Subject: Kinsmen Pedestrian Bridge
Report Number: OPD 21-10
Department: Engineering
Submitted by: Shayne Reitsma, P.Eng, Manager of Engineering
Meeting Type: Council Meeting
Meeting Date: Monday, March 22, 2021

RECOMMENDATION

THAT Council receives report OPD 21-10 as information;

AND THAT Council authorize staff to complete a Schedule C Environmental Assessment study and detailed design of the preferred solution;

AND THAT Council give 2022 pre-budget approval for the detailed design project pertaining to the Kinsmen Pedestrian Bridge of $306,000.

BACKGROUND

As part of the provincially mandated Ontario Structural Inspections (OSIM) the Town completed an enhanced inspection of the Kinsmen pedestrian bridge due to the current state of the bridge and the growing safety concerns provided by staff and Council.

The enhanced inspection provided by Vallee Consulting Engineers (Vallee) confirmed that the bridge is in need of repair and that the service life of the bridge is nearing it's end if no maintenance/repair is completed.

DISCUSSION

The Kinsmen Bridge is a nine-span steel deck plate girder structure with a southwest-northwest orientation and a substructure that features cut stone masonry block piers and abutments. The bridge was constructed in 1888 to carry GWR CAL railway over Stoney Creek, and was converted to a pedestrian bridge following the abandonment of the railway in the 1990's.

Following the structural report provided by Vallee, the Town contracted ASI Archaeological & Cultural Heritage Services (ASI) to complete a Cultural Heritage Evaluation Report. This was done to determine whether or not Kinsmen Pedestrian Bridge was deemed Historical/Heritage value. The determination of being Historical/

Heritage value is significant in terms of construction being that it will limit what can be done to the bridge.

ASI's report used the O. Reg. 9/06: Criteria for Determining Cultural Heritage Value or Interest and Ontario Heritage Act to determine the historical/ heritage value:

1. Is a rare, unique, representative or early example of a style, type, expression, and material or construction method – Yes, based on age and construction.

2. Has direct associations with a theme, event, belief, person, activity, organization, or institution that is significant to a community – Yes, this bridge has direct associations with the theme of railway development in Tillsonburg and the construction of the rail line. This rail line was instrumental in shaping the historical transportation, commerce, and settlement in the local area.

3. Is important in defining, maintaining or supporting the character of an area; - Yes, the Kinsmen Pedestrian Bridge provides access to pedestrians and cycles over Stoney Creek.

4. Is physically, functionally, visually or historically linked to its surroundings; - Yes, The location of the subject bridge has served as a historical bridging point with rail traffic in the Town of Tillsonburg and is physically associated with the GWR CAL railway and GWR Tillsonburg Station. This railway and the station were instrumental in shaping the commercial and transportation development of the area.

Given the above responses based on O. Reg. 9/06 the structure is considered to have cultural heritage value.

With ASI's determination that the Kinsmen Bridge has heritage value the Municipal Class Environmental Assessment as part of the Environmental Assessment Act designates this project as a Schedule B or C pending the overall cost of the project being higher or lower than 2.4 million. With Schedule B being the lesser value.

As part of the Enhanced OSIM the Town required replace/maintenance options for the Kinsmen bridge which are summarized below:

1. <u>Do Nothing:</u>
   This option is self-explanatory, but it is important to note that delaying the decision on what to do with this bridge will require consideration of the consequence of doing nothing at this time. To do nothing will not incur short term construction costs, but will require scheduled inspections or an unplanned repairs or closure. Estimated cost $80,000.

2. <u>Close the Bridge</u>
   This option would require modest work to be done in order to close the bridge to pedestrian traffic, such as approach barriers, signage, etc. It also would

require consideration of the eventual decision to demolish or replace the structure. Estimated cost $337,500

3. Repair – Wood Deck
   Replace wood deck and structural supports. Estimated cost $3,300,000

4. Repair – Steel Deck
   Replace wood deck with steel and structural supports. Estimated cost $3,850,000

5. Replace – Like for Like
   This is the highest cost option, but it has a long lifespan and truly replaces the heritage railway bridge with a look alike heritage railway bridge. The cost below reflects a replacement railway bridge, 'Like-for-Like' as shown in the OSIM report estimates. A new bridge however, is not required to carry train loads any longer, and never will be required to do so. For this reason, a new pedestrian bridge at the same height elevation has also been considered (see below), but this option has been included for comparative purposes. Estimated cost $4,375,000

