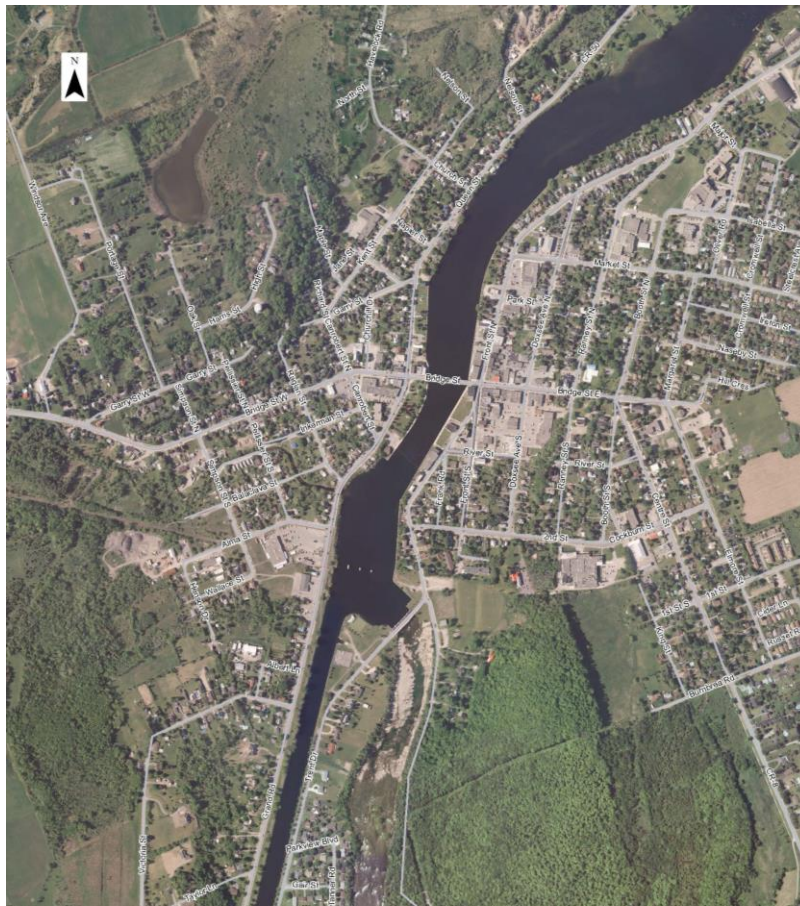


Environmental Study Report – REVISED FINAL

Trent River Crossing & Arterial Road Network Municipal Class Environmental Assessment



PREFACE

This Environmental Study Report (ESR) – Revised Final should be read in association with the Final Draft ESR prepared by AECOM dated August 2009 and included under separate cover in Appendix 1. References to relevant information from that 2009 report and other appended reports are included throughout this Revised Final Report. Also, this ESR was initially finalized and dated August 2014. Since then, some additions or changes have been made to the report in 2015 and 2016 in response to agency reviews and input. The location of these additions or changes is highlighted in the left margins.

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3. Trent Hills Crossing in Campbellford: Feasibility Report, GENIVAR, July 2012
4. Detailed Work Plan, IBI Group, October 29, 2012
5. Steering Committee Meeting Minutes
6. Cultural Heritage Assessment, Heritage Resources Consulting, November 2013 and Cultural Heritage Resource Assessment, Trent River Bridge Crossing, Second Street/Alma Street Alternative, ASI, July 2015
7. Stage 1 Archaeological Assessment, Archeoworks Inc., March 18, 2015
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9. Traffic Volume Forecasts, IBI Group
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12. Staff Reports to Council
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1 Study Approach

1.1 Background

This Schedule 'C' Municipal Class Environmental Assessment (EA) was conducted by the County of Northumberland (the County) in association with the Municipality of Trent Hills (Trent Hills) in the following six iterative phases between November 2007 and July 2015:

1. A Final Draft Environmental Study Report (ESR) was prepared by AECOM Canada Ltd. (originally Totten Sims Hubicki) in a study process extending from early 2008 to late 2009. The Final Draft ESR dated August 2009 was first presented to the Municipality of Trent Hills Council on September 14, 2009, followed by the County of Northumberland Council on September 16, 2009. Subsequent County Council meetings on the study were held on October 21, 2009 and November 19, 2009. At a subsequent County Council meeting on December 9, 2009, County Council approved a staff report recommending that additional investigations and assessments needed to be conducted to confirm the ESR recommendation to construct a new Trent River bridge crossing at a new location in the community of Campbellford;
2. In mid-2009 the study process included a peer review documented in a report entitled Independent Review: Campbellford Bridge conducted by McCormick Rankin Corporation (MRC) dated May 2009;
3. In May 2010, the County retained GENIVAR to undertake a study of the existing Campbellford Bridge Crossing to determine the feasibility of constructing a new bridge with additional capacity at the same crossing location as the existing bridge at some point in the future;
4. In September 2012, IBI Group was retained by the County to prepare a work plan to recommence and complete the EA. This work plan was approved by County Council on November 21, 2012, and the EA recommencement and completion process was started in December 2012. It led to County Council's endorsement of the Environmental Study Report (ESR) on June 18, 2014 with the County Council Resolution provided on the following pages;
5. Based on that County Council endorsement, the Notice of Study Completion was first issued and advertised on September 2, 2014. Based on some feedback from the Ministry of the Environment and Climate Change (MOECC) and the public, the notice was re-issued and advertised again on September 16, 2014 with an extended 61 day response period; and
6. During this 61 day response period, nine (9) Part II Order requests were received by MOECC. The Ministry of Tourism, Culture and Sport (MTCS) also reported a number of deficiencies with the ESR as summarized in Sections 2.1.1 and 6.5 of this Revised ESR. As a result, MOECC in a letter to the County dated December 19, 2014 reported that additional work was required to complete the Class Environmental Assessment (EA) in accordance with the EA Act.¹ The Ministry requested that the County complete six (6) actions, further documented in Section 2.1.1 of this report in order to complete the project. The results of these additional actions are reported in this Revised ESR.

Added
2015

Added
2015

¹ MOECC Letter from Agatha Garcia-Wright, MOECC to Mobushar Pannu, Northumberland County, December 19, 2014

The County has maintained a study web site with an extensive library of related information and documentation since the study inception in 2008 at:

www.northumberlandcounty.ca/trent_river_crossing

The information made available to the public, stakeholders and involved agencies includes:

- pre-2008 traffic studies;
- study notices;
- consultation information and materials including newsletters, public information centre exhibits and comment sheets;
- the August 2009 Final Draft Environmental Study Report (ESR);
- associated Council meeting presentations;
- study Steering Committee agendas and minutes;
- associated technical reports; and
- public speaker presentations.

The ESR study process concluded on June 18, 2014 with the Northumberland County ESR Approval Resolution included on the next pages.

As is further explained in Sections 2.1.1, 6.5 and 6.6 of this ESR, the County then issued a Notice of Study Completion with a 30 day public review period which was subsequently extend to 61 days ending on November 3, 2014. During this review period, MOECC and the County received letters from, and MOECC responded to eight (8) members of the public plus Chief of the Mohawks of the Bay of Quinte (MBQ) requesting the Minister of the Environment and Climate Change to make a Part II Order for the project to comply with Part II of the EA Act involving individual environmental assessments. Correspondence was also received from the Environmental Assessment Branch of MOECC, based on input from the Ministry of Tourism, Culture and Sport (MTCS) noting that additional work related to Aboriginal consultation and heritage and archaeological assessment was required in order to complete the Class EA process.²

As of late 2014, MOECC did not consider the EA process to be complete because of these concerns, and so the nine Part II Order requests in 2014 were not formally received and considered by the ministry at that time. Instead, MOECC requested that six (6) additional steps be conducted by the County to complete the EA in accordance with the EA Act. These six added steps are outlined in Section 6.5 of this report, with the outcome presented in Section 6.6 that led to preparation of this Revised ESR.

² E-mail from Dawnett Allen, MOECC to Mohushar Pannu, Northumberland County, December 24, 2014

110:06:14



Mo Pannu
FILE COPY

Resolution - PAGE 1

MOVED BY *[Signature]*
SECONDED BY *MACMILLAN* *WALAS* **Date:** June 18, 2014

WHEREAS IBI Group was retained by the County of Northumberland to recommence and conclude the Trent River Crossing and Arterial Road Network Municipal Class Environmental Assessment;

AND WHEREAS two finalist Trent River Crossing Alternatives were developed: 1) twin the existing bridge resulting in a 3-lane bridge at the existing bridge crossing corridor, and 2) build a new Second Street/Alma Street bridge and replace the existing bridge at the end of its service life;

AND WHEREAS IBI Group recommended alternative 2) and presented the reasons for this recommendation to the public during a Public Information Centre in Campbellford on Saturday, March 22, 2014;

AND WHEREAS nine (9) out of the 13 project Steering Committee members voted in favour to support the recommendation from IBI Group to build a new bridge at Second Street/Alma Street and replace the existing bridge during the meeting on May 16, 2014;

AND WHEREAS six (6) out of seven (7) members of Trent Hills Council voted in favour to support the recommendation from IBI Group to build a new bridge at Second Street/Alma Street and replace the existing bridge during the June 3, 2014 session of Council;

NOW THEREFORE BE IT RESOLVED THAT County Council endorses the recommendation from IBI Group to build a new bridge at Second Street/Alma Street and replace the existing bridge;

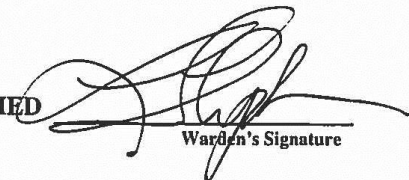
~~CARRIED _____
Warden's Signature~~
~~DEFEATED _____
Warden's Signature~~
~~DEFERRED _____
Warden's Signature~~
~~The above vote was UNANIMOUS~~
~~_____~~
Warden's Initials

PAGE 2

AND FURTHER that County Council direct IBI Group and staff to finalize and file the Trent River Crossing and Arterial Road Network Municipal Class Environmental Assessment with the Ontario Ministry of Environment in order to secure two bridge crossing corridors to ensure adequate river crossing capability and redundancy for the future;

AND FURTHER that County Council direct staff to proceed with the detail design, tendering, purchase of property, or any related work following the approval of the Environmental Study Report from the Ontario Ministry of the Environment, in consultation with County Council.

CARRIED



Warden's Signature

DEFEATED

Warden's Signature

DEFERRED

Warden's Signature

The above vote was **UNANIMOUS**

Warden's Initials



NORTHUMBERLAND COUNTY COUNCIL – RECORDED VOTE

Resolution # 110.06:04 Recorded Vote Requested By Councillor

| Municipality | Councillor | Position | Votes | YES | NO | Absent | Other |
|-----------------------------------|-------------------|----------|-----------|-----|----|--------|-------|
| Municipality of Brighton | Walas, Mr. M. | Mayor | 3 | 3 | | | |
| Municipality of Trent Hills | Macmillan, Mr. H. | Mayor | 4 | 4 | | | |
| Town of Cobourg | Brocanier, Mr. G | Mayor | 6 | 6 | | | |
| Municipality of Port Hope | Thompson, Ms. L. | Mayor | 5 | | 5 | | |
| Township of Cramahe | Coombs, Mr. M. | Mayor | 2 | 2 | | | |
| Municipality of Alnwick/Haldimand | McDonald, Mr. D. | Mayor | 2 | 2 | | | |
| Township of Hamilton | Lovshin, Mr. M. | Mayor | 4 | 4 | | | |
| TOTALS | | | 26 | | | | |

Absent: 0 Representing: 0 Votes YES: 21 NO: 5 TOTAL(26)

The work plan used to recommence and complete this EA was originally reviewed with staff of the Ministry of the Environment Regional Office in Kingston on October 22, 2012. Staff concluded that *“the Municipal Class EA is a proponent driven process and MOE does not have an approval function ... This is your process and MOE may offer some guidance based on written comments and other technical information.”*³

This ESR documents the entire EA process conducted between 2008 and 2014. In doing this, significant references and referrals are made to the associated reports noted above that form part of the EA process and documentation. The intent of this ESR is not to repeat this related work, but rather to reference it in documenting the required four (4) phases of the Schedule ‘C’ EA process:

- Phase 1 – Identify the Problem or Opportunity
- Phase 2 – Identify alternative solutions to address the problem or opportunity
- Phase 3 – Examine alternative methods to implement the preferred solution
- Phase 4 – Document in the Environmental Study Report (ESR)

1.2 Study Area

The study area associated with this EA was established at two levels. First, the “overall” study area for the AECOM EA study covers the existing community of Campbellford in the Municipality of Trent Hills as shown on Exhibit 1.1, and extends to south of Ferris Provincial Park to include rural Trent River crossing alternatives suggested by members of the public during the initial EA study. No rural crossing locations north of the community were included owing to low crossing demands expected in this area, wide crossing width, close proximity of parallel County roads to the river banks and the location of Trent-Severn Waterway lock facilities.

A second, more focused study area was established for the EA recommencement starting in early 2012. By that time the following two finalist river crossing alternatives had been confirmed by the Steering Committee, and so the “final” study area covers the portion of the Campbellford urban arterial road network linked to these two locations as shown in Exhibit 1.2:

1. Existing Bridge Street Bridge
2. Second/Alma Crossing

1.3 Previous Studies

1.3.1 Pre-2008

Two traffic engineering studies conducted prior to 2008, and following construction of the existing Bridge Street Bridge in Campbellford in 1968, considered transportation conditions in the community of Campbellford, now part of the Municipality of Trent Hills. These studies included consideration of the transportation issues associated with an additional bridge crossing of the Trent River in Campbellford, namely:

³ Jon Orpana, Environmental Planner & EA Coordinator, Kingston Regional Office, e-mail to D. Drackley September 19, 2012

Exhibit 1.1 - Overall Study Area

Source: AECOM Final Draft ESR, August 2009

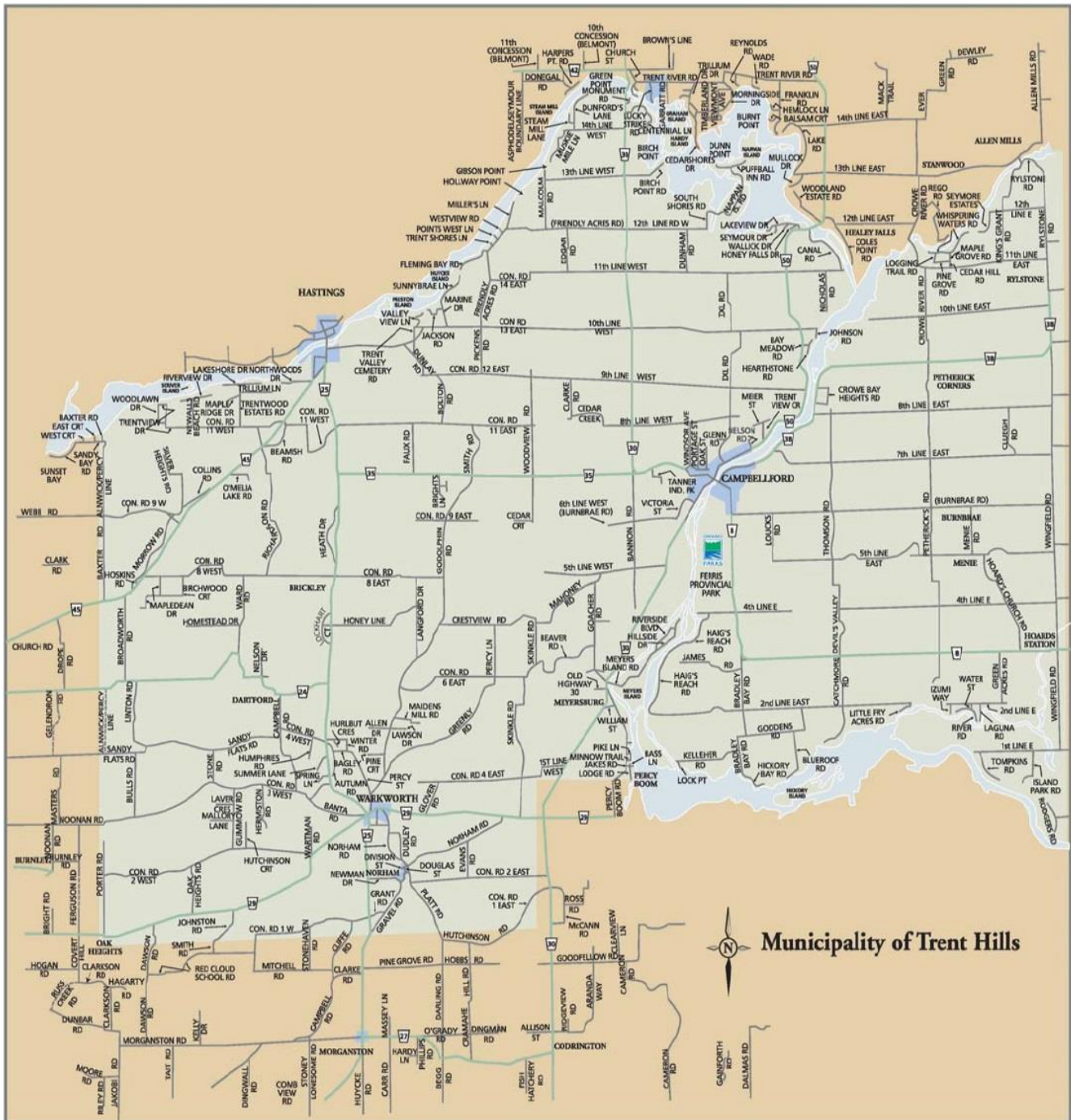
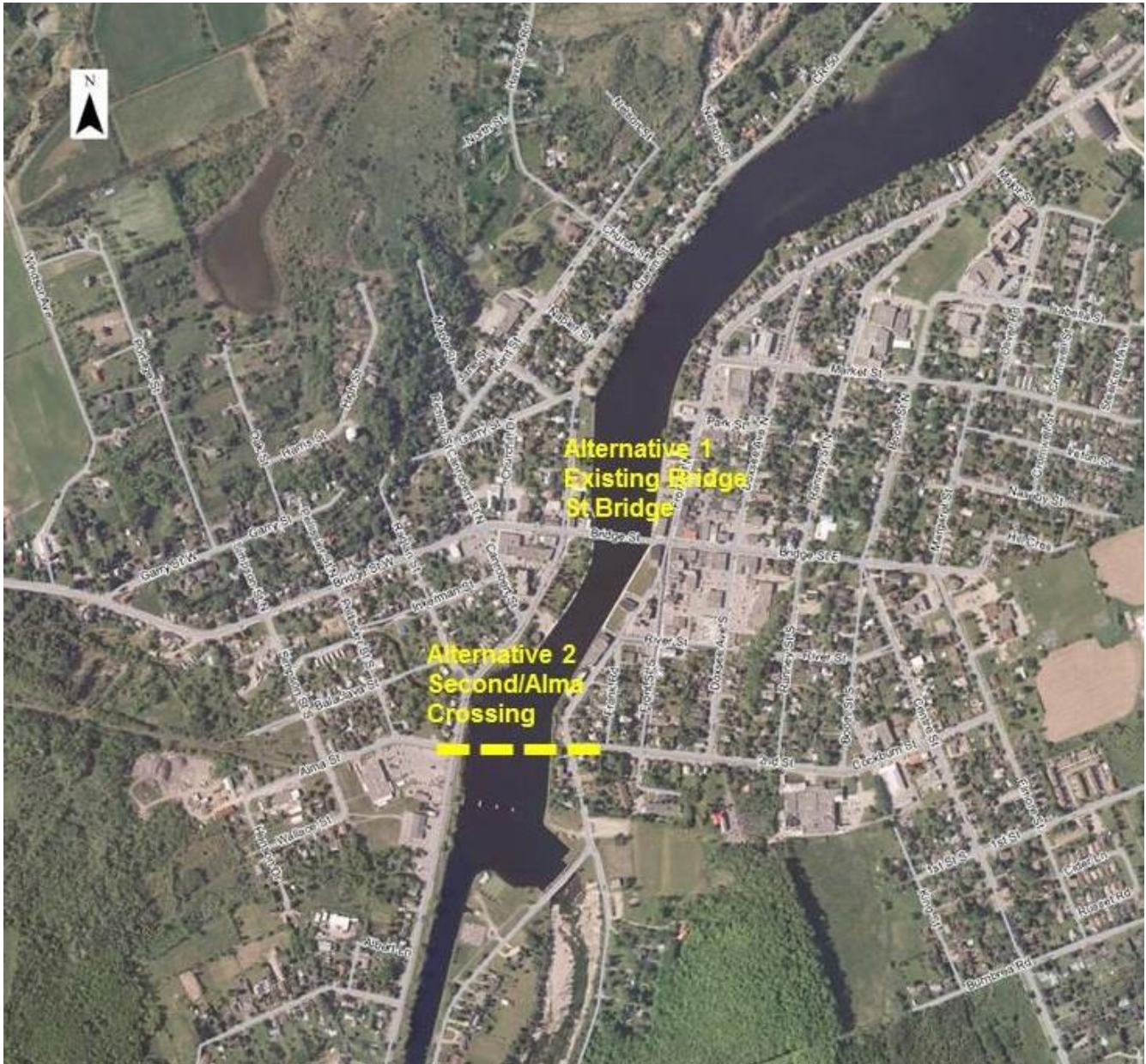


Exhibit 1.2 - Finalist Study Area



- **Town of Campbellford Traffic Operations Study, M.M. Dillon Ltd., 1989** – Although a traffic operations study, one of this report’s objectives was to “*determine the potential need for a second crossing of the Trent River*” in Campbellford. One study conclusion was that “*The location of the potential crossing requires further investigation*”; and
- **Additional Bridge Crossing Need and Justification Study, Totten Sims Hubicki Associates, 1996** – The scope of this study was to confirm the need for additional Trent River crossing capacity “*in or near the Town of Campbellford*”. This included identification of the scope and nature of improvements needed to satisfy existing and future river crossing demands, and if appropriate, select a crossing location and associated property requirements. Ultimately, a new river crossing using the former “High Black” CNR railroad bridge corridor was the study’s preferred long term crossing location. Owing to land development that has occurred in parts of this corridor since 1996, it is no longer a reasonable, viable crossing location.

Both of these studies concluded that an additional Trent River crossing would be required to accommodate future traffic volumes at an acceptable level of service, and to provide two fixed, high level bridge crossings for emergency vehicle use. These conclusions are seen as forming the initial need and justification for addition bridge capacity in Campbellford.

1.3.2 2008-09 AECOM Canada Limited

In late 2007, the County of Northumberland in association with the Municipality of Trent Hills retained Totten Sims Hubicki (now AECOM Canada Limited) to carry out a Class EA Study entitled the “**Additional Trent River Crossing Schedule ‘C’ Class EA**”. Over a two-year period from early 2008 to late 2009, the Study progressed through the four (4) phases of the Schedule ‘C’ Class EA process, culminating in a Final Draft Environmental Study Report (ESR) being presented to Trent Hill Council on September 14, 2009, and County Council on September 16, 2009. Three Public Information Centres were held, and newsletter issued as part of this process, with associated information provided in the Final Draft ESR Appendix A.

Reference
Appendix 1:
AECOM Final Draft
ESR, Appendix A,
August 2009

The 2008/09 AECOM study evaluated eight (8) urban Trent River crossing location options within Campbellford, and four (4) rural located to the south. As previously reported in Section 1.2 of this report dealing with the Study Area, no rural crossing locations north of the community were included owing to low crossing demands expected in this area, wide crossing width, close proximity of parallel County roads to the river banks and the location of Trent-Severn Waterway lock facilities. The locations of the urban options are shown in Exhibit 1.3, and rural options in Exhibit 1.4.

The Final Draft ESR recommended the construction of a new Trent River bridge crossing in Campbellford at what is referred to as the Second Street/Alma Street location approximately 400 m south of the existing Bridge Street Bridge along the Second Street/Alma Street corridor. In response to concerns from some community residents and stakeholders about the impacts of a Second/Alma bridge crossing, County Council at their December 9, 2009 meeting decided to defer a decision on the EA, put it on hold, and directed staff to further investigate the feasibility and cost of the construction of an additional bridge within the existing Bridge Street corridor.

Note: It is important to note that at their October 19, 2009 council meeting, the Municipality of Trent Hills Council voted in favour of approving the AECOM ESR for authorization to file with MOE (now MOECC), conditional on County approval. Following this, at their December 9, 2009 meeting County Council did not reject the Final Draft ESR. Rather, County Council requested additional information on the costs and benefits of widening the existing Bridge Street Bridge to provide required long term river crossing capacity in a one-bridge scenario, compared to the two-bridge scenario recommended in the Final Draft ESR.

Exhibit 1.3 - Urban Crossing Location Options
Source: AECOM, Final Draft ESR, August 2009

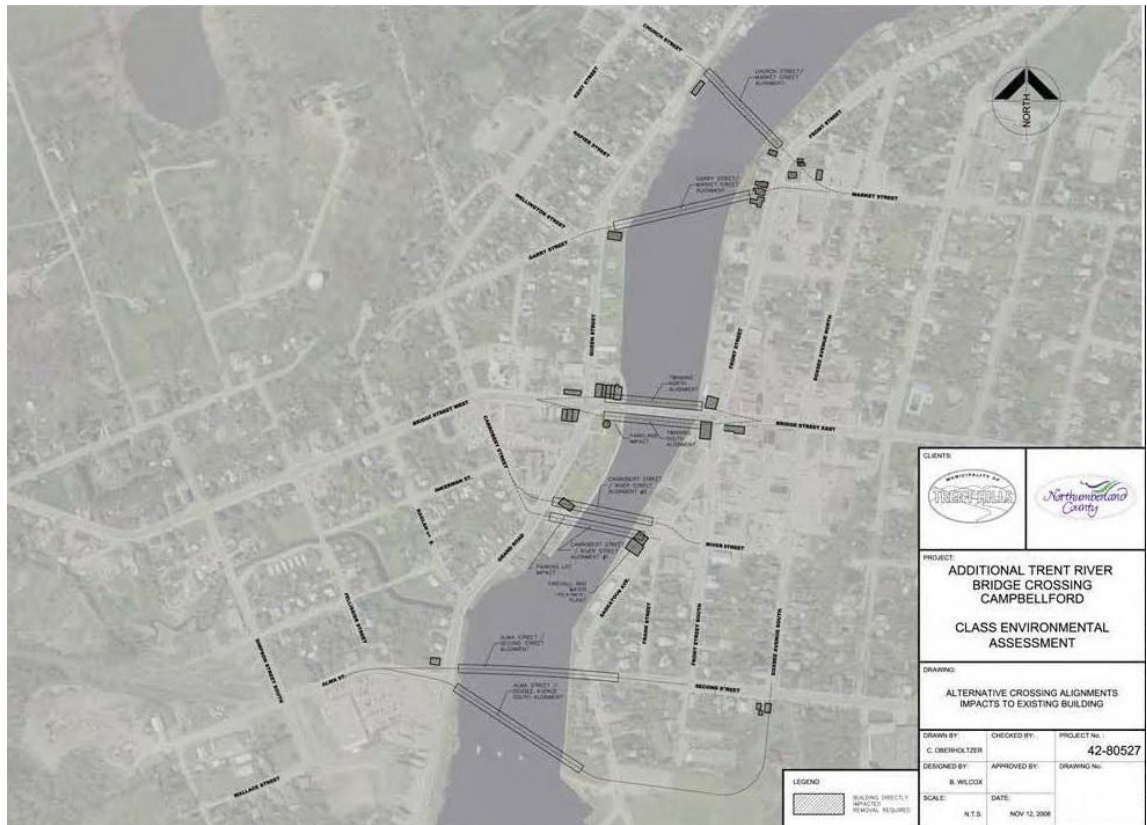
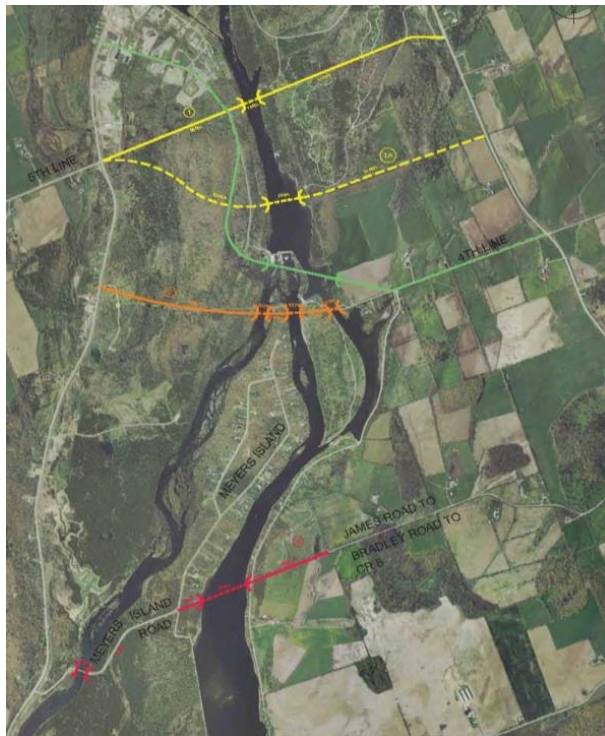


Exhibit 1.4 - Rural Crossing Location Options (South)
Source: AECOM, Final Draft ESR, August 2009



1.3.3 2009 McCormick-Rankin Corporation

McCormick-Rankin Corporation (MRC) was retained by the County of Northumberland in late 2008 to conduct an independent review of the findings to date of AECOM's Additional Trent River Crossing EA, and examine the possibilities of improving traffic flow at the existing Trent River crossing in Campbellford. This included the viability of widening the existing Bridge Street bridge as an alternative to constructing a second bridge as recommended in the AECOM ESR.

The prologue to the MRC report entitled Independent Review: Campbellford Bridge dated May 2009 states that *"While this report does examine a number of solutions, these are short to medium term solutions that only address the traffic issues for the next 10 to 15 years. They do not address the long term traffic demands for a future second bridge. At best, these short term solutions provide a buffer for the Municipality and County to obtain funding for a second crossing. The Municipality and the County should continue to plan and ultimately protect for the location of the second crossing"*.

Reference
Appendix 2: MRC
Independent Review:
Campbellford Bridge,
May 2009

The report concludes that adding a third lane to the full length of the existing Bridge Street bridge to facilitate left turn movements at the bridge terminus intersections would provide an acceptable level of service to 2027. At that time, the report concludes that level of service at these intersections will have decreased to the existing condition. The report also concludes that adding two lanes to the existing Bridge Street bridge would be *"much more complicated"*, and although it could be achieved structurally, the ability of the road network at either end of the bridge to accommodate four lanes of traffic is limited. Because existing downtown buildings at both ends of the existing bridge would need to be purchased and demolished, existing services relocated and other major costs incurred, MRC concluded that adding two lanes to the existing bridge is not considered to be feasible.

Two approaches were recommended by the MRC study:

1. The first approach would be to widen the existing bridge end spans to accommodate left turn movements from the bridge. This was seen as a short term solution because in three to five years the anticipated growth in bridge traffic would start to create traffic congestion similar to today. The reports states that this approach would give the County the opportunity to protect for an alternative crossing location and construct a new crossing in time to have it serve as a detour route during reconstruction of the existing Bridge Street bridge in an estimated 20 to 25 years; or
2. Do nothing to the existing Bridge Street bridge, optimize signal timing at the bridge ends and manage traffic congestion to the extent possible until a new second crossing can be constructed.

1.3.4 2012 GENIVAR

GENIVAR was retained by the County of Northumberland in February 2010 to undertake a study of the existing Bridge Street bridge in Campbellford to determine the feasibility of constructing a new bridge at the same crossing location. This was viewed as an alternative to the controversial recommendation of the AECOM ESR to construct a new bridge in the Second Street/Alma Street corridor. GENIVAR performed a comprehensive review of the existing bridge design, including a thorough site inspection and detailed structural analysis of the bridge. It was concluded that the existing bridge is deficient in terms of maximum acceptable deflection/vibration criteria as specified in the Canadian Highway Bridge Design Code at that time.

A review of possible design alternatives for the replacement of the existing bridge was conducted. Given the restraints at this location, many alternatives were found to not be technically feasible or cost effective and so were eliminated from further consideration. However, 11 feasible design alternatives were considered in the study. A traffic analysis was

also conducted of the existing bridge approaches and approach intersections. The analysis concluded that there would only be a minimal gain in traffic operations from a four lane bridge crossing compared to a three lane crossing. Therefore the study recommended the three lane crossing approach to solving the traffic capacity issue.

Reference
Appendix 3: Trent
River Crossing in
Campbellford:
Feasibility Report,
July 2012. GENIVAR

The study also involved extensive public consultation with 13 project Steering Committee meetings that were open to the public, plus two Public Information Centres. An indepth socio-economic evaluation process was used to eventually select a preferred approach to twinning the existing Bridge Street bridge, and later replace the existing bridge structure. This evaluation is fully documented in **Appendix 3** of this ESR entitled Trent River Crossing in Campbellford: Feasibility Report, July 2012.

The study eventually selected a Modified 3 Lane Bridge Alternative as the preferred design for twinning and replacing the existing Bridge Street bridge. This involved constructing a two lane bridge immediately to the north of the existing bridge once traffic capacity has been reached on the existing bridge, estimated at that time to be 10 years. Then until the existing bridges reaches the end of its service life, both abutting bridges would operate with one lane per direction and a dedicated left turn lane at each end of the widened bridge. When the existing bridge reaches the end of its service life, the “new” bridge would be used as a detour as the existing bridge is removed and replaced. The ultimate bridge configuration would have tow 3.5m travel lanes, a 3.5m continuous centre turn lane, 1.8m sidewalks on each side and a 4.6m wide recreational pathway on the north side.

A 60% detailed design with general arrangement drawings were prepared for this recommended Modified 3 Lane Bridge. This degree of design detail is typically not included in a Municipal Class EA at the functional or preliminary design stage. However, more design detail was required for three main reasons; 1) to ensure the bridge twinning and replacement was technically feasible, 2) to provide as accurate a capital cost estimate as possible and 3) to confirm [property acquisition and building removal requirements. In the end, the GENIVAR study concludes that the Modified 3 Lane Bridge configuration is the most feasible alternative for the renewal of the Bridge Street bridge (also referred to as the Campbellford Bridge).

1.4 2013-14 IBI Group Study Re-Commencement

In September 2012, County Council approved the selection of IBI Group to develop a detailed work plan and budget for the re-commencement of the original 2009 AECOM ESR for the Campbellford Bridge, and determine the arterial transportation needs and demand within the former Town of Campbellford through the Class EA process. This re-commencement work plan established how far back in the five-phase Class EA process the County will need to go in order to consider and evaluate the viable alternatives, appropriately involve the local community and successfully complete and obtain Council approval of the ESR options for resuming the EA study.

Reference
Appendix 4: Detailed
Work Plan, October
29, 2012, IBI Group

The study re-commencement work plan prepared by IBI Group is presented in **Appendix 4** of this ESR based largely on discussions held with the County, Municipality and the Ministry of the Environment (now MOECC). The main elements of the recommended recommencement approach are presented as follows.

1.4.1 Produce an Updated Environmental Study Report (ESR)

The updated ESR document needs to be a stand-alone report. It will include a summary of all work tasks conducted as part of the 2009 AECOM Final Draft ESR and the 2012 GENIVAR Feasibility Study, with references to these documents where required. This will be augmented with new updated and expanded information prepared as part of the EA completion. This new ESR will cover all topics, and with details on all changes since the 2009 report including

summaries of previous findings that do not change. The 2009 Final Draft ESR and finalized ESR will be separate documents.

1.4.2 Comply with Municipal Class EA Process

It was confirmed with MOECC that since the Municipal Class EA process is proponent-driven, the County as the proponent will determine how best to complete the EA (see previous Section 1.1). The basic EA principles to be followed in doing this are:

- **Objective** - start the EA recommencement with no pre-conceived solution preferences;
- **Reasonable** - consider only reasonable, meaning “feasible” alternatives;
- **Consultative** – contact all affected parties and the general public;
- **Systematic** - in how impacts on all aspects of the environment are evaluated; and
- **Traceable** - in how this decision-making process is documented.

