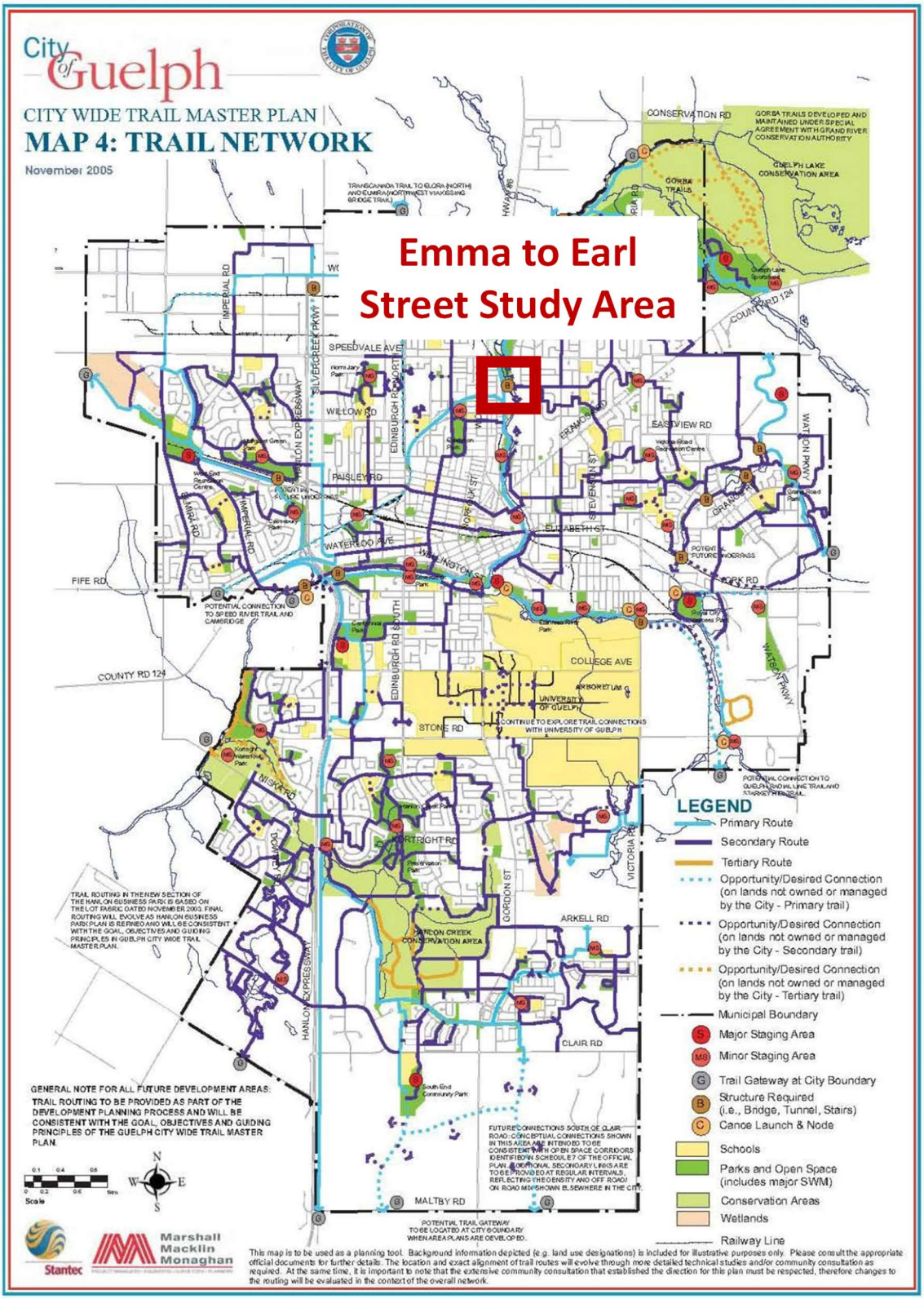


Figure 3. Guelph Cycling Master Plan Map Illustrating Structure Required between Emma & Earl Streets (2005)

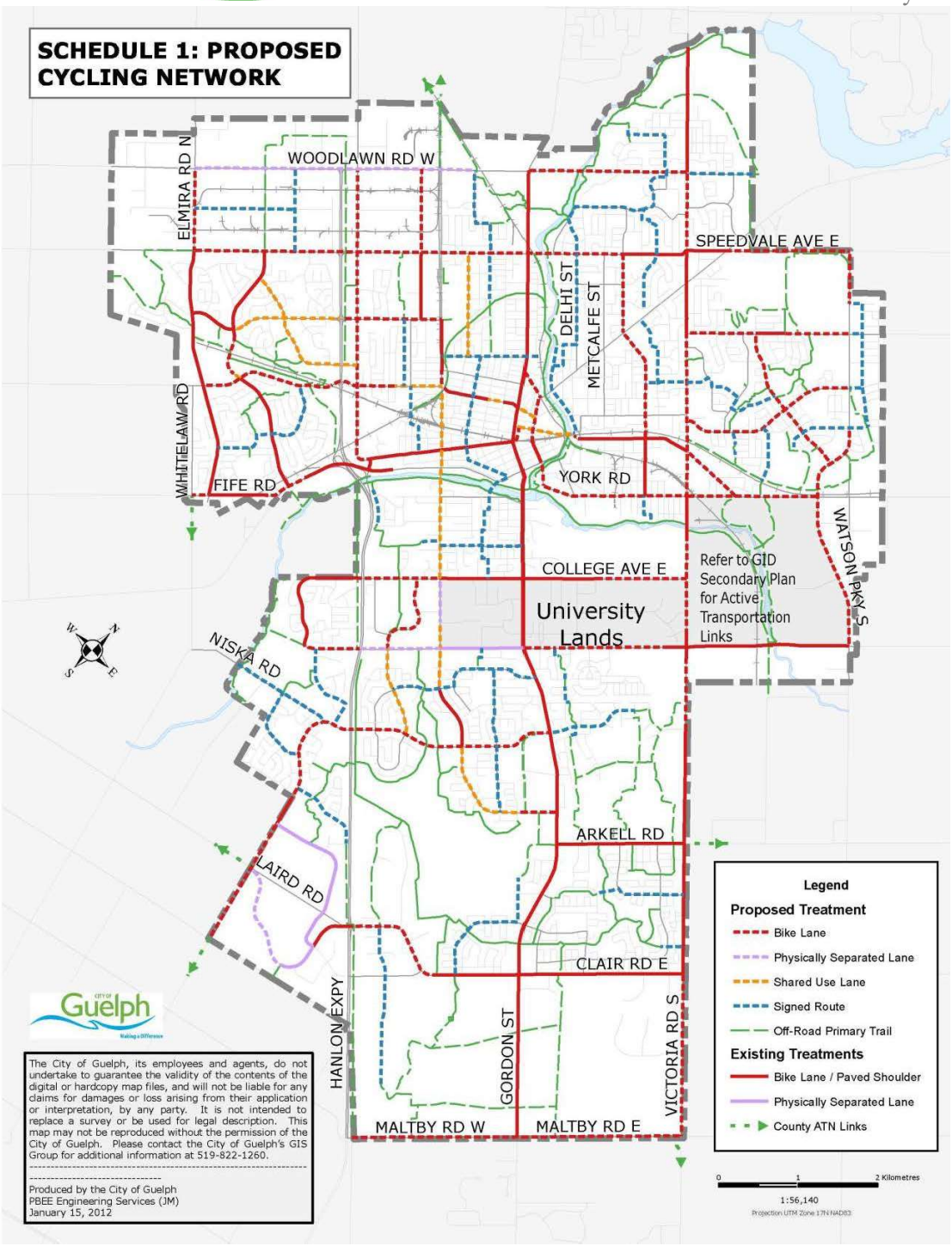


Figure 4. ***Cycling Master Plan Proposed Cycling Network (2012).***

Figure 5. Tree Inventory within Potential Area of Impact.

Figure 6. Arboi

Tag #	Species Common Name	Species Botanical Name	DBH (cm)	Tag #	Species Common Name	Species Botanical Name	DBH (cm)
934	Small leaved Linden	*Tilia cordata*	17	976	Black Locust	*Robinia pseudoacacia*	23,9
935	Black Walnut	*Juglans nigra*	37	977	Black Locust	*Robinia pseudoacacia*	16
936	Siberian Elm	*Ulmus pumila*	56	978	Black Locust	*Robinia pseudoacacia*	14,8
937	Crack Willow	*Salix fragilis*	61	979	Manitoba Maple	*Acer negundo*	18
938	Crack Willow	*Salix fragilis*	68	980	Manitoba Maple	*Acer negundo*	[14,18,26, 19,10]
939	Manitoba Maple	*Acer negundo*	26	981	Crack Willow	*Salix fragilis*	46
940	Black Walnut	*Juglans nigra*	12	982	Black Walnut	*Juglans nigra*	31
941	Manitoba Maple	*Acer negundo*	26,23,16,2 6	983	Black Walnut	*Juglans nigra*	12
942	Manitoba Maple	*Acer negundo*	35	984	Black Walnut	*Juglans nigra*	[27,19]
943	Crack Willow	*Salix fragilis*	(32,40,38, 36)	985	Crack Willow	*Salix fragilis*	131
944	Manitoba Maple	*Acer negundo*	(16,21,17)	986	Manitoba Maple	*Acer negundo*	18,13,29, 23
945	Crack Willow	*Salix fragilis*	(41,39)	987	Black Walnut	*Juglans nigra*	22
946	Norway Maple	*Acer platanoides*	26	988	Manitoba Maple	*Acer negundo*	43
947	Manitoba Maple	*Acer negundo*	21	989	Manitoba Maple	*Acer negundo*	45,28
948	Norway Maple	*Acer platanoides*	19	990	Manitoba Maple	*Acer negundo*	19
949	Norway Maple	*Acer platanoides*	21	991	Black Locust	*Robinia pseudoacacia*	20,17,10
950	Crack Willow	*Salix fragilis*	58	992	Manitoba Maple	*Acer negundo*	23,26,30
951	Crack Willow	*Salix fragilis*	75,66	993	Manitoba Maple	*Acer negundo*	26
952	White Elm	*Ulmus americana*	21,29	994	White Elm	*Ulmus americana*	16
953	Manitoba Maple	*Acer negundo*	11,27	NT1	Black Locust	*Robinia pseudoacacia*	11
954	Manitoba Maple	*Acer negundo*	40	NT2	Black Locust	*Robinia pseudoacacia*	10
955	Crack Willow	*Salix fragilis*	80	NT3	Black Locust	*Robinia pseudoacacia*	11
956	White Elm	*Ulmus americana*	26	NT4	Black Locust	*Robinia pseudoacacia*	14
957	Crack Willow	*Salix fragilis*	62,(46,46)	NT5	Black Locust	*Robinia pseudoacacia*	13
958	Manitoba Maple	*Acer negundo*	34	NT6	Black Locust	*Robinia pseudoacacia*	14
959	Manitoba Maple	*Acer negundo*	16,10	NT7	Black Locust	*Robinia pseudoacacia*	17
960	Manitoba Maple	*Acer negundo*	18	NT8	Black Locust	*Robinia pseudoacacia*	14
961	Crack Willow	*Salix fragilis*	74	NT9	Black Locust	*Robinia pseudoacacia*	17,15
962	Manitoba Maple	*Acer negundo*	42	NT10	Black Locust	*Robinia pseudoacacia*	18,19,15
963	Manitoba Maple	*Acer negundo*	60	NT11	Black Locust	*Robinia pseudoacacia*	11
964	Manitoba Maple	*Acer negundo*	26	NT12	Black Locust	*Robinia pseudoacacia*	16,20
965	Crack Willow	*Salix fragilis*	72,71	NT13	Black Locust	*Robinia pseudoacacia*	14
966	Manitoba Maple	*Acer negundo*	28	NT14	Black Locust	*Robinia pseudoacacia*	18
967	White Elm	*Ulmus americana*	11	NT15	Black Locust	*Robinia pseudoacacia*	26
968	Manitoba Maple	*Acer negundo*	17	NT16	Black Locust	*Robinia pseudoacacia*	17
969	Black Walnut	*Juglans nigra*	11	NT17	White Elm	*Ulmus americana*	15
970	Black Walnut	*Juglans nigra*	16	NT18	Black Locust	*Robinia pseudoacacia*	19
971	Black Walnut	*Juglans nigra*	33	NT19	Black Walnut	*Juglans nigra*	n/a
972	Black Locust	*Robinia pseudoacacia*	30	NT20	Black Walnut	*Juglans nigra*	n/a
973	Black Walnut	*Juglans nigra*	26	NT21	Black Walnut	*Juglans nigra*	n/a
974	Black Locust	*Robinia pseudoacacia*	20	NT22	Black Walnut	*Juglans nigra*	n/a
975	Black Locust	*Robinia pseudoacacia*	15	NT23	Black Walnut	*Juglans nigra*	n/a

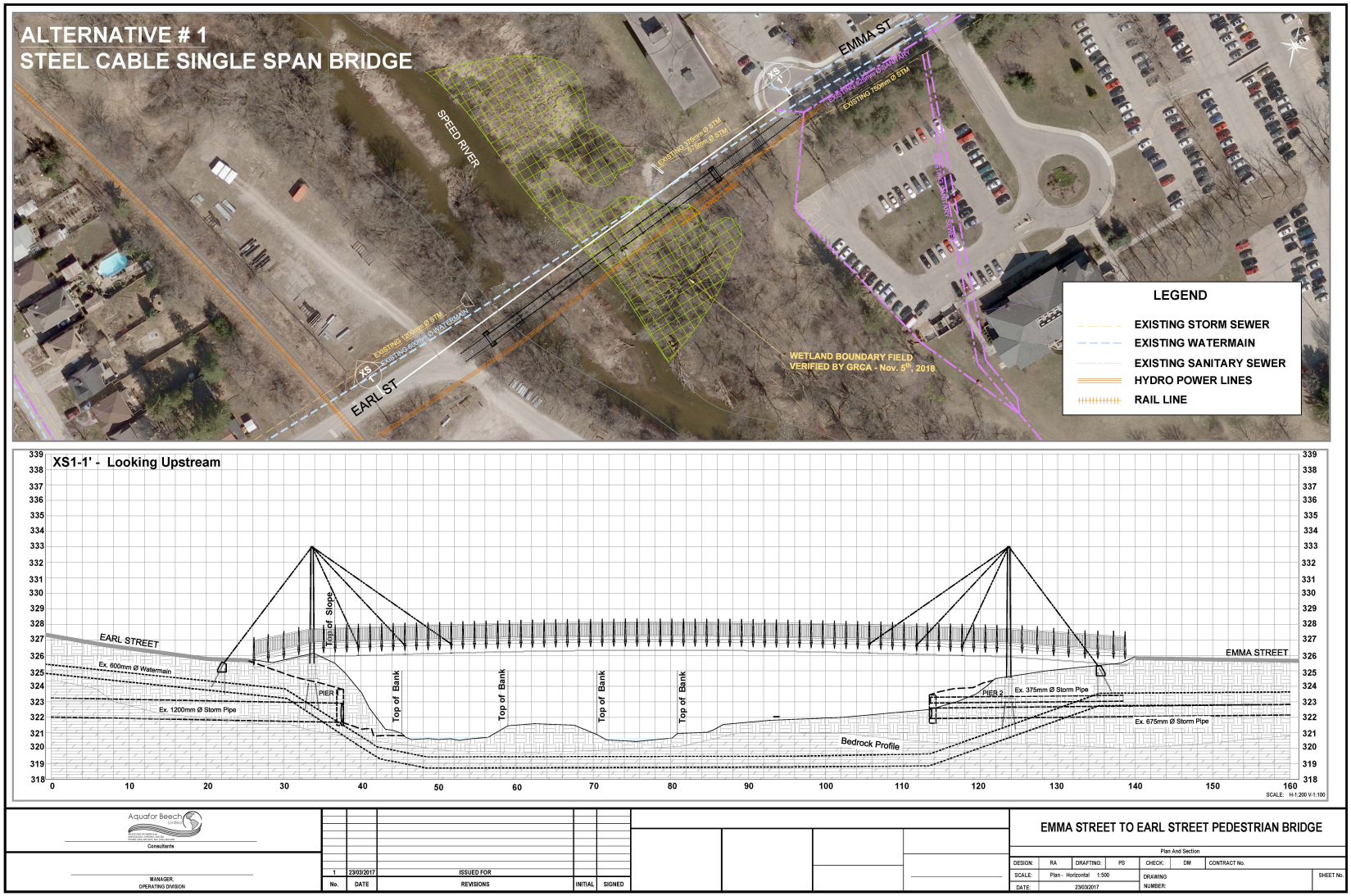


Figure 7. Alternative 1 – Single Span Steel Cable with Abutments in Cultural Woodland.

