

August 18, 2011

Revised: November 27, 2011

**Mr. Richard Bolduc**  
**Director of Public Works**  
Municipality of Trent Hills  
Box 1030, 66 Front Street South  
Campbellford, ON K0L 1L0

Dear Richard:

**Project No: 60188628****Regarding: Review of Hastings Canadian National Railway Bridge over the Trent River**

## **1. Background**

It is our understanding that the Trent Severn Waterway (TSW) will be closing the swing bridge portion of the Bridge Street crossing of the Trent River for an extended period to conduct repairs and maintenance during the fall of 2011 (or later). During the time of this closure the Bridge Street crossing over the Trent River in Hastings will be rendered non-operational. As a result, using the existing road network a crossing of the Trent River during the closure will require either detour to the west around Rice Lake or a detour of approximately 30km to the east to cross the Trent River at County Road 30.

The former Canadian National Railway Bridge (CNR Bridge) located approximately 1.2 km upstream of the Bridge Street crossing has been put forth as a potential alternative crossing location that could shorten the above noted detours. The CNR Bridge was operational as part of the Campbellford Subdivision of the CNR network until it was abandoned in the 1980's. The CNR Bridge and adjacent sections of rail bed now operate as part of a recreational trail system used primarily by snow mobiles.

The bridge itself is plate girder structure consisting of four (4) spans supported by stone masonry abutments and concrete piers. The most southerly span is a swing bridge that is typically open during the navigation to accommodate boat traffic under the structure and closed in the winter to accommodate snow mobile traffic over the structure. The structure has a timber deck consisting of transverse railway ties (sleepers) topped with longitudinal timber runners. Timber frame handrails of more recent construction are provided along the entire length of the structure.

## **2. Potential Concerns**

Having completed an initial desktop review of aerial photography and existing site photos as well as completing a brief initial site visit AECOM would propose to include a preliminary level review of the following concerns and considerations in a preliminary engineering report:

- **Approaches:** Currently there are no active municipal maintained roadways leading to the CNR Bridge. It is accessible only by the former rail bed, which approaches the structure in embankment conditions at both ends. The embankment is typically 5.25 m wide at the top.
- **Connecting Roadways:** The suitability of the roads providing access to the CNR Bridge will be important to ensure efficient traffic operation and determine if existing roadways are structurally capable of supporting the increased traffic. Local roadways intersect/about the former rail bed at several locations. No direct road access to the structure exists via the municipally maintained road network. A gravel road (McCarthy's Point Road) provides access to the embankment north of the river approximately 150 m from the structure. The surface treated western portion of Bay Street provides access to the embankment on the south side of the river. Homewood Avenue abuts the rail bed near the structure, but is separated from the embankment by a grade difference.
- **Structure Width:** The CNR Bridge was originally built to carry rail traffic on a single set of tracks and is significantly narrower than a typical roadway bridge. The deck is typically 4.25 m wide with the travelled portion narrowed to 4.0 m by curbs and barriers mounted on the deck.
- **Impacts of One Way Traffic:** Given the length of the structure and narrow nature of the embankment review will be required to determine what potential impact a long single lane of one way traffic will have on overall traffic operation, emergency access and queue lengths.
- **Signals and Traffic Control:** Controlling traffic accessing the detour and rejoining the arterial road network will be critical. Potentially temporarily reconfiguring intersection traffic controls including the signals at Front and Bridge Streets may be necessary.
- **Structural Condition:** The structure was design to carry freight rail traffic and is substantially built. As a result, the sub structure and superstructure are expected to be in reasonably condition. The condition of the timber decking and swing components presents the main potential for structural issues relative to application of highway type traffic.
- **Guiderail and Barriers:** Given the nature of the approaches and the design of the structures' handrail it is anticipated that significant guiderail installation may be warranted.

### 3. Scope of Work

Relative to the potential concerns noted above, work under this assignment will include the following tasks:

- Two day field inspection of the structure's existing condition to identify material and performance deficiencies related to its potential use as a roadway bridge.
- Field review of the approach roadways to identify limitations and necessary improvements.
- Summary report detailing identified deficiencies and recommended improvements complete with cost estimates at the preliminary engineering level. Further design work would be required to prepare to implement recommendations provided.

#### **4. Schedule**

We understand that TSW has schedule its work on the swing bridge at Bridge Street for the fall of 2011, after the close of navigation on the waterway. As such AECOM would complete field inspections in early September and provide a final report to the Municipality by the end of September 30, 2011.

#### **5. Fees and Commercial Terms**

Should the Municipality wish to proceed invoicing for this work will be included as separate line item on invoices for the currently active Structure Inspection assignment. In keeping with current practice, invoices will be issued on a monthly basis with payment terms of Net 30 days. The total fee to provide a review of the suitability of using the CNR Bridge as an alternative crossing of the Trent River as outlined herein is **\$12,000 + HST**.

#### **6. Closure**

We appreciate the opportunity to submit this proposal and would look forward to working with Municipal Staff to provide the necessary input. Should you require further information or have any questions please do not hesitate to contact the undersigned.

Sincerely,  
**AECOM Canada Ltd.**



Dan Campbell  
Project Manager  
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DEC:dec  
Encl.

cc: Will McCrae, P.Eng. – AECOM Cobourg, Dennis Baxter, P.Eng – AECOM Whitby