1.4.3 Maximize Existing Information

It was determined that much of this existing information prepared for the 2009 Final Draft ESR can be incorporated into the EA completion in order to avoid cost duplications, minimize EA completion timing and maximize the use of relevant information already conducted for the project. MOECC had also confirmed that since a Final Draft ESR was presented to the public in late 2009, and again in May and September of 2011 as part of the GENIVAR feasibility study focusing on the existing Campbellford Bridge alternatives, further consultation and PICs should deal only with new information, and not repeat information and decisions previously made unless they relate to the ESR update.

1.4.4 Use Updated Technical Information Where Required

Previous technical information identified for updating as part of the EA re-commencement was:

- Traffic data on volumes, travel patterns and Level-of-Service to update the Problem / Opportunity Statement if and where required;
- Relevant provincial/federal policies on which the EA process is based; and
- The evaluation process conducted for the 2009 EA and 2012 Feasibility Study.

1.4.5 Ensure Effective Community Engagement

In re-commencing this EA process, a proactive and continuous engagement process with involved agencies, stakeholders and members of the public was required. Based on the project history, a high degree of project interest and community engagement was expected early and continuously through the EA process. This interest must be encouraged as “positive engagement”, rather than dwelling on past experiences, issues and concerns. To do this, community engagement involved the following principles:

- Follow the Municipal Class EA planning principles involving objectivity and traceability in the planning process;
- Contact the community early in the recommencement to explain the study, the completion process and how the community can provide input;
- Ensure the combined 2009 Final Draft ESR and 2013-14 Final ESR processes meet all mandatory consultation requirements for a Schedule ‘C’ EA;

- Provide convenient ways for the public to provide meaningful input to the study through various opportunities including a project web site;
- Maintain a consistently open, objective, traceable and proactive dialogue with interested agencies, stakeholders and members of the public;
- Rely on organized stakeholder groups, organizations and agencies to provide coordinated, efficient and cost-effective input and feedback to the project; and
- Work interactively with the Steering Committee and Project Team so they understand all alternatives and selection of the preferred solution.

1.4.6 Avoid Any Piecemealing

The provincial EA process defines piecemealing as the breaking up of a larger project into smaller component parts so each can be dealt with separately. In the case of the Trent River Crossing and Arterial Road Network EA, separation of any arterial road network changes relating to the river crossing could constitute piecemealing, so may not comply with the EA Act.

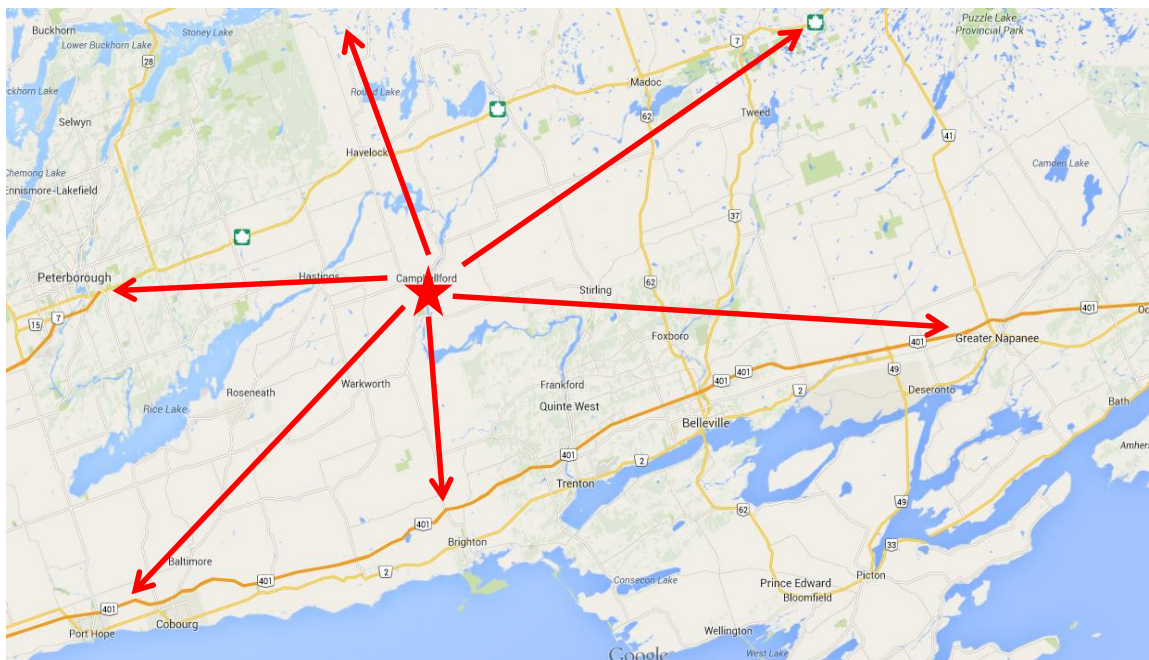
The EA re-commencement and completion avoids this situation by including the “Arterial Roadway Network” as part of the new EA process. This means that in addition to the actual Trent River crossing works, the EA includes associated intersection and route improvements. These other traffic improvements may require only a Schedule ‘B’ or even pre-approved Schedule ‘A+’ EA approach, so they may not need to be included in the Schedule ‘C’ process.

1.5 Study Context

1.5.1 Trent Hills Locational Context

The Municipality of Trent Hills was formed in 2001 with the amalgamation of the Municipality of Campbellford/Seymour, Township of Percy and Village of Hastings. The Municipality is strategically located on the Trent-Severn Waterway in Northumberland County in eastern Ontario. It is conveniently located within reasonable road access to the Greater Toronto Area to the west, and the National Capital Region to the east. As illustrated in Exhibit 1.5, it is located about a 25 minute drive from Highway 401 to the south, and Highway 7 to the north.

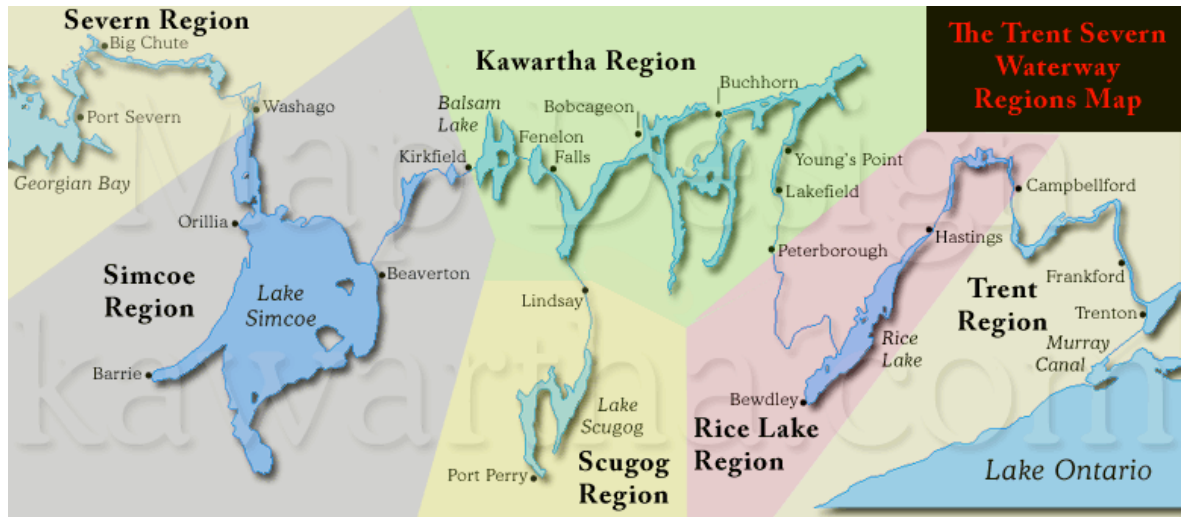
Exhibit 1.5 - Trent Hills Locational Context



1.5.2 Trent River Crossings in Northumberland County

In order to fully appreciate the role of the Trent River crossing in Campbellford, it is important to understand the strategic regional role of this facility in the County of Northumberland, the Trent-Severn Waterway and southeastern Ontario overall. The waterway extends 386 km from Trenton on Lake Ontario to Port Severn of Georgian Bay. As shown on Exhibit 1.6, in the eastern Trent/Rice Lake Region of the Waterway, the Campbellford crossing is one of only four public road crossings, the others being in Trenton and Frankford (Quinte West) to the east and Hastings to the west.

Exhibit 1.6 - Trent-Severn Waterway Bridge Crossings



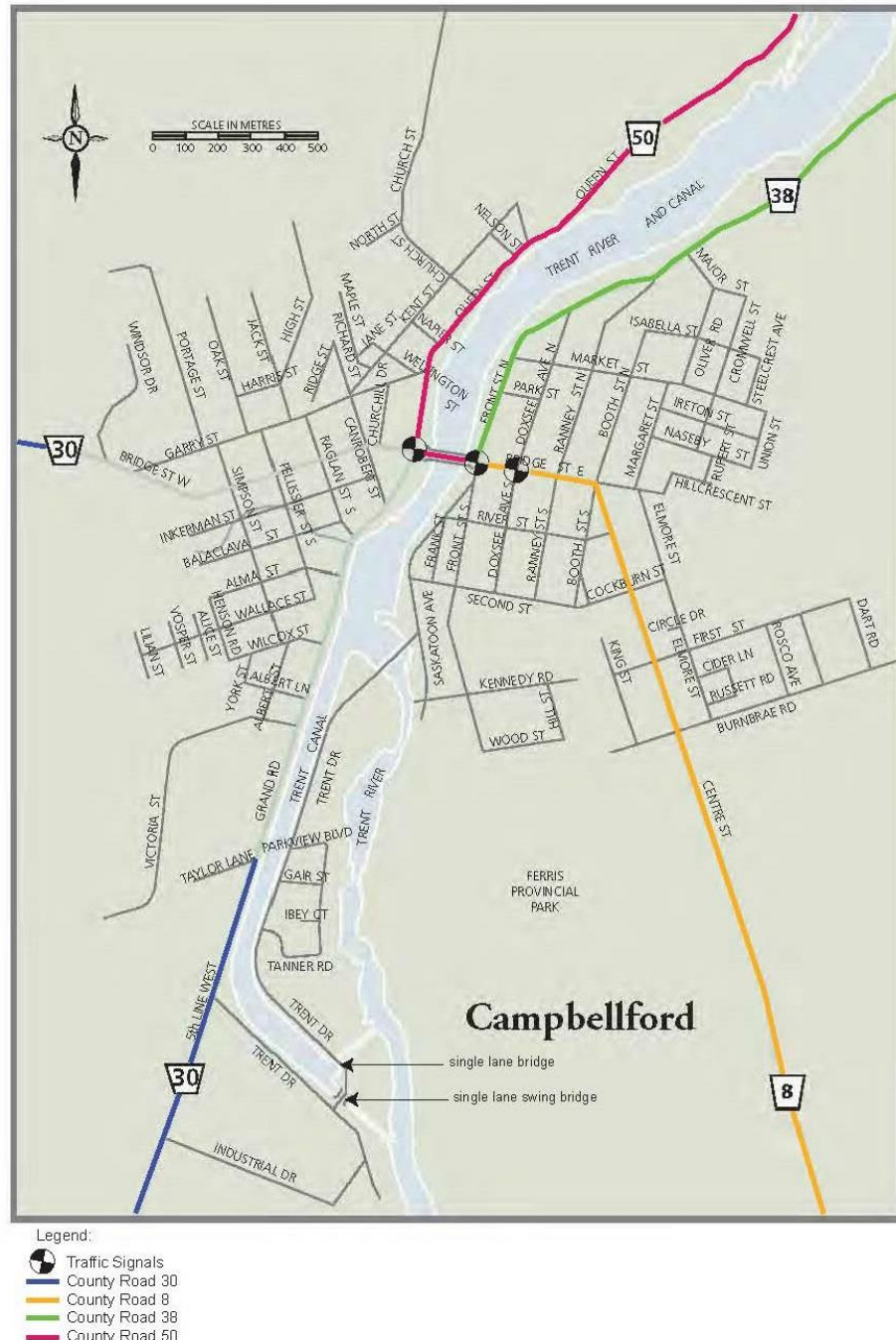
In southeastern Ontario, municipalities like Northumberland County are dependent on these and other upstream and downstream roadway crossings of the waterway to ensure effective ground transportation and regional connectivity for local communities, emergency response, goods movement and support for the local tourism industry. In Campbellford, there has been a Trent River crossing at the existing Bridge Street location since 1840 at 'Campbell's ford'. It has evolved from a wood bridge, to an iron bridge opened in 1877, a steel bridge opened in 1904 and later modified into a Bascule lift bridge and then the existing pre-stressed concrete bridge opened in 1968.

As shown on Exhibit 1.7, if for whatever reason the existing Bridge Street Bridge in Campbellford could not provide for river crossing, the nearest available public crossings on a formal public roadway for Campbellford traffic would be at:

- Healey Falls to the north on County Road 50 which is a 25 km detour and would take about 30 minutes; or
- Mill Street/County Road 5 bridge in Frankford, part of Quinte West which would be a 77 km detour and take about 77 minutes.

and are not designated as public roads under the Highway Traffic Act. They also provide limited bearing capacity (weight restriction), and interrupted transportation service due to an alternating single lane right-of-way on two of the bridge and a swing bridge operation on the third as shown on Exhibit 1.6. With these structural, operational and jurisdictional limitations, these secondary crossings do not provide viable public Trent River crossing options for Northumberland County in Campbellford.

Exhibit 1.8 - Trent River Canal Crossings in Campbellford
 Source: AECOM Final Draft ESR, August 2009



1.5.3 Northumberland County Draft Official Plan, June 18, 2014

According to the Draft County Official Plan (OP) dated June 18, 2014 (Table G, page 14), the County is planned to grow from 84,482 people in 2011 to 102,517 people by 2034, a growth of 18,035 residents over 23 years. This corresponds with the County growth forecast from *Places To Grow, Growth Plan for the GGH* that has the County growing by an additional 20,500 residents by 2036, and additional 5,000 residents to 110,000 by 2041 (Schedule 3, page 63). The County's proposed growth management policies are intended to direct future County growth to the six designated urban areas, which includes the Campbellford area of Trent Hills.

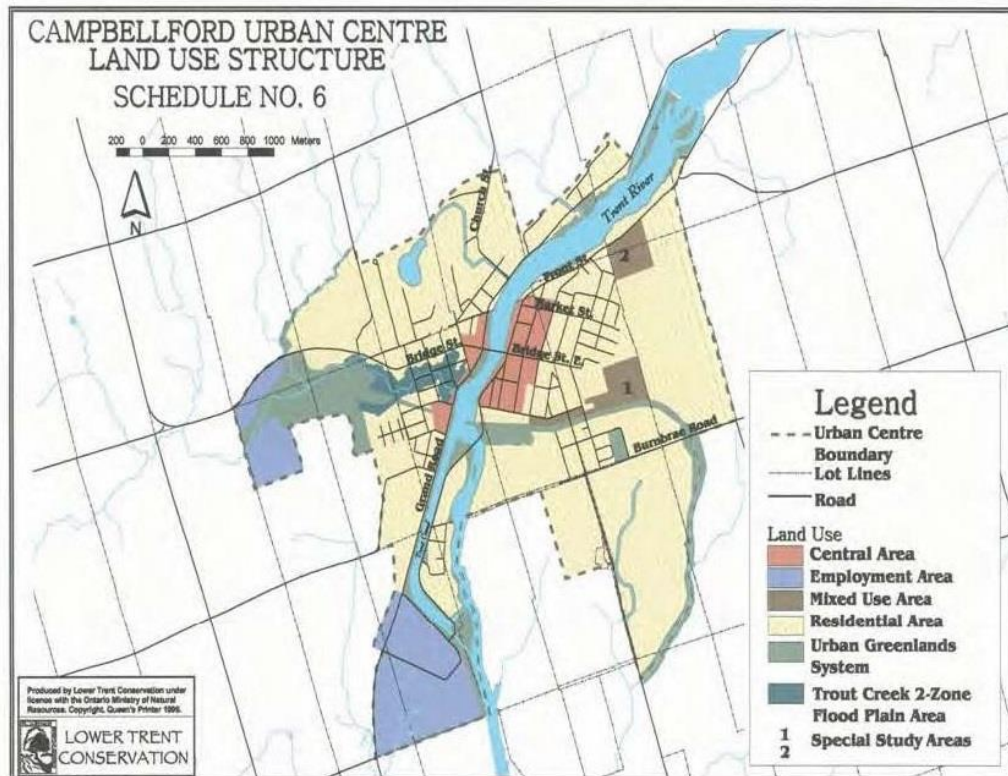
From a transportation perspective, the strategic river crossing location of Campbellford in the County and surrounding south-central Ontario Region has this river crossing experiencing traffic demands generated well beyond the local community. Included in the transportation objectives of the Draft OP are the following relevant objectives relating to the Trent River crossing:

- Facilitate the safe and efficient movement of people and goods within the County's communities and to and from adjacent communities;
- Ensure that County roads continue to be effective corridors for the movement of people and goods in and throughout the County of Northumberland and Province of Ontario;
- Protect transportation corridors to facilitate the development of a transportation system that is compatible with and supportive of existing and future land uses; and
- Promote public transit, cycling and walking as energy efficient, affordable and accessible forms of travel.

1.5.4 Municipality of Trent Hills Draft Official Plan, October 2012

After the Municipality of Trent Hills was formed in 2001, a Joint Official Plan was finalized (prepared in 2000) for the Municipality of Campbellford/Seymour, Township of Percy and Village of Hastings. Schedule 6 of that Joint OP outlines the land use structure of the community as shown on Exhibit 1.9:

Exhibit 1.9 - Joint Official Plan Land Use Structure



Development policies for the Central Area through which the existing Bridge Street Bridge and arterial corridor over the Trent River operate include:

- Mixed use buildings are encouraged within the Central Area designation. It is intended that the permitted commercial uses will be developed on the ground floor. Residential and office uses are encouraged to locate above the ground floor commercial uses; and
- The built form of the area is considered a significant asset to the community, and it is an objective of this Plan to protect the existing historical resources while promoting vibrant community development and redevelopment.

For Mixed Use areas such as that located south of the designated Central Area, it is important to note that one of the development policies is to “*encourage intensification over time*” (OP Policy 5.2.3.3 b ii)). The OP also includes policies regarding the Greenland System, Trent-Severn Corridor, Economic Vitality, Healthy Communities and Transportation, all of which have been considered in the evaluation of Trent River crossing alternatives. For example, Transportation policy 6.1.1.1.b states:

“Where deemed appropriate and necessary by Council, the existing collector and local road system will be upgraded and extended to provide satisfactory vehicular movement throughout the Planning Area and their connection to adjacent municipalities.”

The Municipality is now in the process of updating the Official Plan. The new Draft OP dated October 2012 includes a new Land Use Schedule 6 which is essentially the same as the current OP in effect.

1.6 Study Purpose

The stated purpose of the initial EA process conducted between 2008/09 for an additional Trent River crossing was:

“To successfully complete Phases 1 through 4 of the Class EA process, which considers the need and justification for addressing the river crossing issue, alternative ways of improving travel over the Trent River, and alternative designs for the recommended improvements.”

According to the later Request for Proposals issued by the County in July 2012, the purpose of the EA re-commencement is:

“The purpose of this project is to prepare and file for public record an Environmental Study Report (ESR) that identifies and reports on the arterial road transportation solutions and alternatives for the former Town of Campbellford, in consideration of existing and future transportation issues, community enhancement, environmental and economic impacts, all intended to meet or exceed the current requirements of the Canadian Highway Bridge Design Code (CHBDC) and the Municipal Class Environmental Assessment Act under Schedule ‘C’.”

1.7 Study Objectives

The EA re-commencement Request for Proposals provides the primary objectives for the EA completion:

- To recommence the 2009 ESR and conduct an analysis of the current and future transportation needs in the former Town of Campbellford to complete an Environmental Study Report of sufficient detail while satisfying the requirements of Phases 1 - 4 of the Municipal Class EA Planning and Design Process (MEA June 2007 or as amended in 2011);
- Complete an Origin-Destination Traffic Study to fully understand the transportation needs and demand within the former Town of Campbellford;

- Analyze the property impacts particularly the loss of housing stock, condition of the existing housing within buildings adjacent to site(s) of interest, desirability to keep housing in identified corridors, availability of alternate accommodation within the vicinity, how severe impacts may be on the community, etc.
- Explore the various river crossing design alternatives in consideration of:
 - possible alignment options within and around the geographic limits of the former Town of Campbellford; or the viable options selected through consultation with the Steering Committee;
 - existing traffic volumes, patterns and transportation demands;
 - future growth related to development in the area and pass-through traffic;
 - potential detour routes for various design alternatives;
 - impacts on adjacent properties and economic impact on existing businesses;
 - loss of housing units, condition of the impacted housing stock, desirability to keep the impacted housing and availability of alternate accommodation within the vicinity;
 - impacts on existing facilities, utilities and structures;
 - cultural, historical, socio-economic, archaeological and heritage issues;
 - geotechnical investigations; and
 - pedestrian and trail linkages.
- Establish detailed cost estimates for construction, provision for detour routes during construction if required, cost to acquire property and/or businesses necessary for the preferred alternative if applicable, and other related impacts;
- Upon completion of the necessary budgeting and fundraising activities by the County and the Municipality, complete Phase 5 of the Municipal Class EA Planning and Design Process.

1.8 Study Direction

The original EA study conducted in 2008/09 was directed by a Project Team made up of staff from the Municipality and County, along with the consulting team from AECOM. Owing to some public concerns regarding the study process noted when the Final Draft ESR was presented in late 2009, the County and Municipality decided to establish a formal Steering Committee to direct the GENIVAR river crossing feasibility study begun in February 2010. The Steering Committee members were as follows and their meeting were open to public attendance and questions:

GENIVAR Steering Committee 2010-2012:

| | |
|--|--|
| Mark Lovshin, 2011 County Warden Mayor Hector Macmillan Councillor Bill Thompson | Chair, County Councillor, Mayor Hamilton Township Trent Hills Mayor and County Councillor Trent Hills Councillor |
| Public & Business Representatives: | |
| Alan Appleby Tom Kerr Michael Nitsch, P. Eng. Brian Redden | Representative, Second Street Resident's Association President, Campbellford Business Improvement Association Retired Engineer representing Public At Large President, Trent Hills & District Chamber of Commerce |
| County and Trent Hills Staff: | |
| Richard Bolduc, A.SC.T Jim Peters, MCIP, RPP | Director of Public Works, Trent Hills Director of Planning, Trent Hills |
| Mike Rutter | CAO, Trent Hills |

| | |
|---|---|
| Mobushar Pannu, P. Eng. Peter Nielsen, C.E.T. Christina Harvey, P. Eng. | Director of Transportation & Waste, Northumberland County Manager of Project Engineering, Northumberland County Engineer, Northumberland County |
| Project Manager: | |
| Steve Fournier | Project Manager, Fournier Consulting Services |
| Consultants: | |
| Julia Marson, P. Eng. | Senior Structural Engineer, GENIVAR |
| Nick McDonald, MCIP, RPP | Partner, Meridian Planning Consultants Inc. |

Reference
Appendix 3: Trent River Crossing in Campbellford: Feasibility Report, July 2012, GENIVAR

This Steering Committee held 13 progress meetings between April 2010 and August 2011 during the GENIVAR study. All meetings were open to the public and notices were sent to those on the study mailing list. The points of discussion at each meeting are included in Section 6 of the GENIVAR report, and posted on the study web site at:

www.northumberlandcounty.ca/trent_river_crossing

In 2012, prior to initiating the EA re-commencement, the County also re-established the study Steering Committee with the following membership, most from the previous Committee:

Re-Commencement Steering Committee 2013-2014 (to Council decision June 18, 2014):

| | |
|--|--|
| Council Members: | |
| Gil Brocanier Mark Lovshin Hector Macmillan Rosemary Kelleher-MacLennan | Mayor, Cobourg, Chair County Councillor, Mayor Hamilton Township Trent Hills Mayor and County Councillor Trent Hills Councillor |
| Public & Business Representatives: | |
| Alan Appleby Tom Kerr Brian Redden | Representative, Second Street Resident's Association President, Campbellford Business Improvement Association President, Trent Hills & District Chamber of Commerce Public At Large representative was vacant – no applications received. |
| County and Trent Hills Staff and Project Team: | |
| Jim Peters, MCIP, RPP Mike Rutter Mobushar Pannu, P. Eng. Mark Mills Christina Klein, P. Eng. Tim Blake | Director of Planning, Trent Hills CAO, Trent Hills Director of Transportation & Waste, Northumberland County Manager of Roads Operations, Northumberland County Engineer, Northumberland County Fire Chief, Trent Hills |
| Consultants: | |
| Don Drackley, MCP (MCIP, RPP) | Consultant Project Manager, IBI Group |

Reference
Appendix 5: Steering Committee Meeting Minutes, 2012-2014

As with the previous GENIVAR study Steering Committee, each of the six re-commencement Steering Committee meetings held between October 2012 and May 2014 were open to the public, and meeting notices were mailed to those on the interested public mailing list which by the last meeting had 216 names. Minutes of meeting are included in **Appendix 5** of this ESR.

2 Study Process

2.1 Municipal Class Environmental Assessment Process

Reference
Appendix 1:
AECOM Final Draft
ESR, August 2009

This study has followed the process requirements of the *Municipal Class Environmental Assessment, Municipal Engineers Association, October 2000, as amended 2011*. This is stated in Section 1.4 of the 2009 Final Draft ESR, including what the five phases of the process require for the study proponent (the County).

As reported in Section 1.4 of the 2009 Final Draft EA, and further confirmed through study work conducted in 2013/14, the proponent has worked to try and find reasonable means to address both the problems and opportunities associated with the proposed Trent River crossing capacity improvements. As reported in Final Draft ESR Section 1.4, if any Part II Order request is submitted to the Ontario Ministry of the Environment as a result of this EA, the Minister will make one of the following decisions:

- Deny the request;
- Refer the matter to mediation; or
- Require the County to comply with Part II of the EA which may result in the requirement to prepare an Individual EA.

It is important to note that none of these Ministerial options provide for an outright refusal of the Class EA study by the Minister.

2.1.1 Notice of Study Completion and Revised Environmental Study Report

Added
2015

As previously reported in Section 1.1 Background, on June 18, 2014 Northumberland County Council voted to endorse the recommendations of the Environmental Study Report dated August 2014. The Notice of Study Completion was then issued with a 30 day public review period which was subsequently extend to 61 days ending on November 3, 2014.

During this review period, MOECC and the County received letters from, and MOECC responded to eight (8) members of the public plus Chief of the Mohawks of the Bay of Quinte (MBQ) requesting the Minister of the Environment and Climate Change to make a Part II Order for the project to comply with Part II of the EA Act involving individual environmental assessments. Correspondence was also received from the Environmental Assessment Branch of MOECC, based on input from the Ministry of Tourism, Culture and Sport (MTCS) noting that additional work related to Aboriginal consultation and heritage and archaeological assessment was required in order to complete the Class EA process.⁴ Further information on this additional work is reported in Section 6.5 and 6.6. of this report.

As of late 2014, MOECC did not consider the project to be complete because of these concerns, and so the nine Part II Order requests in 2014 were not formally received and considered by the ministry at that time. As a result, except for the request from the MBQ, the other eight Part II Order requests are not directly addressed in this Revised ESR. However, the bases for these requests were and continue to be addressed through the EA process as reported in this Revised ESR. This information will also be used in formal responses to any subsequent Part II Order requests accepted by MOECC following the re-issuing of the Notice of Study Completion.

⁴ E-mail from Dawnett Allen, MOECC to Mohushar Pannu, Northumberland County, December 24, 2014

2.2 Canadian Environmental Assessment Act

When the 2009 Final Draft ESR was prepared, certain aspects of the proposed river crossing (crossing of navigable water and crossing of a fishery) were subject to the federal Canadian Environmental Assessment Act (CEAA). Since then, major changes were made to CEAA that now mean that now it does not apply to this project. This was confirmed by CEAA in their April 23, 2014 letter response stating, “Based on the information provided, your project does not appear to be described in the Regulations Designating Physical Activities (the Regulations)”.⁵ This is because according to section 25 (c) of the new federal Regulations, construction and operation of a new all-season public highway may require a Federal Environmental Assessment if it is 50 km or more in length.

There will still be federal clearance requirements associated with any bridge construction over the Trent River in Campbellford, no matter the location and design. In early 2014, Parks Canada (PC) provided written confirmation concluding that it is premature for PC to be actively involved in this study during the Municipal Class EA process.⁶ However, it was also noted that PC is expected to perform a review to determine potential for adverse environmental effects under the new interim directive for Environmental Impact Analysis (EIA). PC concluded that based on the information provided about this project, a Detailed Impact Analysis (DIA) will be required.

PC added that a Shoreline and In-water Works permit would also be required for a new bridge, and that this would be issued following approval and sign-off of the DIA by Parks Canada. A Bridge Agreement will also be required when any new bridge construction is completed. This ESR commits to these requirements for a DIA, and associated federal permits and agreements as reported in Section 9.8 of this ESR.

Added
2016

Updated input from Transport Canada provided in December 2015 notes that the Navigation Protection Act as amended in 2014 may apply to this project.⁷ Transport Canada cannot participate in a review of this project until confirmation is received from the Navigation Protection Program that the project requires an authorization and/or approval under the navigation Protection Act. This requirement is included as an EA commitment in Section 9.8 of this report early in the detailed design process.

⁵ Letter from A. Puvananathan, Director, Ontario Region, CEAA to D. Drackley, IBI Group, April 23, 2014

⁶ E-mail from Eileen Nolan, Parks Canada to Don Drackley, IBI Group, January 9, 2014

⁷ E-mail from Environmental Assessment Coordinator, Transport Canada, Ontario Region, December 18, 2015

3 Existing Conditions

3.1 Socio-Economic Environment

Reference
Appendix 1: AECOM Final
Draft ESR, August 2009,
Section 2

Little has changed in the socio-economic environment of the study area since it was reported in Section 2.1 of the Final Draft ESR in 2009. Those policy changes that have occurred are focused mainly on the Provincial Policy Statement updated in 2014:

3.1.1 Policy Framework

3.1.1.1 Provincial Policy Statement, 2014

The 2009 Final Draft ESR references Provincial Policy Statement 2005 that address matters associated with the EA. Updates made to the 2014 Provincial Policy Statement that also relate to this study are *highlighted* as follows:

1.0 Building Strong and Healthy Communities

1.1 Managing and Directing Land Use to Achieve Efficient and Resilient Development and Land Use Patterns

1.1.1.g. ensuring that necessary infrastructure and public service facilities are or will be available to meet current and projected needs;

1.1.1.h promoting development and land use patterns that conserve biodiversity and consider the impacts of a changing climate;

1.6.7 Transportation Systems

1.6.7.1 Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods and are appropriate to address projected needs.

1.6.8 Transportation and Infrastructure Corridors

1.6.8.1 Planning authorities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs.

1.6.8.2 Major goods movement facilities and corridors shall be protected for the long term.

1.7 Long term Economic Prosperity

1.7.1 Long-term economic prosperity shall be supported by:

c) maintaining and whenever possible enhancing the vitality and viability of downtowns and main streets;

d) encouraging a sense of place by promoting well-designed built forms and cultural planning, and by conserving features that help define character including built heritage resources and cultural heritage landscapes;

f) providing for an efficient, cost-effective, reliable multi-modal transportation system that is integrated with adjacent systems and those of other jurisdictions, and is appropriate to address projected needs.

3.1.1.2 Oak Ridges Moraine Conservation Plan – Trent Hills OP Amendment No. 2

As reported in Section 2.1.1.2 of the 2009 Final Draft ESR, OP Amendment No. 2 brought the Trent Hills OP into conformity with the Oak Ridges Moraine Conservation Plan. No changes have taken place regarding this legislation since then.

3.1.1.3 Official Plan Policies

Since 2009, further work has been conducted by the Municipality of Trent Hills on their new Official Plan, but as previously reported in Section 1.5.4 of this updated ESR, the 2000 Joint Official Plan still remains in place.

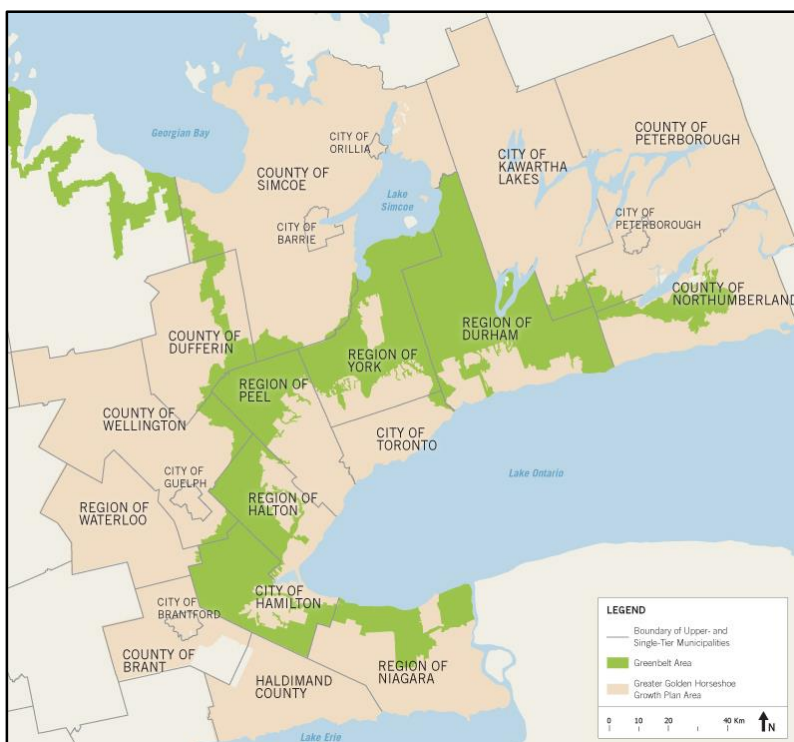
3.1.2 Project Population Growth and Development

The Municipality of Trent Hills, and specifically the Campbellford community, is a small, stable urban centre located in a predominantly rural region. The 2009 ESR reports a Trent Hills population of 12,247 in the 2006 census, which has since grown by 2.9% to 12,604 by 2011. According to the Trent Hills Draft Official Plan dated October 2012, the Municipality is now expected to grow by 1,443 residents to 13,890 people by 2031. Of this growth, 875 residents are expected to reside in Campbellford.

This growth forecast is supported by recent growth studies conducted for the new County OP that have Trent Hills growing by only 1,566 residents to 14,606 people by 2034.

Clearly, the need and justification for improved river crossing capacity at Campbellford is in no way tied exclusively to the expected growth of either the Municipality of Trent Hills, or more specifically the Campbellford community. As will be further reported in Section 4 of this ESR, traffic growth through Campbellford will result from broader regional population and employment growth, tourism growth, economic development and related goods movement throughout Northumberland County, south-central Ontario and the Greater Golden Horseshoe. One source of provincial growth forecasting for the County is the *Places To Grow Growth Plan for the Greater Golden Horseshoe* area that includes Northumberland County, as shown on Exhibit 3.1, and has the County growing by about 20,000 people by 2034:

Exhibit 3.1 - Greater Golden Horseshoe Growth Plan Area



3.1.3 Existing Land Use

Existing land use in Campbellford has remained largely unchanged from that reported in Section 2.1.3 of the 2009 Final Draft ESR. This includes the land use features shown on Figure 4 of that Plan, and presented here as Exhibit 3.2. Reference will be made to some of these features in the evaluation of alternative planning solutions in Section 7:

Exhibit 3.2 - Local Socio-Economic Environment Features

Source: AECOM Final Draft ESR, August 2009



3.1.4 Rental Housing

One important component of the existing socio-economic environment in Campbellford that may be impacted by the selection of the long term river crossing plan involves the supply of rental housing. This is because one of the finalist alternatives for the Trent River crossing, namely the twinning/widening of the existing Bridge Street bridge, would remove a relatively significant supply of this housing at the existing crossing location.