6. Replace – High elevation pedestrian bridge
   This option has a high cost but it has the longest lifespan and the greatest functionality. The actual cost of this option may vary significantly depending on the type and style of bridge design chosen. A more modest replacement pedestrian bridge that isn't required to carry train or traffic loading could be designed and constructed for a much lower cost than a 'Like-for-Like' option. Estimated cost $2,250,000

7. Replace – Valley Path
   This option is the lower cost replacement option. It has a similarly long lifespan as the Like-for-Like or High Elevation replacement but it has reduced functionality due to the required barrier free accessible switchback paths up the embankments. Estimated cost $1,250,000

Each option was considered with the following criteria and given an overall score that can be seen in **Table 1.**

Accessibility & Functionality: /20

How accessible is the option being considered? Does it present additional challenges or does it remove barriers to the path of travel? Lower challenges and barriers to the path of travel result in better functionality and a higher score.

Aesthetics & Heritage: /15

Does the option have aesthetic appeal? Is the visual appearance sympathetic to the heritage value of the existing structure? Better visual appeal and lower impacts to heritage aesthetics result in a higher score.

Durability & Lifespan: /20

Does the option have durable materials that do not require periodic repair and replacement? Assuming that needed repairs and maintenance is carried out, does the option have a short, medium, or long term life expectancy? More durable options that require less maintenance and have a long lifespan result in a higher score.

Safety & Liability: /15

It is assumed that regulatory requirements (ie CHBDC, etc.) will be met, but are there hazards that may pose a liability to the Town? Lower risks result in a higher score.

Construction Cost: /30

How does the cost of construction compare to the other considered options? Lower costs result in a higher score.

TOTAL: /100

The sum total of all considered categories represent a score out of 100 points. The highest score being the more desirable option using the weighted criteria considered.

Table 1- Option Summary

OPTIONS	COST	OVERALL SCORE
1. Do Nothing	$80,000	46
2. Close Bridge	$337,500	49
3. Rehab – Wood Deck	$3,300,000	54
4. Rehab – Steel Deck	$3,850,000	73
5. Replace – Like for Like	$4,375,000	66
6. Replace – High Elevation bridge	$2,250,000	78
7. Replace – Valley Path	$1,250,000	71

Based on Vallee's cost estimates and according to the Municipal Class Environmental Assessment our options are limited to 3, 4 and 5. From Table 1 it can be seen that option 3, 4 and 5 are over the $2.4 million threshold therefore making this a Schedule C project. Based on a Town engineering estimate we will require $306,000 to complete the Schedule C process and provide Council with three conceptual plans and one detailed design.

CONSULTATION

This report was created in conjunction with ASI and Vallee.

FINANCIAL IMPACT/FUNDING SOURCE

The recommended project fee of $306,000 (net HST included) be funded through 2022 taxation. The Engineering Department will continue to explore potential grant opportunities given the historic structure of the Kinsmen Bridge.

COMMUNITY STRATEGIC PLAN (CSP) LINKAGE

1. Excellence in Local Government☒ Demonstrate strong leadership in Town initiatives
   ☒ Streamline communication and effectively collaborate within local government
   ☒ Demonstrate accountability

2. Economic Sustainability
   ☐ Support new and existing businesses and provide a variety of employment opportunities
   ☐ Provide diverse retail services in the downtown core
   ☐ Provide appropriate education and training opportunities in line with Tillsonburg's economy

3. Demographic Balance
   ☐ Make Tillsonburg an attractive place to live for youth and young professionals
   ☐ Provide opportunities for families to thrive
   ☐ Support the aging population and an active senior citizenship

4. Culture and Community
   ☒ Promote Tillsonburg as a unique and welcoming community
   ☐ Provide a variety of leisure and cultural opportunities to suit all interests
   ☒ Improve mobility and promote environmentally sustainable living

ATTACHMENTS

None.