Report
Staff Report
The Corporation of the City of Brampton
2021-07-12

Date: 2021-07-12

Subject: **Preliminary Design Report No.2 for 0 Gorewood Drive, Wiley Bowstring Bridge in Claireville Conservation Area – Designated under Part IV of the Ontario Heritage Act.**

Secondary Title: Discussion of Rehabilitation Options and New Design Options as proposed by AMTEC Engineering and the Toronto and Region Conservation Authority of the Wiley Bridge.

Contact: **Merissa Lompart, Assistant Heritage Planner**
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Report Number: Planning, Bld & Ec Dev-2021-850

Recommendations:

1. That the report from Merissa Lompart, Assistant Heritage Planner, dated July 12, 2021, to the Brampton Heritage Board Meeting of August 17, 2021, regarding the **Preliminary Design Report No.2 for 0 Gorewood Drive, Wiley Bowstring Bridge in Claireville Conservation Area – Designated under Part IV of the Ontario Heritage Act** be received;

2. That based on provided examples of concrete bowstring bridge rehabilitation in southern Ontario as shown in Appendix B, and review of all seven proposed alternative options in the report titled "*Preliminary Design Report No. 2 Wiley Bridge Claireville Conservation Area*" prepared by AMTEC Engineering Ltd., the Brampton Heritage Board recommend Alternative No. 3: Maximum Rehabilitation as the preferred option; and

3. That should Alternative No. 3: Maximum Rehabilitation prove unviable, the Brampton Heritage Board recommend Alternative No. 5: Removal of Existing Bridge and Construct a new Prefabricated Bowstring Arch Bridge with the conditions that the new prefabricated bridge be of equal or greater architectural value as the current heritage designated Wiley Bowstring Bridge, and that a plaque or form of commemoration approved by heritage staff be provided.

Overview:

- **The Wiley Bowstring Bridge at 0 Gorewood Drive was designated under Part IV of the *Ontario Heritage Act* on November 20, 2013 under By-Law 328-2013.**
- **A Heritage Impact Assessment was previously done by Archaeological Services Inc. (ASI) in 2019 which concluded that rehabilitation of the bridge is the most appropriate method of preservation.**
- **Wiley Bowstring Bridge has reached a point of deterioration where rehabilitation or replacement is necessary.**

Background:

Wiley Bowstring Arch Bridge was built circa 1930 by Langton & Bartho of Toronto based on a design by N.L. Powell who was a Peel County Engineer. The Wiley Bridge is one of two concrete bowstring arch bridges in Brampton, the other crossing the Credit River near Churchville Heritage Conservation District. Around the 1930's concrete bridges were favoured because of their simplicity and use of local building materials. The Wiley Bridge met designation criteria under the Ontario Heritage Act under all three categories of Design/Physical Value, Historical/Associative Value, and Contextual Value. Therefore, the Wiley Boswtring Bridge at 0 Gorewood Drive was designated under Part IV of the Ontario Heritage Act on November 20, 2013 under By-Law 328-2013.

Current Situation:

The Wiley Bowstring Arch Bridge has reached a state of disrepair forcing the Toronto and Region Conservation Authority (TRCA) to close it to the usual pedestrian traffic. Multiple options have been proposed in the attached report, all of which shall be considered by the City of Brampton Heritage Staff and the Brampton Heritage Board.

Those options are as follows:

1. Alternative No. 1 – Do Nothing
2. Alternative No. 2 – Minimum Rehabilitation
3. Alternative No. 3 – Maximum Rehabilitation
4. Alternative No. 4 – Removal of Existing Bridge and Construct a new Prefabricated Pratt Truss Bridge
5. Alternative No. 5 – Removal of Existing Bridge and Construct a new Prefabricated Bowstring Arch Bridge
6. Alternative No. 6 – Removal of Existing Bridge and Construct a new Concrete Bowstring Arch Bridge

7. Alternative No. 7 – Removal of Existing Bridge and Construct a new Slab-on-Girder Bridge

Heritage Impact Assessment

A Heritage Impact Assessment was completed by ASI in June 2019 as requested by the TRCA. This Heritage Impact Assessment concluded that rehabilitation of the bridge is the most appropriate way to proceed. Part of their concluding statement was as follows:

"*The Wiley Bridge is located along the former Gorewood Drive in the Claireville Conservation Area, in the City of Brampton and is being assessed as part of the proposed rehabilitation of the structure. The subject bridge was constructed circa 1930 and is a single-span concrete bowstring arch structure resting on concrete abutments. The bridge historically was designed to carry vehicular traffic, though it currently carries north south-bound pedestrian traffic over the Humber River….*

Concrete repair and rehabilitation should be suitably planned and executed in a manner that limits the scale and magnitude of the intervention to addressing only the elements in need of repair, where feasible. The use of a light grey sealant coating over the structure is anticipated to limit the visual impact of any localized concrete repairs and will ensure a uniform light grey colour similar to the existing concrete colour. The removal of the existing railings should be planned and executed in a manner that limits the impacts to the superstructure of the bridge. Removal and replacement of the concrete railings should be suitably planned and executed in order to ensure that there are no negative impacts to the cast-in-place arch superstructure as a result of demolition or construction-related activities including vibrations. All rehabilitation should be designed and executed in a manner that preserves the legibility of the heritage value of the subject bridge as an early-twentieth-century construction type. In this respect, historical photographs and original design drawings should be reviewed to ensure interventions are planned based on documentary evidence (where available)."

Corporate Implications:

Financial Implications:

There are no financial implications for the City of Brampton Corporation as the bridge is owned and operated by the Toronto and Region Conservation Authority (TRCA). All rehabilitation and/or replacement costs will be covered by the TRCA.

Other Implications:

It is important to note that the report titled "*Preliminary Design Report No. 2 Wiley Bridge Claireville Conservation Area*" prepared by AMTEC Engineering Ltd. stated in their conclusions that they would recommend Alternative No. 5: Removal of Existing Bridge and Construct a new Prefabricated Bowstring Arch Bridge.

City of Brampton Heritage Staff has informed the TRCA and AMTEC Engineering Ltd. on their opinion based on research and analysis of the report, other Municipalities' rehabilitation examples, and their own heritage expertise. Heritage Staff are of the opinion that Alternative No. 3 – Major Rehabilitation is the most heritage conscious, and economically viable option based on the proposed alternatives in this report. This will conserve the Wiley Bowstring Bridge as a unique example of concrete bowstring bridges in southern Ontario and specifically in Brampton. Maintenance of this bridge will be required as is the case with all buildings and engineering works, heritage or contemporary.

In a situation where Alternative No. 3: Maximum Rehabilitation is no longer a viable option, City of Brampton Heritage Staff would recommend proceeding with Alternative No. 5: Removal of Existing Bridge and Construct a new Prefabricated Bowstring Arch Bridge. However, with this recommendation, Heritage Staff would also state the following conditions:

1. That construction of a new bridge is subject to architectural review prior to the heritage designated Wiley Bowstring Bridge being demolished.
2. That the new bridge be of equal or greater architectural value as the current heritage designated Wiley Bowstring Bridge.
3. That a plaque or other form of commemoration (i.e art installation, sculpture, naming system, etc.) be placed in close proximity to the new bridge to educate visitors to Claireville Conservation Area of the lost heritage resource.

Conclusion:

It is recommended that the Brampton Heritage Board provide their expert opinion on which alternative option, as proposed in the report by AMTEC Engineering Ltd. is most preferred and acceptable.

Authored by:

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Reviewed by:

Jeffrey Humble,
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Reviewed by:

Bob Bjerke, MCIP, RPP
Director, Policy Planning

Approved by:

Richard Forward, MBA, MSc. P.Eng.,
Commissioner, Planning and Development Services

Attachments:

Appendix A – Preliminary Design Report No.2 Wiley Bridge Claireville Conservation Area prepared by AMTEC Engineering Ltd dated May 12, 2021. Report authored by Agostino Monteleone, P.Eng., M.A.Sc. in conjunction with the Toronto and Region Conservation Authority.

Appendix B – Examples of Concrete Bowstring Bridges in Ontario