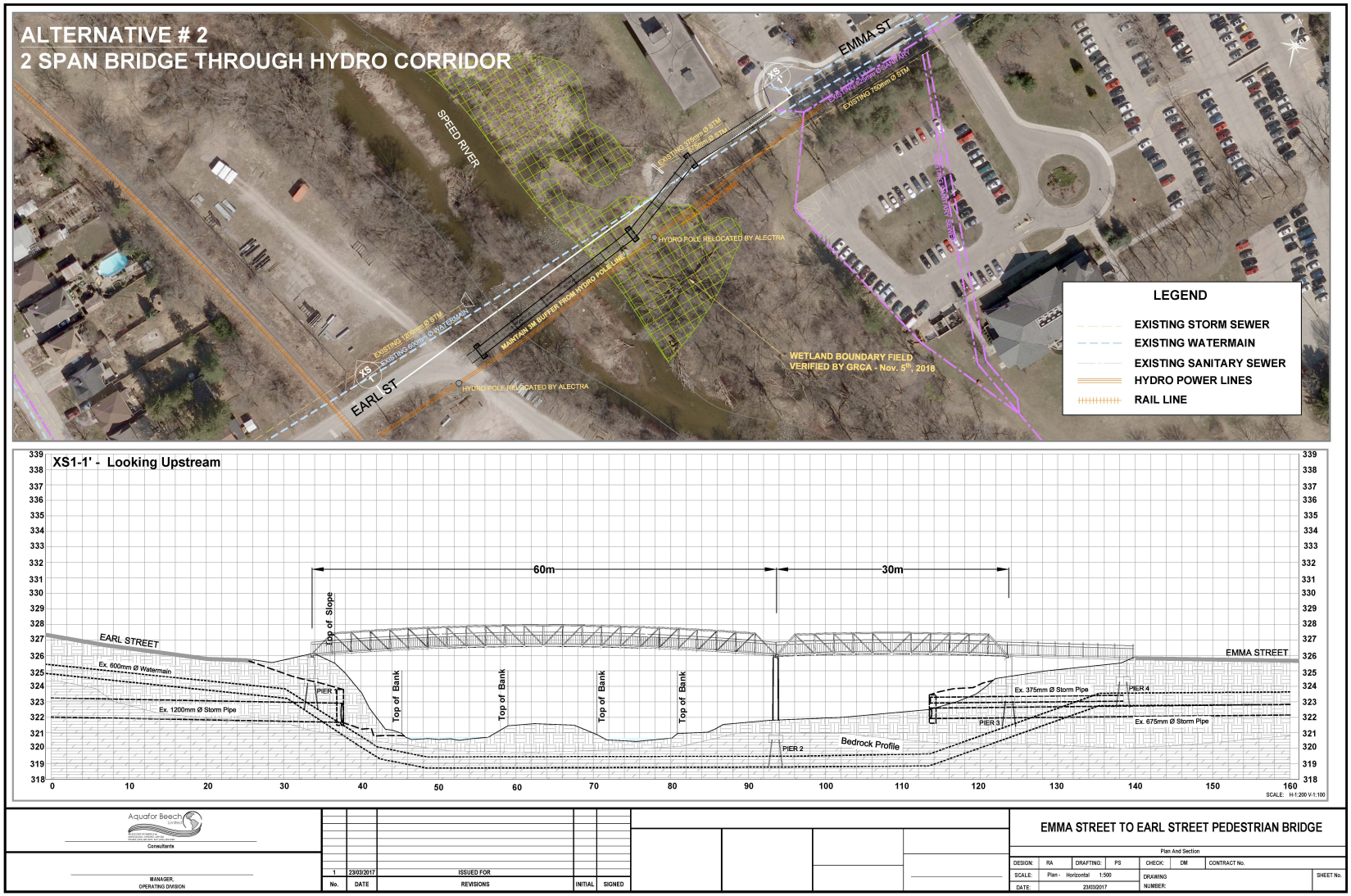


Figure 8. Alternative 2 - Two Span Box Truss Bridge Through Hydro Corridor, with Abutments in Cultural Woodland and Wetland.

February 11th, 2019

Sincerely,

AQUAFOR BEECH LIMITED

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Ltd

APPENDIX C

PUBLIC INPUT

Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Thursday, July 14, 2016 8:40 AM
To: amos.r@aquaforbeech.com
Subject: FW: Emma Street to Earl Street Bridge improvements

Here is another for the mailing list. I will go out on a ledge here and guess Dr. Berto is in favour of the bridge.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: T. Berto [redacted]
Sent: July 13, 2016 6:50 PM
To: Andrew Janes; amos r
Subject: Emma Street to Earl Street Bridge improvements

Dear Ma'ams/Sirs:

I am thrilled at the proposal of the Emma Street to Earl Street Bridge. I feel this is both a necessary and vital improvement to our quality of life in Guelph for several reasons:

It encourages and helps celebrate our natural and river areas, which is healthy for both the maintenance of these areas, and improves the general health of our citizenry through contact with nature.

It encourages the exploration and travel through the city by non-automobile means. This promotes walking, biking and other non-carbon based modes of travel.

It joins disparate parts of the city and encourages neighbour-liness and citizenship.

Please allow me to remain informed about this development, and pass on my encouragement to any and all that are promoting this idea.

Best

Dr. T. Berto
[redacted]

This e-mail message (including attachments, if any) is intended for the use of the individual to whom it is

Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Monday, July 18, 2016 11:30 AM
To: amos.r@aquaforbeech.com
Subject: FW: Emma St. Bridge

One more for the mailing list.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: W MUNGALL [redacted]
Sent: July 18, 2016 11:25 AM
To: Andrew Janes
Subject: Emma St. Bridge

Please add me to the project mailing list, on behalf of Guelph Hiking Trail Club.

Bill Mungall

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Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Wednesday, July 20, 2016 3:13 PM
To: amos.r@aquaforbeech.com
Subject: FW: Emma Street to Earl Street Bridge Improvements

One more for the list.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: Luke Weiler [redacted]
Sent: July 20, 2016 2:34 PM
To: Andrew Janes
Subject: Emma Street to Earl Street Bridge Improvements

Good afternoon,

I would like to be added to the project mailing list for the Emma Street to Earl Street Bridge Improvements. Would you please add [redacted] to that list?

Thanks very much,

Luke Weiler, BA JD
[redacted]

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Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Tuesday, July 26, 2016 8:46 AM
To: amos.r@aquaforbeech.com
Subject: FW: Emma bridge

Hi Rob,

1 more for the mailing list.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor T 519-822-1260 x 2338 E andrew.janes@guelph.ca

-----Original Message-----
From: Helen Hansen [redacted]
Sent: July 25, 2016 4:55 PM
To: Andrew Janes
Subject: Emma bridge

City of Guelph
ATTN: Andrew Janes P Eng
This is to respond to the notice in the Tribune July 21 about planned pedestrian bridges.
I reside near the proposed Emma bridge over the Speed, and would find it useful.
I now use the pedestrian bridge off Arthur to Cardigan - an easy way to get to downtown from Metcalfe where I live.
Improving pedestrian facilities is clearly a good move, for environmental and social reasons. When people have safe pleasant quiet places to walk, they will do so, for transportation and for recreation.
Maybe such routes could be signed indicating the way to downtown, to main streets, or to other places.
Would you please include my name in the project e-mailing list?
Thank you.
Helen Hansen
[redacted]

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Rob Amos

From: Mike Marcolongo [redacted]
Sent: Monday, July 25, 2016 3:53 PM
To: andrew.janes@guelph.ca
Cc: amos.r@aquaforbeech.com
Subject: Emma St. to Earl Street Pedestrian Bridge

Hi Andrew:

Would you please add my name to the mailing list for this ongoing EA?

Many thanks,

Mike

Rob Amos

From: Lynn Chidwick [redacted]
Sent: Tuesday, July 26, 2016 1:12 AM
To: amos.r@aquaforbeech.com; andrew.janes@guelph.ca
Subject: Emma Street Bridge

As I live at [redacted], I am extremely interested in participating in the EA process for the Bridge at Emma/Earl. Please add me to your mailing list and I would appreciate if you can send me all relevant information in advance so I can be better prepared to participate in the public meetings.
Thank you
Lynn

Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Tuesday, August 2, 2016 8:30 AM
To: amos.r@aquaforbeech.com
Subject: FW: Emma St pedestrian bridge EA

Hi Rob,

Here is another for the list.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: Donna Serrati [redacted]
Sent: July 31, 2016 10:25 AM
To: Andrew Janes
Subject: Emma St pedestrian bridge EA

Hello Andrew

Kindly add my name to the project mailing list.

Donna Serrati
[redacted]

Thank you.
Donna

Sent from my BlackBerry - the most secure mobile device - via the Bell Network

---

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Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Tuesday, August 2, 2016 2:12 PM
To: amos.r@aquaforbeech.com
Subject: FW: Norwich Street Bridge improvements Environmental Assessment: Notice of Study Commencement

Hi Rob,

Jennifer at the School Board would like to be added to the list for the Emma to Earl bridge.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: Jennifer Passy [mailto:Jennifer.Passy@ugdsb.on.ca]
Sent: August 2, 2016 1:50 PM
To: Andrew Janes
Cc: brent.willis@gmblueplan.ca
Subject: Norwich Street Bridge improvements Environmental Assessment: Notice of Study Commencement

Good afternoon Andrew,

Can you please ensure that I am added to the mailing list for this project, as well as the other two bridge related EAs that the City is undertaking with GM BluePlan Ltd..

With respect to the Norwich Street bridge in particular, this bridge serves as a route to school for a number of students who live west of the river and attend École King George PS in Grades 4-8 (currently Grades 5-8).

Jennifer Passy, BES, MCIP, RPP
Manager of Planning

Upper Grand District School Board
500 Victoria Road North
Guelph, ON N1E 6K2
Tel. (519) 822-4420 ext. 820
Fax. (519) 822-2134
Cell. (519) 766-3418
jennifer.passy@ugdsb.on.ca

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400 Clyde Road, P.O. Box 729 Cambridge, ON N1R 5W6

Phone: 519.621.2761 **Toll free:** 866.900.4722 **Fax:** 519.621.4844 **Online:** www.grandriver.ca

September 23, 2016

Rob Amos
Project Manager, Aquafor Beech Ltd.

Dear Mr. Amos

Re: City of Guelph-Proposed Emma to Earl Street Pedestrian Bridge
Schedule B Class Environmental Assessment
Notice of Study Commencement, Terms of Reference for Ecological Studies & Background Data Request

Thank-you for circulating the Notice of Study Commencement for the proposed Emma to Earl Street Pedestrian Bridge project to the GRCA. We request that our office remains notified of any information pertaining to the Environmental Assessment as it becomes available.

The study area contains natural hazard and natural heritage features including the Speed River, its associated floodplain, wetlands, erosion hazard and the associated allowances to these features. These features and their allowances are regulated under Ontario Regulation 150/06; any future development within the regulated areas may require the issuance of a permit from GRCA.

The comments from the GRCA on the proposed terms of reference for the ecological studies in support of the pedestrian bridge are forthcoming and will be provided as soon as possible.

Background Data Request

The Ministry of Natural Resources and Forestry (MNRF) and the City of Guelph house most of the information requested and these agencies should be consulted.

The Grand River Information Network (GRIN) provides data layers that are available for public download which may be of value for this project; specifically shapefiles for floodplain limits, subwatershed boundary and aerial photography. To access this use the following link: https://maps.grandriver.ca/

Should you have any questions or require any information, please contact Ashley Rye at 519-621-2763 ext. 2320.

Yours truly,

Fred Natolochny, MCIP, RPP
Supervisor of Resource Planning
Grand River Conservation Authority

c.c. Andrew Janes, Project Engineer Supervisor, City of Guelph, 1 Carden Street, Guelph, ON N1H 3A1 (email)
Adèle Labbé, Environmental Planner, City of Guelph, 1 Carden Street, Guelph, ON N1H 3A1 (email)

Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Monday, October 17, 2016 8:46 AM
To: amos.r@aquaforbeech.com
Subject: FW: Norwich, Ward-to-Downtown and Emma Bridges

FYI - this is also related to the Emma to Earl bridge.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor T 519-822-1260 x 2338 E andrew.janes@guelph.ca

-----Original Message-----
From: [redacted]
Sent: October 16, 2016 10:57 PM
To: Andrew Janes; brent.willis@gmblueplan.ca; Tiffany Brule
Cc: Phil Allt; June Hofland; james@jamesgordon.ca
Subject: Norwich, Ward-to-Downtown and Emma Bridges

These processes to decide on bridges to connect trails and communities are exciting opportunities to build a more active transportation network, pedestrian-accessible city, vibrant community and business opportunities.

The construction of the Emma bridge and refurbishment of the historic Norwich bridge will connect two parts of the city that are isolated by the river and by arterial roads (Speedvale, Eramosa) that make pedestrian and bicycle access difficult and dangerous. These connections will enable a vibrant active street life and more pedestrian and bicycle use. This will also build on the visionary development of the trans-Canada trail adjacent to the railway. This is my neighborhood, and we have already seen the transformative effect of that trail.

Connection of the new developments in the Ward to Wellington Street and downtown with two bridges will have the same positive effect on the rejuvenated Ward and "lower town" neighborhoods. Those connections will help humanize the sterile Wellington Street corridor. Pedestrian and bicycle movement and traffic will make for safer lively streets and more business development opportunities.

I do hope the haphazard bicycle trail connections through that Wellington corridor will be fixed as part of this effort. While much of the basic cycling trail system works, the connections and signs to communicate the connections are not good and are a major impediment to trail use.

I support developing all these bridges and hope to see the specific proposals soon as part of the environmental assessment process.

Thanks

Paul Smith

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Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Monday, October 24, 2016 9:05 AM
To: amos.r@aquaforbeech.com
Subject: FW: Earl to Emma St. bridge

Hi Rob,

1 more for the list.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: Rick and Jane [redacted]
Sent: October 24, 2016 8:45 AM
To: Andrew Janes
Subject: Earl to Emma St. bridge

Good morning. I am very interested in this initiative and supportive of it. However, I am unable to attend the open house tomorrow. Can you please keep me in the loop as far as developments are concerned?

Thanks

Rick McRonald
[redacted]

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Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Wednesday, October 26, 2016 9:07 AM
To: amos.r@aquaforbeech.com
Subject: FW: Emma/Earl Pedestrian Bridge

Here is a comment.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: Bonnie Swantek [redacted]
Sent: October 25, 2016 6:32 PM
To: Andrew Janes
Subject: Emma/Earl Pedestrian Bridge

Hello Andrew,

We had hoped to attend the open house this evening, but schedules changed and we are unable.

We very much wanted to voice our support for this pedestrian bridge in whatever form the City determines is best!

We have zero concerns/issues and are looking forward to having the connection to the other side of the river.

Thank you!

Shane and Bonnie Swantek
[redacted]

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Rob Amos

From: Lynn Chidwick [redacted]
Sent: Wednesday, October 26, 2016 7:06 PM
To: andrew.janes@guelph.ca; james.gordon@guelph.ca; andy.vanhellemond@guelph.ca; bob.bell@guelph.ca
Cc: amos.r@aquaforbeech.com; Martin Collier
Subject: Emma Street Bridge

I have just been looking at the Trail Master Plan on line.
I was not able to find reference specifically to the Emma Street Bridge.
Can you please give references in the Trail Master Plan for the following:
1. references to the Emma Street Bridge in the Trail Master Plan 2. references indicating the need for the Emma Street Bridge and how the need was identified 3. references indicating where the construction of the bridge is on the list of priorities 4. how the Bridge construction ties in with future trail developments.
5. Have there have been changes to the Trail Master Plan since 2005? If so, what are these changes, how were they determined, and how do they relate to the building or need for the Emma Street Bridge.

I found information regarding the "need for the bridge" was exceedingly lacking at the public meeting last night which I understood was the point of the meeting. The information at the meeting, for the most part, made an assumption that the Bridge was to be built. This should have been presented at the second public meeting. The first public meeting should have focussed on "the need" for the Bridge.
If the need is indicated in the Trail Master Plan, then more specific information from the Master Plan should have been available at the meeting.
I assume you have this information readily available and look forward to receiving it soon.
Sincerely,
Lynn Chidwick

Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Thursday, October 27, 2016 11:39 AM
To: [redacted] Bob.Bell@guelph.ca; James.Gordon@guelph.ca; Andy.VanHellemond@guelph.ca
Cc: amos.r@aquaforbeech.com; marty.collier@sympatico.ca; Antti.Vilkko@guelph.ca
Subject: RE: Emma Street Bridge

Hello Lynn,

The location of future sidewalk would be determined during the design process. As part of the City's design process, a legal survey of the public Right of Way would be undertaken. This will ensure that any proposed sidewalk is constructed on City of Guelph property. Without this survey, I cannot accurately define where the property line is. This level of design is not normally undertaken during the EA process.

Regarding your previous email, City and Consultant staff will review the questions and prepare a response to you.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor T 519-822-1260 x 2338 E andrew.janes@guelph.ca

-----Original Message-----
From: Lynn Chidwick [redacted]
Sent: October 27, 2016 10:30 AM
To: Andrew Janes; Bob Bell; James Gordon; Andy VanHellemond
Cc: amos.r@aquaforbeech.com; Martin Collier
Subject: Emma Street Bridge

At the public meeting on October 25th, Andrew said there would be sidewalks on both sides of Earl Street from Dufferin Street to the bridge.
Can you please provide us with diagrams of these sidewalks also indicating property lines?
Sincerely,
Lynn Chidwick

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Rob Amos

From: Lynn Chidwick [redacted]
Sent: Thursday, October 27, 2016 10:30 AM
To: andrew.janes@guelph.ca; bob.bell@guelph.ca; james.gordon@guelph.ca; andy.vanhellemond@guelph.ca
Cc: amos.r@aquaforbeech.com; Martin Collier
Subject: Emma Street Bridge

At the public meeting on October 25th, Andrew said there would be sidewalks on both sides of Earl Street from Dufferin Street to the bridge.
Can you please provide us with diagrams of these sidewalks also indicating property lines?
Sincerely,
Lynn Chidwick

Rob Amos

From: Guelph Bikes <guelphbikes@guelphbikes.ca>
Sent: Tuesday, November 1, 2016 9:00 PM
To: andrew.janes@guelph.ca; amos.r@aquaforbeech.com
Subject: Emma/Earl EA
Attachments: Emma Earl EA feedback Patrick Sheridan.docx

Dear Andrew and Amos,

Thanks for a great presentation last Tuesday. Very much appreciate your feed back and the other staff present were very knowledgeable and eager to share their work.