This impact was studied in a report entitled *Rental Housing Impact of Potential Bridge Twinning in Campbellford*, prepared by TWC Consulting Inc., dated August 2013. It was commissioned by Northumberland County separate from the EA completion, and is available on the project web site. This report finds that if the existing seven buildings were to be demolished at the existing Bridge Street bridge to allow for the bridge twinning alternative, removal of the 46 rental apartments or 5% of the Municipality of Trent Hill's entire rental stock and an even higher percentage of Campbellford's rental stock would be a significant negative impact on the supply of rental housing.

The report concludes that current new affordable housing development is being constructed in Trent Hills. The long term planning horizon also allows adequate time to create additional new rental housing, potentially through some use of anticipated Federal-Provincial housing funds over the next five years. However, there is currently a waiting list for the existing rental housing units in Campbellford. Residents displaced by removal of existing units in the bridge twinning alternative will not be accommodated by the new rental housing initiatives noted in the TWC Consulting report.

Also, the County's report entitled *"10 Year Housing and Homelessness Study"* conducted by TWC Consulting does not include the possible loss of these 46 rental units at the bridge. Instead, this removal would add to the number of units required for social housing in Campbellford. Therefore, any removal of the rental housing units at the Bridge St. bridge would have a significant social impact on the community, and would need to be addressed through future affordable and social housing plans.

3.2 Cultural Heritage Inventory: Pre-2014

3.2.1 Built Heritage, Heritage Landscapes & Waterscapes

Reference
Appendix 1: AECOM Final Draft ESR, August 2009,
Appendix B, Cultural Heritage Assessment Report, Unterman McPhail Assoc. April 2009,

The cultural heritage of Campbellford, and how it would be impacted by future river crossing plans is one of the most important considerations of this EA. The 2009 AECOM Final Draft ESR includes information on built heritage and cultural heritage landscapes within Campbellford collected by Unterman McPhail Associates from their surveys conducted in late 2008 and early 2009. That report is included in **Appendix B** of the 2009 Final Draft Report.

The core of Campbellford has been identified as an historic settlement, and so is considered to be a stand-alone cultural heritage landscape. The Trent-

Severn Waterway is also recognized as a national historic site.

The 2009 Unterman-McPhail report assessed the cultural heritage of the entire Campbellford community. It reports on the potential disruption and displacement impacts to cultural heritage resources from each of the four (4) river crossing location options located outside of Campbellford (see previous Exhibit 1.4), and the eight (8) location options within the urban community (see previous Exhibit 1.3). Six (6) properties within or adjacent to the urban river crossing options listed below were identified as being designated under Part IV of the *Ontario Heritage Act* and therefore were considered in the evaluation of impacts.

1. 113 Front St. North, Heritage Centre;

2. 37 Saskatoon Ave.;
3. 58 Saskatoon Ave. Fire Hall
4. 17 Second St. Spite House
5. 95 Doxsee Ave.; and
6. Cenotaph, Park on Trent River, Queen St.

Added
2016

Only 17 Second Street is located within a heritage study conducted for this EA, namely the ASI assessment of the Second Street / Alma Street crossing dated July 2015.

Although the AECOM 2009 Final Draft ESR recommended the new Second Street/Alma Street bridge location, the EA re-commencement brought the option of twinning/replacing the existing Bridge Street bridge back into the evaluation. This decision was based on the findings of the 2012 GENIVAR Feasibility Report. As a result, IBI Group recommended that a further heritage assessment specifically of the Bridge Street bridge area be conducted to confirm impacts that a twinned/replaced Bridge Street bridge would have on cultural heritage features in this area.

Reference
Appendix 6: The
Campbellford Bridge
Cultural Heritage
Assessment, Heritage
Resources Consulting
November 2013

That study, entitled *The Campbellford Bridge: A Cultural Heritage Assessment Report of Its Built Heritage and Cultural Heritage Landscape* dated November 2013 was prepared by Heritage Resources Consulting. It is included as **Appendix 6** of this ESR. The combination of this 2013 report, coupled with the information and recommendations of the 2009 Unterman McPhail Associates study provides the guidance required, in terms of cultural and built heritage considerations, to compare and determine which of the final two river crossing options would be least disruptive, and most beneficial, to the community from a cultural heritage perspective in the long term.

The Unterman McPhail study concludes that each of the original 12 river crossings options evaluated for Campbellford would result in varying degrees of change to the existing cultural heritage environment, and would affect built heritage resources and/or cultural heritage landscapes. It further concludes that all 12 options would result in disruption effects, principally visual, to the Trent River which is considered to be of important heritage significance. In response, Section 7 of the Unterman McPhail report recommends a number of mitigation measures for the preferred river crossing, as further reported in Section 9.1_ of this 2014 ESR.

The Heritage Resources Consulting (HRC) report also concluded in late 2013, based on its mandate to assess the Bridge Street bridge and contiguous properties, that the option of retaining the existing bridge in its current two-lane configuration and adding a second two lane bridge in the Alma/Second streets corridor would best conserve the cultural heritage of the original river crossing corridor. This alternative would impose no negative heritage impact on the Bridge Street bridge corridor and so requires no mitigation recommendations.

Construction of a new bridge in the Alma/Second Street corridor would, however, result in significant impact to cultural heritage resources in the area that is identified in the 2009 Unterman McPhail Associates Cultural Heritage Assessment Report.

3.2.2 Archaeology

A Stage 1 Archaeological Assessment was conducted for the AECOM Final Draft ESR by Archeoworks in April 2008 focused on a potential river crossing between Second Street and Alma Street that was preferred at that time. It is contained in the 2009 AECOM ESR as **Appendix D**, and found that no archaeological sites had been registered within a two kilometre radius of the Second/Alma corridor. However, the Ministry of Tourism, Culture and Sport (MTCS) policy would consider the crossing area to have high archaeological potential, including Aboriginal archaeological resources in undisturbed portions of a potential river crossing.

Added
2016

Furthermore, in the area surrounding the Second/Alma corridor, moderate to high potential for locating historical remains was established.

Due to these conclusions, the 2008 Archeoworks report recommends that a further Stage 2 archaeological investigation will be required for any proposed river crossing alignment within Campbellford to ensure the protection of any archaeological material. This was agreed to with the Mohawks of the Bay of Quinte at the meeting held on February 19, 2015 between representatives of MBQ and the County, as reported in Section 9.1.3.1 of this ESR. Minutes of that meeting are also included in Appendix 11. Furthermore, in Section 9.1.2 of this ESR, the County commits to conducting a Stage 2 survey of the Second/Alma corridor early in the detailed design process once the exact location of the bridge structure and associated works is confirmed.

3.3 Cultural Heritage Inventory: Post 2014

3.3.1 Built Heritage Resources and Cultural Heritage Landscapes

Added
2015

Prior to 2015, cultural heritage conditions, impacts and mitigation were addressed in the two previously referenced reports, namely the original Unterman McPhail Associates Cultural Heritage Assessment Report from 2009 included in **Appendix 1** of this Revised ESR, and the November 2013 Campbellford Bridge Cultural Heritage Assessment Report prepared by Heritage Resource Consulting included in **Appendix 6**.

When this EA process was recommenced in early 2013, MTCS reviewed the 2009 Unterman McPhail report and recommended that it should be updated and expanded to include more information on the existing Bridge Street bridge twinning alternative. This led to preparation of the November 2013 Bridge Street bridge assessment. Information from both reports was used to describe heritage conditions, impacts and mitigation recommendations in the August 2014 ESR.

Communications were conducted between MTCS, Northumberland County and IBI Group from March 2013 to October 2014 on the cultural heritage information being used in the EA recommencement and ESR report. The County's position was that the 2009 Unterman McPhail report remained an appropriate source of information to use in the EA, and that it had been augmented by the 2013 Campbellford Bridge report. MTCS countered that the Unterman McPhail report still required updating and expansion. Furthermore, the Ministry held that since the County had conducted a more detailed assessment of the Bridge Street bridge twinning alternative in 2013, a similar assessment update should also be conducted of the Second Street/Alma Street alternative.

Following a final meeting involving MTCS, MOECC, Northumberland County and IBI Group staff on March 9, 2015, the County retained Archaeological Service Inc. (ASI) to conduct the new Cultural Heritage Resources Assessment of the Second/Alma crossing alternative. This report, dated July 2015 is included in Revised ESR **Appendix 6** and includes the existing conditions information provided as follows in Section 3.3.2 and 3.3.3. Further information on cultural heritage impacts and mitigation recommendations are included in Section 9 of this Revised ESR.

The complete report in **Appendix 6** should be reviewed for further information. This report was reviewed by MTCS in early August 2015 with the following comments and recommendations:⁸

- *"This Heritage Report clearly identifies existing cultural heritage conditions ... providing a detailed inventory... and corresponding mapping";*

⁸ Letter from Rosi Zirger, MTCS to D. Drackley, IBI Group, August 7, 2015

- “Section 3.5.2 of the Report clearly identifies potential impacts of the proposed project on identified cultural heritage resources. Section 4 offers a comprehensive and thoughtful analysis of these impacts”; and
- “MTCS recommends that information from this technical study be summarized and included in the updated Environmental Study Report ... we recommend that the Mitigation Recommendations outlined in section 5.0 be considered in the overall EA.”

3.3.1.1 Second Street / Alma Street Corridor – Existing Conditions

Added
2015

The Trent River divides the community of Campbellford and the study area into the east and west sides. On the west side of the Trent River, Grand Road runs north to south along the river banks. The intersection of Alma Street and Grand Road has a large parking lot on the southwest corner, a c. 1900 brick residence at 120 Grand Road on the northwest corner, and a park on the east side of Grand Road along the river. On the north side of Alma Street, the study area consists of a residential area of late nineteenth/early twentieth century homes, remnants of what used to be known as Emilyville.

The Rotary Trail, which is also part of the TransCanada trail, runs between Grand Road and the built canal waterway, and is accessed at the Alma Street intersection. This trailhead provides uninterrupted views along the Trent River, including: northeast toward the downtown commercial blocks, the existing bridge crossing and the distinct tower of the Fire Hall on the east bank and southeast toward the former railway bridge piers located in the river.

On the east side of the Trent River, Saskatoon Avenue generally runs north to south parallel to the river banks. In the vicinity of the proposed bridge crossing, Saskatoon Avenue is a streetscape of mainly twentieth century residences. East of Saskatoon Avenue, Frank Street, Front Street South and Doxsee Avenue South also travel north to south but terminate at Second Street. All three streets consist of mixed nineteenth and twentieth century residential streetscapes with well-kept homes and mature tree canopy.

3.3.1.2 Second Street / Alma Street Corridor – 2015 Update on Identified Cultural Heritage Resources

Added
2015

Based on the results of the background research and field review conducted as part of the 2015 Cultural Heritage Resource Assessment of the Second/Alma alternative, 38 built heritage resources (BHR) and seven cultural heritage landscapes (CHLs) were identified within, adjacent, and in the vicinity of the Second Street/Alma Street crossing study area as listed in Exhibit 3.3. A detailed inventory of these cultural heritage resources is presented in Section 7.0 and mapping of these features is provided in Section 8.0 of the complete 2015 Cultural Heritage Resource Assessment report included in **Appendix 6** of this Revised ESR. Note that the forms of recognition have been updated from the 2009 Unterman McPhail (UMcA) report used in the August 2014 ESR.

Exhibit 3.3 - Second Street / Alma Street Crossing - Identified Cultural Heritage Resources

| Resource | Location | Type | Recognition |
|----------|------------------------|-----------|---|
| BHR 1 | 17 Second Street | Residence | Designated, Part IV; Heritage Plaque |
| BHR 2 | 95 Doxsee Avenue South | Residence | Designated, Part IV; Heritage Plaque |
| BHR 3 | 85 Frank Street | Residence | Recommended for designation, Part IV; Heritage Plaque |
| BHR 4 | 116 Grand Road | Residence | Recommended for designation, Part IV; Heritage Plaque |
| BHR 5 | 79 Frank Street | Residence | Proposed for designation, Part IV; Heritage Plaque |
| BHR 6 | 90 Frank Street | Residence | Proposed for designation, Part IV; Heritage Plaque |
| BHR 7 | 61 Second Street | Residence | Listed, Municipal Register |
| BHR 8 | 55/57 Second Street | Residence | Listed, Municipal Register |

| Resource | Location | Type | Recognition |
|----------|------------------------------------|---------------------------|---|
| BHR 9 | 50 Second Street | Residence | Listed, Municipal Register |
| BHR 10 | 25 Second Street | Residence | Listed, Municipal Register; Heritage Plaque |
| BHR 11 | 69 Frank Street | Residence | Listed, Municipal Register; Heritage Plaque |
| BHR 12 | 73-75 Frank Street | Residence | Listed, Municipal Register |
| BHR 13 | 74 Frank Street | Residence | Listed, Municipal Register |
| BHR 14 | 80 Frank Street | Residence | Listed, Municipal Register; Heritage Plaque |
| BHR 15 | 86 Frank Street | Residence | Listed, Municipal Register |
| BHR 16 | 93 Frank Street | Residence | Listed, Municipal Register |
| BHR 17 | 94 Frank Street | Residence | Listed, Municipal Register; Heritage Plaque |
| BHR 18 | 89 Saskatoon Avenue | Residence | Listed, Municipal Register |
| BHR 19 | 83 Saskatoon Avenue | Residence | Listed, Municipal Register |
| BHR 20 | 93 Saskatoon Avenue | Residence | Listed, Municipal Register |
| BHR 21 | 99 Saskatoon Avenue | Residence | Listed, Municipal Register |
| BHR 22 | 109 Saskatoon Avenue | Residence | Listed, Municipal Register |
| BHR 23 | 116 Saskatoon Avenue | Residence | Listed, Municipal Register |
| BHR 24 | 125 Saskatoon Avenue | Residence | Listed, Municipal Register; Heritage Plaque |
| BHR 25 | 104 Grand Road | Residence | Listed, Municipal Register |
| BHR 26 | 120 Grand Road | Residence | Previously identified (UMcA 2009) |
| BHR 27 | 124 Saskatoon Avenue | Residence | Listed, Municipal Register |
| BHR 28 | 65 Second Street | Residence | Previously Identified (UMcA 2009) |
| BHR 29 | 110 Grand Road | Residence | Identified, field review and historical research |
| BHR 30 | 72 Pellissier Street South | Residence | Identified, field review and historical research |
| BHR 31 | 148 Alma Street | Residence | Identified, field review and historical research |
| BHR 32 | 154 Alma Street | Residence | Identified, field review and historical research |
| BHR 33 | 42 Second Street | Residence | Identified, field review and historical research |
| BHR 34 | 81 Second Street | Residence | Listed, Municipal Register; Heritage Plaque |
| BHR 35 | 89 Second Street | Residence | Listed, Municipal Register |
| BHR 36 | 96 Second Street | Residence | Listed, Municipal Register |
| BHR 37 | 60 Frank Street | Residence | Listed, Municipal Register; Heritage Plaque |
| BHR 38 | 77 Second Street | Commercial Residential | Listed, Municipal Register |
| CHL 1 | Second Street | Streetscape | Previously identified (UMcA 2009) |
| CHL 2 | Alma Street | Streetscape | Previously identified (UMcA 2009) |
| CHL 3 | Saskatoon Avenue | Streetscape | Previously identified (UMcA 2009) |
| CHL 4 | Frank Street | Streetscape | Previously identified (UMcA 2009) |
| CHL 5 | Trent River and Park on Grand Road | Former Railway Crossing | Previously identified (UMcA 2009) |
| CHL 6 | Trent River | Waterscape | Part of the Trent-Severn Waterway, a National Historic Site |
| CHL 7 | East side of Trent River | Residential Neighbourhood | Identified, field review and historical research |

3.3.2 Archaeology

Reference
Appendix 7:
 Archeoworks Stage 1
 Assessment, March
 18, 2015

As with the previously reported cultural heritage assessment, re-commencement of the EA required a further Stage 1 Archaeological Assessment of both the existing Bridge Street bridge alternative and the Second/Alma crossing alternative in downtown Campbellford. As reported in the March 18, 2015 report in **Appendix 7**, Archeoworks concluded that a Stage 2 survey is required if either the Bridge Street bridge alternative or Second/Alma alternative is selected as the preferred location of

the Trent River crossing. The report concludes that the Second/Alma crossing is expected to retain high archaeological potential, and so a Stage 2 test pit survey is required once the EA process confirms an approved location for a river crossing in this area.

For the Bridge Street bridge alternative, the 2014 Stage 1 assessment concludes if this crossing alternative is preferred through the EA process, that Stage 2 work would only be required on the grassed frontage of 34 Bridge Street West, and in the open parkland immediately south of the existing bridge on the west bank.

3.4 Natural Environment

An investigation of aquatic and terrestrial environment features along the Trent River in Campbellford was conducted by Warne Engineering and Biological Services in the spring and summer of 2008 for the AECOM EA. The original study area at that time was the portion of the Municipality of Trent Hills covering the Campbellford area and its major site features. This included the urban Campbellford crossing options and those more rural to the south. The results of this investigation are reported in **Appendix C** of the 2009 AECOM Final Draft ESR.

Reference
Appendix 1: AECOM
Final Draft ESR,
Appendix C: Natural
Environment Site Review

The Warne report concluded that AECOM's preferred Second/Alma crossing "*is not within or adjacent to identified natural heritage features*". Trout Creek, a tributary of the Trent River, was noted as a significant natural feature associated with the Second/Alma alignment, but is sufficiently upstream of the Second/Alma crossing option that it is unlikely that it would be affected by a new bridge at this location.

Other findings of the Warne report deal with Species At Risk, potential impacts of construction, recommended mitigation measures and cumulative effects. The final Next Steps recommendations of the report address the necessary permits from environmental regulatory agencies that will be required to move into the construction phase. This includes:

- DFO Authorization through Parks Canada for the Harmful Destruction of Fish Habitat, from expected Harmful Alteration, Disturbance or Destruction of Fish Habitat (HADD);
- Provincial Permit to Take Water; and
- Federal Navigable Waters Protection Act Permit.

Reference
Appendix 8: Fish &
Fish Habitat
Assessment Report,
LGL Ltd., April 2014

These and other natural environment permitting requirements are committed to by this EA in Section 9: Environment Impacts and Mitigation Commitments.

As a follow-up to the 2009 Warne evaluation, IBI Group contracted LGL Limited in 2013 to review and confirm natural environment conditions and requirements specifically at the existing Bridge Street bridge crossing. The results are reported in the LGL Limited technical memo dated April 2014 and are included as **Appendix 8**

to this ESR. It addresses commitments to erosion and sediment controls prior to and during construction, and the need for environment monitoring during construction which are included in the ESR Section 9 Environmental Impacts and Mitigation Commitments.

3.5 Transportation

Since the subject of the Trent River crossing in Campbellford involves the operation of the available river crossings and road network serving these crossings, the 2009 Final Draft ESR presents information on the existing network operations and level of service.

3.5.1 Road Traffic

3.5.1.1 2009 ESR

The existing transportation system inventory reported in the 2009 ESR focuses on how the key arterial roads shown on Exhibit 3.4 in the vicinity of the Bridge Street bridge operate. The key roads serving the bridge are:

- Bridge Street is a County Arterial Road (County Road 8) east of the Bridge Street bridge and a Municipality of Trent Hills Local Arterial road to the west within the urban area.
- Front Street is a County Arterial north of Bridge Street (County Road 38) and Municipal Arterial to the south.
- Grand Road/Queen Street jurisdiction splits between a County Arterial north of Bridge Street (County Road 50) and a Municipal Road to the south to Taylor Lane.

Exhibit 3.4 - Key Bridge Street Bridge Access Roads

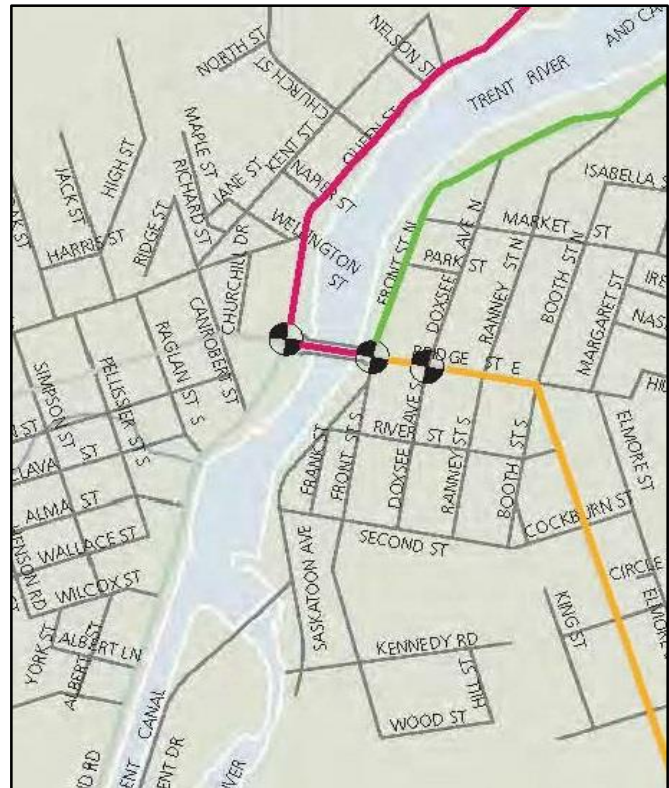
According to the new Draft Official Plan of Northumberland County, a County Arterial is intended to connect urban areas and rural settlement areas and Highway 401. Municipal Arterial Roads provide for travel through urban areas to County Arterial Roads and Highway 401. Traffic operations at the Bridge Street bridge is controlled by signals at the Bridge Street/Grand Road-Queen Street, Bridge Street/Front Street and Bridge Street/Doxsee Street intersections as shown on Exhibit 3.4.

Reference
 AECOM Final Draft
 ESR, Section 2.5.1
 Roads

The other Municipal Roads studied in the 2009 EA as part of the river crossing network are Trent Drive and

Saskatoon Street, also shown on Exhibit 3.5. Turning movement traffic volumes were collected for these and other network intersections using 2007 counts. The results, reported in Section 2.5.1.2 of the 2009 ESR conclude that peak hour traffic volumes do not vary significantly between seasons in Campbellford, and that although there are morning and afternoon peak periods, traffic volumes are at fairly constant high levels throughout the day. The typical daily traffic volume crossing the Bridge Street bridge reported in 2009 was approximately 12-14,000 vehicles.

In terms of traffic operations, the Volume to Capacity (V/C) ratios and associated Level-of-Service (LOS) was measured in 2009 at the key intersections associated with the Bridge Street bridge crossing. The LOS assigned to an intersection is considered acceptable if it is LOS C or better (A, B, C) and can include LOS D during peak travel hours. LOS E is poor operations which should be improved, and LOS F is unacceptable operations and must be improved. The 2009 analysis concluded that the three signalized intersections associated with the Bridge Street



bridge did not operate very well during the peak AM and PM hours as illustrated by the poor LOS E and F conditions shown in Exhibit 3.5:

Exhibit 3.5 - 2009 Peak Hour Bridge Street Intersection LOS

| DIRECTION | CROSS STREET | AM PEAK HOUR | PM PEAK HOUR |
|-----------|---------------|--------------|--------------|
| EB | Grand Road | F | F |
| | Front Street | E | E |
| | Doxsee Avenue | C | C |
| | Total | E | E |
| WB | Doxsee Avenue | D | D |
| | Front Street | E | F |
| | Queen Street | E | E |
| | Total | D | E |

The 2009 analysis concluded that some of these poor intersection operations could be improved by optimizing the signal timing. Using a technical intersection optimization study conducted by Read Voorhees & Associates Ltd in 2009-2010, signal optimization was implemented in mid-2009 and late 2010 with generally favourable results. Intersection LOS was improved as predicted, but the requirement for more than the existing two lane capacity over the bridge remained unchanged.

3.5.1.2 Other Post 2008 Traffic Findings

Reference
Appendix 2: Section 3.4, MRC Independent Review: Campbellford Bridge, May 2009

The Cambridge Bridge Independent Review conducted by MRC dated May 2009 states that:

“From a traffic perspective, Bridge Street is presently operating at near capacity in the vicinity of the Bridge Street bridge. Left hand turn movements, from the bridge on to either Grand Road or Front Street, result in backup to traffic over the bridge since there is an inability for the through traffic on the bridge to pass by the left turning vehicles. Constructing some form of a third lane alternative on the bridge to accommodate these left turn movements will immediately improve the intersection utilization and provide an increased level of service. Signal timing adjustments could also be made to reduce delays for the peak movements to improve the delay in the peak direction.”

Reference
Appendix 3: Section 5.1, Trent River Crossing in Campbellford: Feasibility Report, July 2012, GENIVAR

Note: Signal timing adjustments were implemented in 2010 by the County. The MRC report also includes alternative routing alternatives and turn restrictions to optimize the bridge operation. Another option they suggested was to remove Bridge Street on-street parking between Queen and

Canrobert to get 150 m of additional left turn storage.

The GENIVAR Feasibility Report dated July 2012 states that:

“The traffic analysis indicates that the intersection at Grand Road/Queen Street as it is now (in 2012 with signal timing adjustments) is well over capacity (with a level of service F) and the intersection of Front Street is very close to capacity during both weekday PM and Saturday peak hours.”

3.5.1.3 2013 Update

Since the traffic counts used in the 2009 ESR were conducted more than five years ago, more recent traffic counts were undertaken as part of the EA re-commencement at key Campbellford

road network intersections associated with the Bridge Street bridge crossing. This analysis of existing intersection operations for the EA was updated by IBI Group in 2013.

As part of this existing conditions update, the new turning movement traffic counts were conducted on February 20, 2013 at the locations listed in Exhibit 3.6.

Exhibit 3.6 - Conducted Traffic Counts Inventory - 2013

| INTERSECTION | TYPE | COUNT DATE |
|---------------------------------|--------------|-------------------|
| Bridge St & Grand Rd / Queen St | Signalized | February 20, 2013 |
| Trent Dr & Industrial Dr | Unsignalized | February 20, 2013 |
| Alma St & Simpson St | Unsignalized | February 20, 2013 |
| Second St & Ranney St | Unsignalized | February 20, 2013 |

This was done to illustrate any changes at these key Campbellford intersection because they functions as part of key access corridors within Campbellford. Bridge Street provides east-west access across Campbellford, and Grand Road / Queen Street provide north-south access in / out of Campbellford from / to Highway 7 to the north and Highway 401 to the south.

Exhibit 3.7 - Traffic Analysis Locations

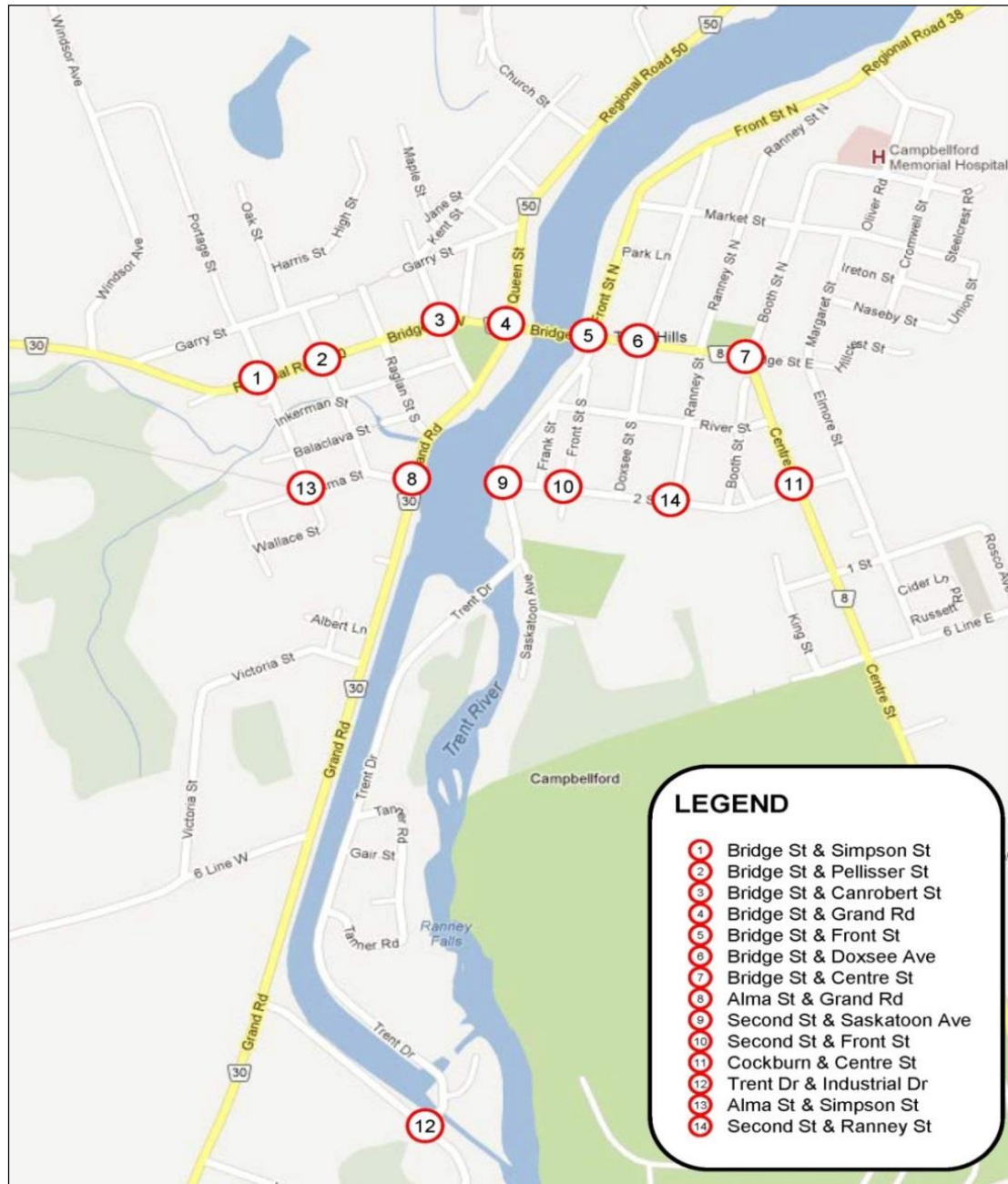


Exhibit 3.8 summarizes a comparison of 2007 and 2013 traffic volumes along these key intersection legs at Bridge Street & Grand Road / Queen Street. Traffic volume changes were observed, with some legs indicating a decrease and some legs indicating an increase. Overall the critical movement, namely traffic on the bridge itself, experienced minor fluctuations but no significant growth between 2007 and 2013. Based on these numbers, the new counts conducted were used to update the existing operation analysis in the 2009 Final Draft ESR. Other 2007 counts within Campbellford conducted for the 2009 ESR were also carried forward.

Exhibit 3.8 - Traffic Growth 2007 to 2013 at Bridge Street & Grand Road / Queen Street

| BRIDGE STREET & GRAND RD / QUEEN ST INTERSECTION LEG | GROWTH FROM 2007 TO 2013 | |
|---|--------------------------|--------------|
| | AM PEAK HOUR | PM PEAK HOUR |
| Campbellford Bridge (east leg) | -2% | -9% |
| Bridge St (west leg) | -10% | -19% |
| Queen St (north leg) | 15% | -28% |
| Grand Rd (south leg) | 10% | 7% |

In terms of summer traffic, the Campbellford road network not only serves daily commuter and business traffic, but also summer recreational travel. The most recent annual corridor traffic counts were published by the County for 2008. As shown in Exhibit 3.9, a review of these counts at locations nearby to the Campbellford area indicated that summer average daily traffic (SADT) was up to 10% greater than annual average daily traffic (AADT) for the Campbellford and nearby area. The traffic operations update to 2013 therefore reported on a 10% traffic increase sensitivity scenario for the AM and PM peak hours representing summer recreational travel.

Exhibit 3.9 - Summer Versus Daily Traffic For Campbellford Area, 2008

| COUNTY ROAD | DESCRIPTION | AADT | SADT | % DIFFERENCE |
|-------------|---|-------|-------|--------------|
| 8 | 0.8 km. North of entrance to Ferris Prov. | 3,300 | 3,300 | 0% |
| 30 | 1 km. South of County Rd. 29 | 4,000 | 4,100 | 2% |
| 30 | 2 km. North of County Rd. 29 | 4,200 | 4,300 | 2% |
| 30 | 0.5 km East of County Rd. 35 | 6,100 | 6,200 | 2% |
| 30 | 3.7 km. North of County Rd. 35 | 3,400 | 3,700 | 9% |
| 38 | 2.6 km. East of Petherick Corners | 1,000 | 1,100 | 10% |
| 50 | 1.4 km. North of Hwy. 30 (Bridge St.) | 1,900 | 2,000 | 5% |

Source: Northumberland County, 2013

Using a combination of the updated and 2007/08 traffic counts, intersection operations modeling (Synchro, SimTraffic) was used to assess the existing road network. The following performance measures were used:

- Level-of-service (LOS) – The same LOS scale was used as in 2009 to relate average delay experienced by motorists at intersections. Generally, LOS A, B and C are considered to be good conditions, D fair and E and F reflect very congested operations.
- Queues – A measure of the distance that queued vehicles occupy along the roadway. Queues longer than 50m were noted.

For analysis purposes, traffic signal timing plans were adopted from the recommendations of the Read Voorhees & Associates Ltd signal optimization study (2009-10). Daily traffic and a 10% traffic volume increase (applied to all turning movements at all intersections) for the summertime scenario were evaluated for the AM and PM peak hours. The sensitivity scenario was conducted to illustrate higher summer recreational traffic experienced in the Campbellford area.

The following weekday traffic operations were noted:

- Overall, the three signalized intersections associated with the Bridge Street bridge operated without any major delays in the AM peak hour. However, in the PM peak hour, poor LOS E was experienced getting off of the Campbellford Bridge;
- Significant queuing was observed along the entire length of the Campbellford Bridge. In the heavier congested PM peak hour, queuing was also observed along the northbound approach at Bridge Street & Grand Road / Queen Street and the southbound approach

at Bridge Street & Front Street, as vehicles attempted to get onto and across the bridge;
 and

- No significant delays or queues were measured or observed at any time at the unsignalized intersections. All unsignalized operations operated at LOS B and higher. Very short queues were observed;

For the summer recreational scenario, the following operations were noted:

- Delays and queues are slightly worse, though overall intersection operations remain relatively consistent. Even with higher traffic volumes, the signal coordination and longer PM peak hour cycle length allowed similar delays and queues to be measured as in the daily traffic scenario; and
- As in the daily traffic scenario, no congested operations or long delays were measured or observed for any of the unsignalized intersections.

These existing LOS conditions at the three intersections approaching the Bridge Street bridge based on traffic signal optimization are presented in Exhibit 3.10.

Exhibit 3.10 - Existing Traffic Conditions, 2013

Weekday

| INTERSECTION | CRITICAL MOVEMENTS | |
|-------------------------------|---|--|
| | AM | PM |
| Bridge St & Grand Rd/Queen St | No major LOS delays; WB and NB queues (110m), EB queue (50m) | LOS E at WB approach; EB queue (50m), WB queue (195m), NB queue (85m), |
| Bridge St & Front St | No major delays; EB and WB queues (75m) | LOS E at EB approach, NBL and SBT; EB queue (195m), WB queue (80m), NBT queue (65m), SBT queue (150m) |
| Bridge St & Doxsee Ave | No major delays; EB queue (70m), WB queue (65m) | No major delays; WB queue (70m) |

Summer

| INTERSECTION | CRITICAL MOVEMENTS | |
|-------------------------------|--|---|
| | AM | PM |
| Bridge St & Grand Rd/Queen St | No major delays; EB queue (85m), WB queue (135m), NB queue (100m), SB queue (50m) | LOS E at SBL; EB queue (80m), WB queue (195m), NB queue (95m), SB queue (55m) |
| Bridge St & Front St | No major delays; EB queue (55m), WB queue (65m), SB queue (50m) | LOS E at EB approach; EB queue (195m), WB queue (110m), NB queue (80m), SB queue (60m) |
| Bridge St & Doxsee Ave | No major delays; EB queue (65m), WB queue (70m) | No major delays; EB queue (80m), WB queue (65m), NB queue (55m) |

Conclusion - The results of the existing traffic analysis update at the Bridge Street bridge confirm that with the traffic signal optimization implemented by the County in 2010, the bridge intersections are currently operating well during the morning peak. However, the afternoon peak period experiences poor LOS E conditions and some very long queuing of turning vehicles at the two bridge terminals. However, one important question addressed by this EA is how these

intersections, and access on and off the existing bridge, will operate in the future. This is addressed in Section 4.4 of this ESR.