This is a great project to improve the city. Both as an improvement to our non motorized transportation network and the ecological restoration opportunities.

Pleas find my comments attached.
Patrick

Emma Street to Earl Street Bridge – Class Environmental Assessment

Public Information Centre #1
October 25, 2016, 6:30 p.m. – 9:00 p.m.
Evergreen Centre, 683 Woolwich St, Guelph

COMMENT FORM

Contact information (optional):
Name: Patrick Sheridan
Address: [redacted]
Telephone Number: [redacted]
Email: [redacted]
☑ Please add me to the project notification email list

1. Draft problem / opportunity statement

A Problem/Opportunity statement is the starting point in undertaking a Municipal Class EA and helps define what will be addressed by the project. Do you agree with the draft Problem/Opportunity Statement below? What changes, if any, would you suggest?
The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail, a car free route for cyclists and pedestrians traveling between downtown and the north east corner of the city. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

2. Draft evaluation criteria

Draft evaluation criteria are proposed to be used to evaluate the various alternatives for the type and location of the Emma Street to Earl Street pedestrian bridge and identify a recommended solution.
a) Please review the list of draft criteria below and indicate whether each one is least important, important, or most important.

Criteria	Least important	Important	Most important
Social environment Aesthetics of bridge		Please build something visually appealing	
Natural environment Impact on woodlands, wetlands and wildlife habitats		My understanding is that little environmental impact is anticipated	
Technical Service life expectancy		Build something to last	
Cost Capital costs for bridge construction	least		

b) Have any criteria been missed? Do you have any other feedback on the proposed criteria?

3. Issues or concerns

The Guelph Trail Master Plan (2005) recommends a bridge over the Speed River to connect Emma Street to Earl Street and provide a connection to the Downtown Trail. The purpose of this EA study is to determine if a pedestrian bridge is warranted at this location, and if so, which style of bridge will be constructed.
Are there any other issues or concerns that the project team should be aware of in moving forward with the study? Have we missed anything?

4. Preliminary bridge types

Do you have any feedback on the preliminary bridge alternatives that have been identified by the project team?

The arch and cable bridges are the most attractive. The truss bridge looks rusty. Appears that you would get rust on your hands and clothes. The final bridge should be wide enough for pedestrians and cyclists to move in both directions at the same time, essentially allow for two lanes of pedestrian/bike traffic in each direction ie 4 lanes. Not that lines would be indicated.

5. Additional comments

Please share any additional comments that you have regarding the study.

The bridge is a great opportunity to improve the connectivity of our trail network. Having a bridge crossing the Speed River between Emma and Earl will allow people walking and biking to avoid the busy Speedvale Ave crossing at the bridge. It will also allow cyclists moving between the North East corner of the city and downtown the opportunity to avoid the Eramosa hill as well as Speedvale ave. Both Speedvale ave and Eramosa rd are busy four lane arterials that are not appealing to cycle. Emma st is a quiet street with little traffic and connects with Stevenson st, a quieter route with bike lanes.

It would also provide an opportunity for ecological restoration in that area of the river which has become over run with invasive plants.

6. PIC/information summary

Was the information provided helpful to you?
Yes the information was helpful

Were all your questions answered?
Yes.

Was the information provided:

☐☐ too technical ☑ about right ☐not detailed enough

Thank you for your comments!

Please return completed forms by November 15 via email:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

Rob Amos

From: Joan and Jake DeBruyn [redacted]
Sent: Wednesday, November 2, 2016 10:25 PM
To: andrew.janes@guelph.ca; Guelph Bikes; amos.r@aquaforbeech.com
Subject: Emma to Earl Bridge

Emma Street to Earl Street Bridge – Class Environmental Assessment

Public Information Centre #1
October 25, 2016, 6:30 p.m. – 9:00 p.m.
Evergreen Centre, 683 Woolwich St, Guelph

COMMENT FORM

Contact information (optional):
Name: Jake DeBruyn
Address: [redacted]
Telephone Number: [redacted]
Email: [redacted]
☐ Please add me to the project notification email list

1. Draft problem / opportunity statement

A Problem/Opportunity statement is the starting point in undertaking a Municipal Class EA and helps define what will be addressed by the project. Do you agree with the draft Problem/Opportunity Statement below? What changes, if any, would you suggest?
The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

AGREED.

2. Draft evaluation criteria

Draft evaluation criteria are proposed to be used to evaluate the various alternatives for the type and location of the Emma Street to Earl Street pedestrian bridge and identify a recommended solution.
a) Please review the list of draft criteria below and indicate whether each one is least important, important, or most important.

Criteria	Least important	Important	Most important
Social environment Aesthetics of bridge	X		

Natural environment Impact on woodlands, wetlands and wildlife habitats		X	
Technical Service life expectancy			X
Cost Capital costs for bridge construction		X	

b) Have any criteria been missed? Do you have any other feedback on the proposed criteria?

These factors are all important.

I note that these criteria do not address the question of whether the bridge is needed.

We support the construction of this bridge.

3. Issues or concerns

The Guelph Trail Master Plan (2005) recommends a bridge over the Speed River to connect Emma Street to Earl Street and provide a connection to the Downtown Trail. The purpose of this EA study is to determine if a pedestrian bridge is warranted at this location, and if so, which style of bridge will be constructed.

Are there any other issues or concerns that the project team should be aware of in moving forward with the study? Have we missed anything?

I am supportive of this bridge moving forward, as our family cycles this route weekly in the summer, and we find the Speedvale bridge area to be quite hazardous, even on a quiet Sunday morning.

4. Preliminary bridge types

Do you have any feedback on the preliminary bridge alternatives that have been identified by the project team?

I think longevity is important. This is not a highly visible bridge, so it does not need to be an ornate showpiece.

The bridge should be wide enough for two double-wide bike trailers or strollers.

Perhaps an access point to the river could be incorporated into the configuration.

5. Additional comments

Please share any additional comments that you have regarding the study.

We are supportive of this because we currently have to cycle across the Speedvale bridge to get from the downtown trail across Speedvale. Our route takes us north to our church at Woodlawn and Victoria, so northbound alternatives are welcome.

6. PIC/information summary

Was the information provided helpful to you?

Yes.

Were all your questions answered?

The criteria for deciding whether or not a bridge is necessary were not clear.

Was the information provided:

○ too technical ○ about right ○not detailed enough

About right.
I cut and pasted the form into my email.

Thank you for your comments!	
Please return completed forms by November 15 via email:	
Andrew Janes, P. Eng., Project Engineer Supervisor City of Guelph 1 Carden Street Guelph, ON N1H 3A1 519-822-1260 Ext. 2338 andrew.janes@guelph.ca	Rob Amos, MASc., P.Eng Project Manager Aquafor Beech Limited 55 Regal Road, Unit 3 Guelph, ON N1K 1B6 519-224-3740 x 1236 amos.r@aquaforbeech.com

Rob Amos

From: Active Guelph <activeguelph@gmail.com>
Sent: Monday, November 7, 2016 6:54 AM
To: amos.r@aquaforbeech.com; andrew.janes@guelph.ca
Subject: Proposed bridge at Emma and Earl Streets

Dear Mr. Amos and Mr. Janes,

Here are GCAT's comments about the proposed bridge at Emma and Earl Streets.

Guelph Coalition for Active Transportation's mission is to increase the quantity, quality and safety of Active Transportation in Guelph.

GCAT supports the building of the Emma Earl Bridge for these reasons.

- The proposed bridge will provide off road infrastructure in the heart of the city to people of all ages, connecting all ends of the city for both those who walk and those who cycle.
- Statistics show that 60% of people will consider cycling if they feel the cycling facilities are safe.
- The Emma Earl Bridge will provide a safe connection to the downtown, which is a major cycling destination according to Guelph's Cycling Master Plan.
- The proposed bridge will also allow people who walk and cycle to avoid the Eramosa hill when crossing the Speed River.
- This bridge connection will also bring users from the east end to the Trans Canada Trail and eventually to the Speedvale Avenue underpass, and over to the Woodlawn multi-use path where they will have access to services and jobs in the west end.

We also understand that some people living near the proposed bridge have concerns about how it will impact their neighbourhood, in terms of privacy,etc. We hope that you will consider these concerns when making the detailed designs around this bridge.

Thank you,
Yvette Tendick
President
Guelph Coalition for Active Transportation

Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Monday, November 7, 2016 3:48 PM
To: amos.r@aquaforbeech.com
Subject: FW: proposed bridge at Emma and Earl streets

FYI

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: Lauren MacDonald [redacted]
Sent: November 7, 2016 3:25 PM
To: Andrew Janes
Subject: Fw: proposed bridge at Emma and Earl streets

Hello,

I wanted to voice my support for the proposed Emma-Earl street bridge.
I am a parent of 2 small children who mostly cycles to work (we are a 1 vehicle household) and I would really benefit from this proposed bridge for both convenience and safety.
As it stands I cycle down woolwich to speedvale to get to my school and this project would enable me to avoid speedvale all together, which for safety would be amazing. Riding with 2 children in a chariot along speedvale is kind of terrifying.
I think this would help a lot of cyclists and would connect that community with local shops and downtown more.

Thank you for looking into this and hopefully the project gets the green light to move forward. As my children get older it would be nice to cycle to school with them in a safe and legal way (i.e., not on the sidewalk).

Cheers!

Lauren MacDonald
FI Kindergarten Teacher
Edward Johnson Public School
[redacted]

Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Monday, November 7, 2016 11:03 AM
To: amos.r@aquaforbeech.com
Subject: FW: Emma Street Bridge
Attachments: Pages from GuelphTrailMasterPlan.pdf

Hi Rob,

FYI - here is a response that was sent to Lynn regarding her questions on the need for the bridge.

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor T 519-822-1260 x 2338 E andrew.janes@guelph.ca

-----Original Message-----
From: Janet Sperling
Sent: November 7, 2016 10:52 AM
To: 'Lynn Chidwick'; Bob Bell; Andrew Janes; James Gordon
Cc: Martin Collier; Terry Petrie; Susan Boyle; Jeff Huber; [redacted] Beth Finnis
Subject: RE: Emma Street Bridge

Good morning Lynn,

The Emma Street bridge is identified on the 2005 Trail Master Plan (see attached - symbol B). The bridge connection was identified in the Trail Master Plan because it provides a good linkage from a primary trail system to a secondary trail system. The bridge connection meets the goal and guiding principles of the Trail Master Plan, most notably: Convenient, Connected and Unimpeded (pp27). The route was also reviewed and evaluated using the criteria listed on page 29.

In terms of being identified on the priority list in the Master Plan, it was not identified in the short or medium time frames but instead was intended to be a very long term goal (beyond 20+ years). It provided a good connection, but there were a number of trails higher on the priority listing that showed more of an immediate need. The Trail current Trail Master Plan Update 2016-2017 will re-evaluate trail priorities across the City.

Recent planned Speedvale Avenue road right-of-way improvements has established the need for the Emma to Earl pedestrian/cycling bridge to become a higher priority to facilitate safe alternative modes of transportation. It had previously been the intension in the 2009 Bike Policy and 2013 Cycling Master Plan that bike lanes be accommodated along Speedvale Ave. Following recent preliminary design of Speedvale, it was determined that the current ROW may not be large enough to accommodate all transportation needs without significant property impacts to adjacent lands and expansion of the current bridge over the Speed River. As such, an alternative route was identified using a cycling/pedestrian bridge connecting Emma and Earl.

Should you have any additional questions, please let me know.

Janet Sperling
Manager Open Space Planning
Parks & Recreation
Public Services
City of Guelph

Janet.Sperling@guelph.ca
519-822-1260 extension 2293

-----Original Message-----
From: Lynn Chidwick [redacted]
Sent: November 7, 2016 10:12 AM
To: Bob Bell; Andrew Janes; Janet Sperling; James Gordon
Cc: Martin Collier; Terry Petrie; Susan Boyle; Jeff Huber; [redacted] Beth Finnis
Subject: Re: Emma Street Bridge

I have not as yet got a response to my inquiry regarding reference to the Emma Street Bridge in the Trail Master Plan. As this is part of Phase 1 of the Environmental Assessment, it is important that I receive this information so that I and other community members may provide comment.
Lynn Chidwick
> On Oct 26, 2016, at 7:09 PM, bob.bell@guelph.ca wrote:
>
> Hi Janet
> Could your dept respond to this please I know it's all online in the
> existing MP
>
> Bob Bell
> Ward One Councillor
> City of Guelph
> 519-803-5543
> Bob.Bell@Guelph.ca
> Original Message
> From: Lynn Chidwick [redacted]
> Sent: Wednesday, October 26, 2016 7:05 PM
> To: Andrew Janes; James Gordon; Andy VanHellemond; Bob Bell
> Cc: amos.r@aquaforbeech.com; Martin Collier
> Subject: Emma Street Bridge
>
>
> I have just been looking at the Trail Master Plan on line.
> I was not able to find reference specifically to the Emma Street Bridge.
> Can you please give references in the Trail Master Plan for the following:
> 1. references to the Emma Street Bridge in the Trail Master Plan 2.
> references indicating the need for the Emma Street Bridge and how the
> need was identified 3. references indicating where the construction of
> the bridge is on the list of priorities 4. how the Bridge construction ties in with future trail developments.
> 5. Have there have been changes to the Trail Master Plan since 2005? If so, what are these changes, how were they determined, and how do they relate to the building or need for the Emma Street Bridge.
>
> I found information regarding the “need for the bridge” was exceedingly lacking at the public meeting last night which I understood was the point of the meeting. The information at the meeting, for the most part, made an assumption that the Bridge was to be built. This should have been presented at the second public meeting. The first public meeting should have focussed on “the need” for the Bridge.

> If the need is indicated in the Trail Master Plan, then more specific information from the Master Plan should have been available at the meeting.
> I assume you have this information readily available and look forward to receiving it soon.
> Sincerely,
> Lynn Chidwick
>
>
>
>
> ----------
> This e-mail message (including attachments, if any) is intended for the use of the individual to whom it is addressed and may contain information that is privileged and confidential. If you are not the intended recipient, you are notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender and erase this e-mail message immediately.
>
>
> ----------
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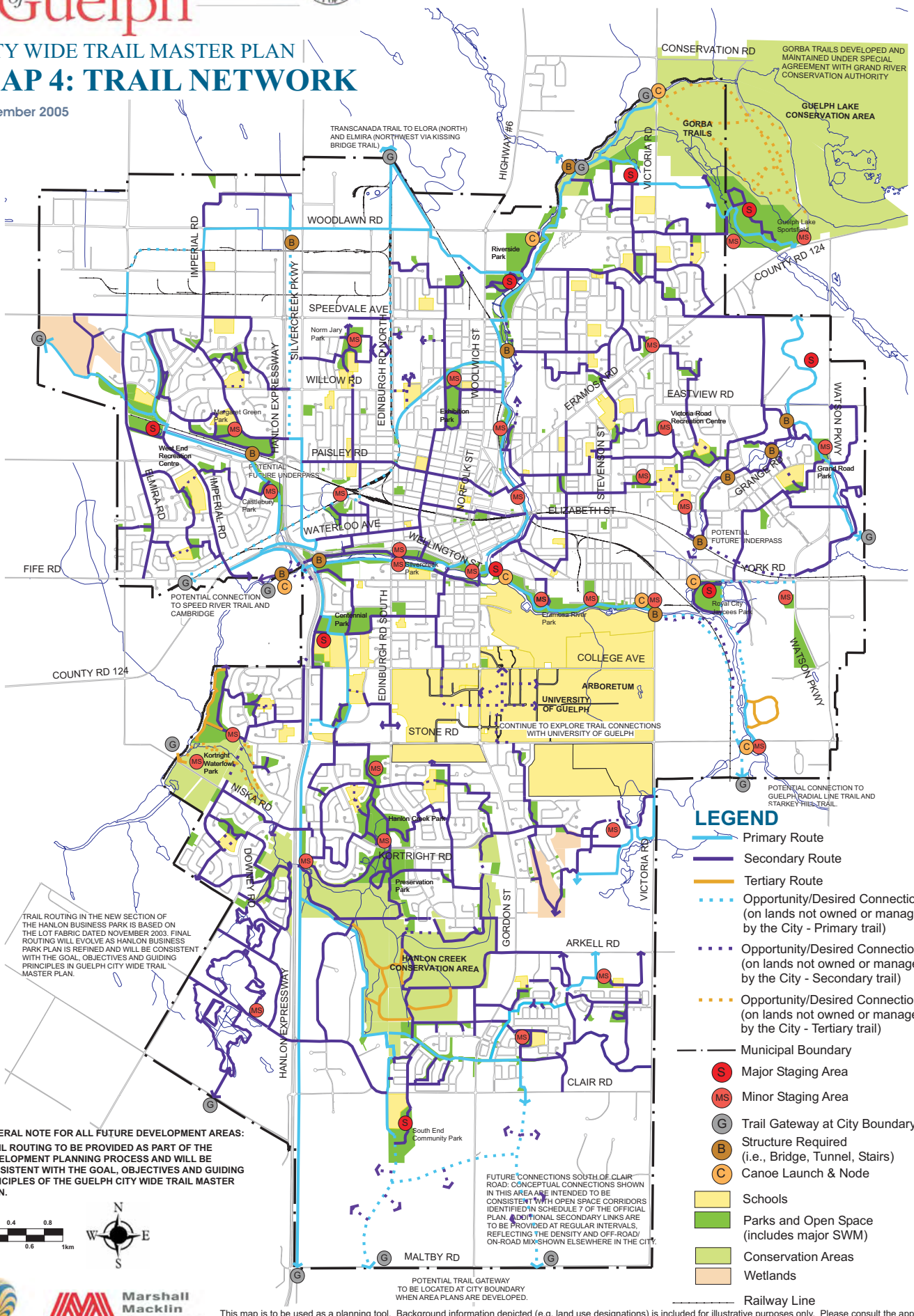
City of Guelph

CITY WIDE TRAIL MASTER PLAN

MAP 4: TRAIL NETWORK

November 2005



GENERAL NOTE FOR ALL FUTURE DEVELOPMENT AREAS:

TRAIL ROUTING TO BE PROVIDED AS PART OF THE DEVELOPMENT PLANNING PROCESS AND WILL BE CONSISTENT WITH THE GOAL, OBJECTIVES AND GUIDING PRINCIPLES OF THE GUELPH CITY WIDE TRAIL MASTER PLAN.