3.5.2 Bridges

3.5.2.1 Bridge Street Bridge (AKA High Level Bridge)

The Bridge Street bridge shown here spanning the Trent River in Campbellford is a County bridge, constructed in 1968. It is a five span post-tensioned concrete slab bridge with a total span length of 139.5 m. Its deck has two 3.25 m traffic lanes with 1.0 m shoulders and 1.5 m sidewalks on each side. Four cast-in-place reinforced concrete piers on concrete spread footings support the superstructure.

A very important element of this EA's Need and Justification (see Section 5) is that this type of concrete bridge structure has an average 75 year lifespan before having to be replaced. It was previously rehabilitated in 2006 at 38 years old. The remaining bridge lifespan is estimated to be about 30 years before it will need to be replaced.

3.5.2.2 Other Trent River Bridges

There are three other structures that form the other crossing of the Trent River and Canal in Campbellford along Trent Drive, as previously shown on Exhibits 3.6 and 1.8:

1. A one-lane swing bridge over the Trent Canal owned and operated by the Trent-Severn Waterway (Parks Canada). Parks Canada has reconfirmed that this bridge must remain as is, and is not intended to serve as a long terms river crossing option;
2. A single lane concrete bridge for vehicles with limited load (i.e. no large fire trucks or other heavy vehicles) located in the vicinity of the Ontario Power Generation (OPG) facility, and owned and operated by the Trent-Severn Waterway; and
3. A two-lane Municipality of Trent Hills Bridge with a Trent-Severn Waterway control structure below.

Reference
Appendix 1: AECOM
Final Draft ESR,
Section 2.5.2.2, August
2009

Each of these three other Trent River bridges that provide one limited river/canal crossing are shown on Exhibit 3.11. Because they are essentially under the jurisdiction or control of Parks Canada, they do not provide viable and reliable long-term Trent River crossing control options for the County. In the past, Parks Canada and other federal agencies have opposed improvements to the capacity of the swing bridge and OPG crossing facility (see AECOM 2009 Final Draft ESR section 2.5.2.2).

Exhibit 3.11 - Other Trent Drive Bridges



1. One Lane Swing Bridge



2. One Lane Bridge
Over OPG



3. Two Lane Municipal Bridge
over Trent-Severn Waterway
Control Structure

3.5.3 Emergency Services

Reference
Appendix 1: AECOM
Final Draft ESR,
Section 2.6, August
2009

The preceding information on existing Trent River and Canal crossings in Campbellford reconfirms the important conclusion of this EA that the entire Northumberland County and south-central Ontario region are dependent on the Campbellford crossing as an essential transportation link across the Trent-Severn Waterway. This essential crossing role brings into question the role of this crossing for emergency service providers, namely the Ontario Provincial Police (OPP) Northumberland County Paramedics and Trent Hills Fire Department. Previous input from these emergency service providers was included in Section 2.6 of the 2009 Final Draft ESR, summarized as follows and update.

As part of the 2009 Final Draft ESR, the OPP supported the need and justification for an additional crossing of the Trent River in Campbellford (see 2009 Final Draft ESR Section 2.6.1.1). For the Northumberland County Paramedics ambulance service, the 2009 Final Draft ESR reports that they supported the need and justification for an additional crossing of the Trent River in Campbellford ((see 2009 Final Draft ESR Section 2.6.1.2).

The Trent Hills Fire Department (Campbellford/Seymour Station) located on the east side of the Trent River in downtown Campbellford also supported the need and justification for an additional crossing of the Trent River. Since emergency response in this part of Northumberland County is dependent on effective river crossing, the ESR re-commencement invited further input from the Trent Hills Fire Department on their ability to cross the Trent River for emergency responses. A summary of their 2013 input that has been considered in the EA is provided as follows:

1. Warning signals lights should be installed at the bridge intersections to clear the intersections in emergencies This could help firefighters accessing the Fire Hall;
2. The single bridge crossing in Campbellford has become a traffic bottleneck, and as such the Fire Department does not support the Bridge Street bridge twinning options since they expect that it would eventually again become a single crossing bottleneck;
3. The goal of the County and Municipality should be to find, approve and implement an effective solution – get it done. This can include plans for interim solutions as well;
4. The group cited the Trenton example that has two bridges in the core area, one near the fire hall;
5. Conditions across the Bridge Street bridge can vary greatly. For example, on one day crossing time can be 10 minutes at noon, 4 minutes the next day at 2:30 p.m. and no delay the next day at 12:20 p.m.;
6. Heavy vehicle crossings are part of the bridge crossing problem, but there are no other reliable crossing options locally. This includes school bus crossing twice a day, plus farm equipment, off-peak period factory deliveries and local business activities such as concrete suppliers;
7. If a new bridge was built, load restricts could be put on the existing bridge to help extend its life;
8. It was noted that the larger emergency trucks, especially the ladder truck, have difficulty turning onto the bridge irrespective the traffic conditions owing to existing intersection geometry; and
9. The majority of the Fire Department are volunteers who are required to respond to the Fire Hall in their private vehicles in case of an emergency.

4 Future Conditions

4.1 Community Growth

The 2009 AECOM Final Draft ESR states that future changes in the volume of traffic crossing the Trent River within Campbellford will be influenced by two main factors:

1. Population and employment growth, and related economic development within Campbellford and the Municipality of Trent Hills; and
2. Growth and development occurring in the remainder of Northumberland County and beyond in other parts of the Province of Ontario (focused on the Greater Golden Horseshoe). This is because being situated at the junction of several County roads between Highway 401 and Highway 7, intra-County and intra-Provincial traffic forms part of the river crossing travel demand.

Some members of the public who oppose the required Trent River crossing capacity in Campbellford argue that added capacity is not required because Campbellford has not grown, and so traffic volume are not growing. This opinion is not supported by the following facts.

In terms of community growth, Campbellford is admittedly a slow growth community, but recent demographic trends published by the Municipality show the population increasing 2%-5% per 5-year census period, as shown in Exhibit 4.1 below based on adjusted population counts. Overall, the population statistics showed a slow but increasing trend. Traffic growth can be expected to follow a similar trend.

Exhibit 4.1 - Demographic Data for the Municipality of Trent Hills

| POPULATION | YEAR | | | | %AGE GROWTH | | |
|------------|--------|--------|--------|--------|-------------|-----------|-----------|
| | 2006 | 2011 | 2016 | 2021 | 2006-2011 | 2011-2016 | 2016-2021 |
| Actual | 12,247 | 12,604 | - | - | 3% | - | - |
| Adjusted | 12,247 | 12,604 | 12,891 | 13,511 | 3% | 2% | 5% |

Source – Municipality of Trent Hills. Actual population were from Statistics Canada. Adjusted populations for 2016 and 2021 based on ratio of 2011 actual to 2011 projections applied to projected population.

The distribution of land use in the Campbellford urban area indicates where future traffic generators can be expected, namely near the downtown core, at the three signalized intersections, and along the major corridors leading into and out of Campbellford such as Bridge Street (CR 30), Grand Road (CR 30) / Queen Street (CR 50), Front Street (CR 38) and Centre Street (CR 8). Since the residential areas are well established, little to no growth can be expected from these existing areas. According to the land use structure shown on Exhibit 1.9 from the current Trent Hills Official Plan, residential growth in the community is planned to the south along both sides of CR 8 as well as in the east side and west of Grand Road. Employment-related land use is planned on the west side of Trent River and south of Bridge Street.

More important for the Trent River crossing issue is the broader regional population and employment growth, tourism growth, economic development and related traffic growth expected throughout Northumberland County, south-central Ontario and the Greater Golden Horseshoe. As previously reported in Section 3.1.2 of this ESR, the *Places To Grow Growth Plan for the Greater Golden Horseshoe* area, that includes Northumberland County, has the County growing by 20,000 people by 2036. Although most of this growth is expected to occur along the Highway 401 corridor, it is also expected to contribute to traffic growth on the County road network, including the strategic County road links through Campbellford and across the Trent River, and to and from Highway 401 to the south and Highway 7 to the north.

4.2 Future of the Existing Bridge Street Bridge

The three previous engineering studies by AECOM, MRC and GENIVAR each address the existing and future condition of the existing Bridge Street bridge in Campbellford. AECOM states in their Section 4.4 that with regular maintenance, the design life of the existing bridge is expected to be approximately 75 years. Having been constructed in 1968, this means the remaining lifespan of the bridge is now estimated at about 30 years. According to AECOM, rehabilitation or replacement will likely be required in this timeframe:

“if it continues to be the only high level bridge over the Trent River in this area ... The planning and budgeting for rehabilitation and/or replacement should commence within 10 years to ensure continuous service and no load restrictions”.

AECOM estimated that bridge replacement would take approximately 18-24 months to complete, during which time the crossing would be either closed or limited to one lane alternating one-way traffic at all times. No other structurally adequate and reliable river crossing detour is available in Campbellford, so traffic congestion, emergency access and economic impact issues are expected to be significant during this replacement.

In late 2009, County staff considered whether a temporary detour bridge such as a Bailey Bridge could be used to accommodate river crossing traffic while the existing bridge is being reconstructed. They concluded that this was not a feasible option because:

- Bailey Bridges are intended to serve low volume traffic use;
- They are typically a single lane structure so three would be required, two for traffic and one for pedestrians; and
- The crossings would need to provide a 6.7 m (22') separation over the river surface to accommodate boat traffic which is not possible with a Bailey Bridge.

Also in 2009, MRC concluded that adding a third full length centre turning lane to the existing bridge would not be a “*prudent investment*” because by 2027 the forecasted traffic growth would decrease the level of service back to 2009 conditions, and the cost would be spent on a bridge with only a +/- 30 remaining year lifespan.

In 2012 GENIVAR undertook a detailed structural analysis of the existing bridge, and found that it is deficient in terms of maximum acceptable deflection/vibration criteria specified at that time in the Canadian Highway Bridge Design Code. However, their report states that “*It is noted, however, that the deficiency does not justify that the bridge would be unsafe to the public*”.

The 2012 GENIVAR report concluded that:

“Based on the feasibility analysis performed by GENIVAR and the recommendations provided by the steering committee, the Modified 3 Lane Bridge configuration is the most feasible alternative for the renewal of the Campbellford Bridge.”

4.3 Road Network Traffic Growth

The earliest available Bridge Street bridge traffic count is included in a County staff presentation dated December 9, 2009. It refers to a 1968 count of 1,310 vehicles per day compared 40 years later to 12-14,000 vehicles per day in 2008. This supports the position that River crossing traffic has and will continue to grow. Furthermore, more recent County traffic data also shows slow and sometimes fluctuating but still steady growth in traffic volumes on County roads since 1998, exemplified in Exhibit 4.2 for County Road 30 at a count location situated on County Road 30 immediately west of the Campbellford urban area and east of Bannon Road:

Exhibit 4.2 - County Road 30 Daily Traffic Volume Counts

| YEAR | SPRING | SUMMER | FALL | ANNUAL AVERAGE |
|------|--------|--------|-------|----------------|
| 1998 | 5,113 | 5,786 | 5,784 | 5,561 |
| 2003 | 5,892 | 6,860 | 7,559 | 6,770 |
| 2008 | 5,969 | 6,248 | 5,957 | 6,058 |
| 2013 | 5,475 | 6,586 | 6,495 | 6,185 |

The 2009 Final Draft ESR used a growth factor of 1%/year applied to Campbellford intersections and turning movements to forecast 20 year horizon traffic to 2027. The 2009 ESR also examined a 2%/year growth scenario reflecting the development and occupancy of new industrial and residential areas. For the Second Street / Alma Street river crossing alternative, the 2009 ESR noted that 50% of traffic currently using the Campbellford Bridge can be expected to divert to a new nearby (400 m downstream) river crossing at that location.

The EA re-commencement in 2013 concluded that the demographic growth trends previously presented in the 2009 Final Draft ESR support being carried forward into a new extended long-term 20 year traffic growth forecast to 2033. Therefore, this 1%/year traffic growth compounded over 20 years represents a 22% growth rate. In the Northumberland County context, an average 1%/year growth is believed to be reasonable, reflecting a generally positive economic vision for the future of Trent Hills and the County.

IBI Group also considered testing the 2009 ESR's more aggressive 2% sensitivity analysis for the next 20 years, reflecting additional growth to the new 2033 horizon. However, it was concluded that this added growth could not be supported by growth and economic development patterns over the past 20 years, as well as Municipal and County planning policies. This more aggressive annual growth could only be considered either by extending the planning horizon to 30 year at 2043, or with more aggressive economic development which cannot be anticipated at this time.

Based on the 1% annual population growth rate selected for this study, the resulting compounded 22% traffic growth rate was applied to intersections and traffic movements that serve important destinations in Campbellford such as the hospital, the downtown and commercial developments along Bridge Street, Grand Road, Front Street and Centre Street. Most local residential streets in the community with existing land use would not be expected to experience traffic growth, except where influenced by road network changes. The list below summarizes where the growth rate were applied. The matrix in Exhibit 4.3 also details the intersections and directions where the 22% growth rate was applied to 2033 and the direction of traffic at each intersection.

- All turning movements at Bridge Street & Grand Road / Queen Street;
- All turning movements at Bridge Street & Front Street;
- All turning movements at Bridge Street & Doxsee Avenue;
- Eastbound right and northbound left at Bridge Street & Booth Street / Centre Street;
- East- and westbound through movements at all other intersections along Bridge Street except Bridge Street & Booth Street / Centre Street;
- North- and southbound through movements at all other intersections along Grand Road and Queen Street; and
- North- and southbound through movements at all other intersections along Centre Street.

Existing 2013 and forecasted 2033 traffic volume schematics for Campbellford are provided in **Appendix 9** to this ESR report.

Exhibit 4.3 - 22% Growth Factor Application to Traffic Volumes

| INTERSECTION | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Bridge St & Simpson St | | x | | | x | | | | | | | |
| Bridge St & Pellissier St | | x | | | x | | | | | | | |
| Bridge St & Canrobert St | | x | | | x | | | | | | | |
| Bridge St & Grand Rd/Queen St | x | x | x | x | x | x | x | x | x | x | x | x |
| Bridge St & Front St | x | x | x | x | x | x | x | x | x | x | x | x |
| Bridge St & Doxsee Ave | x | x | x | x | x | x | x | x | x | x | x | x |
| Bridge St & Centre St/Booth St | | | x | | | | x | | | | | |
| Alma St & Grand Rd | | | | | | | | x | | | x | |
| Cockburn St & Centre St | | | | | | | | x | | | x | |

4.3.1 Traffic Diversion to a Second Street / Alma Street River Crossing

The previous Campbellford Bridge diversion rate of 50% to the new Second Street / Alma Street river crossing established in the 2009 Final Draft ESR is considered reasonable and carried forward in the 2014 Final ESR. This is because a new river crossing located only 400 m to the south is relatively close to the existing Bridge Street bridge, and accordingly is an equally favourable route for motorists operating in an arterial road couplet configuration with the existing bridge.

The functional bridge design for a Second/Alma crossing is included in the 2009 Final Draft ESR, and is shown here as Exhibit 4.4 (Figure 15 in the 2009 ESR). Exhibit 4.4 indicates that the new bridge would connect the intersections of Alma Street and Grand Road on the west side of Trent River, and Second Street and Front Street South on the east side. Full movements would be provided at the east and west side connecting intersections. The bridge would also cross over the current Second Street & Saskatoon Avenue intersection.

Based on the 2033 daily traffic volumes, the 50% diversion is expected to result in the following:

- Approximately 500-600veh/h (two-way) would be added to the new crossing during the a.m. and p.m. peak hours;
- Increases of up to approximately 200veh/h (two-way) can be expected along Simpson Street and Second Street, as motorists reroute to the new crossing; and
- Decreases of approximately 200veh/h same amount can be expected east of Front Street and west of Grand Road / Queen Street, along Bridge Street.

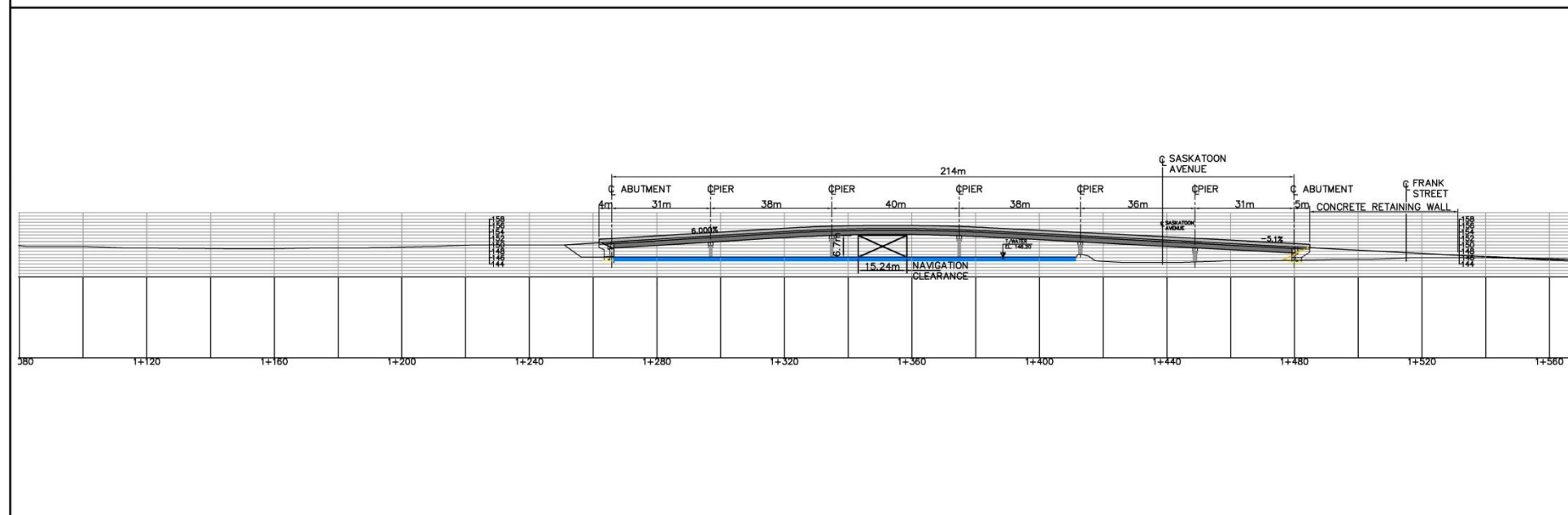
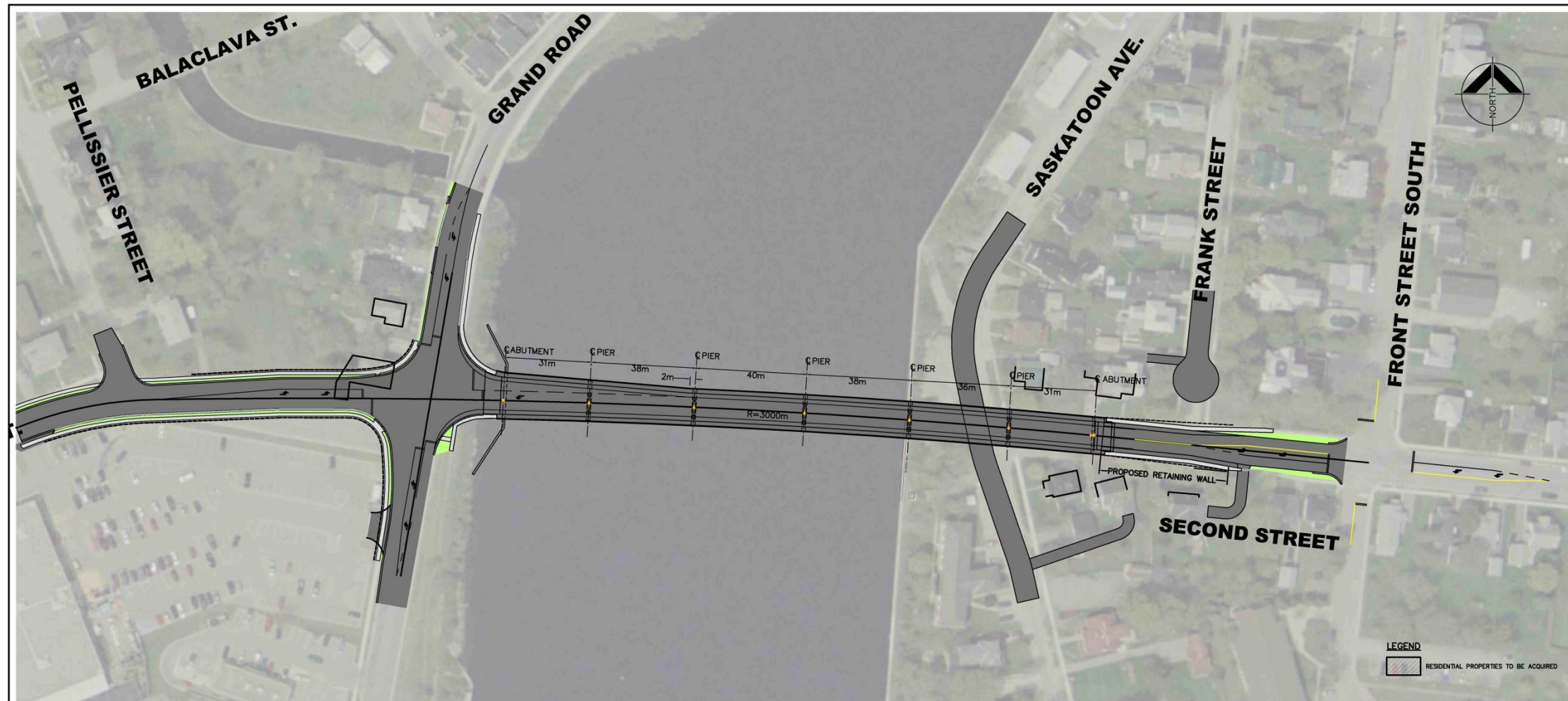
These diversions would relieve corridor operations along Bridge Street. However, upgrading of Simpson Street and Second Street would be required to better accommodate motorists and operations along the new crossing corridor. For example, signals at Alma Street & Grand Road, turn bays along the corridor, and improved lane and pavement markings may all be considered.

Reference
Appendix 9: Traffic Volume Forecasts, IBI Group

An analysis and comparative description of roadway network improvements expected for each of the finalist river crossing alternatives is provided next in Sections 4.4 of this ESR. Schematics illustrating the intersection volumes after the diversion with a Second/Alma crossing are also provided in **Appendix 9**.

Exhibit 4.4 - Second/Alma Bridge Concept

Source: AECOM Final Draft ESR, August 2009, Figure 15



CLIENT:

AECOM

AECOM Canada Ltd.
 513 Division Street, Cobourg, Ontario, Canada K9A 5G6
 T905.372.2121 F905.372.3621

PROJECT:

ADDITIONAL TRENT RIVER
 BRIDGE CROSSING
 CAMPBELLFORD

DRAWING:

DESIGN ALTERNATIVE
 3000m RADIUS CROSSING RIVER

| | | |
|--------------|--------------|--------------|
| DRAWN BY: | CHECKED BY: | PROJECT No.: |
| P. MERRETT | | 42-80527 |
| DESIGNED BY: | APPROVED BY: | DRAWING No.: |
| P. MERRETT | | |
| SCALE: | DATE: | |
| 1:750 | JANUARY 2009 | |

B2027-1002 2009; Revisions: 01; Aug 2009 2:44 PM

4.4 Traffic Operations

Reference
Appendix 1: Section
3.3, AECOM Final Draft
ESR, August 2009

Section 3.3 of the 2009 Final Draft ESR contains level-of-service (LOS) and volume/capacity (V/C) information on future traffic operations in the 2027 peak hour at the signalized Bridge Street bridge intersections at Queen Street / Grand Road, Front Street and Doxsee Avenue under the lower growth 1%/year traffic growth and a higher 2%/year traffic growth. It also includes these conditions at the Bridge Street/Canrobert Avenue unsignalized intersections. It concludes that:

“under a lower growth scenario, and assuming optimized traffic signal plans, traffic conditions at the individual intersections would represent very busy, but technically acceptable (traffic operations perspective only) conditions. For the Bridge Street corridor operations, the analysis results under the lower 2027 traffic forecasts would be generally represented by level of service D, which would be marginally acceptable, but also indicates that the system is approaching capacity”.

This 2009 conclusion was updated by IBI Group in 2013 with an analysis of traffic operations under the two finalist crossing alternatives confirmed by the Steering Committee for EA completion:

Alternative 1 – Twin/Replace Existing Bridge Street Bridge (the 1 bridge solution - GENIVAR modified 3 lane configuration); and

Alternative 2 - Second Street / Alma Street Corridor river crossing and Replace Two lane Bridge Street Bridge

This updated comparison of traffic operations was done for the three critical intersections along Bridge Street analysed in 2009, namely Bridge/Queen/Grand, Bridge/Front and Bridge/Doxsee. The analysis looked at an extended 20-year (to 2033) horizon plus a very long term 30-year (to 2043) and 40-year (to 2053) horizon. The compounded traffic growth of 1% per year previously described in Section 4.3 for the 20-year analysis was carried forward to develop the 30 and 40year horizons.

Reference
Appendix 10: Updated
Performance
Measures, IBI Group,
November 2013

The target service levels for long-term planning set by IBI Group was LOS E or better at the three signalized intersections, and a volume to capacity ratio of less than 1.0. The detailed traffic performance at the three critical road network intersections is tabulated in **Appendix 10** and summarized as follows.

The updated traffic operations analysis conducted by IBI Group in late 2013 uses updated intersection counts and signal optimization implemented by the County in 2010 for the Bridge Street bridge intersections. It reconfirms the findings of the three previous studies that PM peak traffic conditions at the existing bridge are currently fair to poor, and some area intersections are reaching their operational capacity.

In 20 years, by 2033, if nothing is done to improve the intersection operations, conditions will deteriorate to unacceptable LOS F conditions at both ends of the bridge in the PM peak and fair LOS D conditions in the AM at the westerly Queen/Grand intersection. If the bridge and associated intersection capacity is improved by either twinning the existing bridge in Alternative 1 or adding a second river crossing nearby in Alternative 2, then good LOS B and C should be maintained for the very long 40 year planning horizon. This important conclusion is summarized in Exhibit 4.5 from LOS forecasts taken from the detailed performance measure tables in **Appendix 10**.

Exhibit 4.5 - Peak Period LOS Forecast Summary

| YEAR | INTERSECTION | OVERALL INTERSECTION LEVEL OF SERVICE | | | | | |
|------|--------------------|---------------------------------------|----|-------------------|----|-------------------|----|
| | | DO-NOTHING | | ALT 1-BRIDGE TWIN | | ALT 2 – 2 BRIDGES | |
| | | AM | PM | AM | PM | AM | PM |
| 2013 | Bridge/Queen/Grand | C | D | | | | |
| | Bridge/Front | B | D | | | | |
| | Bridge/Doxsee | B | B | | | | |
| 2033 | Bridge/Queen/Grand | D | F | C | C | C | C |
| | Bridge/Front | C | F | B | C | C | C |
| | Bridge/Doxsee | B | B | B | B | B | B |
| 2043 | Bridge/Queen/Grand | | | C | C | C | C |
| | Bridge/Front | | | B | C | C | C |
| | Bridge/Doxsee | | | B | B | B | B |
| 2053 | Bridge/Queen/Grand | | | D | D | C | C |
| | Bridge/Front | | | B | C | C | C |
| | Bridge/Doxsee | | | B | B | B | B |

Good LOS, Fair LOS, Unacceptable LOS

The updated IBI Group traffic analysis concludes that both river crossing alternatives will serve the County’s traffic capacity over a 40 year planning horizon. For Alternative 2, this is based on the expected diversion of 50% of traffic to the new crossing.

For the Alternative 1 Bridge Street bridge twining/replacement, some additional mitigation measures are also expected at the approaches to the bridge to reduce queue lengths of turning vehicles and associated delays by the 40-year horizon. This is expected to include removal of up to 14 parking spaces on Bridge Street approaching the bridge, plus up to 6 spaces combined on Front Street and Grand Road approaching the bridge for a total loss of 20 spaces.

Addition of a right-turn bay was also identified for the northbound approach to the Bridge Street and Grand Road intersection. For Alternative 2, mitigation measures in addition to the Second/Alma bridge structure include traffic operation and signage improvement along the Second/Alma/Simpson corridor from Bridge Street West/County Road 30 to Centre Street/County Road 8 which are further discussed in Section 8 of this ESR.

4.4.1 Summertime Sensitivity Analysis

IBI Group ran a summertime sensitivity analysis for both alternatives using a 10% volume growth factor to account for the higher traffic levels in the summer. The 10% factor is based on traffic counts on nearby provincial highways. The summertime analysis indicates performance similar to and slightly worse than the weekday analysis. Mitigation measures associated with both Alternative 1 (parking removal) and Alternative 2 were found to be adequate to accommodate summertime volumes without triggering LOS F or V/C ratios greater than 1.0. However the higher summer volumes do lead to some additional movements that operate at LOS E, with longer queues, compared to weekday conditions in all planning horizons.

4.4.2 Delay, Emissions and Road User Costs

Reference
Appendix 1: Section
3.4, AECOM Final Draft
ESR, August 2009

Section 3.4 of the 2009 Final Draft ESR presents further findings on traffic condition characteristics associated with the 2027 planning horizon. This includes forecasts of intersection delay and environmental impacts from vehicle emissions, fuel use and road user cost. The 2009 report concluded that by 2027, travel delays in Campbellford across the Trent River are expected to “*increase substantially*”. According to the 2009 report, this includes:

- Delay to emergency service response, with associated impacts on critical incident survivability through prompt rescue, Northumberland Paramedics intervention and transportation to medical facilities;
- Decrease in the proportion of critical incident survivors who achieve full recovery;
- Increase in fire-related casualties, and material loss, through prompt fire attack and suppression
- Delay to goods movement;
- Less timely intervention immediately before and during criminal acts; and
- Less crime deterrence through less potential for criminal apprehension.

These forecasts were not updated for the ESR re-commencement and completion because they were originally conducted mainly to show the benefits of optimizing signal timings and improving coordination of the traffic signals at each end of the existing Bridge Street bridge, which was since completed by the County in 2010.

5 Project Need and Justification

This ESR section addresses Phase 1 of the Municipal Class EA process.

The need and justification for an additional Trent River crossing and associated road network improvements in the Campbellford area of Northumberland County has been discussed for the past 25 years. Previous engineering studies (M.M. Dillon 1989, Totten Sims Hubicki 1996) have recommended short term traffic operation improvements that have since been implemented including signal optimization at the Bridge Street bridge. The main outstanding recommendation not initiated until 2008 was the preparation of a Municipal Class EA to establish and protect for future Trent River crossing improvements. This EA study was initiated by AECOM in 2008 and completed by IBI Group in 2014 as reported in this ESR document.

5.1 Finalist River Crossing Project Alternatives

For analysis and EA purposes, the following project alternatives were evaluated and compared in this EA as reported in Sections 7 and 8 of this EA:

1. **Do-nothing** - with 2014 crossing capacity and associated road facilities, required by the EA process to gauge the effect of alternative solutions;
2. **Alternative 1** – Twin/Replace Existing Bridge Street Bridge (the 1 bridge solution - GENIVAR modified 3 lane configuration); and
3. **Alternative 2** - Second Street / Alma Street Corridor river crossing and Replace Two-lane Bridge Street Bridge (the 2 bridge solution – AECOM).

Phase 1 of the Municipal Class EA process requires that the proponent (the County) describe the problems or deficiencies that these alternative projects are intended to address. Opportunities that each project can address also need to be described. In the case of the Trent River crossing and arterial road network in Campbellford, existing conditions are previously described in Section 3 of this ESR, with longer-term conditions forecasts to 20, 30 and 40 years in the future presented in Section 4.

For the EA completion, the need and justification for the final proposed project is threefold:

1. Planning for Bridge Street Bridge Replacement;
2. Transportation Service Improvements; and
3. Related Improvements to Emergency Access.

5.2 Planning for Bridge Street Bridge Replacement

The need and justification for improved Trent River crossing capacity and associated arterial road network improvements in Campbellford is first and foremost based on the need to eventually replace the existing Bridge Street bridge. This EA is essentially a bridge replacement study.

As of 2014, the Bridge Street bridge has an estimated 30 years of operational life left. This may vary based on a number of factors including traffic loading, traffic volumes, environmental conditions and exposure to chemicals such as chlorides. With the other Trent River crossing in Campbellford under the control of Parks Canada as part of the Trent-Severn Waterway, and with their limited load, clearance geometry and crossing capacity, the Bridge Street bridge is the only high level bridge over the Trent River in the area. Therefore, when it reaches the end of its operational life in some 30 years, it is expected that plans will have to have been made,

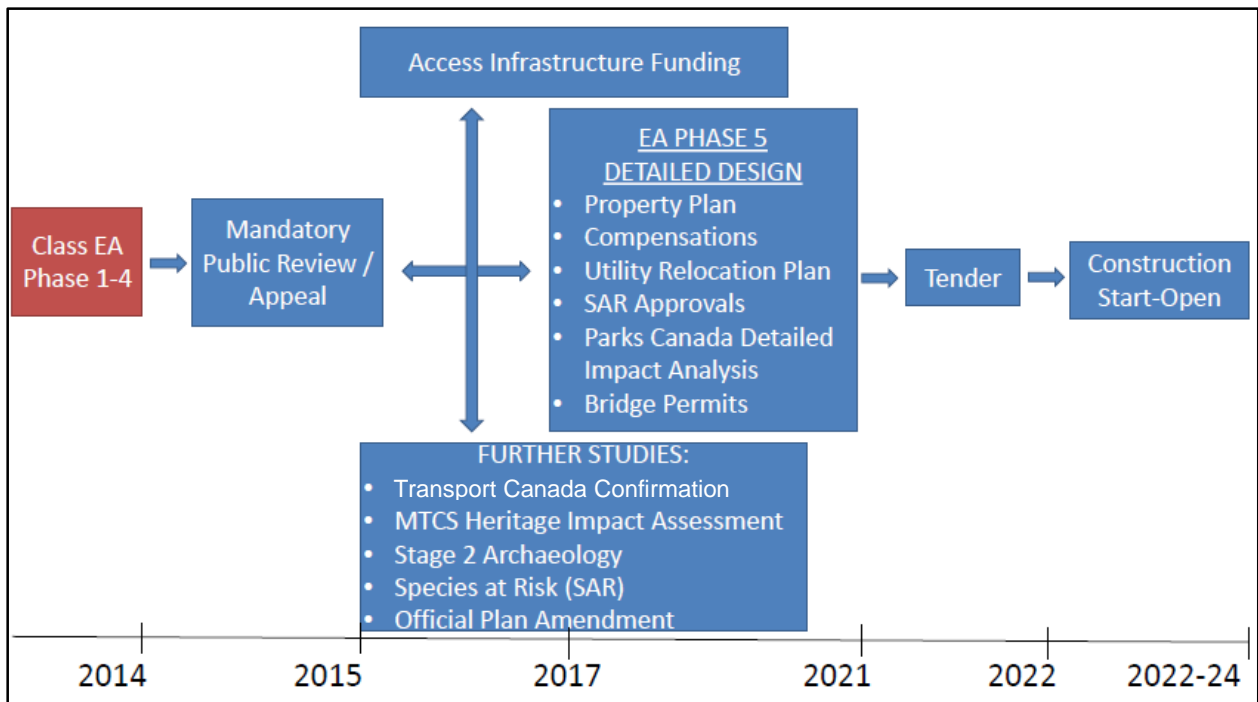
approved and funded to replace the bridge in order to ensure continuous service and no load or other operational restrictions.

During the consultation process for the EA re-commencement, many questions were asked by members of the public as to why this EA has to be prepared now if a new bridge is not needed for 30 years. The answer has been twofold.

5.2.1 Twin /Replace Bridge Lead Time

A relatively long lead time will be required to complete the multitude of steps necessary to open a new or replaced Trent River bridge. As shown on Exhibit 5.1, this lead time is expected to be approximately 10 years based on the multiple jurisdictions involved (federal, provincial, County, municipal), the commitments made by this EA for additional work following EA completion (see Section 9) and the high level of interest for the project shown by some members of the public and involved agencies.