Stantec

Marshall Macklin Monaghan

PROJECT MANAGERS • ENGINEERS • SURVEYORS • PLANNERS

This map is to be used as a planning tool. Background information depicted (e.g. land use designations) is included for illustrative purposes only. Please consult the appropriate official documents for further details. The location and exact alignment of trail routes will evolve through more detailed technical studies and/or community consultation as required. At the same time, it is important to note that the extensive community consultation that established the direction for this plan must be respected, therefore changes to the routing will be evaluated in the context of the overall network.

Rob Amos

From: Lynn Chidwick [redacted]
Sent: Monday, November 7, 2016 6:45 PM
To: amos.r@aquaforbeech.com; andrew.janes@guelph.ca; james.gordon@guelph.ca; andy.vanhellemond@guelph.ca; mayor@guelph.ca
Cc: Janet.Sperling@guelph.ca; Martin Collier; Susan Boyle; [redacted]; Terry Petrie; [redacted]
Subject: Emma/Earl Street Bridge EA

I received information today on the Trail Master Plan from Janet Sterling, Manager of Open Space Planning, Parks and Recreation for the City of Guelph. She said *"There will be a lot of public input on the Trail Master Plan update. City Staff are just finalizing an request for proposal right now to send out in order to hire a consultant for the project. I anticipate that public consultation will commence in the spring of 2017, but that will be finalized once we have a consultant on board and we can confirm the schedule of work. If you would like, instead of waiting for a notice to come out in the paper or on the City website, I can make a note to ensure you are contacted once we commence the public engagement process."*

In light of this information, I think the Emma Earl Bridge EA should be suspended until after the Master Planning process is complete. This gives public the opportunity to provide input and also ensures that the bridge (or not) connection meets the goal and guiding principles of the Trail Master Plan, most notably: Convenient, Connected and Unimpeded (pp27) or changes that will undoubtedly impact the Bridge. In my view going forward at this point may result in a disjointed effort, and also a huge expense to the City and taxpayers.

Sincerely
Lynn Chidwick

Rob Amos

From: Vicki Beard [redacted]
Sent: Monday, November 7, 2016 7:40 PM
To: 'Lynn Chidwick'; amos.r@aquaforbeech.com; andrew.janes@guelph.ca; james.gordon@guelph.ca; andy.vanhellemond@guelph.ca; mayor@guelph.ca
Cc: Janet.Sperling@guelph.ca; 'Martin Collier'; 'Susan Boyle'; 'Terry Petrie'; [redacted]
Subject: RE: Emma/Earl Street Bridge EA

Lynn Thanks for taking the lead on this. If you look at the Speedvale reconstruction, you'll see the bridge is completely unnecessary as it joins to the trail and gives access to both sides of the river. The plan is to put a trail up the west side of the river. Access to the trail will be on both sides of the river before the Speedvale bridge.
If you look at the purposed bike path that comes from Manhattan Court you'll see there is no city property to put a trail on this means more expense as the property will need to expropriated to build the section from Manhattan Court to Emma, another waste of money. Why should we pay for this?

Vicki

From: Lynn Chidwick [redacted]
Sent: November 7, 2016 6:45 PM
To: amos.r@aquaforbeech.com; andrew.janes@guelph.ca; james.gordon@guelph.ca; andy.vanhellemond@guelph.ca; mayor@guelph.ca
Cc: Janet.Sperling@guelph.ca; Martin Collier [redacted] Susan Boyle [redacted]; [redacted] Terry Petrie [redacted]
Subject: Emma/Earl Street Bridge EA

I received information today on the Trail Master Plan from Janet Sterling, Manager of Open Space Planning, Parks and Recreation for the City of Guelph. She said *"There will be a lot of public input on the Trail Master Plan update. City Staff are just finalizing an request for proposal right now to send out in order to hire a consultant for the project. I anticipate that public consultation will commence in the spring of 2017, but that will be finalized once we have a consultant on board and we can confirm the schedule of work. If you would like, instead of waiting for a notice to come out in the paper or on the City website, I can make a note to ensure you are contacted once we commence the public engagement process."*

In light of this information, I think the Emma Earl Bridge EA should be suspended until after the Master Planning process is complete. This gives public the opportunity to provide input and also ensures that the bridge (or not) connection meets the goal and guiding principles of the Trail Master Plan, most notably: Convenient, Connected and Unimpeded (pp27) or changes that will undoubtedly impact the Bridge. In my view going forward at this point may result in a disjointed effort, and also a huge expense to the City and taxpayers.

Sincerely
Lynn Chidwick

Rob Amos

From: Andrew.Janes@guelph.ca
Sent: Tuesday, November 8, 2016 8:40 AM
To: amos.r@aquaforbeech.com
Subject: FW: Bridge

FYI

Regards,
C. Andrew Janes, P.Eng. | Project Engineer Supervisor
T 519-822-1260 x 2338
E andrew.janes@guelph.ca

From: Bette-Ann [redacted]
Sent: November 8, 2016 12:29 AM
To: Andrew Janes
Subject: Bridge

Emma Street to Earl Street Bridge – Class Environmental Assessment

Public Information Centre #1
October 25, 2016, 6:30 p.m. – 9:00 p.m.
Evergreen Centre, 683 Woolwich St, Guelph

COMMENT FORM

Contact information (optional):
Name: Bette-Ann Bruulsema
Address: [redacted].
Telephone Number: [redacted]
Email: [redacted]
☐ Please add me to the project notification email list

1. Draft problem / opportunity statement

A Problem/Opportunity statement is the starting point in undertaking a Municipal Class EA and helps define what will be addressed by the project. Do you agree with the draft Problem/Opportunity Statement below? What changes, if any, would you suggest? The draft P/O statement notes that the bridge will connect to the downtown Trail. From where, what is the greater area and purpose of the connection.
The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

2. Draft evaluation criteria

Draft evaluation criteria are proposed to be used to evaluate the various alternatives for the type and location of the Emma Street to Earl Street pedestrian bridge and identify a recommended solution.
a) Please review the list of draft criteria below and indicate whether each one is least important, important, or most important.

Criteria	Least important	Important	Most important
Social environment Aesthetics of bridge			
Natural environment Impact on woodlands, wetlands and wildlife habitats			
Technical Service life expectancy			
Cost Capital costs for bridge construction			

b) Have any criteria been missed? Do you have any other feedback on the proposed criteria?
Function in the grand plan for pedestrian and cycle paths.

3. Issues or concerns

The Guelph Trail Master Plan (2005) recommends a bridge over the Speed River to connect Emma Street to Earl Street and provide a connection to the Downtown Trail. The purpose of this EA study is to determine if a pedestrian bridge is warranted at this location, and if so, which style of bridge will be constructed.
Are there any other issues or concerns that the project team should be aware of in moving forward with the study? Have we missed anything?
I greatly appreciate any effort to facilitate people moving about by bicycle or walking. But I experience the trails in Guelph to not follow smoothly – a path stops abruptly or awkwardly connects to the next section – almost as if different groups are in charge of different sections and they don't consult eachother. The Downtown trail is fantastic – and then it drops you on Speedvale with no good way to cross. If we look at the present proposal – it is a great way to cross the river away from Speedvale, but if I am coming from downtown, I would cross to Emma and then take Marlborough and still end up at Speedvale where there is no assistance to cross. One should travel to the cross walk at Riverbend to cross Speedvale – along the sidewalk which I shouldn't do on my bike. The reality is that people will be attempting to cross Speedvale at Marlborough. Will you add a pedestrian cross there? Or might you make the bridge a bit closer to Speedvale (the river is narrower) and end closer to the crosswalk.

Or did I hear the bridge at the river and Speedvale will be redone in which case design the path go under the roadway and connect directly to the Speedriver Trail on the north side. – that would be the best.

4. Preliminary bridge types

Do you have any feedback on the preliminary bridge alternatives that have been identified by the project team?

It's a bit awkward that the bridge examples you have are much bigger spans. Keep it simple.

5. Additional comments
Please share any additional comments that you have regarding the study.

6. PIC/information summary
Was the information provided helpful to you?

Yes.

Were all your questions answered?

Was the information provided:
O too technical O about right Onot detailed enough

Thank-you for your work on this,
BA

Thank you for your comments!	
Please return completed forms by November 15 via email:	
Andrew Janes, P. Eng., Project Engineer Supervisor City of Guelph 1 Carden Street Guelph, ON N1H 3A1 519-822-1260 Ext. 2338 andrew.janes@guelph.ca	Rob Amos, MASc., P.Eng Project Manager Aquafor Beech Limited 55 Regal Road, Unit 3 Guelph, ON N1K 1B6 519-224-3740 x 1236 amos.r@aquaforbeech.com

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you have received this communication in error, please notify the sender and erase this e-mail message immediately.

Rob Amos

From: Sharon Buisman [redacted]
Sent: Tuesday, November 8, 2016 1:50 PM
To: andrew.janes@guelph.ca; amos.r@aquaforbeech.com
Subject: proposed Emma to Earl pedestrian bridge

Andrew and Rob, we have raised four children here in Guelph, and now have three grandchildren also living here. Cycling has always been a primary means of transportation for our family. We have made good use of the bike path which follows the Speed River, but when we arrive at Speedvale Avenue, fear sets in. Cycling on Speedvale Avenue to cross the bridge is dangerous, cycling on the sidewalk is illegal. We are thrilled to hear about the possibility of constructing a pedestrian bridge over the river near this junction in order to improve safety and accessibility. We strongly endorse this proposal and would encourage the city, for the sake of safety and the environment, to move ahead on it.
Thank you for your work on this project!

Sharon Buisman

Rob Amos

From: Ron Clayton [redacted]
Sent: Friday, November 11, 2016 10:38 AM
To: andrew.janes@guelph.ca; amos.r@aquaforbeech.com
Cc: Ron Clayton
Subject: Emma St. to Earl St. Bridge - Class Environmental Assessment
Attachments: Scanned from a Xerox Multifunction Device (4).pdf

[redacted]

Emma Street to Earl Street Bridge – Class Environmental Assessment

Public Information Centre #1
October 25, 2016, 6:30 p.m. – 9:00 p.m.
Evergreen Centre, 683 Woolwich St, Guelph

COMMENT FORM

Contact Information (optional):

Name: RON CLAYTON (ARMTEC)

Address: [redacted]

Telephone Number: [redacted]

Email: [redacted]

☒ Add my Email Address to the Project Notification List

1. Draft Problem/Opportunity Statement

A Problem/Opportunity statement is the starting point in undertaking a Municipal Class EA and helps define what will be addressed by the project. Do you agree with the draft Problem/Opportunity Statement below? What changes, if any, would you suggest?

The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

2. Draft Evaluation Criteria

Draft evaluation criteria are proposed to be used to evaluate the various alternatives for the type and location of the Emma Street to Earl Street pedestrian bridge and identify a recommended solution.

a) Please review the list of draft criteria below and indicate whether each one is least important, important, or most important.

Criteria	Least Important	Important	Most Important
Social Environment Aesthetics of Bridge			
Natural Environment Impact on Woodlands, Wetlands and Wildlife Habitats			
Technical Service Life Expectancy			
Cost Capital Costs for Bridge Construction			

b) Have any criteria been missed? Do you have any other feedback on the proposed criteria?

3. Issues/Concerns

The Guelph Trail Master Plan (2005) recommends a bridge over the Speed River to connect Emma Street to Earl Street and provide a connection to the Downtown Trail. The purpose of this EA study is to determine if a pedestrian bridge is warranted at this location, and if so, which style of bridge will be constructed.

Are there any other issues or concerns that the project team should be aware of in moving forward with the study? Have we missed anything?

Please See Attached Page For Armtec Issues/Concerns.

4. Preliminary Bridge Types

Do you have any feedback on the preliminary bridge alternatives that have been identified by the project team?

5. Additional Comments

Please share any additional comments that you have regarding the study.

6. PIC Summary

Was the information provided helpful to you?

Were all your questions answered?

Was the information provided:

too technical about right not detailed enough

Thank you for your comments!

Please return completed forms to the Registration Table. Or if you would like more time, please return by November 15th, 2016 to either contact listed below:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

Issues/Concerns:

Armtec has a few concerns regarding this proposal:

1) Earl St. is the route the trucks take to bring raw material to our plant and to ship out finished product to customers. Our concern revolves around the safety of pedestrians that will be using this bridge. We believe a guarded sidewalk on the north side of Earl St. is necessary in order to keep them off the road. The trucks make large sweeping turns in order to gain access to our yard and a guarded sidewalk will ensure the safety of people using it. We do not think a sidewalk on the south side of Earl St. is a viable option. If one is installed in this location, it forces the pedestrians to cross the road in front of our main gates in order to gain access to the proposed bridge. This potentially puts them in the path of trucks turning into our yard.
2) We own property on the north and south sides of Earl St. The south side is our main yard and the north side is a secondary yard we use for overflow inventory or orders that may stay at our facility for an extended period. We require access across Earl St. from one property to the other with our fork trucks. We require the bridge to be set back close to the bank of the river so the access to both properties is in a straight line across Earl St.
3) Armtec is presently working with the Guelph Hiking Trail Club. The proposal is to install/maintain a side trail off of the main Trans Canada Trail along the bank of the Speed River on Armtec property. If the proposed bridge is approved and moves forward, we are hopeful both of these projects can complement each other, in order to maximize the effectiveness they will both offer the citizens of Guelph.

Thank you for your consideration to the above.

Ron Clayton, Armtec [redacted]

Emma Street to Earl Street Bridge – Class Environmental Assessment

Public Information Centre #1
October 25, 2016, 6:30 p.m. – 9:00 p.m.
Evergreen Centre, 683 Woolwich St, Guelph

COMMENT FORM

Contact Information (optional):

Name: Amanda Ammon

Address: [redacted]

Telephone Number: [redacted]

Email: [redacted]

☑ Add my Email Address to the Project Notification List

1. Draft Problem/Opportunity Statement

A Problem/Opportunity statement is the starting point in undertaking a Municipal Class EA and helps define what will be addressed by the project. Do you agree with the draft Problem/Opportunity Statement below? What changes, if any, would you suggest?

The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

2. Draft Evaluation Criteria

Draft evaluation criteria are proposed to be used to evaluate the various alternatives for the type and location of the Emma Street to Earl Street pedestrian bridge and identify a recommended solution.

a) Please review the list of draft criteria below and indicate whether each one is least important, important, or most important.

Criteria	Least Important	Important	Most Important
Social Environment Aesthetics of Bridge		✓	
Natural Environment Impact on Woodlands, Wetlands and Wildlife Habitats			✓
Technical Service Life Expectancy		✓	
Cost Capital Costs for Bridge Construction		✓	

b) Have any criteria been missed? Do you have any other feedback on the proposed criteria?

Built from sustainable materials and construction methods.

3. Issues/Concerns

The Guelph Trail Master Plan (2005) recommends a bridge over the Speed River to connect Emma Street to Earl Street and provide a connection to the Downtown Trail. The purpose of this EA study is to determine if a pedestrian bridge is warranted at this location, and if so, which style of bridge will be constructed.

Are there any other issues or concerns that the project team should be aware of in moving forward with the study? Have we missed anything?

This is a great initiative!

4. Preliminary Bridge Types

Do you have any feedback on the preliminary bridge alternatives that have been identified by the project team?

In favour of a sustainably-built alternative. More natural esthetic.

5. Additional Comments

Please share any additional comments that you have regarding the study.

This bridge is very important and would provide a crucial link ~~before~~ between the downtown and the north side. There are currently no bike lanes connecting either Speedvale or Eramosa from downtown. This bridge would offer a safe corridor for cyclists and pedestrians.

6. PIC Summary

Was the information provided helpful to you?

Yes

Were all your questions answered?

Yes

Was the information provided:

too technical (about right) not detailed enough

Thank you for your comments!