Exhibit 5.1 - Timeline for Trent River Crossing Construction



In addition, the remaining structural design life of the existing Bridge Street bridge will be influenced by whether the Alternative 2 second river crossing is followed for this study. If not, the resulting higher loading on the existing bridge has the potential to reduce the remaining design life, and so require an earlier date for its replacement. Conversely, if the second bridge alternative is followed, and expected traffic volumes are diverted from the existing bridge, this has the potential to extend the existing bridge design life.

Therefore, this ESR agrees with the 2009 Final Draft ESR conclusion that the need for an additional Trent River crossing is to:

“Provide an alternative river crossing, which will assist in maximizing the structural design life of the existing Bridge Street bridge as well as making it more efficient to rehabilitate or replace the existing Bridge Street bridge structure in the future”.

5.2.2 Construction Impacts

Another important opportunity created by providing an additional river crossing in Campbellford is to avoid the construction impacts of twinning and replacing the existing Bridge Street bridge. The Modified 3-Lane design for the existing bridge twinning and replacement developed by GENIVAR in 2012 would take place in two stages, as is further discussed in Section 8.1 of this ESR.

The first stage would involve partial removal of the existing bridge's north sidewalk, and barrier installation for construction of a new north side bridge superstructure. During this construction, a number of factors would restrict crossing traffic, such as boat traffic and restrictions associated with that work, in-water work requirements, demolition requirements, limited construction staging access and maintaining traffic through the intersections. During these construction periods, the existing bridge would be restricted to one-lane operations for periods of time, thereby seriously impacting river crossing capacity in Campbellford. This would include access to and from the downtown commercial hub.

This first stage of construction is expected to take 18 to 24 months to complete, and fully open the bridge back to traffic. This is partly because Stage 1 includes the demolition of the existing Buildings on the north side, plus the north side bridge sidewalk.

The second stage of the existing bridge twinning/widening would be more complex as it would involve demolishing the building on the southeast corner of the Bridge/Front intersection, and then dismantling the entire existing bridge structure and replacing it as a new two lane structure. This second stage (replacing the existing bridge) could therefore take longer than Stage 1, with a conceptual estimate of 24-30 months to complete.

As with the first stage, during these 24-30 months the second stage construction would significantly impact roadway access through Campbellford, including to and from the downtown.

As a comparison, construction of a new Trent River bridge 400 metres downstream of the existing bridge would not impact existing Bridge Street bridge operations. There would be no economic impacts on Campbellford from having the existing crossing closed, or limited to alternating one-way traffic during the construction period.

5.2.3 Confirmation of Bridge Replacement Impacts

How to replace the Bridge Street bridge in Campbellford has been discussed for the past 25 years. During this time, local property owners, residents and businesses have had no assurance as to when, where and how the existing bridge will be replaced at the end of its structural design life. This has led to concern and frustration in the community about the impacts of a final bridge replacement plan, and how impacted property owners and businesses will be compensated. Similarly, mitigation plans for example for any cultural heritage impacts cannot be prepared until a final bridge replacement plan is available.

One of the important opportunities provided by an approved EA is that the community will have a final bridge replacement plan. Based on this, the community can take the actions needed to address impacts and implement the project, as discussed further in Section 9.

5.3 Transportation Service Improvements

IBI Group agrees with the findings of the 2009 AECOM Final Draft ESR pertaining to the issues associated with, and need for transportation service improvement across the Trent River in Campbellford. The main transportation problems are summarized as follows:

- Existing arterial level of service along Bridge Street for the weekday peak hour traffic periods indicates near to over-capacity conditions;

- This existing traffic congestion along Bridge Street results in delays, longer travel times, higher fuel consumption, related higher emissions and road user costs (see AECOM 2009 Final Draft ESR Section 3.4);
- The existing secondary crossing routes along Trent Drive in Campbellford include two single lane bridges that are owned and operated by the Trent-Severn Waterway (Parks Canada), and therefore the future service provided by this route is subject to the Waterway's decision-making process regarding maintenance, operation and rationalization of future needs;



- With new development planned within Campbellford, as well as Northumberland County and south-central Ontario overall, additional traffic capacity over the Trent River in Campbellford will be required (see 2014 ESR Section 4.1);



- The traffic congestion along Bridge Street and its key intersections negatively affects the efficiency and economy of goods movement with and through the community;
- Bridge Street traffic congestion also affects the accessibility and associated attractiveness of the Campbellford downtown, and creates a street environment that is not supportive of downtown business. These negative business impacts are expected to worsen as traffic volumes and associated congestion grows;
- Although collision experience studied by AECOM at Bridge Street intersection was relatively low, increased traffic growth, congestion and associated driver frustration brings the potential for related safety problems (i.e. red light running, turns without sufficient gaps, tailgating, failure to yield to pedestrians) and associated vehicle-vehicle and vehicle-pedestrian or cyclist collisions; and
- The Bridge Street bridge is the only Trent River crossing in Campbellford that accommodates pedestrians with sidewalks. Similarly, pedestrians and cyclists using Bridge Street or the Parks Canada swing bridge must share narrow travel lanes with motorized traffic.

Based on these problems, this EA process has concluded that in terms of transportation service, the need and justification for improved Trent River crossing capacity in Campbellford is to:

- Reduce current and future traffic congestion, emissions and road user costs;
- Provide for future economic growth and development in the County, Trent Hills and downtown Campbellford with improved goods movement, downtown accessibility and an improved downtown environment for business;
- Reduce the reliance on existing secondary crossings that do not have the structural capacity to accommodate all types of crossing traffic (i.e. heavy trucks, fire trucks), and subject to the control and decision-making of the Trent-Severn Waterway (Parks Canada);
- Provide safer conditions for motorized, pedestrian and cycling travel modes, thereby improving opportunities for and use of active transportation in Trent Hills.

If the Trent River crossing in Campbellford is not improved to address these problems and needs, this EA process has concluded that the transportation impacts and related consequences for existing and future conditions will include:

- Ongoing temporary periods of traffic congestion during weekday peak hours and summer weekends, with higher associated emissions and road user costs;
- Potential for even higher crossing demands on the Bridge Street bridge if the secondary crossings is taken out of service by the Trent-Severn Waterway;
- Potential negative impacts on existing businesses and the attraction of new businesses in Trent Hills and especially in the Campbellford downtown resulting from accessibility, mobility and street environment concerns;
- Delays for goods movement and other commercial transportation operations (i.e. school and other buses, construction vehicles); and
- Without the needed crossing capacity, the barrier effect of the Trent River on pedestrians and cyclists makes it difficult to encourage use of these alternative modes of transportation in the community now and as part of future travel demand management initiatives to reduce local auto dependence.



5.4 Related Improvements to Emergency Access

One of the greatest risks to Trent Hills of not having sufficient river crossing capacity involves emergency access. The related key issues reported in the 2009 AECOM Final Draft ESR and supported by IBI group are:

- During the 2008-09 EA process, each of the emergency service providers – fire, ambulance and police – noted major concerns with the existing bridge situation and supported an additional crossing. This was reconfirmed with fire and ambulance in 2013;
- Fire protection is the most significant concern as large fire trucks are too heavy for the weight restriction on the secondary crossings. Also, if fire or ambulance response is slowed due to river crossing traffic congestion, the added response time can lead to serious implications; and
- The fire service is affected in two ways by bridge congestion. Fire trucks can be delayed in responding to a call, and the volunteer fire fighters are delayed in getting to the fire hall or location of a fire.

Therefore, in terms of emergency response, the need for improved Trent River crossing capacity is to increase emergency routing alternatives and reduce emergency response times.

If this need is not addressed, the Trent Hills Fire Service believes there will be increased delay for emergency response times with associated potential for negative health impacts and higher societal costs. Higher costs and logistics concerns have also been noted about the need to provide temporary emergency services on each side of the river whenever the existing Bridge Street bridge is under repair or otherwise temporarily unavailable.

6 Public and Agency Consultation

Having been conducted over a six year period, this EA study has provided an extensive amount of consultation with involved members of the public and external agencies. A summary of this input is provided as follows, with post-2012 consultation material from the IBI Group study re-commencement and completion provided in **Appendix 11**.

6.1 AECOM 2008-09

Reference

Appendix 1: Section 5 & Appendix A, AECOM Final Draft ESR, August 2009

Information on the points of contact with the AECOM study, newsletters, notices of Public Information Centres (PIC) and responses to the public and agencies is summarized in Section 5 of the AECOM Final Draft ESR dated August 2009, and in the associated Appendix A to that report. This includes a notice of study commencement and three PICs held as follows:

- Notice of Study Commencement mailed and published in January 2008;
- PIC #1 April 24, 2008
- PIC #2 June 26, 2008
- Community Newsletter mailed to all Trent Hills residents on the tax role and attendees of PIC #1 and PIC #2, and published in the Trent Hills Communicator section of the Shield Newspaper on October 31 and November 7 & 14; and
- PIC #3 November 19, 2008.

The 2009 Final Draft ESR Appendix A contains a record of all correspondence received from the public and agencies during the 2008-09 study. Questions were addressed by the Project Team as promptly and thoroughly as possible throughout the study. Appendix A of the 2009 Final Draft ESR contains a summary of correspondence without names, addresses and e-mails of the public withheld for potential privacy concerns. The County has a binder with all original correspondence.

During the 2008-09 EA study, the project Steering Committee meetings were not held as public meetings and were not open to public attendance.

6.1.1 First Nations Consultation 2008/09

For the 2008-09 AECOM EA study,, the following First Nations communities and related agencies were contacted in 2008/09:

- Association of Iroquois & Allied Indians
- Hiawatha First Nations
- Mohawks of the Bay of Quinte
- Curve Lake First Nations
- Chippewas of Georgina Island
- Mississaugas of Scugog Island First Nations
- Alderville First Nations
- Anishinabek Nation / Union of Ontario Nipissing First Nations
- Ontario Ministry of Aboriginal Affairs

During the initial AECOM EA process in 2008-09, the only First Nations contact that provided a response to the Notice of Study Commencement was an acknowledgement from the Association of Iroquois and Allied Indians.

6.2 GENIVAR 2010-12

Reference
Appendix 3: Trent
River Crossing in
Campbellford:
Feasibility Report,
July 2012, GENIVAR

Unlike the 2008-09 EA study that was directed by a Project Team of Municipal and County staff, the GENIVAR Feasibility Report was prepared under the direction of a formal Steering Committee with membership as previously presented in Section 1.8 of this ESR. That committee held 13 meetings, all of which were open to the public. The points of discussion at each meeting are included in Section 6 of the GENIVAR report, and posted on the study web site at:

www.northumberlandcounty.ca/trent_river_crossing

Two PICs were also held as part of this study to apprise the public of the findings and acquire public feedback to be incorporated into the study. These PICs were held as follows:

- May 5, 2011 to review replacement/rehabilitation alternatives, evaluation matrices, schedule and next steps; and
- September 19, 2011 to review the preferred replacement/rehabilitation alternatives, schedule and next steps.

According to Section 10 and 11 of the GENIVAR Feasibility Report, the main concerns noted by the public at these two PICs were:

PIC #1:

- Removal of building structures;
- Question regarding the need for a new bridge in Campbellford;
- Relief funds for residents affected by the construction of the widened or new structure;
- Availability of affordable housing should the apartment buildings on the north and south sides of the bridge be demolished; and
- Total cost of the preferred alternatives.

PIC #2:

- Removal of building structures;
- Question need for a new bridge in Campbellford;
- Relief funds for impacted property owners;
- Availability of affordable housing should the apartment buildings on the north and south sides of the bridge be demolished; and
- Total cost of the preferred alternatives.

Since the 2012 Feasibility Report was not prepared as an EA, only technical agencies were contacted for input, and no First Nations were included in the study notifications.

6.3 IBI Group 2013-14 Re commencement

As part of IBI Group's re-commencement and completion of this EA starting in January 2013, the following six types of consultation opportunities were provided to the public and external agencies.

6.3.1 Steering Committee Representation

Steering Committee members had the opportunity to discuss the study between Committee meetings. This included the representatives of the Second Street Residents Association, Campbellford BIA and Trent Hills and District Chamber of Commerce.

6.3.2 Steering Committee Meetings

Each of the six re-commencement Steering Committee meetings held between October 2012 and May 2014 were open to the public, and meeting notices were mailed to those on the interested public mailing list which by the last meeting had 216 names. Minutes of meetings are included in **Appendix 5** of this ESR.

6.3.3 Newsletters

Three (3) study newsletters were put on the County's study web site and mailed to those on the study mailing list and local media, with copies made available at the County and Trent Hills offices:

1. The January 2013 edition explained the study history, why it was delayed, what additional work had and would be conducted and how the study would be re-commenced and completed;
2. The March 2014 edition announced the March 22, 2014 PIC and explained how and why the preferred river crossing alternative had been selected; and
3. The December 2015 edition was a notice that the Revised ESR had been prepared for public review as requested by MOECC, how it could be accessed from the County's website and who to direct questions to.

Added
2016

6.3.4 Public Information Meeting (PIC)

A PIC was held on Saturday, March 22, 2014 in the gym of the Campbellford High School as part of the EA re-commencement. It was the sixth PIC held regarding the project since its commencement in January 2008. Saturday was selected as the preferred date for this PIC so that the gym would be available to hold the expected large turnout. An informal drop-in was held from 3:30 to 5:30 pm, followed by a presentation to 6:00 pm and then a question/answer period to 7:00 pm. A summary report on the PIC is included in **Appendix 11** of this ESR document.

Reference
Appendix 11:
Consultation Material,
IBI Group

In summary, 173 members of the public, including Steering Committee members and media representatives, signed in to the PIC. Also, 12 delegations asked and had their questions answered during the question/answer period. The subjects of the questions were as follows, and responses are provided in the PIC summary report in **Appendix 11:**

1. How will the Steering Committee vote on the preferred alternative? It should be a secret vote;
2. There is no guarantee that the existing Bridge Street bridge will be replaced in the future if a Second/Alma bridge is constricted;
3. How will the County pay for a new or twinning bridge;
4. Impacts of a Second/Alma bridge on surrounding recreation and residential areas;
5. Why is this bridge so critical when the County has other infrastructure upgrade priorities;
6. How much money has been spent on this study – make a decision;
7. How will impacted property owners be compensated;

8. Should the EA be completed before the County's new Transportation Master Plan;
9. Is there enough traffic to justify two bridges;
10. What does the cost estimate for a new bridge include;
11. Impacts on community heritage; and
12. Why no public vote on this matter.

In total, 61 comment sheets were provided at, and within two weeks after the PIC. On the question of whether you support Alternative 1: Twin/Replace the existing Bridge Street bridge, 41 responses said yes and 20 said no. On the question of supporting Alternative 2: Second/Alma Crossing and two-lane Bridge Street bridge replacement, 21 people said yes and 46 said no.

6.3.5 Public & Agency Outreach

Added
2015

During the active period of the EA re-commencement between January 2013 and November 2014, the County, Municipality of Trent Hills and IBI Group received a relatively large amount of correspondence from a core group of the public which is all saved in the project record. This input came mainly from those impacted by or concerned about impacts of an Alternative 2 Second/Alma second river crossing. The project record of this correspondence shows that the core group of responders involved some 15 members of the public who contacted the Project Team on numerous occasions, attended Steering Committee meetings and monitored the study process throughout the EA recommencement process.

At the fourth Steering Committee meeting on November 15, 2013, a letter petition with some 340 signatures was also submitted to the Committee opposing the Second/Alma river crossing alternative. Committee members noted a number of issues with the petition letter wording, and indicated that some of the facts presented in the letter are incorrect, including:

- #2 Amount of bridge cost to be the responsibility of Trent Hills. The Committee clarified that a new bridge would be a County responsibility and therefore the cost would not be solely on Trent Hills taxpayers.
- #5 Fire and ambulance vehicles can cross the current bridge without delay. Fire Chief Blake responded that this statement is not correct.
- #6. Trent Hills population has not been shrinking over the past decade. The Trent Hills planner, Jim Peters, said this was not correct.

The Steering Committee decided that with these issues noted, the letter petition be received for information.

It should also be noted that between January and April 2009, a previous petition with 1,980 signatures had been submitted to the County supporting a new Second/Alma bridge in Campbellford.

Added
2016

An outreach meeting was held with the Trent Hills Fire Department and County EMS representatives, plus a study Steering Committee member and study staff on July 26, 2013 to discuss:

- Road-related Emergency Response issues in Campbellford area
- Road-related Fire Hall access issues in Campbellford area
- Best Emergency Response solution
- Best Fire Hall access solution

One comment from the group was that the single bridge crossing in Campbellford has become a traffic bottleneck, and as such they have no support of a Bridge Street bridge twinning since they expect that it would eventually again become a single crossing bottleneck. Additional comments from that meeting are previously included in Section 3.5.3.

Communications were also made with, and information received from the following external agencies during the recommencement:

Added
2016

- Transport Canada
- Parks Canada,
- Trent-Severn Waterway;
- Ontario Ministry of the Environment;
- Canadian Environmental Assessment Agency;
- Ontario Ministry of Tourism, Culture and Sport; and
- Infrastructure Ontario

Responses were provided to these agencies and members of the public, where appropriate or requested, in as timely a manner as possible. This information is included in **Appendix 11** with the names, addresses and emails of members of the public who contacted the study redacted (removed) for privacy reasons. This information is filed in the project record.

6.3.6 First Nations Consultation

In re-commencing and completing the EA study in 2013/14, the following ten (10) First Nations organizations were contacted:

- Association of Iroquois & Allied Indians
- Hiawatha First Nations
- Mohawks of the Bay of Quinte
- Curve Lake First Nations
- Chippewas of Georgina Island
- Mississaugas of Scugog Island First Nations
- Alderville First Nations
- Anishinabek Nation / Union of Ontario Indians Nipissing First Nations
- Kawartha Nishnawbe First Nations
- Ontario Ministry of Aboriginal Affairs

Added
2015

They received the Notices of Study Commencement and Recommencement, Notice of Study Completion and newsletters including the PIC notice. Each also received a January 20, 2015 letter from the Northumberland County CAO providing an update on the project status. To date, responses have been received from the following three First Nations contacts, which are included in **Appendix 11** to this ESR report:

- Mohawks of the Bay of Quinte (MBQ)
 - June 11, 2014 acknowledging receipt of the March 22, 2014 PIC notice and requesting summary project information (see ESR Section 9.1.3.1);
 - In a letter dated October 31, 2014 to MOECC, Chief of the MBQ requested a Part II Order based on environmental and archaeological matters (see Sections 6.5 and 9.1.3.1 for further information on this request); and

Added
2016

- January 20, 2015 letter from the Northumberland County CAO summarizing actions being taken by the County to resolve any Aboriginal consultation and heritage issues brought forward by MBQ to MOECC in MBQ letters to the ministry dated October 31, 2014, November 24, 2014 and November 25, 2014 included in **Appendix 11** to this ESR.
- E-mail from Nicole Storms, Environmental Services Coordinator, MBQ to D. Drackley (IBI Group) and M. Pannu (Northumberland County) dated December 18, 2015 noting appreciation for the consultation commitments made to address MBQ interests (see Section 9.1.3.1 of this ESR).
- Alderville First Nations:
 - March 31, 2014 acknowledging receipt of March 22, 2014 PIC notice and noting interest in fish population and water level impacts, plus request for basic project information;
 - November 7, 2014 e-mail stating the project is “*deemed level 3, having minimal potential to impact our First Nations rights...please keep Alderville FN appraised of any archaeological findings, burial sites or environmental impacts*”;
 - February 24, 2015 letter stating “*confirming the Northumberland County is conforming to the requirements with the Duty to Consult process*”.
- Mississaugas of Scugog Island First Nations, March 6, 2013 requesting continued study information which IBI Group responded to on March 6, 2013.

6.4 Decision Meetings Open to the Public

6.4.1 Study Steering Committee

At their sixth meeting for the EA re-commencement and completion held on May 16, 2014, the project Steering Committee heard from ten (10) delegations opposing the Alternative 2 solution to plan for a new Trent River crossing in the Second Street/Alma Street corridor and two-lane Bridge Street bridge replacement. The minutes of this meeting are included in **Appendix 5**, with a summary of delegation topics including concerns about downtown business impacts, the consultation process, heritage issues, use of Simpson Street as part of a Second/Alma corridor, need for added river crossing capacity and rendering of a Second/Alma bridge as presented.

In a secret vote, the Steering Committee voted 9 to 4 in favour of supporting the Alternative 2 solution to plan for a new Trent River crossing in the Second Street/Alma Street corridor and two-lane Bridge Street bridge replacement. This decision was then sent forward to the Municipality of Trent Hills and Northumberland County councils.

6.4.2 Municipality of Trent Hills

The findings and recommendations of the EA re-commencement and completion by IBI Group were brought forward to the Municipality of Trent Hills Council on June 3, 2014. The staff report presented to Council is included in **Appendix 12** of this ESR. Ten (10) delegations spoke at the meeting on the following subjects:

- The Trent Hills and District Chamber of Commerce representative favoured Alternative 1 based mainly on concerns about the business impacts of a second bridge crossing bypassing the existing downtown;
- No comprehensive site plans or renderings have been provided on how a Second/Alma bridge would look (in response the delegate was informed that the Second/Alma functional plan has been available for public viewing in the AECOM Final Draft ESR

since 2009, and that IBI Group has presented renderings showing how the bridge could look as it joins with Second Street in the area of Saskatoon Avenue);

- Retaining and improving the existing Bridge Street bridge could be a catalyst for downtown redevelopment;
- How can the County plan for 30-50 years in the future;
- The EA has not had enough emphasis on people, and there is no guaranteed the existing bridge will be replaced if a new Second/Alma crossing is built;
- Impacts of a Second/Alma bridge on heritage homes especially from traffic vibration;
- Most of the County's forecasted growth will be along the Highway 401 corridor. Also, if the Second/Alma crossing is approved, this will not follow the requirements of the Planning Act and Heritage Act;
- What happens if the forecasted population and traffic growth does not occur? The County should wait, watch and measure traffic growth, set aside the EA and reconsider it in ten years; and
- Change is difficult, but the County has been provided expert engineering advice and should accept it.

Municipal Council voted 6 to 1 in favour of the EA preference for the Alternative 2 solution to plan for a new Trent River crossing in the Second Street/Alma Street corridor and two-lane Bridge Street bridge replacement.

6.4.3 Northumberland County

The EA preference was presented to Northumberland County Council on June 18, 2014. A notice of this meeting, included in **Appendix 11**, was mailed to all contacts on the study mailing list. The staff report to Council is included in **Appendix 12** and recommends endorsement of the recommendation to build a new bridge at Second Street/Alma Street and replace the existing two-lane Bridge Street bridge.

Twelve (12) delegations made presentations to County Council, summarized as follows with topics similar to the June 3rd Municipal County presentations:

- Chamber of Commerce support for twinning/replacing the existing Bridge Street bridge;
- Most BIA members want Alternative 1;
- Questions on how the capital cost of Alternative 2 was calculated and whether it includes improvements to associated roads and traffic controls (it does);
- The study needs a more people-centred approach. Design drawings of Second/Alma crossing are not available (they are in the 2009 Final Draft ESR and been available for public viewing on the study web site since late 2009);
- It's time to make a decision and move forward. Safety is the main issue that a second bridge can address;
- Alternative 2 was not the recommendation made to the Steering Committee at their June 28, 2013 meeting (correction - no recommendation was made at that meeting, but rather a report on work in progress was presented);
- Human factors have not been addressed, and there are no details. What is Campbellford's vision for the future (see Official Plan)? Delay the study for another year, establish a citizens advisory committee and have the new Council decide then;

- The March 22, 2014 PIC did not provide sufficient time for delegations. There is no guarantee that the existing Bridge Street bridge will be rebuilt if a new Second/Alma bridge is constructed;
- Alternative 2 is opposed by the Architectural Conservancy of Ontario, and contravenes the Planning Act and Conservation Review Board;
- Traffic volumes have declined since 2007 so why is a second bridge needed;
- Detailed issues have not been addressed such as Tim Horton's access on Grand Road, Simpson Street bridge replacement; and
- There is a 2013 petition against the two bridge Alternative 2, and a 2008 petition in favour of Alternative 2.

On a recorded weighted vote, County Council at its meeting on June 18, 2014, voted 21 to 5 in favour of the staff recommendation to endorse Alternative 2 to build a new bridge at Second Street/Alma Street and replace the existing two-lane Bridge Street bridge. The approval resolution is included in Section 1.1 of this ESR.

6.5 Part II Order Requests 2014

Added
2015

As previously noted in Sections 1.1 and 2.1.1 of this report, on June 18, 2014 Northumberland County Council voted to endorse the recommendations of the Environmental Study Report dated August 2014. The Notice of Study Completion was then issued with a 30 day public review period which was subsequently extend to 61 days ending on November 3, 2014.

During this review period, MOECC and the County received letters from eight (8) members of the public plus Chief of the Mohawks of the Bay of Quinte (MBQ) requesting the Minister of the Environment and Climate Change to make a Part II Order for the project to comply with Part II of the EA Act involving individual environmental assessments. In a series of letters dated November 18, 2014, the EA Branch of MOECC acknowledged receipt of these nine (9) Part II Order requests, and that they will be maintained on the public record unless the EA Branch is notified by the sender otherwise.

Correspondence was also received from the Environmental Assessment Branch of MOECC, based on input from the Ministry of Tourism, Culture and Sport noting that additional work related to Aboriginal consultation and heritage and archaeological assessment was required in order to complete the Class EA process.⁹

As of the end of 2014, MOECC considered the project to be incomplete because of these concerns, and so the eight Part II Order requests (not including the MBQ request) from members of the public were not formally considered by the ministry or responded to by the County.

In their letter to Northumberland County dated December 19, 2014, MOECC stated that the following additional work is required in order to complete the EA in accordance with the EA Act:¹⁰

1. Consult with the Mohawks of the Bay of Quinte (MBQ) and other potentially affected or interested Aboriginal communities;
2. Consult with MTCS on the required Stage 2 Archaeological Assessment and complete additional work required to identify and protect heritage properties;

⁹ E-mail from Dawnett Allen, MOECC to Mohushar Pannu, Northumberland County, December 24, 2014

¹⁰ Agatha Garcia-Wright, Director Environmental Assessment and Approval Branch to Mohushar Pannu, Northumberland County, December 19, 2014

3. Once the assessment of effects is completed, include appropriate mitigation and impact management measures in the ESR, and make a draft available to the public and Aboriginal communities on the County's website;
4. Revise the ESR and circulate copies of the draft to appropriate agencies for a minimum 30-day review and comment period. The draft should be revised to address any additional agency comments and concerns;
5. Finalize the revised ESR and issue a new Notice of Completion, making the ESR available for a 30 day public, Aboriginal community and agency review period. Parties who have previously expressed an interest in the Project and those who submitted Part II Order request will receive a copy of the Notice of Completion; and
6. Provide a copy of the ESR and the revised Notice of Completion to the Environmental Assessment and Approvals Branch and the MOECC Eastern Region office.

6.6 Environmental Study Report Revisions 2015

The County took actions to resolve the MBQ First Nations concerns, culminating with a meeting with MBQ staff on February 19, 2015. Minutes of that meeting are included in the project file, ESR **Appendix 11** and discussed further in Section 9.1.3.1. The County did not request MBQ to withdraw their Part II Order request because MOECC had earlier considered the EA process to not be complete.¹¹

As a result, except for the request from the MBQ, the other eight Part II Order requests are not directly addressed in this Revised ESR. However, the bases for these requests were and continue to be addressed through the EA process as reported in this Revised ESR. This information will also be used in formal responses to any subsequent Part II Order requests accepted by MOECC following the re-issuing of the Notice of Study Completion.

Added
2016

Also during 2015, and in response to the additional tasks MOECC requested in December 2014, the County arranged to have the Cultural Heritage Resources Assessment of the Second/Alma crossing alternative prepared by Archeological Services Inc. (see **Appendix 6**). It was reviewed by MTCS in August 2015, and accepted in their August 7, 2015 letter to the County.¹² Similarly, the Stage 1 Archaeological Assessment had been updated as reported in the March 18, 2015 Archeoworks report also submitted to MTCS (see **Appendix 7**).

These and other edits were made to the August 2014 Final ESR report, updating it to the Revised report dated December 2015. On December 7, 2015 the County submitted this Revised report to MOECC to complete the following four (4) of the six (6) added tasks requested by the ministry:

1. Consult further with the Mohawks of the Bay of Quinte (MBQ) and other potentially affected or interested Aboriginal communities;
2. Consult with MTCS on requirement for Stage 2 Archaeological Assessment and complete additional work required to identify and protect heritage resources;
3. Include appropriate mitigation and impact management measures in the ESR and make a draft available to the public and Aboriginal communities on the County web site; and
4. Revise the Environmental Study Report and circulate copies of the draft to appropriate agencies for a minimum 30-day review and comment period. The County is requesting

¹¹ E-mail from Dawnett Allen, December 24, 2014

¹² Letter from Rosi Zirger, MTCS to D. Drackley, IBI Group, August 7, 2015

that any comments on the Revised Environmental Study Report be provided by **January 15, 2016**.

The Revised ESR was also posted by the County on their project web site on December 9, 2015, and a media release issued on December 11, 2015 announcing that the document was available for public review up until January 15, 2016. The following was posted and sent to MOECC:

- Revised Trent River Crossing ESR Report prepared by IBI Group dated December, 2015.
- Archeoworks Stage 1 Archaeological Assessment: Second/Alma Crossing dated March 18, 2015.
- ASI Cultural Heritage Resource Assessment, Second/Alma Crossing dated July, 2015.
- Trent River Newsletter #3 sent to some 300 project contacts and posted on the County's web site.

In their e-mail response dated December 11, 2015, the ministry noted that their Project Review Unit would only review and comment on the report is a Part II Order is received after the final Notice of study Completion is released.¹³

By January 15, 2016, responses had been received by the following agencies regarding the December 2015 Revised report:

- Transport Canada regarding Canadian Environmental Assessment Act, 2012 requirements provided via e-mail on December 18, 2015 and incorporated into Sections 2.2 and 9.8 of this Revised Final report;
- MOECC Kingston to address source water protection because a new Second/Alma crossing is within an Intake Protection Zone 1.¹⁴ It was recommended that this be addressed in the final ESR and the Municipality of Trent Hill staff agreed. This has been added to Sections 3.4 and 8.5.2 of this Revised Final report, plus the Exhibit 8.1 and 8.2 evaluations;
- MTCS suggested comments and revisions which have been incorporated into this Revised Final report;¹⁵ and
- MOECC acknowledging receipt of the December 2015 Revised ESR, and noting that it will only be reviewed and commented on if a Part II Order is received following the final Notice of Study Completion.

Correspondence was also received by the County and MOECC between December 9, 2015 and January 15, 2016 from two (2) members of the public. Both are in the project file as being opposed to a Second/Alma crossing. Their concerns included the public review period covering the Christmas season, that no other opportunities for public review and comment were being provided, how two bridges would operate together and that County Council's endorsement of the Second/Alma crossing should be changed. This input was responded to by both the County and MOECC, explaining that further opportunities for comment and Part II Order request will be available following the final Notice of Study Completion.

¹³ E-mail from K. Rudzki, Environmental Approvals Branch, MOECC to D. Drackley, IBI Group, December 11, 2015

¹⁴ Letter from J. Orpana, MOECC Kingston to D. Drackley, IBI Group, February 2, 2016

¹⁵ Letter from R. Zirger, MTCS to D. Drackley, IBI Group, January 14, 2016

7 Evaluation of Alternative Planning Solutions

This section of the ESR document addresses Phase 2 of the Municipal Class EA process to evaluate and compare alternative planning solutions to address the problem and/or opportunity presented previously in Section 5 of this ESR.

7.1 Planning Alternatives

Five (5) planning alternatives were considered to address the river crossing problem/opportunity in Campbellford:

1. **Do Nothing** – used for comparative purposes, this alternative would have no additional river crossing or improvements to the existing Campbellford crossings;
2. **Traffic Operations Improvements Along Bridge Street** – improve flow of traffic through modifications to traffic signals and intersection approach lanes;
3. **Duplicate Emergency Services on Both Sides of the River** – provide additional fire, ambulance and police services on the opposite side of the river to their existing locations;
4. **New River Crossing Within Campbellford** – construct a new river crossing within the Campbellford urban area; and
5. **New River Crossing Outside Campbellford** – construct a new river crossing beyond the Campbellford urban area.

The 2009 AECOM Final Draft ESR reports the conclusions to the evaluation of these five planning alternatives which are summarized below in Exhibit 7.1:

Exhibit 7.1 - Initial Evaluation of Planning Alternatives

Source: Table 18, AECOM Final Draft ESR, August 2009

| Alternative | Need and Justification Issues, and Evaluation | | | Implement in Short Term | Carry Forward |
|---|---|--|---|----------------------------------|---------------|
| | Transportation Service | Emergency Access | Replacement of Existing Bridge | | |
| Do Nothing | <ul style="list-style-type: none"> ▪ Does not address issues | <ul style="list-style-type: none"> ▪ Does not address issues | <ul style="list-style-type: none"> ▪ Does not address issues | No | No |
| Traffic Operations Improvements Along Bridge Street | <ul style="list-style-type: none"> ▪ Provides interim relief to traffic congestion, and reduces delay and vehicle emissions ▪ Limited capacity for future traffic increases ▪ Does not improve pedestrian and cycling river crossings | <ul style="list-style-type: none"> ▪ Does not address issues | <ul style="list-style-type: none"> ▪ Does not address issues | Yes | No |
| Duplicate Emergency Services | <ul style="list-style-type: none"> ▪ Does not address issues | <ul style="list-style-type: none"> ▪ Addresses issues in part, but long term costs may be prohibitive ▪ Logistics issues remain related to volunteer fire fighter access to stations, and hospital location on one side of the river | <ul style="list-style-type: none"> ▪ Addresses issues in part, additional costs to be borne during construction period ▪ Logistics issues remain related to volunteer fire fighter access to stations, and hospital location on one side of the river | Yes (for special events only) | No |
| New Crossing Within Campbellford | <ul style="list-style-type: none"> ▪ Addresses river crossing traffic issues | <ul style="list-style-type: none"> ▪ Addresses emergency issues | <ul style="list-style-type: none"> ▪ Addresses bridge replacement issue by providing an alternative | No | Yes |
| New Crossing Outside of Campbellford | <ul style="list-style-type: none"> ▪ Provides interim relief to traffic congestion, and reduces delay and vehicle emissions ▪ Limited practical capacity for future traffic increases ▪ Does not improve pedestrian crossings, some cycling benefits | <ul style="list-style-type: none"> ▪ Addresses emergency access issues, but less effective due to more circuitous routing for emergency vehicles | <ul style="list-style-type: none"> ▪ Addresses bridge replacement issue by providing an alternative, but less effective due to more circuitous routing for travel within Town | No | Yes |

7.2 River Crossing Alternatives

Many Trent River crossing solutions have been considered at Campbellford. Previous Exhibit 1.3 and 1.4 show the alternatives that were evaluated in the AECOM EA study. A screening was conducted in that study of all possible crossing alternatives, and most were screened out from further consideration in this EA study as summarized in the following Exhibit 7.2.

The two finalist alternatives endorsed by the study Steering Committee were subjected to a more detailed comparative evaluation as part of the EA re-commencement and completion in 2013-14. The Do-Nothing alternative was also screened out from further consideration because it does not address the long-term problem/opportunity statements established for this study, leaving the two finalist alternatives:

1. **Alternative 1** – Twin/Replace Existing Bridge Street Bridge (the 1 bridge solution - GENIVAR modified 3 lane configuration); and
2. **Alternative 2** - Second Street / Alma Street Corridor river crossing and Replace Two-lane Bridge Street Bridge (the 2 bridge solution – AECOM).

The following Exhibit 7.2 summarizes why all but these two finalist alternative planning solutions were screened out from further consideration in the EA. These two alternatives were then subjected to a detailed comparative evaluation reported next in Section 8 to select the preferred crossing solution for the community.

It is important to note that Alternative 1 to twin / replace the existing Bridge Street bridge was screened out from further consideration in the 2009 AECOM report. The feasibility assessment conducted as part of that study concluded that the twinning and replacement alternatives for the existing bridge would not be feasible in terms of constructability and transportation service because of the following disadvantages:

- require expensive and complex bridge construction;
- experience bridge capacity reduction during construction;
- require significant road and intersection redesign at Queen Street/Grand Road and Front Street;
- require major building demolition;
- continue to concentrate all river crossing traffic at one location;
- provide only one location for emergency (fire) crossing; and
- would not be located in an area that would serve new development directly.

This important study conclusion was later updated in 2012 when the GENIVAR feasibility study found that a Modified 3-Lane Bridge design with a new two lane bridge built immediately to the north of the existing bridge is “*the most feasible alternative for the renewal of the Campbellford Bridge*”. The preliminary estimated cost for this existing bridge twinning and replacement was also found to be comparable to the cost of constructing a new river crossing structure and replacing the existing bridge at the end of its service life.

Based on this iterative technical work and the associated new findings, the EA re-commencement once again opened the bridge twinning/replacement concept as a finalist alternative. The EA re-commencement has therefore focused on a comparative evaluation of the new Second/Alma crossing with eventual replacement of the two-lane Bridge Street bridge (Alternative 2) previously preferred in 2009, and the Modified 3-Lane bridge (Alternative 1) design prepared by GENIVAR in 2012.

Exhibit 7.2 - Screening of Alternative River Crossing Solutions

| ALTERNATIVE RIVER CROSSING SOLUTION | SCREENING RATIONALE |
|--|---|
| <p>Alternative 1: Twin/Replace Existing Bridge Street Bridge with 3-lane Modified Bridge (GENIVAR design)</p> | <p>RETAINED AS FINAL ALTERNATIVE - This alternative was chosen as a finalist as the existing bridge can be used as a detour during the construction of the new bridge (and vice versa when the current bridge is replaced) and traffic can continue to use the downtown crossing which would benefit local businesses. However, there would need to be removal of buildings on Queen Street/Grand Street and Front Street, leaving the potential for additional parking and/or parkland at those locations. The cost for a new two lane bridge is moderate comparable to the other alternatives. The advantages and disadvantages of this finalist alternative are documented in the detailed evaluation of the final short-listed alternatives in ESR Section 8.</p> |
| <p>Alternative 2: New Bridge, Alma Street (at Grand Road) to Second Street (at Saskatoon/Front Street) plus 2-lane replacement of Bridge Street Bridge (AECOM design)</p> | <p>RETAINED AS FINAL ALTERNATIVE - This finalist alternative provides a direct link between Alma Street and Second Street, and was presented to Municipal and County Councils as the preferred solution in late 2009. It would add an east-west road connection linking north-south arterial roads on both sides of the river, using existing roadways. Property acquisition would be required and signals would be required at the Grand Road/Alma Street intersection. Adding a new bridge crossing on the Trent River at this location would have socio-cultural impacts on the Campbellford community.</p> |
| <p>Traffic Operations Improvements Along Bridge Street</p> | <p>PREVIOUSLY IMPLEMENTED - The County initiated new signal timing in 2010, so these improvements have been implemented. While this has provided some improvement for vehicle movements along Bridge Street and turning movements on and off the bridge, there is only a fixed amount of capacity available at the Bridge Street intersections. Also, any turning movement improvements provided through intersection controls will be reduced and eventually eliminated as Bridge Street and associated bridge traffic increases over time. Therefore, this is considered an interim or temporary solution that will not address the long term traffic management needs in the community because:</p> <ul style="list-style-type: none"> • Road and bridge capacity remains fixed; • Does not improve pedestrian and bicycle traffic across the river; • Does not address the emergency access problem/need in the community; and • Does not address the aging structural condition of the existing Bridge Street bridge. |
| <p>Note: The following alternative planning solutions were evaluated and screened out from further consideration in the AECOM Final Draft ESR reported dated August 2009 (see Sections 6.3.3, 6.3.4 and 6.3.5). This screening was re-confirmed by the study Steering Committee as part of re-commencing this EA study in 2012.</p> | |

| TYPE OF SOLUTION: IMPROVE EXISTING BRIDGE STREET BRIDGE | |
|---|---|
| Improve Existing Bridge on Bridge Street | Improving the existing bridge would involve adding an exclusive left turn lane, as congestion is a key factor in the operational deficiency of the bridge. To add an additional lane to the two lane bridge would involve either dividing the width of the current roadway into three lanes; removing sidewalks to widen the road, or widening the bridge by cantilevering. These options are not feasible as the bridge at its current state does not have an adequate width to safely provide a third lane, nor the weight bearing capacity to accommodate three lanes of traffic if the sidewalks were removed, and the structural capability of widening cantilever sections could not occur without compromising the structural integrity of the bridge. |
| Modifications to the Existing Bridge to Widen the Travelled Roadway | Improving the existing bridge would involve adding an exclusive left turn lane, as congestion is a key factor in the operational deficiency of the bridge. To add an additional lane to the two lane bridge would involve either dividing the width of the current roadway into three lanes; removing sidewalks to widen the road, or widening the bridge by cantilevering. These options are not feasible as the bridge at its current state does not have an adequate width to safely provide a third lane, nor the weight bearing capacity to accommodate three lanes of traffic if the sidewalks were removed, and the structural capability of widening cantilever sections could not occur without compromising the structural integrity of the bridge. |
| TYPE OF SOLUTION: NEW CROSSING STRUCTURE | |
| Low Level Swing or Lift Bridge (Various Locations) | This alternative has high construction, maintenance and staffing costs. There is also increased traffic delay, gas consumption and emissions for vehicles while the bridge is raised. Safety issues arise for boating traffic when the bridge is in the lowered position and for vehicular traffic when in the raised position. There is also the potential of failure of mechanical components that could cause delays in vehicular and boat traffic. |
| Tunnel Under the Trent Canal or River | This alternative would require a long approach to meet the required depth below the river bed and that means that the entry/exit points would be a considerable distance from the edge of the river. This would require constructing new connecting roads and acquiring property which is not feasible. There are also higher construction, operation maintenance costs than compared to a bridge. |
| TYPE OF SOLUTION: NEW CROSSING SOUTH OF CAMPBELLFORD URBAN AREA | |
| 5th Line extension through/adjacent to Ferris Park to County Rd. 8 | This alternative requires extensive construction of new roads, reconstruction of the existing road and a standard girder bridge. The location would require a provincially controlled road allowance through Ferris Provincial Park, plus the potential of needing property requirements from within or adjacent to the park. The impacts on park policy and property are not acceptable by Ontario Parks. In addition there are minimal benefits for local and through traffic, and emergency routes. There is minor offloading (15%) of the existing demands on the current bridge. |
| 4 th Line extension west to Meyers Island and either west to County Rd 30 or | This alternative requires extensive construction of new roads, reconstruction of the existing road and a single or multiple standard girder bridges. Property requirements would be required to accommodate grading of a reconstructed 4 th Line east of the river. There are constraints imposed by Ontario Power Generation and potential new development in the area. There are |

| | |
|--|--|
| north to 5 th Line | minimal benefits for local and through traffic, and emergency routes. There is minor offloading (15%) of the existing demands on the current bridge. |
| Link County Road 30 and 8 via Meyers Island Road, James Road and Bradley Road | This alternative requires extensive construction of new roads, reconstruction of an existing road and two standard girder bridges. Property requirements would be necessary to accommodate grading and reconstruction of James Road and Bradley Road. There are also impacts on Meyers Island residential community. There are minimal benefits for local and through traffic, and emergency routes. There is minor offloading (15%) of the existing demands on the current bridge. |
| TYPE OF SOLUTION: TRENT CANAL CROSSING | |
| Over the Trent Canal Connecting Grand Road and Trent Drive | It is not possible to provide a high level bridge at this location that provides reasonable connections to Grand Road and Trent Drive due to the narrow width of the canal and the need to provide clearance along the Trent-Severn Waterway requirements. |
| TYPE OF SOLUTION: NEW CROSSING WITHIN CAMPBELLFORD URBAN AREA | |
| Alma Street at Grand Road to Second Street at either Saskatoon Avenue or Frank Street (via Kennedy Park) or Doxsee Avenue (via Kennedy Park) | <p>If a new bridge terminated at Saskatoon Avenue, roundabout travel would be required via Saskatoon Avenue to provide a link between Grand Road and Second Street. This would lead to the need for intersection design to accommodate truck turning movements and inefficient vehicle movement (e.g., more stops and turns).</p> <p>If the bridge continued through Kennedy Park, the soccer and skate park would be negatively impacted. There is a seniors apartment that would be impacted by traffic and noise. A major intersection re-design would be required at Second Street/Front Street to accommodate truck turning movements and Saskatoon Avenue would have to be terminated at the bridge alignment.</p> <p>A flyover over Kennedy Park to Doxsee Avenue would have a negative impact on the park. Traffic routed to Doxsee would travel through an established residential area and through traffic would have the potential to travel in proximity to schools.</p> |
| Former Railway Bridge Corridor, Grand Road to Kennedy Park | There would be negative impacts on Kennedy Park and the traffic would be at the front or rear of the Second Street residences. All the CN property has been sold thereby preventing a direct alignment to County Road 8 through the rail ROW. The development of the west side of the Trent River (e.g., Canadian Tire and Tim Horton's) of employment and commercial establishments has eliminated a location for a bridge at this site. |
| Canrobert Street (at Grand Road) to River Street | The narrowness of the Trent River at this location is a disadvantage when trying to obtain the necessary vertical clearance requirement and meet the road grades on the bridge and intersection approaches. There would be major property impacts, and the signalization that would be required is not spaced out at a desirable interval from the existing traffic signals. The alignment would impact the fire hall and water plant buildings. |
| Church Street to Market Street | The municipal road does not provide good connectivity to the County/Municipal road network in Campbellford. New developments are occurring south of the existing bridge and a bridge located in the north would do little to serve this growth. |

| | |
|---|--|
| <p>Garry Street to Market Street</p> | <p>The municipal road does not provide good connectivity to the County/Municipal road network in Campbellford. New developments are occurring south of the existing bridge and a bridge located in the north would do little to serve this growth.</p> |
| <p>TYPE OF SOLUTION: NEW CROSSING NORTH OF CAMPBELLFORD URBAN AREA</p> | |
| <p>Locations North of Campbellford</p> | <p>No good alternative crossing locations are available north of the existing bridge owing to limited road connectivity, and most traffic attractors with higher traffic volumes are located south of the existing bridge. North of the Campbellford community, crossing locations are precluded by the river width, proximity of roads to the river bank, Trent-Severn Waterway lock facilities and diminishing river crossing demands.</p> |

8 Evaluation of Finalist River Crossing Concepts

This section of the ESR document addresses Phase 3 of the Municipal Class EA process to evaluate alternative design concepts for the preferred planning solution and select the preferred concept.

8.1 Evaluation Methodology

As previously reported in Section 7.2 of this ESR, the EA re-commencement and conclusion has focused on a comparative evaluation of the two finalist river crossing alternatives:

1. **Alternative 1** – Twin/Replace Existing Bridge Street Bridge (the 1 bridge solution - GENIVAR modified 3 lane configuration); and
2. **Alternative 2** - Second Street / Alma Street Corridor river crossing and Replace Two-lane Bridge Street Bridge (the 2 bridge solution – AECOM).

Reference
Appendix 1: Section 6.3.5 Evaluation, AECOM Final Draft ESR, August 2009

This involved a complete review and re-assessment of the evaluation of river crossing alternatives presented in Section 6.3.5 of the AECOM 2009 Final Draft ESR. The new re-assessment used the same unweighted (i.e. all criteria have the same weight) evaluation criteria groupings as applied in the 2009 report, namely:

| CRITERIA GROUP | CRITERIA |
|---------------------------------|---|
| TRANSPORTATION | Traffic Operations Provision of Emergency Access Change to Existing Road Function |
| SOCIAL ENVIRONMENT | Single-Family Residential Property Displacement (not heritage) Displacement of Rental Apartment Units Residential Traffic Intrusion Potential for Urban Design Improvements Access to New Development Changes to Traffic Noise |
| CULTURAL ENVIRONMENT | Direct Displacement of Built Heritage Resources (BHR) Indirect Disruption of Built Heritage Resources (BHR) Disruption of Cultural Heritage Landscapes (CHL) |
| NATURAL ENVIRONMENT | Source Water Protection Displacement/Disruption of Natural Heritage Features |
| ECONOMIC ENVIRONMENT | Displacement of Existing Business Space Impact on Downtown Business Commercial Goods Movement New Business Development Opportunity in the Community |
| ENGINEERING & CONSTRUCTION COST | Bridge Construction Cost Associated Road Capital Cost Total Staged Cost Amount of Property Acquisition/Resale Potential |

8.1.1 June 28, 2013 Steering Committee Meeting

At the project Steering Committee meeting on June 28, 2013, IBI Group presented preliminary findings from the initial, in-progress evaluation of the two finalist Campbellford river crossing alternatives. Although still a work-in-progress, IBI Group did identify a number of preliminary observations on some of the advantages and disadvantages associated with each of the two finalists. Some stakeholder representatives and members of the public interpreted IBI Group's initial comments at this June 28th meeting as being study conclusions. Since then some have noted that information presented at the June 28th meeting differs from the conclusions and recommendations contained in this ESR.

On numerous occasions since June 28, 2013, IBI Group has explained that comments offered at that Steering Committee meeting were preliminary based on incomplete work-in-progress. They were not intended to represent any study findings or conclusions. This was clearly stated to the public and media at the Steering Committee meeting, and is record as such in the meeting minutes (see **Appendix 5**).

8.2 Planning Horizon

One of the requirements that Northumberland County set for this project is for a "long-term plan". The initial traffic forecasts and analysis show that Alternative 1 (Bridge Street) can provide a good Level-of-Service for crossing traffic over the next 20 years. This would involve a twinned/replaced single river crossing on Bridge Street with one travel lane/direction and centre turn lane as designed by GENIVAR. However, since the project requires a longer term plan, the question is what happens beyond 20 years into a longer term planning horizon?

The definition of "long term" for this project can involve various planning horizons: 20 years, 30 years, and 40-50 years. To limit confusing timelines and simplify the terminology, this analysis considers two main time-frames:

- **Long-Term** - up to 30 years (2043); and
- **Very Long Term** - beyond 30 years.

For these planning horizons, the following important visions were established for the community, County and south-Central Ontario:

- Campbellford will continue to be a strategic river crossing location for local, County and regional south-central Ontario auto and commercial goods movement traffic;
- According to *Places To Grow, Growth Plan for the GGH*, the County will grow by an additional 20,000 residents by 2036 and this will affect travel demand across the Trent River in Campbellford;
- Further traffic growth in Northumberland County will be experienced from extension of Highway 407 to highway 35/155, thereby increasing the attractiveness of Highway 7 between the GTA and National Capital Region;
- Future river crossing demands at Campbellford will be influenced by newly emerging travel trends involving alternative fuel sources, use of Active Transportation (cycling and walking) for local trip-making, travel costs and associated travel demand management involving how and when people travel); and
- Over a very long-term planning horizon of 40-50 years, the goal of a prosperous Campbellford will increase motorized traffic volumes from standard and evolving technologies across the Trent River at a modest but steady rate in response to local and regional population, employment and economic growth.

8.3 Further Considerations for Evaluation

An Environmental Assessment can be an iterative process, as this EA has been since its start in 2008. These iterations have allowed for new information to be considered as part of the evaluation of alternatives. For this study, the Steering Committee considered a number of issues associated with the preliminary “work in progress” evaluation information presented at the June 28, 2013 Steering Committee meeting (see previous Section 8.1.1) . In doing this, the objective was to improve the evaluation process and make it as balanced as possible. This has resulted in the following additions being made to complete the evaluation as now presented in Section 8.5 of this ESR:

- consider truck traffic and Active Transportation (cycling and walking);
- use directional route signage and community marketing for through vs. local traffic;
- address source water protection at the existing bridge crossing;
- manage commercial goods movement through the community;
- emergency response input received from the Trent Hills Fire Department;
- impacts on affordable rental housing units based on the findings of the TWC Consulting report entitled Rental Housing Impact of Potential Bridge Twinning in Campbellford, August 2013;
- impacts on existing buildings located on both sides of the Bridge Street bridge (**Appendix 6** - Heritage Resource Consulting, November 2013); updating of designated and listed heritage properties in Campbellford by the Municipality of Trent Hills;
- traffic diversion from Bridge Street resulting from traffic congestion;
- community growth as per the 1999 and Draft October 2012 Trent Hills Official Plan;
- long term redevelopment opportunities in impacted areas of the community;
- staged capital cost updates for each of the two river crossing alternatives; and
- traffic analysis for the 30 year and 40+ year planning horizons.

Added
2015

In addition, the following three added sources of information have been reviewed in further assessing effects of the finalist river crossing alternatives, including appropriate revisions to the mitigation and impact management measures reported (see Section 9.1) in the August 2014 ESR:

- updating of designated and listed heritage properties in Campbellford by ASI’s July 2015 Cultural Heritage Resource Assessment, Second Street/Alma Street Alternative (ESR **Appendix 6**);
- re-evaluation of potential impacts on and recommended mitigation measures for existing buildings located on both sides of the Second/Alma corridor by ASI’s July 2015 Cultural Heritage Resource Assessment, Second Street/Alma Street Alternative (ESR **Appendix 6**); and
- conclusions and recommendations from Stage 1 Archaeological Assessment conducted by Archeoworks Inc. dated March 18, 2015 (ESR **Appendix 7**).

IBI Group’s evaluation process and update has continued to use the same unweighted evaluation criteria as applied in the 2014 ESR report, namely that all evaluation criteria have the same weight of importance in the evaluation. The revised ESR process has again concluded that the study Steering Committee’s selection of the best transportation solution for the

community needs to be based on the overall study goal and the associated problem/opportunity being addressed by this study.

8.4 Response to Study Goal

For the evaluation of final alternatives, it was important that this study focuses back on its overall goal, as set by County Council on July 18, 2012 and incorporated it into the November 2012 Steering Committee Terms of Reference as follows:

*“To develop a **realistic, attainable, cost-effective, long-term** plan for the transportation system in Campbellford which will support an attractive prosperous community”*

The three key aspects of this goal are:

1. County Council must be able to support the plan, making it **realistic and attainable**;
2. The plan must be **cost-effective**, meaning the cost must provide the most benefit to the community. This does not necessarily equate to the lowest cost; and
3. The plan must be **long-term**, meaning it must be capable of meeting the transportation needs of a stable, prosperous community within the functional lifespan of the river crossing (bridge) infrastructure being provided.

In attempting to meet this goal, most responses to the study over the past six years have been understandably focused on impacts on the existing Campbellford community as it is today, and not how the river crossing infrastructure will impact this community in the future.

8.5 Evaluation of Finalist Alternatives

All 22 criteria listed in Section 8.1 were used in evaluating and comparing the two finalist alternatives. The evaluation results are tabulated as follows in Exhibit 8.1 using a Reasoned Arguments type of methodology that compares the pros (advantages) and cons (disadvantages) of the two final alternatives against each of the 22 evaluation criteria. It is intended to provide an objective, traceable response to each criterion for each alternative prepared by IBI Group. The results are then summarized in Section 8.6.

Earlier in the study process, the Steering Committee had considered applying weights to the evaluation criteria in response to the perceived importance and priority of each criterion. Since the Committee could not agree on the application of such weights, it was eventually decided to not weight the criteria, with the understanding that all criteria have the same importance and priority for the study.

8.5.1 Re-evaluation of 2014 / 2015 Evaluation Findings

8.5.1.1 Cultural Heritage

Added
2015

The July 2015 Cultural Heritage Resource Assessment by ASI in **Appendix 6** recognizes various types of heritage resource impacts, ranging from destruction, removal or relocations, through to alternations, isolation, view obstructions or other changes to the heritage setting. An ‘adjacent’ impact is defined as being on contiguous properties or separate property somehow physically connected to a heritage resource. These cultural impacts on buildings, properties, landscapes and waterscapes were originally recognized and taken into account in the 2009 Draft ESR by AECOM, and again in the 2014 Final ESR by IBI Group.

The 2015 ASI report again concludes that various types of work associated with a new Second/Alma bridge in Campbellford will have the potential to affect cultural heritage resources

in a variety of ways. This is why it is important to identify and commit to appropriate mitigation measures for such projects, as is done in Section 9.1.1 of this revised ESR.

Added
2016

One important change made to the previous Cultural Heritage evaluations involves the seven (7) existing buildings adjacent to the Bridge Street bridge that are expected to require removal to twin the bridge in Alternative 1. Feedback provided by MTCS on the Revised ESR dated January 14, 2016 states in part:¹⁶

“The buildings were determined to have cultural heritage value or interest (CHVI) whether or not they are designated or listed. From a heritage perspective removal of these buildings cannot be considered a “Pro”.”

This ministry opinion differs from some members of the public who have stated that some of these buildings are eyesores. However, based on the MTCS input, combined with the findings of the Heritage Resources Consulting report dated November 2013 (see **Appendix 6**), the evaluation has been adjusted to reflect a negative “Con” impacts of removing these buildings at the Bridge Street bridge in downtown Campbellford.

8.5.1.2 Archaeology

Added
2015

As with previous archaeological assessments associated with the two finalist river crossing alternatives in the Campbellford area, the Stage 1 Archaeology Assessment by Archeoworks dated March 18, 2015 (**Appendix 7**) found no previously registered archaeological sites within a one kilometre radius of these alternative study areas. However, areas requiring Stage 2 archaeological surveys are identified in the report. Since this recommendation applies to each of the finalist alternatives, it is not included as a criterion in the evaluation of these alternatives. Most importantly, the report includes recommendations on where Stage 2 archaeological surveys are required, and this forms part of the revised impact mitigation and commitment recommendations in Section 9.1.2 of this revised ESR.

The Archeoworks report also provides the same list of designated heritage properties and heritage plaque properties within 300 metres of the two finalist study corridors as provided in the ASI Cultural Heritage Resource Assessment

8.5.1.3 Source Water Protection

Added
2016

Since the first Final ESR and Notice of Study Completion were issued in 2014, a Trent Source Protection Plan has been finalized and approved by the Lower Trent Conservation Authority and Trent Conservation Coalition effective January 1, 2015. This plan was under development during the 2013/14 EA process, but final policies for the Campbellford Municipal Surface Water System and Lower Trent Source Protection Area did not come into effect until the start of 2015.

The 2014 ESR addressed source water protection as one of 22 evaluation criteria to select the preferred Trent River crossing location. This importance of source water protection can now be enhanced because both the Alternative 1 twinning/replacement of the existing Bridge Street bridge, and Alternative 2 new Second/Alma crossing are located within an Intake Protection Zone 1 (IPZ1) which is the most vulnerable part of the intake protection zone. The Trent Source Protection Plan is a risk-based plan, and in part requires best management practices for upgrading transportation ‘pathways’ to minimize potential impacts on the water supply.

In Campbellford, the focus of these impacts is on the Trent River. The existing Bridge Street bridge is upstream of the municipal water supply, has no spill collection system and drains

¹⁶ Letter from R. Zirger, MTCS to D. Drackley, IBI Group, January 14, 2016

directly into the Trent River. This contravenes the Trent Source Protection Plan, and has been evaluated accordingly as a major 'Con' in this EA.

In terms of the Alternative 2 new Second/Alma crossing, it is downstream of the municipal water supply, and so any bridge spills would not impact the municipal water source. Although the associated longer term (30 year) plan to replace the existing Bridge Street bridge is still upstream of that source, it is expected that the design of a Bridge Street bridge replacement will adhere to modern design codes and be required to conform to the Trent Source Protection Plan policies in terms of protecting the Trent River from spills.

Exhibit 8.1 - Reasoned Arguments Evaluation of Finalist Alternatives

| EVALUATION CRITERIA | FACTORS | ALTERNATIVE 1 TWIN EXISTING BRIDGE ON NORTH SIDE & REPLACE EXISTING BRIDGE (1 BRIDGE / 1 X 3 LANE OPTION) | ALTERNATIVE 2 NEW SECOND ST./ALMA ST. BRIDGE & REPLACE EXISTING BRIDGE (2 BRIDGE / 2 X 2 LANE OPTION) |
|--------------------------|---|---|--|
| 1. TRANSPORTATION | | | |
| 1.1 Traffic Operations | Ability to provide traffic operations and associated Level-of-Service to serve existing and future travel demands for the next 30 years by autos, commercial vehicles, cyclists and pedestrians within the community with minimal negative impacts. | <p><u>Pros</u> – Provides adequate crossing and turning movement capacity at the river for the next 30 years (to 2043). Includes capacity for cyclist and pedestrian traffic in the multi-use lane. Retains CR 30/Bridge St. and CR 8/Centre St. as the main east-west arterial route through Campbellford.</p> <p><u>Cons</u> – 3 lanes on the Bridge St. bridge will not meet very long term transportation needs without other Bridge St. capacity enhancements. Beyond 2043 (30 years), additional improvements will be needed such as extended parking restrictions, road widening and associated building removal in the downtown to ensure adequate Bridge St. bridge and road operations.</p> | <p><u>Pros</u> - The 2-bridge capacity will accommodate very long term river crossing needs beyond 30 years for the next 40-50 years as required by this project. Diverting some river crossing traffic relieves Bridge St., and the new crossing would provide more flexible, redundant routing for drivers, cyclists and pedestrians. It provides a new direct road link between CR 8/Centre St., CR 30/Grand Rd. and CR 30 Bridge St. The close proximity of the 2 bridges provides opportunity to divert approximately 50% of river crossing traffic to the new crossing operating as a couplet. Directional signage can be used on the Bridge St. approach route for “Local Downtown” traffic, and on the Second/Alma crossing signed as “Campbellford via Second Street” for through traffic.</p> <p><u>Cons</u> – Traffic volumes would increase on approach roads to the new crossing. West of Grand Rd., some river crossing traffic would follow the Alma St. and Simpson St. collectors where upgrades would be required. A new arterial extension from Alma Street to CR 30 along the abandoned rail corridor was considered as an option and eliminated from further consideration owing to impacts on parts of the Urban Greenland System that includes the Trout Creek Floodplain and associated natural heritage features. East of the river, the Second St. collector would require upgrades (i.e. geometry, right-of-way, intersection traffic control) to accommodate traffic growth to CR 8/Centre St.</p> |

| EVALUATION CRITERIA | FACTORS | ALTERNATIVE 1 TWIN EXISTING BRIDGE ON NORTH SIDE & REPLACE EXISTING BRIDGE (1 BRIDGE / 1 X 3 LANE OPTION) | ALTERNATIVE 2 NEW SECOND ST./ALMA ST. BRIDGE & REPLACE EXISTING BRIDGE (2 BRIDGE / 2 X 2 LANE OPTION) |
|---|--|--|---|
| 1.2 Provision of Emergency Access (as per Fire Dept. input) | Ability to provide required emergency response and access to the Campbellford Fire Hall by Trent Hills Fire Department staff. | <p><u>Pros</u> – Provides emergency response across the river as long as a good Level-of-Service is provided along Bridge St. and its intersections. This would include improved EMS warning signals on the bridge for better visibility</p> <p><u>Cons</u> – Emergency response and access to the Fire Hall remain limited to one river crossing with no crossing redundancy. Any incident blocking the bridge or approach lanes would disrupt access to and from the Fire Hall and associated emergency response timing.</p> | <p><u>Pros</u> – Provides improved river crossing capacity redundancy and response route choice within Campbellford in response to traffic conditions and response location.</p> <p><u>Cons</u> – None noted from an emergency response or fire hall access perspective.</p> |
| 1.3 Change to Existing Road Function | The Trent Hills Official Plan classifies all public roads in Campbellford based on road function. Reclassification may be required if the road function changes as a result of changes to the arterial road network. A change in jurisdiction for example from a Municipal road to a County road may also be required. | <p><u>Pros</u> – Continues to utilize the existing Bridge St. arterial corridor with no functional changes expected to other streets in Campbellford.</p> <p><u>Cons</u> – Maintaining the existing Bridge St. corridor through Campbellford with a single river crossing places much of the area's traffic growth and associated impacts on that arterial road.</p> | <p><u>Pros</u> – Maintains the function of the designated Second St. collector road east of the river and the designated Alma St. and Simpson St. collectors to the west. Reclassification to arterial roads would not be required since the route would only connect County Roads and the river crossing.</p> <p><u>Cons</u> - West of the river, Alma St. and Simpson St. would require traffic control, roadway and structural improvements to function as a link to a new river crossing.</p> <p>A new road extension from CR 30 to Alma St. along the abandoned rail corridor is an alternative connection opportunity, but currently contains the Trans Canada Trail, and is designated as part of the Urban Greenland System and Trout Creek Floodplain in the existing 1999 and draft 2012 Official Plan Schedule 6: Land Use. Similar road improvements would be required east of the river on the Second St. collector extending to CR 8/Centre St.</p> |

| EVALUATION CRITERIA | FACTORS | ALTERNATIVE 1 TWIN EXISTING BRIDGE ON NORTH SIDE & REPLACE EXISTING BRIDGE (1 BRIDGE / 1 X 3 LANE OPTION) | ALTERNATIVE 2 NEW SECOND ST./ALMA ST. BRIDGE & REPLACE EXISTING BRIDGE (2 BRIDGE / 2 X 2 LANE OPTION) |
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| 2. SOCIAL ENVIRONMENT | | | |
| 2.1 Single Family Residential Property Displacement (not including heritage – see Criteria 3.1) | Full removal of a house or houses as a direct result of the river crossing and associated arterial road network changes. This does not include partial property acquisition for example for potential street widening when the property can continued to be used for the same or an alternative purpose. | <p><u>Pros</u> – No single family residential property displaced.</p> <p><u>Cons</u> – None from a residential property displacement perspective (see impact on Rental Housing next).</p> | <p><u>Pros</u> – No advantages compared to Twinned/Replaced Bridge alternative, except that impacted houses acquired on Second St. could be available for resale and conversion to alternative uses such as retailing or offices.</p> <p><u>Cons</u> – West of the river, 120 Grand Rd. now owned by Trent Hills would be displaced by improvements to the Grand Rd./ Alma St./bridge intersection. No other property along Alma St. or Simpson Street would be displaced, although some minor acquisition of strips of property frontage for potential road widening or geometric improvement may be required depending on the detailed design of the roads.</p> <p>East of the river, the 2009 AECOM Final Draft ESR recommends that 5 of the 8 homes on Second St. between Saskatoon Ave. and Front St. be acquired owing to the proximity impacts of retaining walls and associated access closures from a Second/Alma bridge at this location. However, these houses could be resold and converted to alternative uses as noted under pros.</p> |
| 2.2 Displacement of Rental Apartment Units | Sub-criterion to 2.1 specifically for removal of rental apartment units (not to be double counted with 2.1). | <p><u>Pros</u> – None since the GENIVAR twinning/replacement design requires removal of all existing rental apartment units in 7 existing buildings on the north and south sides of the Bridge St. bridge (#4-6, #8-10, #12 and #16 Bridge St. W, #2 and #6 Front St. N and #4-8 Front St. S).</p> <p><u>Cons</u> – According to a report entitled <i>Rental Housing Impact of Proposed Bridge Expansion in Campbellford</i> prepared by Tim Welch Consulting Inc. dated August 2013, up to 46 rental units in</p> | <p><u>Pros</u> – No rental apartment units are impacted by this alternative. Impacts on the existing apartment units near the east side retaining walls (116 Saskatoon Ave./Garshell Apts, 111 Front St. S, 112 Front St. S) would be limited to some visual proximity impacts from the walls.</p> <p><u>Cons</u> – None as long as all involved rental housing units are maintained to acceptable standards.</p> |

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| | | <p>seven properties next to the existing Bridge St. would be lost through bridge widening. Also, the County's report entitled "10 Year Housing and Homelessness Study" conducted by Tim Welch Consulting Inc. does not include the possible loss of these 46 rental units at the bridge. Instead, this removal would add to the number of units required for social housing in Campbellford. Therefore, any removal of the rental housing units at the Bridge St. bridge would have a significant social impact on the community, and would need to be addressed through future affordable and social housing plans.</p> | |
| 2.3 Residential Traffic Intrusion | <p>Potential for traffic diversion (see Criterion 1.1) onto minor streets resulting from the river crossing and related arterial road network changes.</p> | <p><u>Pros</u> – Maintaining adequate traffic operations on the Bridge St. corridor will help prevent traffic intrusion on other alternative routes. Also, access from alternative routes to the existing bridge is already limited.</p> <p><u>Cons</u> – Although there is only one "municipal" river crossing location in Campbellford at the Bridge St. bridge, there are alternative routes for traffic through the community to access that bridge or completely avoid (bypass) the community, such as on Trent Dr., 5th Line W and Bannon Rd. Inadequate river crossing capacity within Campbellford could encourage increased use of these alternative bypass routes.</p> | <p><u>Pros</u> – none</p> <p><u>Cons</u> – Traffic diversion to a new Second/ Alma crossing would result in a noticeable increase in traffic volume in front of existing residential properties along Second St., Alma St. and Simpson St. An alternative route linking the west side of a Second/Alma crossing to CR 30 using the abandoned rail corridor was screened out based on natural heritage impacts on the Trout Creek Floodplain area and associated urban greenlands. East of the river, no alternative connections south of Second St. were considered feasible owing to the existing land use pattern including multi-unit residential, major recreation facilities, greenlands and parkland, plus the existing river and canal alignments in this area.</p> |
| 2.4 Potential for Urban Design Improvements | <p>Potential to enhance/create new public spaces and/or private development opportunities.</p> | <p><u>Pros</u> – Provides opportunities for improvement to the Bridge St./Front St. and Bridge St./Queen St. intersections.</p> <p><u>Cons</u> – Potential property redevelopment opportunities on surplus land in the vicinity of the</p> | <p><u>Pros</u> – A Saskatoon Ave. flyover for a new Second/ Alma crossing could provide residential redevelopment opportunities on the impacted properties on Second St, including potential multi-unit residential projects.</p> |

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| | | existing Bridge St. bridge intersections will be limited by amount of property required for bridge twinning, especially on the north side. | On the west side of the river, the new bridge could intersect with CR 30/Grand Rd. at a major community gateway entrance at that location into the Campbellford community. <u>Cons</u> – none. |
| 2.5 Access to New Development | Potential to serve future land use as designated by the existing 1999 and draft 2012 Trent Hills Official Plan. | <u>Pros</u> – Improvements to the Bridge St. corridor would serve river crossing needs of future residential development in east Campbellford between First St. N and Burnbrae Rd. E as per the Official Plan. <u>Cons</u> – No access provided to the designated Residential Area south of Second St. | <u>Pros</u> – Provides road access and river crossing capability for the designated Residential Area south of Second St., the Burnbrae Rd. business area and designated Residential Areas located east of Centre St/CR 8 and west of Simpson St. <u>Cons</u> – None. |
| 2.6 Change in Traffic Noise | Change in traffic noise levels on noise sensitive receivers compared to existing ambient noise levels. | <u>Pros</u> – Expanded Environmental Noise Assessment conducted by RWDI in 2013 concludes that forecasted traffic volumes over a twinned Bridge St. bridge would not warrant any noise mitigation for nearby properties including the apartment buildings owing to the level of background downtown noise. <u>Cons</u> – None. No noise-sensitive receivers in the Bridge St. corridor. | <u>Pros</u> – No noise impacts on residential properties along Second St. that are displaced by a Second/Alma crossing (see Criterion 2.1) and converted to alternatives, less noise-sensitive uses. <u>Cons</u> - Existing noise-sensitive areas remains in proximity to a Second/Alma crossing along Saskatoon Ave., Frank St. and Front St. The Environmental Noise Assessment conducted in 2009 in this area concludes that although warrants for noise mitigation were identified, such mitigation is not feasible in the area (see AECOM Final Draft ESR, August 2009, Section 6.4.4). The same conclusion applies to the noise – sensitive area on the west side of the river north of Alma St. and west of Grand Rd. |
| 3. CULTURAL ENVIRONMENT | | | |
| 3.1 Direct Displacement of Built Heritage Resources (BHR) | Removal of designated BHR buildings. <div style="background-color: yellow; padding: 2px; display: inline-block;">Added 2016</div> | <u>Pros</u> – None (see Cons Note below) <u>Cons</u> – Note: MTCS has concluded that building on the north and south side of the Bridge Street bridge | <u>Pros</u> – A combined Bridge St. bridge replacement and Second/Alma bridge would not require any heritage property displacement in the downtown, including the 7 properties that would be removed to twin the existing bridge. None of these 7 downtown |