Please return completed forms to the Registration Table. Or if you would like more time, please return by November 15th, 2016 to either contact listed below:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

Emma Street to Earl Street Bridge – Class Environmental Assessment

Public Information Centre #1
October 25, 2016, 6:30 p.m. – 9:00 p.m.
Evergreen Centre, 683 Woolwich St, Guelph

COMMENT FORM

Contact information (optional):

Name: Colin Ferguson

Address: [redacted]

Telephone Number: [redacted]

Email: [redacted]

☒ Please add me to the project notification email list

1. Draft problem/opportunity statement

A Problem/Opportunity statement is the starting point in undertaking a Municipal Class EA and helps define what will be addressed by the project. Do you agree with the draft Problem/Opportunity Statement below? What changes, if any, would you suggest?

The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location and if so, which style of bridge will be constructed.

2. Draft evaluation criteria

Draft evaluation criteria are proposed to be used to evaluate the various alternatives for the type and location of the Emma Street to Earl Street pedestrian bridge and identify a recommended solution.

a) Please review the list of draft criteria below and indicate whether each one is least important, important, or most important.

Criteria	Least important	Important	Most important
Social environment Aesthetics of bridge		x	
Natural environment Impact on woodlands, wetlands and wildlife habitats		x	
Technical Service life expectancy			x
Cost Capital costs for bridge construction			x

b) Have any criteria been missed? Do you have any other feedback on the proposed criteria?

3. Issues or concerns

The Guelph Trail Master Plan (2005) recommends a bridge over the Speed River to connect Emma Street to Earl Street and provide a connection to the Downtown Trail. The purpose of this EA study is to determine if a pedestrian bridge is warranted at this location, and if so, which style of bridge will be constructed.

Are there any other issues or concerns that the project team should be aware of in moving forward with the study? Have we missed anything?

Ensure 'service life expectancy' includes estimated maintenance costs

I support this bridge as there can never be too many bridges in a city divided by a river.and this location is in a perfect spot to complete the river pathway by enabling the avoidance of the dead ends at Arthur St. and Emma St on the north side of the river.

4. Preliminary bridge types

Do you have any feedback on the preliminary bridge alternatives that have been identified by the project team?

No. They all meet the aesthetic need, in my opinion, so choose the cheapest and best value design for the location

5. Additional comments

Please share any additional comments that you have regarding the study.

Although this will be used by and is being called a pedestrian bridge, it needs to be acknowledged that this bridge primarily serves cyclists who want to avoid the dangerous ride on Speedvvale Ave. by following the cycling path from Emma St to Earl and then connecting to other quiet roads and trails to contiue north, west and south and vic versa. The concept of dismounting from one's cycle when crossing the bridge be should be applied with common sense and in every case, the cyclist shall only pass a pedestrian as a pedestrian.

6. PIC/information summary

Was the information provided helpful to you?

Yes.

Were all your questions answered?

At this stage.

Was the information provided:

☐ too technical ☐ about right ☐ not detailed enough

Thank you for your comments!

Please return completed forms by November 15 via email:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

Emma Street to Earl Street Bridge – Class Environmental Assessment

Public Information Centre #1
October 25, 2016, 6:30 p.m. – 9:00 p.m.
Evergreen Centre, 683 Woolwich St, Guelph

COMMENT FORM

Contact Information (optional):

Name: Melissa Wolfe

Address: [redacted]

Telephone Number: [redacted]

Email: [redacted]

☑ Add my Email Address to the Project Notification List

1. Draft Problem/Opportunity Statement

A Problem/Opportunity statement is the starting point in undertaking a Municipal Class EA and helps define what will be addressed by the project. Do you agree with the draft Problem/Opportunity Statement below? What changes, if any, would you suggest?

The City of Guelph (City) has initiated a Class Environmental Assessment (EA) for a proposed pedestrian bridge connecting Emma Street to Earl Street over the Speed River. A bridge in this location is recommended in the Guelph Trail Master Plan (2005). It will provide a connection to the Downtown Trail. The purpose of the EA study is to determine if a pedestrian bridge is warranted at this location [illegible] will be constructed.

FROM: M. Wolfe / A. Ammon
CARR: Outdoor Drop Box
TRK#: 9000084813
RCVD: 11/14/2016 1036

Dept: Natasha Bagasar
Email: natasha.bagasar@guelph.ca; building@gu
For: Andrew Janes
PCS: 2

RECEIVED
NOV 14 2016
Engineering and Capital Infrastructure Services

9999000084814

2. Draft Evaluation Criteria

Draft evaluation criteria are proposed to be used to evaluate the various alternatives for the type and location of the Emma Street to Earl Street pedestrian bridge and identify a recommended solution.

a) Please review the list of draft criteria below and indicate whether each one is least important, important, or most important.

Criteria	Least Important	Important	Most Important
Social Environment Aesthetics of Bridge		✓	
Natural Environment Impact on Woodlands, Wetlands and Wildlife Habitats			✓
Technical Service Life Expectancy			✓
Cost Capital Costs for Bridge Construction	✓		

b) Have any criteria been missed? Do you have any other feedback on the proposed criteria?

3. Issues/Concerns

The Guelph Trail Master Plan (2005) recommends a bridge over the Speed River to connect Emma Street to Earl Street and provide a connection to the Downtown Trail. The purpose of this EA study is to determine if a pedestrian bridge is warranted at this location, and if so, which style of bridge will be constructed.

Are there any other issues or concerns that the project team should be aware of in moving forward with the study? Have we missed anything?

4. Preliminary Bridge Types

Do you have any feedback on the preliminary bridge alternatives that have been identified by the project team?

5. Additional Comments

Please share any additional comments that you have regarding the study.

I currently bike my two young children often over to the Speed River Trail. However, this currently means a dangerous or disruptive trip along Speedvale and many jarring bumps. Being able to access the trail to downtown via a quieter and safer street would vastly affect the regular risk we have to take in order to get downtown.

6. PIC Summary

Was the information provided helpful to you?

Yes

Were all your questions answered?

No - A link to a website with more detailed information such as bridge types proposed and timelines would be useful.

Was the information provided:

too technical (about right) not detailed enough

Thank you for your comments!

Please return completed forms to the Registration Table. Or if you would like more time, please return by November 15th, 2016 to either contact listed below:

Andrew Janes, P. Eng.,
Project Engineer Supervisor
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1
519-822-1260 Ext. 2338
andrew.janes@guelph.ca

Rob Amos, MASc., P.Eng
Project Manager
Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6
519-224-3740 x 1236
amos.r@aquaforbeech.com

Rob Amos

From: Bill Whitehead [redacted]
Sent: Tuesday, November 15, 2016 3:03 PM
To: andrew.janes@guelph.ca; amos.r@aquaforbeech.com
Subject: Emma Street to Earl Street Bridge open house comments

Hi,

I am a resident nearby and I am in full support of this project! **Very excited.**

1) As a cyclist who commutes to work using the trans-Canada Trail, I believe this bridge will give cyclists and pedestrians a **safer, strong east-west passage** and redirect them off Speedvale, which will be good for drivers too. Connecting to the trail will also strengthen the North South flow (and if you did an underpass at the Speedvale bridge near riverside to avoid cars I would be in heaven).
2) As a parent who has children who were at Victory which has suffered a boundary review, as of grade 4/5, the kids will have to go from Ann St (basically Speedvale & Woolwich) to King George, and this would be WAY better on small streets as opposed to Speedvale. Plus I am on a dead end street, so the bus won't come down, we will have to wait for it with our child on Woolwich? We need a responsible alternative to driving and school busses!
3) Any foot or biking traffic will improve health and decrease traffic congestion
4) The next bridge south of Speedvale to cross the river is very far… Norwich? And its future is also up for debate. We need more crossings.
5) I don't care what kind of bridge it is, but you should consider trees falling over onto cables and people hanging things off them.

More pathways will encourage people to walk them!

THANK YOU FOR THIS PROPOSAL !

Bill Whitehead
[redacted]

Rob Amos

From: Martin Collier [redacted]
Sent: Tuesday, November 15, 2016 11:42 PM
To: amos.r@aquaforbeech.com; andrew.janes@guelph.ca
Cc: james.gordon@guelph.ca; Andy.VanHellemond@guelph.ca
Subject: Emma-Earl Bridge EA

Dear Andrew and Amos,

I am submitting my comments on the unnecessary Emma-Earl Bridge EA – just under the wire at 11:41 p.m. on November 15!

EA Scope, Planning and Demand

- The EA's scope is not large enough as it only focuses on the bridge. To assess the bridge's impacts properly, it must be expanded to (at least) north of Speedvale Avenue Bridge, west on Earl to Dufferin and east on Emma to Marlborough.
- The city is trying to use outdated plans to back up the rationale for the bridge: 2005 Trails Master Plan (TMP) and 2007 Local Growth Management Strategy. While the bridge is a dot in the TMP, it was not considered a priority until the incorrect Speedvale decision was made in 2015. Since it is difficult to know how the Bridge construction ties in with future trail/city developments and demand, this EA should be cancelled until TMP public consultations begin in 2017. Cyclists and pedestrians need a network, not a disconnected one with bridges to nowhere.
- There has been no east-west demand analysis for this area. Cyclists and pedestrians either want to move safely along Speedvale or are travelling north to the park or south to downtown. They are not walking or cycling to the General Hospital or Homewood which are the only possible destinations on the east side of the river. Exhibition Park is the only destination to the west of the river and that is too far away.

Financial

- During last year's Speedvale EA, the city stated that $1.2 million is needed for the Emma-Earl Bridge. But moving hydro utilities, bridge design, possible expropriation (Armtec, neighbours), sidewalks to/from the bridge and unforeseen cost overruns will increase the amount to $3 million or more. These scarce dollars should be invested on Speedvale and other cycling routes where it is most needed (e.g. Trans-Canada trail crossing Eramosa and Macdonell). Staff have concurred that there are a number of trails higher on the priority listing that showed a much higher need.

Cyclist/Pedestrian Safety

- The danger is getting across Speedvale so focus and dollars should be ensuring that happens. If millions of dollars are spent at Emma-Earl Bridge, there won't be any left for the critical underpass.
- If bridge is to be built, sidewalks to Dufferin are needed due to 36 wheeler flat-bed trucks driving to Armtec plant.

Environment and Wildlife

- This is one of the last pristine river areas south of Speedvale Avenue-- as EA photos displayed at the consultation showed. To build in this area contradicts policies put in place to naturalize the river.
- Wildlife and fish will be impacted by bridge construction. Animals that roam the area include: beavers, muskrats, minks, herons, woodpeckers (downy, woody, red bellied and pileated), kingfishers, snapping turtles, ducks (golden eyes, common mergansers, hooded mergansers, red heads, mallards, and buffleheads). Instead of developing the river, the city should leave it naturalized so these species can continue to thrive in our urban environment.

General Safety and Social Impacts

- The city stopped police patrols along the rail trail at least two years ago. This has affected the safety of the trail and contributed to increased drug activity along it. A bridge could exacerbate these issues.
- The garbage potential is significant and will further contribute to the negative environmental impacts. We already know that garbage is thrown from the Riverside Bridge and more will be thrown here if the bridge is built due to less "eyes on the bridge". How will the city control this on both sides of the bridge?

In closing, it is well-known that Council and staff used the bridge as a bone thrown to cyclists to get their support for the Speedvale road design in 2015 – which contradicted the city's bike policy. It is time to reconsider this decision as the Emma-Earl Bridge is not necessary for the affected neighbourhoods or the city at large – for all the financial, planning, environmental and social reasons mentioned above.

Sincerely,
Martin

Martin Collier, MES (Pl.)
[redacted]

APPENDIX D

ARCHAEOLOGICAL INVESTIGATION

Stage 1 Archaeological Assessment
Emma Street to Earl Street Pedestrian Bridge
Part of Lot 2, Broken Front Division F and Lot C
(Former Township of Guelph)
City of Guelph
County of Wellington, Ontario

ORIGINAL REPORT

Prepared for:

Aquafor Beech Limited
55 Regal Road, Unit 3
Guelph, ON N1K 1B6

Archaeological Licence #P1066 (Lytle)
Ministry of Tourism, Culture and Sport PIF# P1066-0021-2016
ASI File: 16EA-108

13 December 2016

ASI Archaeological & Cultural Heritage Services
528 Bathurst Street Toronto, ONTARIO M5S 2P9
416-966-1069 F 416-966-9723 asiheritage.ca

Stage 1 Archaeological Assessment
Emma Street to Earl Street Pedestrian Bridge
Part of Lot 2, Broken Front Division F and Lot C
(Former Township of Guelph)
City of Guelph
County of Wellington, Ontario

EXECUTIVE SUMMARY

ASI was contracted by Aquafor Beech Limited to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) prior to the construction of pedestrian bridge crossing the Speed River, linking Emma Street and Earl Street in the City of Guelph. The Study Area is roughly bounded by Speedvale Road in the northwest, Delhi Street to the northeast, and Woolwich Street in the southwest.

The Stage 1 background study determined that two previously registered archaeological sites are located within one kilometre of the Study Area. The property inspection determined that parts of the Study Area retain archaeological potential and will require Stage 2 assessment.

In light of these results, the following recommendations are made:

1. Parts of the Study Area possess archaeological potential. These lands require Stage 2 archaeological assessment by test pit survey at 5 m intervals prior to any proposed impacts to the property;

2. Parts of the Study Area require test pit survey according to professional judgement to confirm disturbance;

3. The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance or slopes in excess of 20 degrees. These lands do not require further archaeological assessment; and,

4. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

ASI

PROJECT PERSONNEL

Senior Project Manager:	Lisa Merritt, MSc. (P094) *Partner & Director* *Environmental Assessment Division*
Project Coordinator:	Sarah Jagelewski, Hon. BA (R405) *Staff Archaeologist, Assistant Manager* *Environmental Assessment Division*
Project Director (Licensee):	Jessica Lytle, MSc (P1066) *Staff Archaeologist, Project Manager* *Environmental Assessment Division*
Project Manager:	Eliza Brandy, MA (R1109) *Staff Archaeologist, Project Manager* *Environmental Assessment Division*
Field Director:	Robert Pihl, MA, CAHP (P057) *Senior Associate*
Report Preparation:	Eliza Brandy
Graphics:	Blake Williams, MLitt (P383) *Geomatics Specialist, Staff Archaeologist*
Report Reviewer:	Lisa Merritt

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF PLATES

1.0 PROJECT CONTEXT

Archaeological Services Inc. (ASI) was contracted by Aquafor Beech Limited to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) prior to the construction of pedestrian bridge crossing the Speed River, linking Emma Street and Earl Street in the City of Guelph (Figure 1). The Study Area is roughly bounded by Speedvale Road in the northwest, Marlborough Road to the northeast, and Woolwich Street in the southwest.

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (2005) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Tourism, Culture and Sport (MTCS).

In the S & G, Section 1, the objectives of a Stage 1 archaeological assessment are discussed as follows:

- To provide information about the history, current land conditions, geography, and previous archaeological fieldwork of the Study Area;
- To evaluate in detail the archaeological potential of the Study Area that can be used, if necessary, to support recommendations for Stage 2 archaeological assessment for all or parts of the Study Area; and,
- To recommend appropriate strategies for Stage 2 archaeological assessment, if necessary.

This report describes the Stage 1 archaeological assessment that was conducted for this project and is organized as follows: Section 1.0 summarizes the background study that was conducted to provide the historical and archaeological contexts for the project Study Area; Section 2.0 addresses the field methods used for the property inspection that was undertaken to document its general environment, current land use history and conditions of the Study Area; Section 3.0 analyses the characteristics of the project Study Area and evaluates its archaeological potential; Section 4.0 provides recommendations for the next assessment steps; and the remaining sections contain other report information that is required by the S & G, e.g., advice on compliance with legislation, works cited, mapping and photo-documentation.

1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act*, RSO (1990) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the Municipal Class EA process (Municipal Engineers Association 2000 as amended in 2007 and 2011).

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment was granted by Aquafor Beech Limited on November 24, 2016.

1.2 Historical Context

The purpose of this section, according to the S & G, Section 7.5.7, Standard 1, is to describe the past and present land use and the settlement history and any other relevant historical information pertaining to the

Study Area. A summary is first presented of the current understanding of the Indigenous land use of the Study Area. This is then followed by a review of the historical Euro-Canadian settlement history.

1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (BP) (Ferris 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 BP, the environment had progressively warmed (Edwards and Fritz 1988) and populations now occupied less extensive territories (Ellis and Deller 1990).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 BP and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Ellis et al. 1990, 2009; Brown 1995:13).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. Exchange and interaction networks broaden at this time (Spence et al. 1990:136, 138) and by approximately 2,000 BP, evidence exists for macro-band camps, focusing on the seasonal harvesting of resources (Spence et al. 1990:155, 164). It is also during this period that maize was first introduced into southern Ontario, though it would have only supplemented people's diet (Birch and Williamson 2013:13–15). Bands likely retreated to interior camps during the winter. It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From approximately 1,000 BP until approximately 300 BP, lifeways became more similar to that described in early historical documents. During the Early Iroquoian phase (AD 1000-1300), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson 1990:317). By the second quarter of the first millennium BP, during the Middle Iroquoian phase (AD 1300-1450), this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al. 1990:343). In the Late Iroquoian phase (AD 1450-1649) this process continued with the coalescence of these small villages into larger communities (Birch and Williamson 2013). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed.