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| | | <p><i>“have cultural heritage value or interest (CHVI) whether or not they are designated or listed. From a heritage perspective removal of these building cannot be considered a Pro.”</i> Source: letter from R. Zirger, MTCS to D. Drackley, IBI Group, January 14, 2016</p> <p>According to the November 2013 Cultural Heritage Assessment, twinning the Campbellford bridge on its north side would significantly impact adjacent heritage resources. Four building in the River Block on the NE corner of the Bridge St/Queen St intersection would be removed (#16, #12, #8-10 and #4-6 Bridge St. W). At the Bridge St/Front St intersection, #2 Front St. N would also have to be removed, as well as the abutting building to the north (#6 Front St. N) if the structures cannot be separated. The #4-8 Front St. S was identified for demolition to accommodate the existing bridge twinning and replacement. According to the November 2013 Cultural Heritage Assessment (see Appendix 6), the Ferris/Burgis Block located at this addresses <i>“is arguably the most significant element of the built heritage environment in the existing river crossing area”</i>.</p> | <p>properties on Bridge Street currently have any cultural heritage designation.</p> <p>Cons - The 2009 (Unterman McPhail) and 2015 (ASI) cultural heritage assessments recognize the built heritage value of some houses along Second St. impacted by the Second/Alma river crossing. On the east side of the river this may include 109 Saskatoon Ave, 93 and 94 Frank St., 95 Dorse Ave. S and 17, 25, 42, 50, 55/57, 61 and 65 Second St.. Some may qualify for financial compensation or outright purchase and reuse, but none would need to be demolished. . On the west side of the river, #116 and #120 Grand Rd. are expected to be directly impacted. The house at #120 which is now owned by Trent Hills is expected to require demolition. The house at #116 may require purchase, but this must be confirmed in the detailed design. The 2009 AECOM Final Draft ESR identifies these and 2 other properties (#109 Saskatoon Ave. and #9 Second St.) for acquisition to accommodate a connection to a Second/Alma bridge.</p> <p>Except for #120 Grand Rd., none if these directly impacted heritage properties are currently acquired by the County or Municipality or available for alternative uses.</p> |
| 3.2 Indirect Disruption of Built Heritage Resources (BHR) | Disruption of a built heritage setting while maintain the building. | <p><u>Pros</u> – The historic river crossing location along Bridge St. would remain in place. Remnant green space resulting from building demolition could expand riverfront parkland at the approaches to the new bridge.</p> <p><u>Cons</u> - The existing bridge would, over time, lose its current superstructure and its existing mass would be doubled. As a result, the cultural heritage</p> | <p><u>Pros</u> – A combined Bridge St replacement and Second/Alma bridge would not add to heritage property disruption specifically in the downtown. The 2015 ASI assessment concludes that <i>“one resource will be directly impacted through the removal of its residential structure and landscape features... 120 Grand Road.”</i></p> <p><u>Cons</u> - Beyond Second St., the 2015 assessment</p> |

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| | | <p>landscape of the Campbellford river crossing would be changed with the bridge twinning. The eastern and western commercial cores would also lose heritage fabric, but their relationship with the river crossing would remain unimpaired.</p> | <p>identifies 3 additional residential properties on the east side (79, 85 and 90 Frank Street) and one on the west side of the river (116 Grand Rd.) that are either designated, or recommended or proposed for heritage designation that would be indirectly impacted by a Second/Alma crossing. Indirect impacts on these and other houses in proximity of Second St. total 15 on the east side and 5 on the west side according to the 2015 ASI assessment. This impact is expected as a result of alteration to their residential setting caused by increased vehicle traffic, noise and potential vegetation removal associated with intersection design changes. 10 properties abutting Second St. are identified by the Municipality as heritage properties. The 2015 ASI assessment concludes that <i>“the residential neighbourhood on the east side of the Trent River ... will be irreversibly impacted...”</i> The 2009 Cultural Heritage Assessment concluded that a Second/Alma river crossing would have the potential for <i>“high disruption effects”</i> to cultural heritage resources. This includes along the impacted section of Second St., as well as the Trent River waterscape and the former Trent River railway bridge piers.</p> |
| <p>3.3 Disruption of Cultural Heritage Landscapes (CHL)</p> | <p>Disruption to the visual quality and appearance of streetscapes and waterscapes (not including built heritage – buildings).</p> | <p><u>Pros</u> - Twinning and replacing the Bridge St. bridge at its current location will have no impact on current landscape and waterscape views. The widened bridge would have to mirror the slender arching design of the existing one to achieve the required river clearance required by Parks Canada. Viewsheds from Old Mill Park and the Cenotaph will not be significantly changed.</p> <p><u>Cons</u> - The portions of viewsheds that would be</p> | <p><u>Pros</u> – Over time, the Bridge Street crossing has remained the constant physical link between the both sides of the community. Maintaining this physical link on Bridge St. in either crossing alternative retains the related river crossing heritage landscape context.</p> <p><u>Cons</u> - The 2009 Cultural Heritage Assessment has most of the cultural impacts of a Second/Alma crossing as being impacts to Cultural Heritage</p> |

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| | | <p>impacted are those from the downtown commercial properties that now anchor the north and south sides of the river crossing, and would need to be removed to twin the existing bridge. However, these structures are in disrepair and impose a negative appearance to the downtown. With the widening of the bridge, however, other heritage structures such as the former Harris Feed and Flour Mill, a designated heritage building, and the former Campbellford/Queens Hotel would replace them.</p> | <p>Landscapes (CHL) compared to current conditions. This includes streetscapes along Alma St., Saskatoon Ave., Frank St. and Second St., plus the Trent River waterscape itself which is part of the Trent-Severn Waterway National Historical Site.</p> <p>The July 2015 Cultural Heritage Resource Assessment by ASI identifies seven (7) CHL within, adjacent to or in the vicinity of the Second/Alma crossing corridor. Four (4) are streetscapes, (Second, Alma, Saskatoon and Frank), one is the former rail crossing, one the Trent River waterscape which is also part of a National Historic Site and the seventh is the entire Second Street residential neighbourhood. The assessment expects that the residential neighbourhood on the east side of the Trent River which encompasses most of these heritage landscape features will be changed and “irreversibly impacted” by alternations through introduction of a new bridge and associated retaining walls, and associated view obstructions. The 2015 assessment concludes that the overall function of the east side neighbourhood along Second Street will be altered by a new bridge. Furthermore, it is also expected that such changes will lead to some property reuse and renovation along Second Street.</p> <p>Adding a second Trent River crossing 400 metres from the existing heritage crossing will also impact the watershed views in downtown Campbellford. Whether this impact is positive or negative will vary with the viewer.</p> |

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| 4. NATURAL ENVIRONMENT | | | |
| 4.1 Source Water Protection | Potential threat to potable water source and mediation requirements. <div style="border: 1px solid black; background-color: #FFD700; padding: 2px; display: inline-block;">Added 2016</div> | <p><u>Pros</u> - Provincial legislation to protect source water will require action by the Municipality. Replacement of the existing Bridge St. bridge is common to each alternative, so the advantages of such protection should apply equally to each alternative.</p> <p><u>Cons</u> - Current source water protection legislation and stormwater management guidelines would require collection and management of bridge runoff as part of twinning and replacing the existing Bridge St. bridge.</p> <p>Mitigating the source water impact potential created by direct bridge drainage into the Trent River can be accomplished in two basic ways:</p> <ol style="list-style-type: none"> 1. Extend the existing water inlet approximately 160m north of its current location to be upstream of the bridge; or 2. Install a drainage collection system on the bridge to direct runoff into the stormwater sewer system with flow control into the river. <p>Either approach can also be accomplished independent of, or as part of a Bridge St. bridge twinning and replacement.</p> <p>Since mitigating the existing bridge water source impact potential may be required irrespective of bridge works, it therefore should not be included as part of a bridge twinning/replacement cost.</p> | <p><u>Pros</u> - Provincial legislation to protect source water will require action by the Municipality. Replacement of the existing Bridge St. bridge is common to each alternative, so the advantages of such protection should apply equally to each alternative.</p> <p><u>Cons</u> - None</p> |
| 4.2 Displacement / Disruption of Natural Heritage Features | Impacts on aquatic and terrestrial species and habitat. | <p><u>Pros</u> - Twinning and reconstructing the existing Bridge St. bridge at its current location on a combination of new and existing piers is expected to have minor disruptions to aquatic features. This is mainly because the existing fish habitat in the area</p> | <p><u>Pros</u> - Same as Twin/Replace Existing Bridge alternative.</p> <p><u>Cons</u> - Same as Twin/Replace Existing Bridge alternative. An in-water construction timing</p> |

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| | | <p>is fairly uniform with limited in-stream structure and diversity, and with a probable “moderate” sensitivity overall. The Trent River stream bed is primarily bedrock and both shores are lined with a concrete shore wall. Both crossing areas are highly urbanized and disturbed, with little terrestrial habitat potential.</p> <p><u>Cons</u> - A May 15 to June 30 in-water construction timing restriction may be required for the existing bridge twinning/replacement. A HADD/no HADD screening will be carried out to confirm this and if a <i>Fisheries Act</i> authorization will be required.</p> | <p>restriction may also be required for a Second/Alma crossing.</p> |
| 5. ECONOMIC ENVIRONMENT | | | |
| 5.1 Displacement of Existing Business Space | Removal of existing business operation, with associated reduction in assessment (excluding heritage resources). | <p><u>Pros</u> – None.</p> <p><u>Cons</u> – The existing bridge twinning would displace existing business space on the ground floors of buildings abutting the north side.</p> | <p><u>Pros</u> – Additional business development opportunities could be available at the Grand Rd./Alma St. intersection area including the 120 Grand Rd. property acquired by the Municipality. Replacement of the existing bridge with a new 2-lane bridge would not displace existing business space on the ground floor of buildings abutting the north side.</p> <p><u>Cons</u> – None</p> |
| 5.2 Impact on Downtown Business | Impact on downtown business exposure and accessibility that can reduce business viability and new investment. | <p><u>Pros</u> - Maintaining Bridge St.as the primary east-west travel route in Campbellford through the downtown provides continued visibility and accessibility for downtown business. This in turn supports the retention and growth of viable businesses in the downtown.</p> <p><u>Cons</u> – The visibility and accessibility to downtown business will be negatively impacted by growing traffic congestion along Bridge St. and its intersections. The concentration of all future traffic</p> | <p><u>Pros</u> – The traffic diversion rate of approximately 50% from the Bridge St. bridge to a Second/Alma crossing established in the 2009 AECOM study is carried forward. This would reduce traffic volumes on Bridge St. through the downtown, but this is expected to largely involve through trips including heavy trucks. This in turn could improve the downtown environment in terms of less traffic and a more pedestrian-friendly streetscape character.</p> <p>Retention of local business traffic in the downtown</p> |

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| | | <p>growth along Bridge St. will result in reduced level of service operations, and this will impact the visibility and especially accessibility required by downtown businesses.</p> | <p>can also be encouraged with route signage for Bridge St. as the “Local-Downtown” route and Second/Alma as the “Through” route.</p> <p>It is recognized that 3 of the 5 basic requirements of successful retailing are visibility, accessibility and a safe, comfortable environment (the others being cost competitiveness and customer service). All three can be preserved in this two bridge alternative by avoiding traffic congestion on Bridge St. in the downtown that will detract from the use and enjoyment of the downtown.</p> <p><u>Cons</u> – There could be negative impacts on downtown business from the two bridge alternative if the traffic level of service along Bridge St. deteriorates (which is not forecast to occur over the very long term with two bridges).</p> |
| 5.3. Commercial Goods Movement | Ability to serve the movement of trucks within and through the community with minimal associated impacts. | <p><u>Pros</u> – Twinning the Bridge St. bridge would provide adequate turning queue lengths for commercial vehicles turning off and on the bridge to meet forecasted 20 year demand.</p> <p><u>Cons</u> – Traffic volumes and intersection Level-of-Service on Bridge St. is forecast to decline beyond 20 years to again create commercial vehicle congestion crossing the river.</p> | <p><u>Pros</u> – Provision of 2 east-west crosstown routes across the Trent River provides an opportunity to divert through truck traffic with no business in the downtown away from the area. Furthermore, a Second/Alma route could be designated a Truck Route to manage truck movements through the community.</p> <p><u>Cons</u> – Effective management of truck and no-truck routes requires active and consistent OPP enforcement.</p> |
| 5.4 New Business Development Opportunity in the Community | Ability to serve the transportation needs of new businesses in designated areas of the community. | <p><u>Pros</u> - Remnant property on the north side of a twinned Bridge St bridge could remain available for new business development at each end. Maintaining Bridge St. as the main east-west route through the community would provide the business visibility and accessibility needed to attract new business in the core.</p> | <p><u>Pros</u> – Property on the north side of a replaced 2-lane Bridge St. bridge could be available for riverfront business redevelopment. Furthermore, a Second/Alma crossing would provide access to the designated Mixed Use Area on the south side of Second St., the Burnbrae Rd. business area to the east and the new commercial node at the</p> |

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| | | <p><u>Cons</u> – The Bridge St. bridge corridor would provide limited arterial access to the community’s Mixed Use Area designated in the Official Plan, with most of this area accessed by Collector and Local streets.</p> | <p>commercial node at the corner of Alma St and Grand Rd. This enhanced access and exposure can stimulate new business development in these areas, possibly extending to more commercial redevelopment activity along Grand Rd.</p> <p><u>Cons</u> – Downtown visibility and accessibility along Bridge St. will need to not only be maintained, but enhanced through the use of effective route signage and downtown marketing. This will be needed to attract through trips to the downtown that could otherwise bypass businesses in this area. The resulting roadway travel patterns in Campbellford would include an alternative Second/Alma route across the river and through the community mainly for trips that would have a low to no chance of doing business in the core.</p> |
| 6. ENGINEERING & CONSTRUCTION COST | | | |
| 6.1 Bridge Construction Cost (Structural Only) | Estimated cost of river crossing structure only (excluding road network changes and property acquisition). | <p>According to the 2012 Trent River Crossing Feasibility Report prepared by GENIVAR, the Class C preliminary cost estimate to construct a preferred Modified 3 Lane twinning and replacement of the existing Bridge St. is:</p> <p>Stage 1 Twinning: \$12.0 Million Stage 2 Replacement: <u>\$12.7 Million</u> Total Structural Cost: \$24.7 Million</p> <p>These cost estimates were prepared by GENIVAR using a full market description of the structural work, construction/design experience and market conditions in 2012. It does not include costs of utility relocation or replacement, any associated business impact costs or any associated property redevelopment.</p> <p>IBI Group concluded that the 2012 unit costs are</p> | <p>According to the AECOM 2009 Final Draft ESR (Section 7.3, Table 32), the estimated cost to construct a new 2 lane bridge with left turn lanes at the ends and sidewalks extending from the Grand Rd./Alma St. intersection to Second St. near Frank St. with a left turn lane at the west abutment : \$11.6 Million (AECOM, 2009 \$)</p> <p>This estimate was prepared using 2009 benchmark construction costs associated with the bridge including sidewalks and railings. It included the structural works, approach works, retaining walls and Design/Contract Administration. It did not include the cost of property acquisition.</p> <p>However, owing to the preliminary nature of these cost estimates in 2009 dollars, they have been increased by 10% to reflect 2013 costs to:</p> |

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| | | appropriate to use as an estimate in 2013 dollars. | | \$12.8 Million (2013\$) | |
| 6.2 Associated Road Capital Cost | Estimated cost of physical and traffic operation changes to existing road network to serve river crossing. | The 2012 GENIVAR feasibility report estimated that the cost to modify roadways, traffic signals and building removal for the Stage 1 existing Bridge St. bridge twinning would be: \$1.8 Million Utility relocation or improvements to property associated with building removal is not included. Any fibre optic cable relocation at the bridge could cost up to \$1 M as determined by the utility company. As a result, the road costs for this alternative may be close to that for Alternative 2. Road costs also apply only to the Stage 1 works, with no further roadway costs required for the Stage 2 replacement of the existing bridge. | | The 2009 AECOM Final Draft ESR (Section 7.3, Table 33) estimated that for a new Second/Alma bridge crossing, associated benchmark road network changes would cost \$1.9 M in 2009 \$. This included roadworks on Second St. Alma St. and Simpson St., retaining walls and traffic signals, plus a 7.5% contingency, Design/Contract Administration and utility relocation. IBI Group has increased this estimate to reflect 2013 \$, the retaining wall work over Saskatoon Ave. and other associated road works on Second St.. The resulting capital cost is doubled to: \$3.8 Million | |
| 6.3 Total Staged Cost | Total bridge and road capital investment over a 30 planning horizon excluding property acquisition and utility relocation | <u>Stage 1 Year 0-10:</u> Twin Existing Bridge (2 lanes): Roadway Costs: Total: | \$12.0 M \$ 1.8 M \$13.8 M | <u>Stage 1 Year 0-10:</u> Second/Alma Crossing Bridge (2 lanes): Roadway Costs: Total: | \$12.8 M \$ 3.8 M \$16.6 M |
| | | Year 10-20: | \$0 M | Year 10-20: | \$0 M |
| | | <u>Stage 2 Year 20+:</u> Replace Existing Bridge (total 4 lanes) | \$12.7 M | <u>Stage 2 Year 20+:</u> Replace Existing Bridge (2 lanes) GENIVAR \$12.7 estimate with 10% reduction for simplified one-stage replacement construction. | \$11.4 M |
| | | TOTAL COST | \$26.5 M | TOTAL COST | \$28.0 M |
| | | ANNUAL 30 YEAR INVESTMENT | \$885,000 | ANNUAL 30 YEAR INVESTMENT | \$935,000 |
| 6.4 Amount of Property Acquisition / Resale | Amount of property to be acquired (not including cost). | The Modified 3-Lane Bridge concept developed by GENIVAR for a twinned/replaced bridge requires | | Up to 8 of the existing residential properties located on Second St. between Saskatoon Ave. and Front | |

| EVALUATION CRITERIA | FACTORS | ALTERNATIVE 1 TWIN EXISTING BRIDGE ON NORTH SIDE & REPLACE EXISTING BRIDGE (1 BRIDGE / 1 X 3 LANE OPTION) | ALTERNATIVE 2 NEW SECOND ST./ALMA ST. BRIDGE & REPLACE EXISTING BRIDGE (2 BRIDGE / 2 X 2 LANE OPTION) |
|---------------------|--|---|---|
| Potential | It is strongly advised that estimated costs of property acquisition or impact compensation not be included in an Environmental Assessment evaluation of alternatives because; 1) they will be determined through negotiations between a project proponent and impacted property owners, and 2) providing such estimates can prejudice the negotiation process. | acquisition and removal of #4-8 Front St. N on the southwest corner of the Bridge St./Front St. intersection, two properties on the northwest corner if they cannot be separated and 5 properties on the north side of the bridge terminals. The bridge twinning would limit the amount of surplus property that may be available for resale and reuse. | St. have been identified for acquisition in the 2009 AECOM Final Draft ESR as a result of property impacts created by a Second St. ramp connection to a new bridge. They would offer the potential for resale for alternative uses. West of the river, strips of property fronting on Alma St. and Simpson St. may be required to provide sufficient collector road width on these connecting streets. Location and width of such acquisition would be confirmed at the detailed design stage. |

8.6 Preferred Alternative - Summary Evaluation of Alternatives

The results of the Reasoned Arguments evaluation are summarized in Exhibit 8.2 based on the pros (advantages) and cons (disadvantages) of the two final alternatives against the 22 evaluation criteria. It is intended to provide an objective, traceable response to each criterion as prepared by IBI Group, with the following key questions considered by the Steering Committee and Municipal and County Councils in deciding whether to endorse Alternative 2 as the preferred alternative:

1. What river crossing capacity does Northumberland County need in Campbellford over the next 20 years, and then beyond that to 40-50 years to efficiently move people and goods safely and efficiently through the community;
2. Where, how and when should this capacity be provided; and
3. How will provision of this capacity impact the socio-cultural fabric of the community, and how can these impacts be mitigated.

Answering these essential questions has been complex, involving varied and sometimes competing interests that have been considered in the EA process. This is reflected in the close scoring of evaluation criteria shown next in Exhibit 8.2.

Based on research conducted for this study, the study has concluded that Alternative 2 with construction of a new two lane bridge from Alma Street to Second Street, plus replacement of the existing two lane Bridge Street bridge when required, provides the best long-term opportunity to meet the goal of this project, namely to provide a plan that is realistic, attainable and cost-effective over the next 40-50 years.

The rationale for this conclusion is summarized in the following Exhibit 8.2 that highlights the preferred river crossing alternative (√) for each of the study's 22 evaluation criteria. This summary also shows criteria where there is no comparative advantage or disadvantage between the two finalist alternative, and so the evaluation is neutral (-). Following the summary table, the main pros and cons of each alternative that led to the evaluation summary are again itemized from the more detailed Exhibit 8.1 Reasoned Arguments evaluation.

Exhibit 8.2 - Summary Evaluation of Alternatives

√ Preferred Alternative - Neutral / Equal

| CRITERIA | ALTERNATIVE 1 Twin/Replace Existing Bridge Street Bridge with Modified 3-Lane Bridge | ALTERNATIVE 2 New 2-Lane Second/Alma Bridge & Replace Existing 2-Lane Bridge Street Bridge |
|--------------------------------------|--|---|
| GROUP 1: TRANSPORTATION | | |
| 1.1 Traffic Operations | | √ |
| 1.2 Provision of Emergency Access | | √ |
| 1.3 Change to Existing Road Function | √ | |
| Preferred – Transportation | | √ |

| | | |
|--|---|---|
| GROUP 2: SOCIAL ENVIRONMENT | | |
| 2.1 Single Family Residential Property Displacement (not including heritage) | √ | |
| 2.2 Rental Apt. Unit Displacement | | √ |
| 2.3 Residential Traffic Intrusion | √ | |
| 2.4 Potential for Urban Design Improvements | | √ |
| 2.5 Access to New Development | | √ |
| 2.6 Change to Traffic Noise | √ | |
| Preferred – Social Environment | – | – |
| GROUP 3: CULTURAL ENVIRONMENT | | |
| 3.1 Direct Displacement of Built Heritage Resources | – | – |
| 3.2 Indirect Disruption of Built Heritage Resources | – | – |
| 3.3 Disruption of Cultural Heritage Landscapes | √ | – |
| Preferred – Cultural Environment | √ | – |
| GROUP 4: NATURAL ENVIRONMENT | | |
| 4.1 Source Water Protection | – | √ |
| 4.2 Displacement/Disruption of Natural Heritage Features | – | – |
| Preferred – Natural Environment | – | √ |
| GROUP 5: ECONOMIC ENVIRONMENT | | |
| 5.1 Displacement of Existing Business Space | | √ |
| 5.2 Impact on Downtown Business | | √ |
| 5.3 Commercial Goods Movement | | √ |
| 5.4 New Business Development Opportunities | | √ |
| Preferred – Economic Environment | | √ |
| GROUP 6: ENGINEERING & CONSTRUCTION COST | | |
| 6.1 Bridge Construction Cost | – | – |
| 6.2 Associated Road Capital Cost | – | – |
| 6.3 Total Staged Cost | – | – |
| 6.4 Amount of Property Acquisition / Resale Potential | | √ |
| Preferred – Engineering & Construction Cost | – | √ |
| PREFERRED ALTERNATIVE | | √ |

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2016

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2016

8.6.1 PREFERRED ALTERNATIVE 2

Second St. / Alma St. Crossing with Existing Bridge 2-Lane Replacement (2 bridge / 2 x 2 lanes)

The EA re-commencement and completion has concluded that finalist river crossing Alternative 2 is preferred primarily for five important reasons:

1. It provides the best transportation solution for the movement of people and goods across the Trent River in Campbellford for the very long term. During the next 40-50 years, it provides the best traffic operations through the community, with river crossing redundancy that benefits traffic flow, emergency response, goods movement, bridge maintenance and overall roadway network level-of-service;
2. It provides access to planned growth areas in south and east Campbellford over the next 40-50 years;
3. Does not require removal of any existing rental housing units located next to the existing Bridge Street bridge;
4. The community's water source intake is located upstream of the new river crossing, which would protect the source from any spill into the river from the new bridge. For the existing Bridge St. bridge located upstream of the source, a runoff collection system can be installed either before or as part of the eventual bridge replacement included as part of Alternative 2;
5. Traffic conditions and level-of-service through the downtown is improved by avoiding congestion. This alternative provides an alternative route for through traffic including diverted heavy truck traffic, resulting in traffic conditions that are more conducive to the downtown business environment especially along Bridge St. No need to enhance the Bridge Street capacity is expected over the next 40-50 years through downtown changes such as removing on-street parking or widening Bridge Street; and
6. According to the project goal, a cost-effective solution is needed. Engineering and costing information provided by the previous consultant work updated to 2013 levels suggests that the capital costs for river crossing and associated road works between the two finalist alternatives are very comparable. Furthermore, there will be property acquisition costs either for commercial/residential buildings currently abutting the Bridge Street bridge in Alternative 1, or residential property associated with the Second/Alma alignment in Alternative 2. However, in the case of the Second/Alma alignment, opportunities would be available to resell and reuse these acquired properties for alternative uses more compatible with traffic changes created by a Second/Alma crossing. In comparison, Alternative 1 Twin/Replace has the potential for unforeseen costs associated with significant utility relocation/replacement costs.

Given these major advantages (pros) of Alternative 2, the following disadvantages (cons) are also recognized. Recommended measures to mitigate these impacts are included in Section 9 of this revised ESR. Most focus on the social and cultural environment impacts as follows:

1. Impacts to the residential character of Second St. from Saskatoon Ave. to Ranney St., and Simpson St. from Alma St. to Bridge St. resulting from river crossing-related traffic intrusion and associated building and land use changes over the long term. Similar changes have already occurred on Alma St. in proximity to the Canadian Tire location;
2. Impacts on and changes to designated and listed heritage properties along and near Second St., and at the Second St./Saskatoon St. intersection; and
3. Noise impacts on these properties from increased Second/Alma traffic volumes and heavy truck traffic.

Given this, this EA has considered whether the pros (advantages) of two river crossings in the very long term are worth the cons (disadvantages). These pros and cons of this alternative are summarized as follows with details provided in the Exhibit 8.1 Reasoned Arguments evaluation:

| MAIN PROS: | MAIN CONS: |
|---|--|
| <ul style="list-style-type: none"> • Meets both long and very long term transportation needs without twinning existing bridge; • Provides river crossing redundancy for emergency response, maintenance and repair, and when the existing Bridge Street ridge will be to be replaced; • Long term replacement of Bridge St. bridge as 2 lanes would avoid displacement of abutting commercial/residential buildings and so avoids removal of existing rental apartments abutting the existing bridge • Maintains historic river crossing location and waterscape views; • Provides opportunities for residential redevelopment in the Second St. area and business opportunities at the Alma St/Grand Rd node over the long term; • Provides road access to designated growth areas east of the river; • Preserves potential heritage property and landscapes in the downtown; • Water source protection on Bridge St. bridge may be required irrespective of the existing bridge replacement; • Disruption to aquatic features are minor; • Opens new business opportunities at Grand/Alma node; • Traffic diversion from Bridge St. in the downtown is expected to mainly involve through trips, and the downtown environment is improved with reduction of truck traffic diverted using route signage for “Local-Downtown” traffic; • Two river crossings better serve heavy truck goods movement through the community than one bridge; • Riverfront property on Bridge St. and along Grand Rd. remains available for redevelopment; | <ul style="list-style-type: none"> • Adds traffic volume on roads approaching the new crossing (Simpson St., Alma St., Second St. and Cockburn St.); • Traffic control, roadway and structural improvements required along Simpson St., Alma St., Second St. and Cockburn St.; • Up to 8 residential properties could be displaced on Second St. between Saskatoon and Front; • Existing residential areas along the new crossing approaches will experience traffic intrusion, increased traffic noise and visual impacts from retaining walls along the east bridge approach between the river and Front Street; • Possible displacement of built heritage houses for continued residential use along the east and west approaches to a Second/Alma crossing, and disruptive effects on associated cultural landscapes; • Impact on downtown business from closing existing Bridge St. bridge for 18-24 months for replacement in +/- 30 years; and • Splitting of traffic volumes on two bridges and resulting reduction in Bridge Street traffic volumes; and • The estimated \$28 M cost of this alternative includes added cost for improvements to access roads, and could increase with additional utility relocation/replacement costs. |

- Total estimated cost to build a 2 lane Second/Alma bridge and replace the existing 2 lane Bridge St. bridge is \$28 M. This includes a 10% conservative cost saving for less complex 2 lane Bridge St. bridge replacement, and is similar to the Twin/Replace Existing Bridge Alternative. This cost savings is conservative and could be higher as bridge rehabilitation is a complex process;
- On-street parking removal along Bridge Street will not be required;
- Future widening of Bridge Street and intersections is not required; and
- Provides better access for pedestrians and cyclists with two river crossings in the community.

**8.6.2 ALTERNATIVE 1
 Twin/Replace Existing Bridge Street Bridge Only (1 bridge / 1 x 3 lanes)**

The existing bridge twinning and replacement as detailed by the GENIVAR Feasibility Report, 2012 is expected to be technically feasible in terms of solving river crossing capacity and operational needs specifically at this crossing over the long term (30 years), but not beyond.

Under this alternative, traffic conditions along Bridge Street will operate well for the next 30 years. However, beyond that timeframe, the Bridge Street corridor would deteriorate back to conditions similar to today, with long queues and delays. In order to address traffic operations at that time, further capacity enhancements would be needed, and would likely include parking removal and some intersection improvements.

Evaluation of this alternative focused on whether this long-term (30-year) timeframe is sufficient without “jeopardising public and private sector business decision making”, as quoted from the project Terms of Reference.

The main pros and cons of this alternative are summarized as follows with details provided in the Exhibit 8.1 Reasoned Arguments evaluation.

| MAIN PROS: | MAIN CONS: |
|---|---|
| <ul style="list-style-type: none"> • Continues use of existing Bridge St. arterial corridor with no functional changes required to other streets; • No single family residential properties displaced; • Maintaining adequate traffic capacity on the Bridge St corridor would discourage shortcutting onto alternative routes; • Provides opportunities to improve/ redevelop Bridge/Front and Bridge/Queen intersections; • Provides river crossing access for planned | <ul style="list-style-type: none"> • In 30 years additional improvements to the Bridge St. bridge will be required such as intersection widening and removal of on-street parking to maintain traffic operations; • Limits emergency response to one river crossing impacted by traffic Level-of-Service congestion and disruptions; • If adequate Bridge St. capacity is not maintained, traffic diversion to alternative routes will occur in the community; • Displaces existing rental apartment supply abutting the Bridge St. bridge; |

- residential development in east Campbellford;
- Maintains historic river crossing location and waterscape views;
- Disruption to aquatic features is minor;
- Maintains Bridge St. as the primary east-west travel route through Campbellford for downtown business access; and
- Estimated capital cost to twin and replace Bridge St. bridge is similar to Second/Alma and Bridge Replacement.
- Displaces buildings having cultural heritage value or interest as noted by MTCS;
- Community water supply is downstream of the existing bridge, which has no spill collection system. Water source protection on Bridge St. bridge may be required irrespective of bridge replacement;
- Amount of surplus land available for redevelopment at the existing Bridge St. bridge intersections will be limited by the spatial needs of the bridge twinning;
- No improved access to designated growth areas south of Second St.;
- Displaces existing business space abutting Bridge St. bridge;
- Business impacts on the downtown from Bridge St. bridge being closed twice for 18-24 months – for Stage 1 twinning and Stage 2 replacement;
- Commercial vehicle congestion expected across the Bridge St. bridge beyond 30 years; and
- Once the intersections are congested, traffic is expected to divert to adjacent residential streets to avoid congested intersections.

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2016

8.7 Description of Preferred Alternative 2

8.7.1 Bridge Design

The AECOM EA study in 2008/09 considered six different cross-section options for a Second/Alma bridge with two versus four 3.5 m and 3.75 m travel lanes, with and without a centre turn lane plus shoulders and sidewalks. The preferred geometry presented in Section 6.4 of the AECOM 2009 Final Draft ESR is for a two lane Second/Alma bridge with 3.75 m lanes flared at the west end to accommodate an auxiliary left turn lane at the approach to Grand Road (see previous Exhibit 4.4). A similar intersection design is also provided of the east end of the bridge at the Front Street intersection. The shoulders are intended to accommodate cyclists.

The bridge deck would consist of 1400 mm structural steel girders, a 225 mm concrete deck and 90 mm thick asphalt and waterproofing system. The approaches to the bridge would comprise approach slabs, an asphalt wearing surface and gravel shoulders. The west abutment would be widened by 3 m to accommodate the turning lane.

8.7.2 Road Design

The design of the roadway approaches to a new Second/Alma bridge has incorporated the following design constraints:

- Accommodate a navigation channel on the Trent River with a 6.7m vertical clearance (since changed to 6.1m clearance) and 15.24m horizontal clearance under the crossing structure as required by the Trent-Severn Waterway;
- Road grades associated with the bridge crossing that are no more, and preferably less than the existing 6.5% grades;
- A minimum 60 km/h roadway design speed for posting at 50 km/h; and
- A through roadway connection under the bridge at Saskatoon Avenue.

Two designs for the Grand Road/Alma Street intersection at the west end of the new bridge were considered, including a conventional signalization and a roundabout. The signalized intersection was selected as the preferred design, and requires the property since acquired by the Municipality at 120 Grand Road for widening to accommodate left turn lanes.

The vertical bridge alignment has been designed to minimize property impacts, accommodate boat traffic and allow for maintenance of through traffic under the bridge along Saskatoon Avenue. Grades of 5.9 percent and 5.1 percent are proposed on the west and east sides of the navigation channel, respectively, and can be reduced during detailed design with the Waterway's updated reduction in the vertical clearance to 6.1 m.

Reconstruction of Saskatoon Avenue at the crossing involves an alignment shift to the west to provide 6.1 m of vertical clearance under bridge, plus a bridge pier. It is important to note that an alternative vertical alignment was evaluated which had an at-grade intersection of the bridge crossing with Saskatoon Avenue, but the resulting extreme grade (15%) on the east side of the bridge meant this concept is unacceptable,

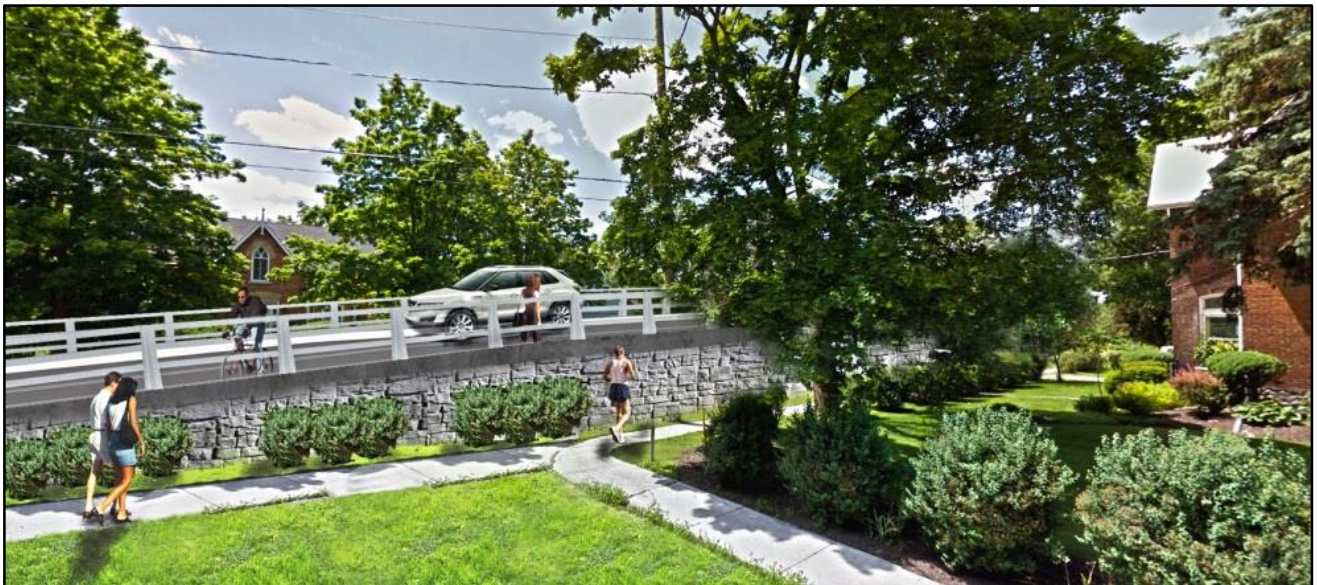
Because Saskatoon Avenue is being maintained as a through roadway, the resulting grade on Second Street requires installation of a retaining wall on both sides of Second Street east of the east bridge abutment. The wall extends east to a point just east of the existing Frank Street intersection. Other associated works include closing Frank Street at Second Street with a turnaround bulb, converting Frank Street from its current one-way operations to two-way and relocating driveway access to access three of the abutting properties at #9 and #17 Second Street and #94 Frank Street.