Samuel de Champlain in 1615 reported that a group of Iroquoian-speaking people situated between the New York Iroquois and the Huron-Wendat were at peace and remained "la nation neutre". In subsequent years, the French visited and traded among the Neutral, but the first documented visit was not until 1626, when the Recollet missionary Joseph de la Roche Daillon recorded his visit to the villages of the Attiwandaron, whose name in the Huron-Wendat language meant "those who speak a slightly different

tongue" (the Neutral apparently referred to the Huron-Wendat by the same term). Like the Huron-Wendat, Petun, and New York Iroquois, the Neutral people were settled village agriculturalists. Several discrete settlement clusters have been identified in the lower Grand River, Fairchild-Big Creek, Upper Twenty Mile Creek, Spencer-Bronte Creek drainages, Milton, Grimsby, Eastern Niagara Escarpment and Onondaga Escarpment areas, which are attributed to Iroquoian populations. These settlement clusters are believed by some scholars to have been inhabited by populations of the Neutral Nation or pre- (or ancestral) Neutral Nation (Lennox and FItzgerald 1990).

Between 1647 and 1651, the Neutral were decimated by epidemics and ultimately dispersed by the New York Iroquois, who subsequently settled along strategic trade routes on the north shore of Lake Ontario for a brief period during the mid seventeenth-century. Compared to settlements of the New York Iroquois, the "Iroquois du Nord" occupation of the landscape was less intensive. Only seven villages are identified by the early historic cartographers on the north shore, and they are documented as considerably smaller than those in New York State. The populations were agriculturalists, growing maize, pumpkins, and squash. These settlements also played the important alternate role of serving as stopovers and bases for New York Iroquois travelling to the north shore for the annual beaver hunt (Konrad 1974).

Due, in large part, to increased military pressure from the French upon their homelands south of Lake Ontario, the Iroquois abandoned their north shore frontier settlements by the late 1680s, although they did not relinquish their interest in the resources of the area, as they continued to claim the north shore as part of their traditional hunting territory. The territory was immediately occupied or re-occupied by Anishinaabek groups, including the Mississauga, Ojibwa (or Chippewa) and Odawa, who, in the early seventeenth century, occupied the vast area from the east shore of Georgian Bay, and the north shore of Lake Huron, to the northeast shore of Lake Superior and into the upper peninsula of Michigan. Individual bands numbered several hundred people and were politically autonomous. Nevertheless, they shared common cultural traditions and relations with one another and the land. These groups were highly mobile, with a subsistence economy based on hunting, fishing, gathering of wild plants, and garden farming. Their movement southward also brought them into conflict with the Haudenosaunee.

Peace was achieved between the Iroquois and the Anishinaabek Nations in August of 1701 when representatives of more than twenty Anishinaabek Nations assembled in Montreal to participate in peace negotiations (Johnston 2004:10). During these negotiations captives were exchanged and the Iroquois and Anishinaabek agreed to live together in peace. Peace between these nations was confirmed again at council held at Lake Superior when the Iroquois delivered a wampum belt to the Anishinaabek Nations. In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases to the north of Lake Ontario in the early nineteenth century, the Crown acknowledged the Mississaugas as the owners of the lands between Georgian Bay and Lake Simcoe and entered into negotiations for additional tracts of land as the need arose to facilitate European settlement.

During the American Revolution, Mississauga warriors supported the English military. Rebel forces destroyed the villages of the Six Nations Iroquois in New York and many people were forced to move to the Niagara area. When Six Nations Iroquois leaders learned that the English planned to make a peace treaty with the Americans and establish a boundary line that would give away their homelands they were angry. The English government offered to protect Six Nations Iroquois peoples and give them land within their boundaries. On August 8, 1783, Lord North instructed Governor Haldimand to set apart land for the Six Nations Iroquois and ensure that they carried on their hunting and fur trading with the British. On May 22, 1784, a tract of land along the Grand River was purchased by the British government from the Mississaugas who lived in the vicinity (Johnston 1964; Lytwyn 2005). The land set apart is called the

Haldimand Tract. Joseph Brant led New York Iroquois loyalists (1600 people) to the Haldimand tract in 1784 and in the fall of 1784, Sir Frederick Haldimand formally awarded the tract to the Mohawks "and others of the Six Nations [Iroquois]." They were authorized to "Settle upon the Banks of the River" and were allotted "for that Purpose six miles [10 km] deep from each Side of [it] beginning at Lake Erie, & extending in the Proportion to [its] Head." The precise boundaries of the grant were unclear as there was no survey; for example, the northern boundary of the original deed from the Mississaugas to the Crown stated that the line extended "from the creek that falls from a small lake into…the bay known by the name of Waghquata [Burlington Bay]…until it strikes the river La Tranche [Thames]." The 1790 survey by Augustus Jones intentionally failed to include the headwaters of the Grand, an action made all the more difficult to address given the unclear description of the extent in the original deeds (Johnston 1964; Lytwyn 2005).

In 1841, Samuel P. Jarvis (Indian Superintendent) informed the Six Nations Iroquois that the only way to keep white intruders off their land would be for them to surrender it to the Crown, to be administered for their sole benefit. With this plan, the Six Nations Iroquois would retain lands that they actually occupied and a reserve of approximately 8,094 ha. The surrender of land was made by the Confederacy in January, 1841 (Johnston 1964; Lytwyn 2005). Today, this history and those surrenders are still contested and there are numerous specific land claims that have been filed by the Six Nations Iroquois with the federal government in regard to lands within the Haldimand Tract (Johnston 1964; Lytwyn 2005).

The eighteenth century saw the ethnogenesis in Ontario of the Métis when Métis people began to identify as a separate group, rather than as extensions of their typically maternal First Nations and paternal European ancestry (Métis National Council n.d.). Living in both Euro-Canadian and Indigenous societies, the Métis acted as agents and subagents in the fur trade but also as surveyors and interpreters. Métis populations were predominantly located north and west of Lake Superior, however, communities were located throughout Ontario (MNC n.d.; Stone and Chaput 1978:607,608). During the early nineteenth century, many Métis families moved towards locales around southern Lake Huron and Georgian Bay, including Kincardine, Owen Sound, Penetanguishene, and Parry Sound (MNC n.d.). By the mid-twentieth century, Indigenous communities, including the Métis, began to advance their rights within Ontario and across Canada, and in 1982, the Métis were recognized as one of the distinct Indigenous peoples in Canada. Recent decisions by the Supreme Court of Canada (Supreme Court of Canada 2003, 2016) have reaffirmed that Métis people have full rights as one of the Indigenous people of Canada under subsection 91(24) of the Constitution Act, 1867.

1.2.2 Euro-Canadian Land Use: Township Survey and Settlement

Historically, the Study Area is located in the Former Township of Guelph, Wellington County in part of Lot 2, Broken Front Division F and Lot C.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth

century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 m of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

Guelph Township

Guelph Township is named after the Royal House of Brunswick, family of the English monarch, George IV. Guelph Township was surveyed by John MacDonald in 1830 and the land in the township was purchased by the Canada Company, which consisted of a group of British speculators who acquired more than two million acres of land in Upper Canada for colonization purposes (Mika and Mika 1983:186). A large number of settlers arrived in the township before it was surveyed. The first settler in the township was Samuel Rife, who squatted near the western limits of the township around the year 1825. Waterloo Road, formerly Broad Road, was built by Absalom Shade and was finished around 1827, the year the Town of Guelph was founded (Mika and Mika 1983:186). Many settlers arrived in the township between the years 1827 and 1830.

City of Guelph

While the present boundaries for the City of Guelph fall within the former Townships of Puslinch and Guelph, the historic community of Guelph was situated on the River Speed in Guelph Township. Guelph was founded by a novelist named John Galt, secretary to the Canada Company, in 1827. The original plan for the town depicted lots reserved for the company offices, a saw mill, a market square, two churches and a burial ground. Registered plans of subdivision for this village date from 1847-1865. The first settlers were attracted here in the next few years. By the late 1840s, the population of Guelph had reached 1,480, and it was incorporated as a town in 1850. It was also selected as the capital of Wellington County, and it was also deemed to be an inland port of entry. The population had reached 6,878 by 1873. By April 1879, the population exceeded 10,000 and Guelph was incorporated as a city. Guelph contained a wide variety of trades and professions by the 1840s (Johnson 1977:83). By the 1870s, Guelph contained churches, banks, insurance agencies, a library, two newspapers, telegraph offices, hotels, stores, flour, saw, and planing mills, woollen factories, foundries, machinery works, sewing machine works, musical instrument manufacturers, tanneries, soap and candle factories, shoemakers, wooden ware manufacturers, and two breweries. It was a station for both the Grand Trunk and Canadian Pacific Railways. Guelph was built on a number of hills which gives it a picturesque appearance, and a number of fine heritage structures in the city were built out of native limestone (Crossby 1873:134; Rayburn 1997:145; Winearls 1991:680–684; Cameron 1967; Fischer and Harris 2007:132; Scott 1997:94–95).

Guelph Junction Railway

In 1884, the Guelph Junction Railway (GJR) began construction on a rail line to connect from south of the Grand Trunk Railway in Guelph with the Credit Valley Railway (later Canadian Pacific Railway) near Campbellville. At the time, the only railway operating out of Guelph was the Great Western Railway

(later Grand Trunk Railway). The population of Guelph was concerned that rates and service could be improved by removing the GTR monopoly. Work commenced on the line by the fall of 1886, with the company agreeing to lease the line to Canadian Pacific upon completion, and the line opened in September 1888. The new junction point with the former CVR tracks became known as Guelph Junction (Hughes 1997).

1.2.3 Historical Map Review

The 1868 *Map of the City of Guelph* (Hobson 1868) and the 1881 *Illustrated Historical Atlas of the Township of Guelph* (H. Parsell & Co. 1881) were examined to determine the presence of historic features within the Study Area during the nineteenth century (Figures 2 and 3). While neither map illustrates land tenure or historical features within the Study Area, it is shown to be located at the northwestern limits of the Town of Guelph. By 1881, Earl and Emma Streets are surveyed in their current alignments, with a saw mill located upriver, and the W. G. & B Railway.

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases.

In addition, the use of historical map sources to reconstruct/predict the location of former features within the modern landscape generally proceeds by using common reference points between the various sources. These sources are then geo-referenced in order to provide the most accurate determination of the location of any property on historic mapping sources. The results of such exercises are often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including the vagaries of map production (both past and present), the need to resolve differences of scale and resolution, and distortions introduced by reproduction of the sources. To a large degree, the significance of such margins of error is dependent on the size of the feature one is attempting to plot, the constancy of reference points, the distances between them, and the consistency with which both they and the target feature are depicted on the period mapping.

1.2.4 Twentieth-Century Mapping Review

The 1906 *Map of the City of Guelph* and the 1935 National Topographic System Guelph Sheet were examined to determine the extent and nature of development and land uses within the Study Area (Figures 4 and 5). While the 1906 map does not illustrate any structures within the Study Area, it depicts the Study Area within the St. John's Ward along the Speed River, illustrating the CPR, Emma Street in their present alignments. Earl Street is not shown to cross east of Dufferin Street. Town plots are illustrated to the north of Emma Street and on the west bank of the river. The 1935 map illustrates two structures adjacent to the Study Area.

A review of available Google satellite imagery shows that since 2006 the Study Area has remained within a predominantly residential landscape near the termini of Earl and Emma Streets along the Speed River.

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Study Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MTCS through "Ontario's Past Portal"; published and unpublished documentary sources; and the files of ASI.

1.3.1 Current Land Use and Field Conditions

A Stage 1 property inspection was conducted on November 23, 2016 that noted the Study Area is located within a residential neighbourhood in the City of Guelph. The Study Area is roughly bounded by Speedvale Road in the northwest, Marlborough Road to the northeast, and Woolwich Street in the southwest. It is also located near the Downtown Trail, a multi-use trail that follows the GJ Railway corridor.

1.3.2 Geography

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Study Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow and Warner 1990:: Figure 2.16)(Karrow and Warner 1990: Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location.
Other geographic characteristics that can indicate archaeological potential include: elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including; food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

The Study Area is situated within the Guelph Drumlin Field physiographic region of southern Ontario in a former spillway (Chapman and Putnam 1984). The Guelph Drumlin Field physiographic region (Chapman and Putnam 1984: 137-139) centres upon the City of Guelph and Guelph Township and occupies roughly 830 km^2. Within the Guelph Drumlin Field, there are approximately 300 drumlins of

varying sizes. For the most part these hills are of the broad oval type with slopes less steep than those of the Peterborough drumlins and are not as closely grouped as those in some other areas. The till in these drumlins is loamy and calcareous, and was derived mostly from dolostone of the Amabel Formation that can be found exposed below the Niagara Escarpment. Spillways are the former glacial meltwater channels. They are often found in association with moraines but in opposition are entrenched rather than elevated landforms. They are often, though not always, occupied by stream courses, the fact of which raises the debate of their glacial origin. Spillways are typically broad troughs floored wholly or in part by gravel beds and are typically vegetated by cedar swamps in the lowest beds (Chapman and Putnam 1984:15).

Figure 5 depicts surficial geology for the Study Area. The surficial geology mapping demonstrates that the Study Area is underlain by modern alluvial deposits of sand (Ontario Geological Survey 2010). Soils in the Study Area include Burford Loam, a grey-brown podzolic with good drainage, and Bottom Land, alluvial deposits of variable drainage and consistency occurring along stream courses that are subject to flooding and show little horizontal differentiation (Olding et al. 1956:51) (Figure 7).

The Study Area crosses the Speed River, a tributary of the Grand River in Wellington County. The Speed River originates near Orton and runs through Guelph where it merges with the Eramosa River which drains into the Grand River in Cambridge. In 1974 the Speed River was dammed just north of Guelph, creating the artificial reservoir of Guelph Lake (Grand River Conservation Authority 2016). The Grand River, which drains an area of approximately 673,397 ha, begins northeast of Dundalk at 526 m above sea level and flows for approximately 290 km to Lake Erie at Port Maitland (Chapman and Putnam 1984:95). It was an important transportation route and a critical resource extraction area for generations of Indigenous people. Historically, the Grand River has been utilized as a navigable waterway, as a power source (such power sites served as settlement nuclei), and above Brantford as a course for driving logs (Chapman and Putnam 1984:98). It is also the focus of the Haldimand Tract; Joseph Brant was awarded six miles (10 km) on either side of the river (Johnston 1964:35–38; Lytwyn 2005). The Grand River (and its tributaries the Nith, Conestogo, Speed and Eramosa Rivers) was designated as a Canadian Heritage River in 1994 for its cultural history and recreation (Canadian Heritage Rivers System 2016).

1.3.3 Previous Archaeological Research

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTCS. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 km east to west, and approximately 18.5 km north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area under review is located in Borden block *AjHb*.

According to the OASD, three previously registered archaeological sites are located within one kilometre of the Study Area (Ministry of Tourism, Culture and Sport 2016). None of these sites are within 50 metres of the Study Area. A summary of the sites is provided below.

Table 1: List of previously registered sites within one kilometre of the Study Area

Borden #	Site Name	Cultural Affiliation	Site Type	Researcher
AjHb-83	n/a	Euro-Canadian	House	Grimes 2014
AjHb-84	n/a	Euro-Canadian	Agricultural	Grimes 2014

According to the background research, no previous reports detail fieldwork within 50 m of the Study Area.

2.0 FIELD METHODS: PROPERTY INSPECTION

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features that will affect assessment strategies, such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted under the field direction of Robert Pihl (P057) of ASI, on November 23, 2016 in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area. It was a visual inspection only and did not include excavation or collection of archaeological resources. Fieldwork was only conducted when weather conditions were deemed suitable, per S&G Section 2. Previously identified features of archaeological potential were examined; additional features of archaeological potential not visible on mapping were identified and documented as well as any features that will affect assessment strategies. Field observations are compiled onto the existing conditions of the Study Area in Section 7.0 (Figure 8) and associated photographic plates are presented in Section 8.0 (Plates 1-8).

3.0 ANALYSIS AND CONCLUSIONS

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the Study Area. These data are presented below in Section 3.1. Results of the analysis of the Study Area property inspection are presented in Section 3.2.

3.1 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites (AjHb-83, AjHb-84);
- Water sources: primary, secondary, or past water source (Speed River);
- Early historic transportation routes (Woolwich St, Delhi St, Emma St, Earl St, GJR);
- Proximity to early settlements (historic Town of Guelph); and
- Well-drained soils (Burford Loam)

These criteria are indicative of potential for the identification of Indigenous and Euro-Canadian archaeological resources, depending on soil conditions and the degree to which soils have been subject to deep disturbance.

3.2 Analysis of Property Inspection Results

The property inspection determined that parts of the Study Area have been subjected to deep soil disturbance events from the construction of the railway, Emma Street, and Earl Street ROWs and according to the S & G Section 1.3.2 do not possess archaeological potential (Plates 1, 3, 5, 6; Figure 8: areas highlighted in yellow). Some lands within the Study Area adjacent to the river are sloped in excess of 20 degrees, or within low and wet conditions, and according to the S& G Section 2.1 do not possess archaeological potential (Plates 2, 4, 7; Figure 8: areas highlighted in pink and blue). These areas do not require further assessment.

Parts of the Study Area require test pit survey according to professional judgement to confirm disturbance in accordance with the S & G Section 2.1.8 Standard 2 (Plates 5, 6, 8; Figure 8: areas in turquoise). The remainder of the Study Area retains archaeological potential (Plates 3, 4, 7; Figure 8: areas highlighted in green). These areas will require Stage 2 archaeological assessment by test pit survey at five metre intervals prior to any development. According to the S & G Section 2.1.2, test pit survey is required on terrain where ploughing is not viable, such as wooded areas, properties where existing landscaping or infrastructure would be damaged, overgrown farmland with heavy brush or rocky pasture, and narrow linear corridors up to 10 metres wide.

3.3 Conclusions

The Stage 1 background study determined that two previously registered archaeological sites are located within one kilometre of the Study Area. The property inspection determined that parts of the Study Area retain archaeological potential and will require Stage 2 assessment.

4.0 RECOMMENDATIONS

In light of these results, the following recommendations are made:

1. Parts of the Study Area possess archaeological potential. These lands require Stage 2 archaeological assessment by test pit survey at 5 m intervals prior to any proposed impacts to the property;

2. Parts of the Study Area require test pit survey according to professional judgement to confirm disturbance;

3. The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance or slopes in excess of 20 degrees. These lands do not require further archaeological assessment; and,

4. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the MTCS should be immediately notified.

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

ASI also advises compliance with the following legislation:

- This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act.*

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

- The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

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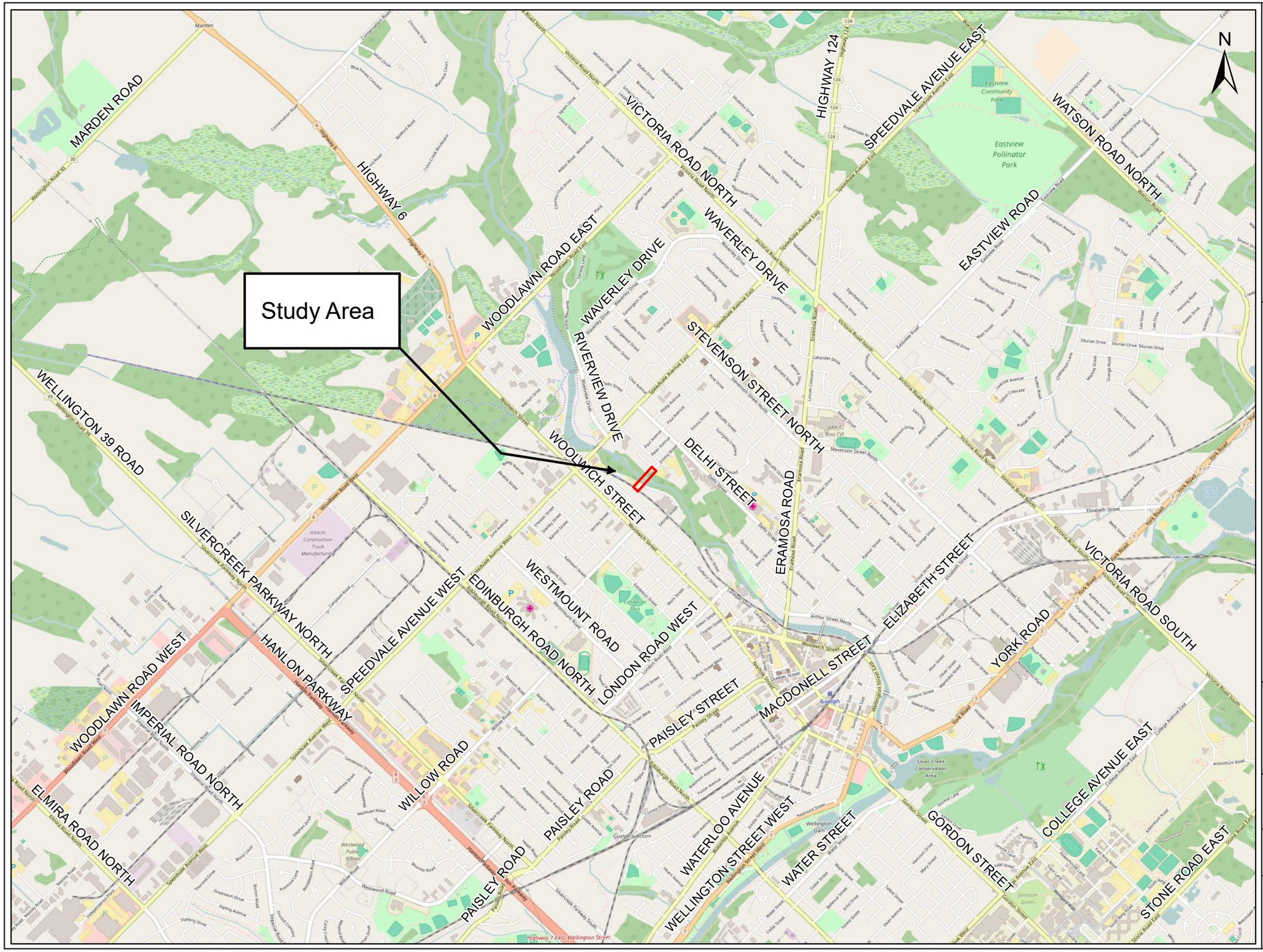
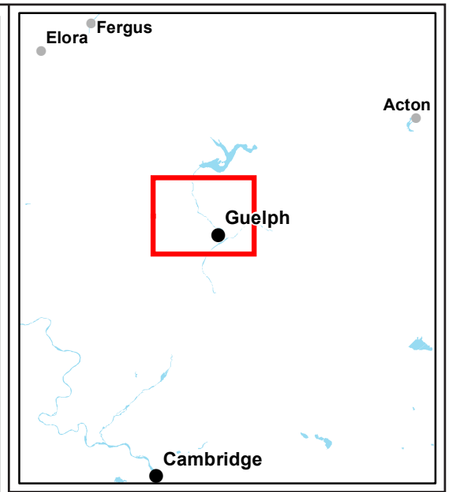
7.0 MAPS





Study Area

BASE:

0 1.5

Kilometres

ASI PROJECT NO.: 16EA-108
DATE: 28 Nov 2016

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FILE: 16EA108_Fig1

ASI
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Figure 1: Emma Street to Earl Street Bridge - Location of the Study Area

Figure 2: Emma Street to Earl Street Pedestrian Bridge Study Area (Approximate Location) Overlaid on the 1868 James Hobson Map of the Town of Guelph

Figure 3: Emma Street to Earl Street Pedestrian Bridge Study Area (Approximate Location) Overlaid on the 1881 Illustrated Historical Atlas of the Township of Guelph

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Study Area

0 250
Metres

ASI PROJECT NO.: 16EA-108 DRAWN BY: BW
DATE: 06 Dec 2016 FILE: 16EA108_Fig2_3

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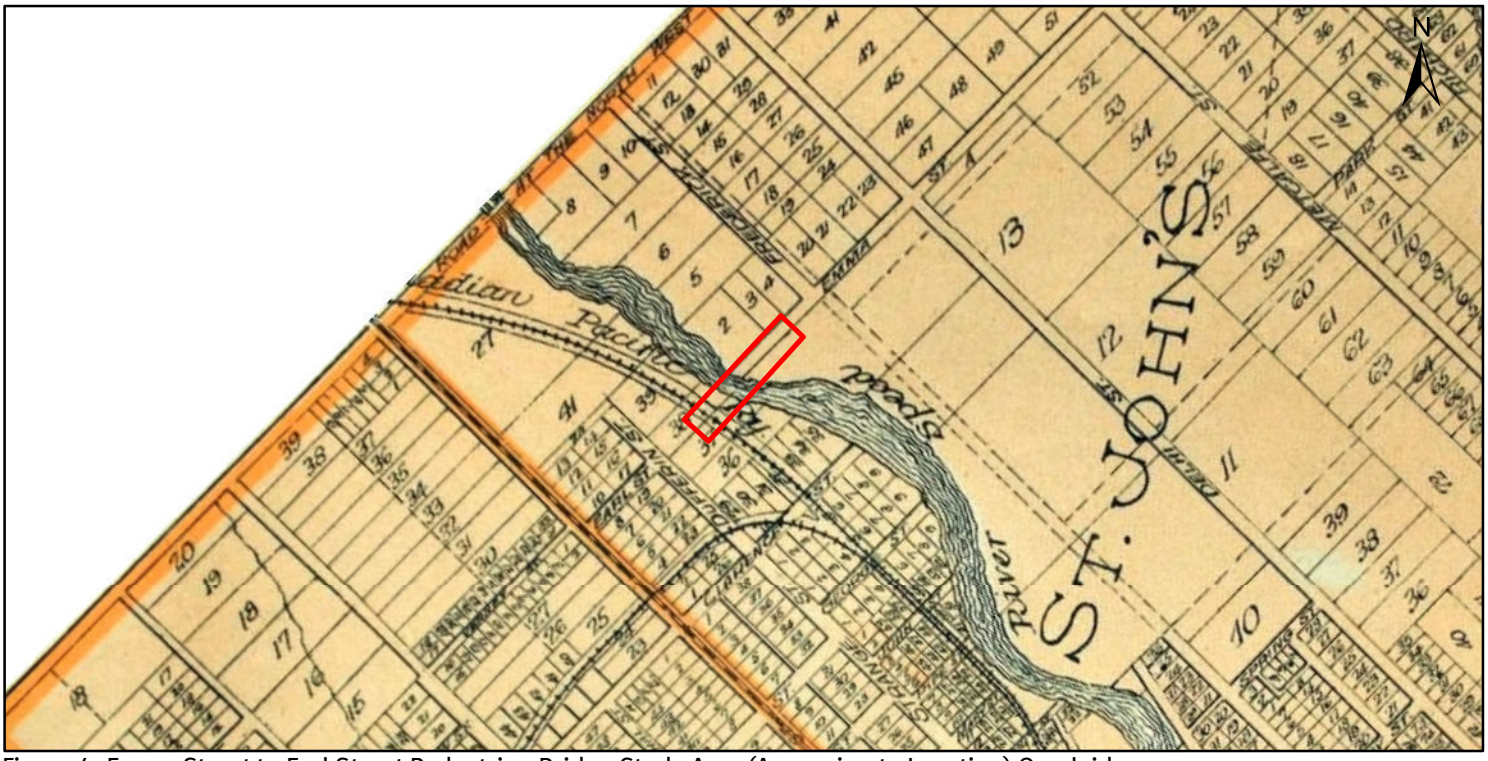

Figure 4: Emma Street to Earl Street Pedestrian Bridge Study Area (Approximate Location) Overlaid on the 1906 Map of the City of Guelph

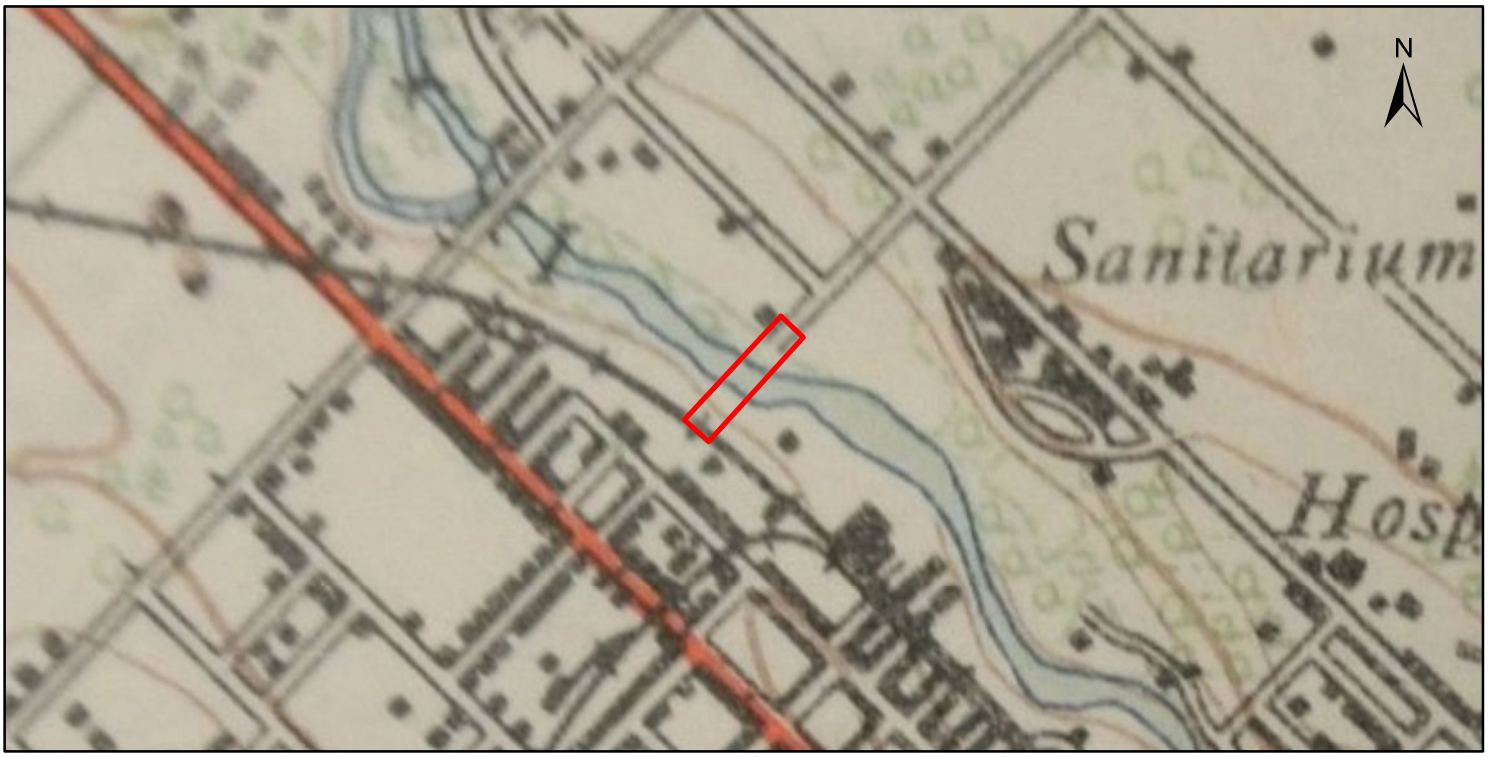

Figure 5: Emma Street to Earl Street Pedestrian Bridge Study Area (Approximate Location) Overlaid on the 1935 NTS Guelph Sheet

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Study Area

0 250
Metres

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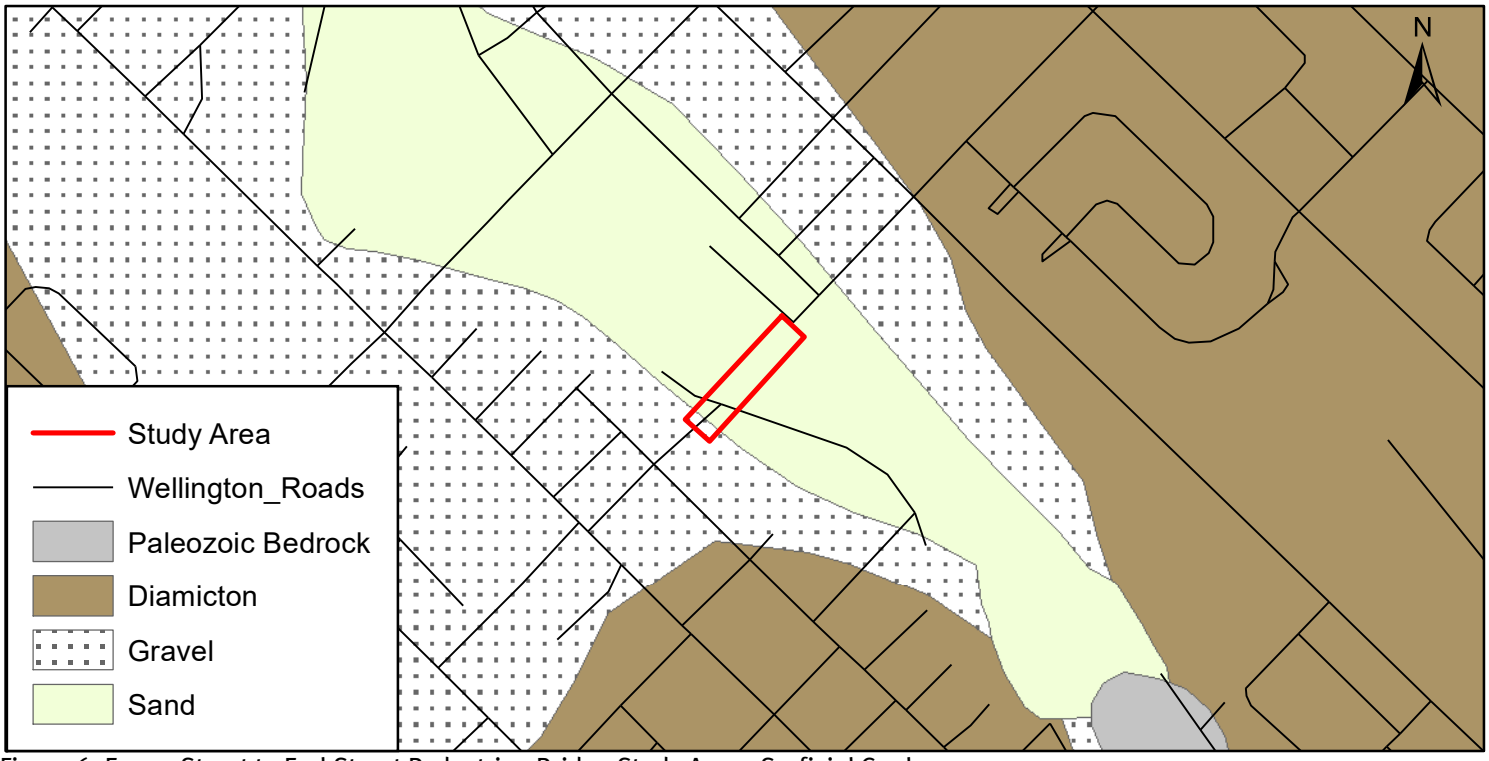