The 2009 AECOM Final Draft ESR and the IBI Group re-commencement work have both concluded that these changes to the west end of Second Street created by a bridge and retaining wall are considered significant impacts to the affected properties. The significant visual impacts alone are illustrated in the bridge rendering in the Second Street/Saskatoon Avenue area shown in Exhibit 8.3. The extent of these impacts would support purchase of the following five most affected properties on Second Street between Saskatoon Street and Frank Street:

- #4 Second Street;
- #94 Frank Street;
- #109 Saskatoon Street;
- #9 Second Street; and
- #17 Second Street.

In addition, the property at 116 Grand Avenue may be purchased in whole or in part, depending on the final design of the Grand Road / Alma Street intersection with the new bridge. The property at 120 Grand Road has been purchased by the Municipality of Trent Hills, and will need to be demolished to accommodate a new intersection at this location.

Exhibit 8.3 - Second Alma Bridge East End Rendering



8.7.3 Traffic Forecasts, Operations and Road User Costs

Section 6.4.3 of the 2009 AECOM Final Draft ESR includes information on how the addition of a Second/Alma crossing is expected to impact traffic volume, operation and road user cost forecasts in 2027, which as the 20 year EA planning horizon used for that study. The analysis concludes that by 2027;

- the future signalized intersections at Bridge/Queen, Bridge/Front, Bridge/Doxsee, Alma/Grand and Second/Front would operate at an acceptable level of service;
- the Bridge Street corridor would operate at an acceptable level of service; and

- the additional river crossing would be expected to reduce future annual road user delay costs at the existing Bridge Street bridge to a level similar to 2007 costs by splitting the river crossing traffic between two bridges.

IBI Group updated these forecasts and findings in 2013 and extended them for a 30 year planning horizon. The finding was that a number of traffic level of service indicators would be improved with a two bridge solution (Alternative 2) compared to a three-lane widening of the existing Bridge Street bridge (Alternative 1). For example, overall intersection delays are within the good LOS B to LOS C range, and turning vehicle queues can be kept to a maximum 95 m.

The 30-year analysis of Alternative 2 indicates that poorer level of service do not occur within the planning horizon, with all movements operating at LOS E or better. However, under a sensitivity case with 25% instead of 50% of traffic diverted from the existing bridge to a new Second/Alma bridge, queues on the existing bridge are forecast to reach or exceed capacity at this horizon. This shows the importance in Alternative 2 for a new Second/Alma bridge to effectively attract in the order of 50% of the daily river crossing traffic.

8.8 Interim vs. Ultimate Preferred Solutions

Reference
Appendix 1: Section
7.2, AECOM Final Draft
ESR, August 2009

In 2009, Section 7.2 of the AECOM Final Draft ESR presented both an interim preferred and ultimate preferred solution for the Trent River crossing and improvements to the associated arterial road network as follows:

Interim Preferred Solution:

The preferred interim solution in 2009 was to improve traffic operations along Bridge Street by optimizing signal timing plans, and making minor road and traffic control improvement. These improvements were implemented by the County in 2010. With no associated property requirements, these traffic management improvements were pre-approved under the Municipal Class EA, so no EA study was required. Therefore, an interim traffic management solution is no longer required for the Trent River crossing.

Ultimate Preferred Solution:

Based on the recommendations of the 2009 AECOM Final Draft ESR, subsequent technical engineering studies and the IBI Group re-commencement and completion of this EA study, the EA's preferred solution is to construct an additional crossing of the Trent River along the Alma Street to Second Street corridor within ten (10) years from 2014 once all required further studies, detailed design, required permits and approvals and funding has been confirmed.

With County Council approval of this preferred solution on June 18, 2014 (see ESR Introduction Section 1.1), this EA recommends that the County proceed to construct, within 10 years of this EA approval in 2014, the Second/Alma bridge and associated road network improvements identified in this ESR. This will maximize the design life of the existing Bridge Street bridge, as well as provide much-needed flexibility for the scheduling and funding of an eventual major replacement or rehabilitation of the existing Bridge Street bridge.

9 Environmental Impacts and Mitigation Commitments

9.1 Cultural Heritage

Much of the impact mitigation associated with the preferred solution with a Second/Alma bridge will be dictated by the Ontario Ministry of Tourism, Culture and Sport (MTCS), Ontario Ministry of Natural Resources (MNR) and Parks Canada /Trent Severn Waterway. With support from these agencies, and filing of this EA with the Ontario Ministry of Environment (MOE), the County can begin making arrangement with MTCS to identify the actions, plans and approvals required to address heritage impacts in the Second Street corridor, focusing on the following three cultural-related subjects.

9.1.1 Cultural Heritage Mitigation Commitments

The cultural heritage impact assessment conducted by Unterman McPhail in 2009 provides a comprehensive summary of what should be considered when recommending mitigation measures of an undertaking that has the potential to negatively impact cultural heritage resources:

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2015

A proposed undertaking should not adversely affect cultural heritage resources and intervention should be managed in such a way that its impact is sympathetic with the value of the resources. When the nature of the undertaking is such that adverse impacts are unavoidable it may be necessary to implement management or mitigation strategies that alleviate the deleterious effects to cultural heritage resources. Mitigation is the process of causing lessening or negating anticipated adverse impacts to cultural heritage resources and may include such actions as avoidance, monitoring, protection, relocation, documentation, salvage, remedial landscaping, etc. Mitigation may be a temporary or permanent action.

Based upon the results of updated background data collection and field review conducted by ASI in 2015, 45 cultural heritage resources were identified within, adjacent, and in the vicinity of the recommended Second Street/Alma Street bridge crossing (see **Appendix 6**). Based on the updated assessment of cultural heritage value and potential impacts, Northumberland County commits to incorporating the following cultural heritage mitigation measures into the detailed design, construction and operation of a new bridge crossing between Second Street and Alma Street as described in this revised ESR:

1. The two finalist river crossing alternatives have been re-evaluated based on information provided by the 2015 ASI Cultural Heritage Resource Assessment. This was done in association with previous cultural heritage information referred to in the 2014 Final and 2009 Draft ESR reports. The updated assessment has now considered the cultural heritage impacts of the Second Street/Alma Street crossing alternative, and those presented in the report prepared by Heritage Resources Consulting (2013) which focused on the existing bridge crossing. The re-evaluation used the same unweighted criteria as previous applied in 2014, and has determined that the construction of a new bridge at the Second Street/Alma Street crossing is still the preferred alternative. Therefore, Northumberland County commits to incorporating the following additional mitigation measures recommended in the 2015 ASI report into the detailed design, construction and operation of a new Second/Alma bridge.

2. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources;
3. In accordance with Sections 4.2.2.5 and 4.2.2.7 of the Trent Hills Official Plan, a resource-specific Heritage Impact Statement should be carried out for BHR 1 located at 17 Second Street, which is designated under Part IV of the Ontario Heritage Act, in order to demonstrate “to the satisfaction of Council that the heritage values, attributes and integrity of the protected heritage property are retained.” The Heritage Impact Statement should be conducted at the earliest possible stage of the detailed design stage.
4. BHR 26 at 120 Grand Road is expected to be significantly impacted through the demolition of the residential structure and the removal of landscape features. A resource-specific Heritage Impact Statement should be carried out for this resource at the earliest possible stage of the detailed design stage, to evaluate the cultural heritage value of the resource, identify cultural heritage attributes, and develop appropriate mitigation measures. The following conservation options, listed in descending order of preference, are standard mitigation measures for cultural heritage resources:
 - a. Retention of the existing built heritage resource in-situ;
 - b. Relocation of the existing built heritage resource to a new location on its current site;
 - c. Relocation of the existing built heritage resource to an appropriate new site nearby in the municipality, preferably in the vicinity of its original location to preserve its historical value;
 - d. Full recording and documentation of the built heritage resource if it is to be demolished;
 - e. Salvage of elements for incorporation into existing historic or new structures.
5. The same Heritage Impact Statement requirements should apply to 116 Grand Road, should the detailed design confirm that the BHR4 house will need to be demolished.
6. A second/Alma bridge and associated retaining walls should be suitably designed to be sympathetic to the historical setting and context of the area as an intact late-nineteenth/early twentieth-century residential neighbourhood, especially on the east side of the Trent River. For example, the Standards and Guidelines for the Conservation of Historic Places in Canada (2010) recommend the following general design guidelines in relation to new additions in CHLs, particularly in relation to areas with significant visual relationships, circulation patterns, or built features:
 - Designing a new feature when required by a new use that respects the historic visual relationships in the cultural landscape. This can include matching established proportions and densities, such as maintaining the overall ratio of open space to building mass in an urban heritage district when designing an infill building;
 - Designing and installing a new circulation feature, when required by a new use, that is compatible with the heritage value of the historic place, including controlling and limiting new access points and intersections along an historic road;
 - Designing a new built feature, when required by a new use, to be compatible with the heritage value of the cultural landscape. For example, erecting a new [structure] using traditional form and materials, or installing signs and lighting compatible with the cultural landscape;

Design, scale, massing, and material fabric of any new structural features should be sympathetic to the surrounding cultural heritage landscapes and built heritage resources. For example, the use of an open-concept railing system for the bridge should be considered to preserve views. Similarly, materials such as pressed concrete or stone or brick facing should be considered for the retaining walls to be compatible with the area, and the height of the walls should be kept as low as technically feasible. The scale, design, and function of the bridge should ensure that this crossing point remains a secondary crossing in relation to the existing and historical bridging point further north in order to preserve the land use history of Campbell's Ford.

7. Conservation plans should be developed for resources whose long-term viability might be in jeopardy due to the proposed undertaking. A conservation plan would identify strategies to ensure the long-term viability of resources as individual residences or recommend appropriate strategies for potential adaptive reuse of the structures that would ensure the conservation of heritage attributes. Conservation plans should be considered for BHR 1 (17 Second Street), BHR 17 (94 Frank Street), and BHR 22 (109 Saskatoon Avenue). Cultural heritage evaluation would need to be conducted as part of the conservation plans for BHR 17 and BHR 22 in order to evaluate the cultural heritage value of the resource and identify cultural heritage attributes.
8. Where built heritage resources and cultural heritage landscapes are expected to be impacted through alteration to their setting, a cultural heritage documentation report should be prepared in advance of construction activities to serve as a final record of each of the resources and the study area in general, including important viewsheds in regard to the Trent River. The resources should be subject to photographic documentation and compilation of a cultural heritage documentation report by a qualified heritage consultant and the report submitted to local repositories for archival purposes. Cultural heritage documentation reports should be completed for CHL 7 (east side of the Trent River as a whole and for its component parts that are to be impacted), as well as CHL 2 (Alma Street streetscape).
9. The feasibility of implementing tree protection zones should be investigated for all identified cultural heritage resources where tree removal is planned.
10. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.
11. The July 2015 Cultural Heritage Resource Assessment of the Second Street/Alma Street alternative has been submitted to the Ministry of Tourism, Culture, and Sport (MTCS) as well as the Municipality of Trent Hills (Planning and Development, Heritage Committee) for review and comment. MTCS responded on August 7, 2015 recommending that these mitigation recommendations from the 2015 report be summarized and included in this revised ESR. Furthermore, hard copies of the 2015 report were received by Trent Hills Planning Department and made available to the Heritage Committee.¹⁷

For the Alternative 1 twinning/replacement of the existing Bridge Street bridge, the *Campbellford Bridge Cultural Heritage Assessment* completed by Heritage Resources Consulting in November 2013 (**Appendix 6**) provides valuable information on the history of buildings associated with the existing bridge. However, the preferred river crossing plan is to construct a new Second/Alma bridge in the next 10 years, and not replace the two-lane Bridge Street bridge until the end of its

¹⁷ E-mail from Jim Peters, Trent Hills Planning Director to Don Drackley, IBI Group, August 13, 2015

structural lifespan estimated at approximately 30 years. Therefore, cultural heritage impacts of the existing bridge replacement have been significantly avoided by the preferred Alternative 2 Second/Alma crossing decision, as compared to the Alternative 1 twinning and replacement of the existing bridge which would have required removal of 6-7 buildings abutting the bridge.

9.1.2 Archaeological Assessment

As reported in their March 18, 2015 report in **Appendix 7**, Archeoworks concluded that a Stage 2 archaeological assessment will be required for the Second/Alma crossing alternative.

Added
2015

Recommendations for further archaeological assessment at both the Second/Alma crossing location, and the existing Bridge Street bridge location have been reported in the March 18, 2015 Archeoworks report. This report has been received by MTCS and they are satisfied that the fieldwork and reporting conducted to date are consistent with ministry standards and guidelines.¹⁸

This ESR commits to conducting a Stage 2 survey of the Second/Alma crossing early in the detailed design process once the exact location of the bridge structure and associated works is confirmed. Northumberland County also commits to the involvement of the Mohawks of the Bay of Quinte in this Stage 2 survey process, as described next in Section 9.1.3.

9.1.3 First Nations

Responses provided by First Nations communities during the EA preparation, and related commitments made by Northumberland County include:

9.1.3.1 Mohawks of the Bay of Quinte (MBQ)

Added
2015

MBQ acknowledged their interest in this project in June 2014 as part of the EA recommencement. They requested a project summary, archaeological reports and agency comments. Available information was provided by the County, but other information that was being updated was not provided at that time. When the County eventually issued the Notice of Study Completion and review period, MBQ submitted a Part II Order request dated October 31, 2014 in order obtain information that they had requested.

Added
2015

In response to that Part II Order submission, MOECC requested Northumberland County to provide requested information to MBQ, which was done during the period November 2014-January 2015. Furthermore, in a letter dated January 20, 2015 from the County CAO to the MBQ Chief, the County committed to the following actions:

- *“The County looks forward to having MBQ participate in and monitor the Stage II Archaeological Assessment that the County has committed to in the EA when the project moves forward into the Detailed Design phase.”*
- *“Furthermore, the County commits to providing MBQ with detailed environmental impact analyses that will be required by federal and provincial agencies as part of the Detailed Design, and in a timely fashion to accommodate MBQ review and meaningful consultation.”*
- *Finally, your (MBQ) staff have also confirmed that the environmental scope and mitigation measures presented in our EA regarding the Trent River fisheries are satisfactory.”*

¹⁸ Letter from Crystal Forrest, MTCS to Alvina Tam, Archeoworks, MTCS file P1016-0035-2014, April 8, 2015

Next, a meeting was held between representatives of MBQ and the County on February 19, 2015, with minutes included in **Appendix 11** of this ESR. After discussing the project status, findings and recommendations, the County representatives made the following commitments for MBQ:

- Construction of a Second/Alma bridge is not imminent, and will require further additional steps, permits and technical work. The County expected it would commence within the next 10 years so there is ample time for MBQ involvement;
- MBQ will be consulted on the bridge design process to ensure water quality is maintained for their Trent River fishery. The design will consider impacts of machinery, oils and other bridge construction and operational impacts on water quality;
- MBQ will monitor any archaeological works and details on construction activity, and agreed this would be best done as part of the Detailed Design when more details are known. A communication protocol will also be established between MBQ, Northumberland County and the Stage 2 archaeologist;
- MBQ will be provided opportunities to review draft reports, Detailed Design work and the on-site Stage 2 Archaeological Assessment as part of the Detailed Design;
- Owing to their staff resources, MBQ will be consulted with then the County sets major project review deadlines;
- As per MOECC requirements for completion of the EA process, MBQ will be invited to review and comment on the draft revisions to the ESR. Furthermore, MBQ will have a further opportunity to review the final ESR as part of the issuing of the Notice of Study Completion and final 30-day review period; and
- The County will cover MBQ costs associated with monitoring the Stage 2 Archaeological Assessment.

In addition to these new commitments to the MBQ, the County will also maintain the following commitments made in the 2014 Final ESR:

- The project will occur on lands of federal and provincial interest. Therefore, the County will act to promote communication and cooperation between responsible authorities and Aboriginal peoples with respect to the EA;
- The County will act in accordance with the principles of the Ontario Environmental Assessment Act to consult with Aboriginal people;
- The level of impact of the project on MBQ people and lands will determine the level of MBQ interest; and
- MBQ has interest in all projects occurring in their traditional territory which includes Northumberland County. This includes interest in potential archaeological artifacts or remains.

9.1.3.2 Alderville First Nations (AFN)

Added
2015

AFN initially contacted Northumberland Council on March 31, 2014 stating that they categorized this project as a Level 2 having some potential impact on AFN rights. This was modified in a November 7, 2014 e-mail stating the project is "*deemed level 3, having minimal potential to impact our First Nations rights...please keep Alderville FN apprised of any archaeological findings, burial sites or environmental impacts*". A letter was then sent by AFN to the County dated February 24, 2015 "*confirming the Northumberland County is conforming to the requirements with the Duty to Consult process*".

Based on this communication to date between AFN and the County, the County will continue to provide AFN direction to project information on the web site.

9.1.3.3 Mississaugas of Scugog Island First Nations

Based on their e-mail of March 6, 2013, the County confirmed they would continue to provide information to the Mississaugas of Scugog Island First Nations (FN) pertaining to the Trent River crossing project. The project is located within their Treaty area and one that could have an impact on the waters of the Trent River, an important traditional and historic waterway, so the FN said they would continue to take great interest on both an environmental front and from an archaeological perspective;

A response provided by IBI Group March 6, 2013 provided this assurance and direction to the study web site for further information and documentation.

9.1.3.4 Curve Lake First Nations

Based on their response request made February 19, 2013, the County said they will keep Curve Lake FN informed about the study. Northumberland County will continue providing project information to their FN contact.

9.2 Bridge Design

The design of a new Second/Alma bridge, and the eventual Bridge Street bridge replacement structure will meet the design requirements of the Canadian Highway Bridge Design Code in effect at that time. The current code in effect in 2014 is CHBDC-2006 and 2010 Supplement.

It is also recommended that a bridge architect be retained as part of the Second/Alma bridge detailed design team to ensure the bridge design, and that of the approach retaining walls, be aesthetically pleasing and fit visually and historically with the Trent River waterscape at the crossing location.

9.3 Road Design and Construction

Improvements made to Second Street, Alma Street and Simpson Street will follow the geometric design guidelines for a two lane urban collector road. These streets are designated as Collectors in the March 2012 Draft Trent Hills Official Plan

The 2009 AECOM Final Draft ESR, Section 7.4, includes a number of commitments and proposed mitigation measures associated with construction and operation of the roads serving a Second/Alma bridge, namely Second Street, Alma Street and Simpson Street.

Construction of the east side road improvements along Second Street and at the Saskatoon Avenue, Frank Street and Front Street intersections will necessitate the temporary and/or intermittent closures of both Second Street and Saskatoon Avenue. Furthermore, Second Street from Saskatoon Avenue to Front Street will have to be closed for the duration of the east side bridge construction. The Saskatoon Avenue closure will be short-term and temporary (a few days) to realign the road and accommodate bridge pier placement and girder erection.

During times of temporary road closures, local residents and emergency services will be notified of the closure schedule, and traffic will have to access Saskatoon Street both from the north, and from the south via Trent Drive and the Trent Canal swing bridge. Final alternative access arrangements and routes will be finalized with affected residents prior to construction start.

On the west side of the Second-Alma bridge crossing, maintaining through traffic service and property access on Grand Road at all times during construction will be a priority. Construction activities will require reducing traffic to a single lane during the course of some days, with

restoration of two-way traffic at the end of the day required by the construction contract. Also, the contractor will be required to submit a construction staging plan for the Grand Road realignment at Alma Street with the objective being to minimize impacts on adjacent businesses (i.e. Canadian Tire, Tim Horton's).

9.4 Pedestrian and Cycling Facilities

Section 7.5 of the AECOM 2009 Final Draft ESR described how pedestrians and cyclists will be accommodated on the Second/Alma bridge. Sidewalks on each side will provide for pedestrian traffic, with a shoulder area adjacent to the travel lanes for bicycle traffic. During detailed design, the option of providing an exclusive 1.5 m wide marked bike lane on each side of the bridge can be explored, along with the impacts of the added bridge width.

The detailed design will also include how to link the bridge sidewalks with existing or proposed sidewalks and/or trails at each end of the bridge. By connecting the bridge with other pedestrian and cycling routes in the community, a Second/Alma bridge can reduce the barrier effect of the Trent River on local walking and cycling, for example to east side recreation facilities in Kennedy Park.

9.5 Property Acquisition / Compensation Plan

In preparing the 2009 Final Draft ESR, the County prepared a draft property compensation policy with guidelines on how to acquire, purchase, compensate and/or expropriate property that would be required for a Second/Alma bridge. The guidelines, provided in **Appendix 13** address three types of potential compensation:

1. Purchase land outright since it is needed to accommodate the physical location of the new river crossing;
2. Land is not needed for the new river crossing, but compensation is provided for impact on lands that are located directly adjacent to and abutting the new bridge location, including the need for road widening(s) to accommodate the new bridge (termed "on-site" impacts); and
3. Land is not needed for the new river crossing and is not located directly adjacent to and abutting the new bridge location, but compensation is provided in recognition of potential impact on the land that is indirectly influenced by the new bridge (termed "off-site" impacts).

The property compensation policy will be finalized once the detailed river crossing design is completed, and the exact impacts on property can be confirmed. Affected property owners may also have recourse to other legal measures, such as for claims of Injurious Affection, if impacts cannot be resolved through the compensation process. At this time, the properties identified through this EA process for possible acquisition are shown next on Exhibit 9.1

9.6 Natural Environment - Fisheries

The Fish and Fish Habitat Assessment Report included as **Appendix 8** to this ESR includes a number of mitigation measures for effects to aquatic habitat and communities relating to the construction and operation of a new Trent River bridge at the finalist Alternative 1 and Alternative 2 locations. These include:

- The contractor will be confined to the minimum area necessary to perform the work;
- No in-water work can occur from May 15 to June 30 to protect spawning, incubation and emergence of warmwater fish species;

- Utilization of a barge for construction within the Trent River will require preparation of a detailed environmental protection plan;
- In-water work will commence only when all required materials are at hand to minimize the duration of in-water work; and
- Construction will be staged to minimize the duration of in-water work.

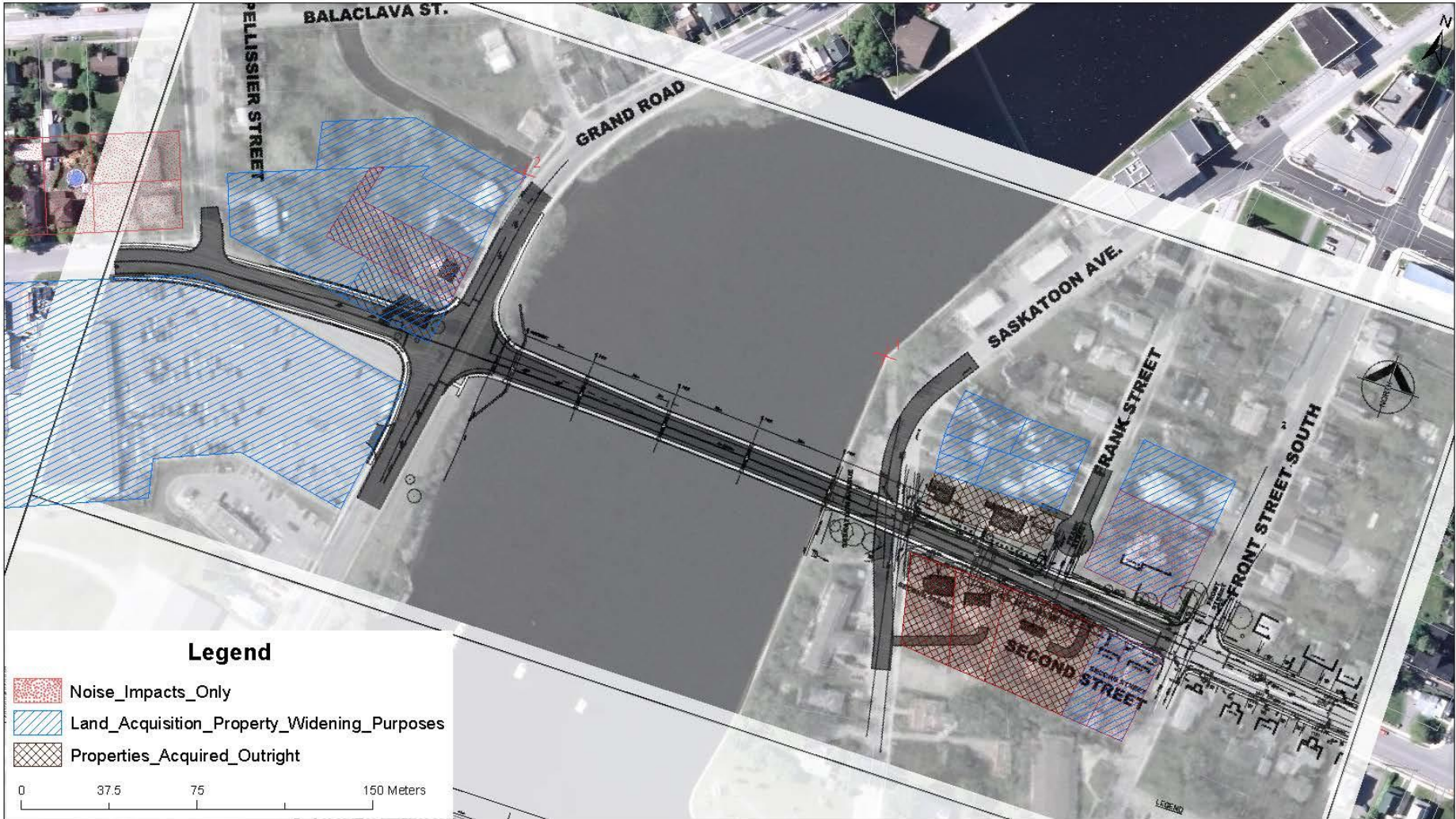
The County is also committed to following the best construction practices, fish mortality prevention, erosion and sediment control and riparian vegetation maintenance recommendations of the Assessment Report. These and the other environmental protection measures recommended for this project will greatly reduce the potential adverse effects to fish and fish habitat resulting from construction activities.

In addition to impacts, bridge construction also provides many opportunities for habitat enhancement within the Trent River. These include the following potential measures that will be further evaluated in the detailed design:

Exhibit 9.1 - Preliminary Property-Taking Plan to be Confirmed in Detailed Design



Campbellford Properties



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 MNR 2008 & 2013

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- Reclaim some natural shoreline from concrete shore walls;
- Provide Walleye spawning shoals to enhance the sport fishery in the river; and
- Since these two improvements could potentially increase flooding risk, a fluvial geomorphological assessment would be required before deciding to implement them.

Since the Trent River is part of the Trent-Severn waterway, is designated as a National Historic Site and is designed for navigation, any aquatic compensation measures included in the detailed design and construction must not affect minimum standards under the *Navigable Waters Protection Act* (Government of Canada 2013).

Included in the approvals required to construct a new Second/Alma bridge is a formal Authorization for the Harmful Destruction of Fish Habitat from the Department of Fisheries and Oceans if a HADD (harmful alteration, disturbance or destruction of fish habitat) is confirmed.

To ensure that erosion and sediment controls are installed prior to and maintained during construction, an Erosion and Sediment Control (ESC) Plan will be prepared. The ESC Plan will provide details on the inspection, maintenance and documentation procedures during all stages of construction.

9.7 Land Use / Official Plan Amendment

Neither the current Municipality of Trent Hills Official Plan (Amendment #5) or the October 2012 Draft Official Plan Review include a second river crossing in the Campbellford community. Therefore, the Municipality will be required to pass an Official Plan Amendment (OPA) to include a Second-Alma corridor crossing and any associated reclassification of roads. Second Street, Alma Street and Simpson Street S are already classified as Collector Roads in the existing Trent Hills OP, so the only reclassification that may be required would be to change these road to County Roads if desired by the County to serve as a new County river crossing.

The OPA would conform to the requirements of the Planning Act, including consultation and appeal provisions. The rationale for the OPA would be based largely on the findings and recommendations of this EA process.

9.8 Other Permits

In addition to the plans and approvals the County has previously committed to in the ESR, additional permits and approvals will be obtained as required to construct and operate a new Second/Alma river crossing bridge. Based on further input and confirmation from involved federal and provincial agencies and the Lower Trent Conservation Authority, these permits and approvals include but are not limited to:

- Ontario Ministry of the Environment Permit to Take Water;
- Authorization and/or approval under the Navigation Protection Program of Transport Canada amended 2014 (to be confirmed early in detailed design);
- Parks Canada Detailed Impact Analysis (DIA) based on this ESR;
- Parks Canada Shoreline & In-water Works permit (based on approval of the DIA by Parks Canada);
- Parks Canada Bridge Agreement when construction is complete;
- Trent-Severn Waterway Environmental Impact Analysis;
- Navigable Waters Protection Act Work Approval, Transport Canada; and
- Species at Risk Authorization under the Endangered Species Act.

Added
2016

9.9 Construction Monitoring

An Environmental Inspector will monitor the site during construction to ensure that construction fencing, tree protection barriers and erosion and sediment control measures are installed correctly and are functioning. The Inspector will also ensure the following monitoring commitments made in Section 7.6.4 of the 2009 AECOM Final Draft ESR and incorporated into this final ESR, are followed. This includes having contact information for the MOECC Spills Action Centre as part of construction monitoring (1-800-268-6060).

Added
2016

Exhibit 9.2 - Potential Construction Related Environmental Impacts and Proposed Mitigation Measures

| Factor Affected | Environmental Impact | Mitigating Measures |
|--------------------------------|--|---|
| Natural Environment | | |
| 1. Fisheries | <ul style="list-style-type: none"> Disruption of spawning periods in the river due to construction at river crossing. | <ul style="list-style-type: none"> Restrict work to be undertaken within river during spawning periods; March 16 to June 30 inclusive of any given year. |
| | <ul style="list-style-type: none"> Loss of fish habitat during construction of new river crossing structure. | <ul style="list-style-type: none"> Careful installation of sheet piling/sandbags to minimize disruption in watercourse. Details to be developed at final design stage. Minimize construction period within watercourse. |
| 2. Water Quality | <ul style="list-style-type: none"> Chemical contamination of river from construction operations. | <ul style="list-style-type: none"> General contamination: Prohibit the placement of construction debris or fuel containers within 30 m of the river. |
| | | <ul style="list-style-type: none"> Fuel contamination: Control equipment refuelling and maintenance and storage of fuel containers. |
| | | <ul style="list-style-type: none"> Storage of materials: Prohibit storage of waste, surplus organic material and topsoil on areas adjacent to river. |
| | | <ul style="list-style-type: none"> Watering from dewatering: Discharge water either into settling basin or vegetated buffer area. |
| 3. Erosion and Sedimentation | <ul style="list-style-type: none"> Sediment transport in storm water run-off. | <ul style="list-style-type: none"> Minimize extent and period of surface exposure, particularly for drainage ditches and slopes. |
| | <ul style="list-style-type: none"> Slope erosion and stability. | <ul style="list-style-type: none"> Incorporate all erosion and sedimentation control measures in accordance with MOE's and MNR's current guidelines. |
| | <ul style="list-style-type: none"> Loss of vegetation to accommodate selected design of river crossing. | <ul style="list-style-type: none"> Limits of work to be delineated in field prior to construction commencement to minimize environmental impacts. Vegetation that is subject to significant environmental damage should be fertilized to accelerate recovery. |
| | <ul style="list-style-type: none"> Damage to trees in close proximity of working area. | <ul style="list-style-type: none"> Erect snow fence leading around dripline of trees in close proximity to work area, do not allow traffic/working equipment around dripline. Consider local modifications in grading to reduce impact on vegetation in close proximity to work area. |
| 5. Air Quality | <ul style="list-style-type: none"> Reduced air quality due to dust. | <ul style="list-style-type: none"> Apply water and calcium during construction. |
| | <ul style="list-style-type: none"> Reduced air quality due to open burning. | <ul style="list-style-type: none"> Open burning will not be permitted. |
| Social Environment | | |
| 1. Maintenance of Road Traffic | <ul style="list-style-type: none"> Delays to traffic due to construction. | <ul style="list-style-type: none"> Maintain traffic movements to local residents at all times. Stage construction to minimize delays. Utilize flag persons. |

| Factor Affected | Environmental Impact | Mitigating Measures |
|--------------------------------|--|---|
| 2. Assurance of Traffic Safety | <ul style="list-style-type: none"> Roadway safety compromised due to construction activities. | <ul style="list-style-type: none"> Standard construction safety practices to be carried out on site. |
| | | <ul style="list-style-type: none"> Require Contractor to conform to the construction requirements of Ontario Traffic Manual "Book 7". |
| 3. Noise | <ul style="list-style-type: none"> Increased noise levels. | <ul style="list-style-type: none"> Adhere to municipal bylaw hours of construction operation. Ensure proper maintenance of construction equipment. |

The Final Draft ESR identification of the following longer term environmental impacts of a new bridge construction and operation are also recognized in this final ESR:

Exhibit 9.3 - Potential Long Term Environmental Issues

| Factor Affected | Environmental Impact | Mitigating Measures |
|----------------------------|---|--|
| Natural Environment | | |
| 1. Vegetation | <ul style="list-style-type: none"> Loss of vegetation to accommodate selected design. | <ul style="list-style-type: none"> Re-vegetation proposed in strategic locations to ameliorate the negative environmental impact of vegetation loss. |
| 2. Water Quality | <ul style="list-style-type: none"> Reduced water quality due to motor vehicle contaminants contained in roadway run-off. | <ul style="list-style-type: none"> Provide storm sewer connections to existing storm sewers on either side of river crossing and employ stormwater management to reduce discharge of contaminants to receiving watercourse. |
| | <ul style="list-style-type: none"> Reduced water quality due to road salting operations. | <ul style="list-style-type: none"> Road salting operations to be carefully monitored on river crossing with a view to reducing salt applications. |
| 3. Fisheries | <ul style="list-style-type: none"> Loss of fisheries due to construction of river crossing structure and watercourse channelization. | <ul style="list-style-type: none"> Construction details developed at detail design stage to be reviewed by both MNR and Trent-Severn Waterway in accordance with the policies set forth in the Fisheries Act prior to construction in order to ensure no net loss of fisheries habitat. |

9.10 Class EA Review

As reported in the conclusion of the 2009 AECOM ESR, the Municipal Class EA Process (October 2000, amended 2011) includes a provision on the timing between when an EA is completed and filed, or MOECC's denial of any Part II Order request(s) and when construction must begin. This lapsed time is ten (10) years. Construction does not have to be completed in this timeframe, only started. After this initial construction commencement, there is no time limit on final completion.

This ESR recommends that construction of a Second/Alma bridge in Campbellford be planned to commence construction within ten (10) years, by 2024. If for whatever reason construction is not started by 2024, the proponent (County) will be required to conduct a review to update this EA where required by the project setting, and ensure that the recommended project and commitments remain valid. If as a result of that review an ESR Addendum is required, a Notice of Addendum will need to be published and provided to review agencies. That Addendum will be subject to a 30 calendar day public review and response period. A Part II Order can be requested during that review period, but only dealing with the subject of the Addendum, and not

on the original ESR. At that time, if no request is made, or if a request is declined by the Minister, the proponent (the County) can proceed to construct the Second/Alma bridge.