Figure 6: Emma Street to Earl Street Pedestrian Bridge Study Area - Surficial Geology

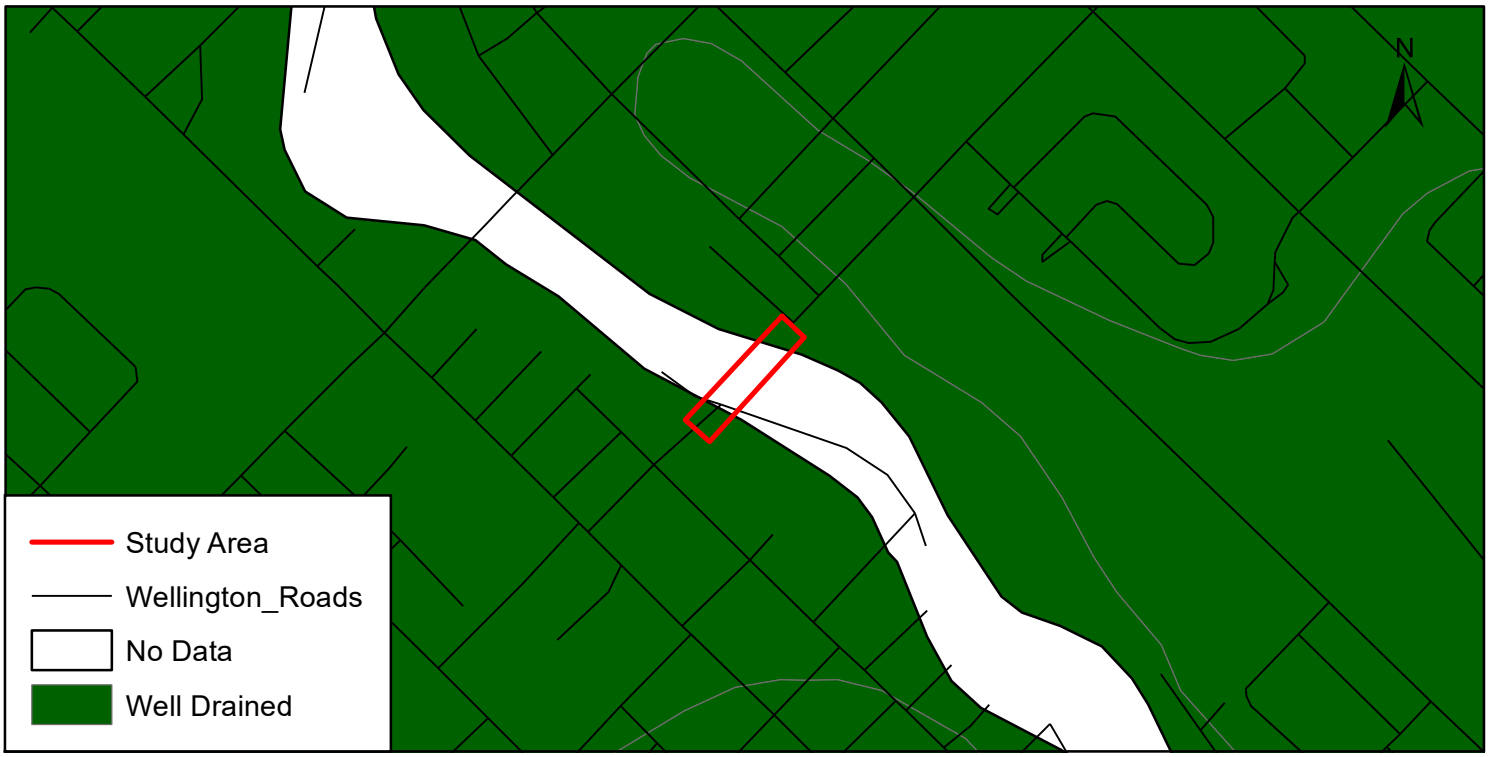

Figure 7: Emma Street to Earl Street Pedestrian Bridge Study Area - Soil Drainage

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0 250
Metres

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Study Area
Disturbed
Low and Wet
Potential - Requires Judgemental Test Pit Survey
Potential - Requires Test Pit Survey
Slope
Rail
Road

BASE:
Ortho
Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 50
Metres

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DATE: 09 Dec 2016
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Figure 8: Emma Street to Earl Street Pedestrian Bridge - Results of the Property Inspection

8.0 IMAGES

Plate 1: Southwest view of Earl Street and railway crossing; Area is disturbed, no potential

Plate 2: Northeast view of the east bank of the Speed River; Areas at the tow of the slope are low and wet, no potential

Plate 3: Southeast view of the Study Area; West river bank retains potential, requires Stage 2 survey; Adjacent property is disturbed, no potential

Plate 4: Northwest view of the Study Area; West river bank retains potential, requires Stage 2 survey; Area adjacent to the river is sloped, no potential

Plate 5: Northeast view of Emma Street; Landscaped area beyond disturbed ROW requires judgemental test pit survey to confirm extent of disturbance

Plate 6: Southwest view at Emma Street terminus; Landscaped area beyond disturbed ROW requires judgemental test pit survey to confirm extent of disturbance

Plate 7: Southwest view of the Study Area; East river bank retains potential, requires Stage 2 survey; Area adjacent to the river is sloped, no potential

Plate 8: Northwest view at Emma Street terminus; Landscaped area requires judgemental test pit survey to confirm extent of disturbance

APPENDIX E

COSTING ESTIMATES OF ALTERNATIVES

Pedestrian Bridges - Alternative 1

City of Guelph

Engineering & Design

1	Geotechnical Investigation for Bridge Design	1	LS	$25,000.00	$25,000.00
2	Design & Administration of Bridge Structure	1	LS	$160,000.00	$160,000.00
				Subtotal (Excl of HST)	$185,000.00

Section "A" – Site Preparation & Removal

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
A1	Performance, Labour, and Material Bonds	1	LS	$20,000.00	$20,000.00
A2	Project Signage	2	EA	$800.00	$1,600.00
A3	Field Office	1	LS	$5,000.00	$5,000.00
A4	Mobilization & demobilization, construct, maintain, and repair access route and staging areas	1	LS	$20,000.00	$20,000.00
A5	Construction Layout and Utility Locates	1	LS	$8,000.00	$8,000.00
A6	Access, Staging Area, Crane Pads, and Rehabilitation	1	LS	$25,000.00	$25,000.00
A7	Traffic Control and Signage	1	LS	$6,000.00	$6,000.00
A8	Clearing, grubbing, and tree removals	1	LS	$25,000.00	$25,000.00
A9	Supply, install, and remove construction / panel fence	200	m	$10.00	$2,000.00
A10	Supply & install sediment fence, silt socks, E&SC	300	m	$30.00	$9,000.00
				Subtotal (Excl of HST)	$121,600.00

Section "B" – Bridge Structure Design and Construction - Alternative 1

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
B1	Fabrication, Supply, and Erection of Steel Cable Single Span Bridge, Including Foundations, Helical Piers, Superstructure and Handrails)	1	LS	$2,500,000.00	$2,500,000.00
				Subtotal (Excl of HST)	$2,500,000.00

Section "C" – Restoration

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
C1	Supply and Placement of Erosion Control Blanket	1	LS	$2,000.00	$2,000.00
C2	Supply and Application of Topsoil (300mm)	1	LS	$8,000.00	$8,000.00
C3	Supply and Application of Terraseed or Sod	1	LS	$12,000.00	$12,000.00
C4	Native Tree & Shrub Plantings	1	LS	$18,000.00	$18,000.00
				Subtotal (Excl of HST)	$40,000.00

Section "D" – Contingency

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
D1	Contingency (20%)	1	LS	$569,320.00	$569,320.00
				Subtotal (Excl of HST)	$569,320.00

Alternative 1 - Single Span Bridge				
Engineering & Design				$185,000.00
Construction				
Section A - Site Preparation and Removal (Excl of taxes)				$121,600.00
Section B - Bridge Structure (Excl of taxes)				$2,500,000.00
Section C - Restoration (Excl of taxes)				$40,000.00
Section E - Contingency (20%)				$569,320.00
Sub Total (Excl of taxes)				$3,230,920.00
HST @ 13%				$420,019.60
Total Bid Price (Incl of taxes)				$3,650,939.60

Pedestrian Bridges - Alternative 2a (Hydro Relocation)

City of Guelph

Engineering & Design

1	Geotechnical Investigation for Bridge Design	1	LS	$25,000.00	$25,000.00
2	Design & Adiminstration of Bridge Structure	1	LS	$80,000.00	$80,000.00
				Subtotal (Excl of HST)	$105,000.00

Section "A" – Site Preparation & Removal

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
A1	Performance, Labour, and Material Bonds	1	LS	$20,000.00	$20,000.00
A2	Project Signage	2	EA	$800.00	$1,600.00
A3	Field Office	1	LS	$5,000.00	$5,000.00
A4	Mobilization & Demobilization	1	LS	$20,000.00	$20,000.00
A5	Construction Layout and Utility Locates	1	LS	$8,000.00	$8,000.00
A6	Overhead Hydro Relocation	1	LS	$60,000.00	$60,000.00
A7	Access, Staging Area, Crane Pads, and Rehabilitation	1	LS	$25,000.00	$25,000.00
A8	Traffic Control and Signage	1	LS	$6,000.00	$6,000.00
A9	Clearing, grubbing, and tree removals	1	LS	$15,000.00	$15,000.00
A10	Supply, install, and remove construction fence	1000	m	$10.00	$10,000.00
A11	Supply, install, and remove sediment fence	1000	m	$15.00	$15,000.00
				Subtotal (Excl of HST)	$185,600.00

Section "B" – Bridge Structure Design and Construction - Alternative

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
B1	Fabrication, Supply, and Erection of Two Span Steel Bridge, Including Foundations, Helical Piers, Superstructure and Handrails)	1	LS	$900,000.00	$900,000.00
				Subtotal (Excl of HST)	$900,000.00

Section "C" – Restoration

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
C1	Supply and Placement of Erosion Control Blanket	1	LS	$18,000.00	$18,000.00
C2	Supply and Application of Topsoil (300mm)	1	LS	$20,000.00	$20,000.00
C3	Supply and Application of Terraseed Mixture	1	LS	$19,000.00	$19,000.00
C4	Additional Ecological Restoration	1	LS	$50,000.00	$50,000.00
				Subtotal (Excl of HST)	$107,000.00

Section "D" – Contingency

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
D1	Contingency (20%)	1	LS		$259,520.00
				Subtotal (Excl of HST)	$259,520.00

Alternative 2a - Two-Span Bridge (Hydro Relocation)					
Engineering & Design					$105,000.00
Construction					
Section A - Site Preparation and Removal (Excl of taxes)					$185,600.00
Section B - Bridge Structure (Excl of taxes)					$900,000.00
Section C - Restoration (Excl of taxes)					$107,000.00
Section E - Contingency (20%)					$259,520.00
Sub Total (Excl of taxes)					**$1,452,120.00**
HST @ 13%					$188,775.60
Total Bid Price (Incl of taxes)					**$1,640,895.60**

Pedestrian Bridges - Alternative 2b (Hydro within Structure)					
City of Guelph					
Engineering & Design					
1	Geotechnical Investigation for Bridge Design	1	LS	$25,000.00	$25,000.00
2	Design & Adiminstration of Bridge Structure	1	LS	$80,000.00	$80,000.00
				Subtotal (Excl of HST)	$105,000.00
Section "A" – Site Preparation & Removal					
Item No.	**Description**	**Est. Qty.**	**Unit**	**Unit Price**	**Total**
A1	Performance, Labour, and Material Bonds	1	LS	$20,000.00	$20,000.00
A2	Project Signage	2	EA	$800.00	$1,600.00
A3	Field Office	1	LS	$5,000.00	$5,000.00
A4	Mobilization & Demobilization	1	LS	$20,000.00	$20,000.00
A5	Construction Layout and Utility Locates	1	LS	$8,000.00	$8,000.00
A6	Hydro Integration into Bridge Structure	1	LS	$265,000.00	$265,000.00
A7	Access, Staging Area, Crane Pads, and Rehabilitation	1	LS	$25,000.00	$25,000.00
A8	Traffic Control and Signage	1	LS	$6,000.00	$6,000.00
A9	Clearing, grubbing, and tree removals	1	LS	$15,000.00	$15,000.00
A10	Supply, install, and remove construction fence	1000	m	$10.00	$10,000.00
A11	Supply, install, and remove sediment fence	1000	m	$15.00	$15,000.00
				Subtotal (Excl of HST)	$390,600.00
Section "B" – Bridge Structure Design and Construction - Alternative					
Item No.	**Description**	**Est. Qty.**	**Unit**	**Unit Price**	**Total**
B1	Fabrication, Supply, and Erection of Two Span Steel Bridge, Including Foundations, Helical Piers, Superstructure and Handrails)	1	LS	$900,000.00	$900,000.00
				Subtotal (Excl of HST)	$900,000.00
Section "C" – Restoration					
Item No.	**Description**	**Est. Qty.**	**Unit**	**Unit Price**	**Total**
C1	Supply and Placement of Erosion Control Blanket	1	LS	$18,000.00	$18,000.00
C2	Supply and Application of Topsoil (300mm)	1	LS	$20,000.00	$20,000.00
C3	Supply and Application of Terraseed Mixture	1	LS	$19,000.00	$19,000.00
C4	Additional Ecological Restoration	1	LS	$50,000.00	$50,000.00
				Subtotal (Excl of HST)	$107,000.00
Section "D" – Contingency					
Item No.	**Description**	**Est. Qty.**	**Unit**	**Unit Price**	**Total**
D1	Contingency (20%)	1	LS		$300,520.00
				Subtotal (Excl of HST)	$300,520.00

Alternative 2b - Two-Span Bridge (Hydro within Structure)					
Engineering & Design					$105,000.00
Construction					
Section A - Site Preparation and Removal (Excl of taxes)					$390,600.00
Section B - Bridge Structure (Excl of taxes)					$900,000.00
Section C - Restoration (Excl of taxes)					$107,000.00
Section E - Contingency (20%)					$300,520.00
Sub Total (Excl of taxes)					**$1,698,120.00**
HST @ 13%					$220,755.60
Total Bid Price (Incl of taxes)					**$1,918,875.60**

Pedestrian Bridges - Alternative 3

City of Guelph

Engineering & Design

1	Geotechnical Investigation for Bridge Design	1	LS	$45,000.00	$45,000.00
2	Design & Adiminstration of Bridge Structure	1	LS	$80,000.00	$80,000.00
				Subtotal (Excl of HST)	$125,000.00

Section "A" – Site Preparation & Removal

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
A1	Performance, Labour, and Material Bonds	1	LS	$20,000.00	$20,000.00
A2	Project Signage	2	EA	$800.00	$1,600.00
A3	Field Office	1	LS	$5,000.00	$5,000.00
A4	Mobilization & Demobilization	1	LS	$20,000.00	$20,000.00
A5	Construction Layout and Utility Loates	1	LS	$8,000.00	$8,000.00
A6	Hydro Relocation	1	LS	$60,000.00	$60,000.00
A7	Access, Staging Area, Crane Pads, and Rehabilitation	1	LS	$15,000.00	$15,000.00
A8	Stream Control, Pumping, Dewatering, and Temporary Creek Crossing	1	LS	$30,000.00	$30,000.00
A9	Traffic Control and Signage	1	LS	$6,000.00	$6,000.00
A10	Clearing, grubbing, and tree removals	1	LS	$25,000.00	$25,000.00
A11	Supply, install, and remove construction fence	1000	m	$10.00	$10,000.00
A12	Supply, install, and remove sediment fence	1000	m	$15.00	$15,000.00
A13	Obtain MNRF Fish Collection Permit and Fish Rescue	1	LS	$5,000.00	$5,000.00
				Subtotal (Excl of HST)	$220,600.00

Section "B" – Bridge Structure Design and Construction - Alternative 3

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
B1	Fabrication, Supply, and Erection of Three Span Steel Bridge, Including Foundations, Helical Piers, Superstructure and Handrails)	1	LS	$800,000.00	$800,000.00
				Subtotal (Excl of HST)	$800,000.00

Section "C" – Restoration

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
C1	Supply and Placement of Erosion Control Blanket	1	LS	$18,000.00	$18,000.00
C2	Supply and Application of Topsoil (300mm)	1	LS	$20,000.00	$20,000.00
C3	Supply and Application of Terraseed Mixture	1	LS	$19,000.00	$19,000.00
C4	Additional Ecological Restoration	1	LS	$70,000.00	$70,000.00
				Subtotal (Excl of HST)	$127,000.00

Section "D" – Contingency

Item No.	Description	Est. Qty.	Unit	Unit Price	Total
D1	Contingency (20%)	1	LS		$254,520.00
				Subtotal (Excl of HST)	$254,520.00

Alternative 3 - Three-Span Bridge					
Engineering & Design					Total
Construction					
Section A - Site Preparation and Removal (Excl of taxes)					$220,600.00
Section B - Bridge Structure (Excl of taxes)					$800,000.00
Section C - Restoration (Excl of taxes)					$127,000.00
Section E - Contingency (20%)					$254,520.00
Sub Total (Excl of taxes)					**$1,402,120.00**
HST @ 13%					$182,275.60
Total Bid Price (Incl of taxes)					**$1,584,395.60**