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**Date** January 28, 2025 **Report No.** 2025-40  
**To** Chair and Members  
City Council  
**From** Inderjit Hans, PMP, P.Eng.  
Commissioner, Public Works Commission

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### 1.0 Type of Report

Consent Item   
Item For Consideration

### 2.0 Topic **Ava Road Bridge Rehabilitation Update [Financial Impact - \$1,243,000]**

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### 3.0 Recommendation

- A. THAT Report 2025-40 titled “Ava Road Bridge Additional Funding” BE RECEIVED; and
- B. THAT an increase in the amount of \$1,243,000 to the capital budget for Ava Bridge (CNR) – OSIM 102 Bridge Rehabilitation Program and Intersection Improvements project (BR1805) BE FUNDED from the following sources:
  - i. \$558,000 from the OCIF Reserve Fund (RF0448); and
  - ii. \$685,000 from the Contingency Reserve Fund (RF0554).

### 4.0 Executive Summary

The purpose of this report is to update Council on additional costs that have been and will be incurred during construction of the Ava Road Bridge Rehabilitation project due to design revisions, project delays, and unanticipated

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site conditions. City staff recommend that the capital budget for the Ava Bridge (CNR) – OSIM 102 Bridge Rehabilitation Program and Intersection Improvements project (BR1805) be increased by \$1,243,000 to provide the funding necessary to complete the construction and close out the Ava Road Bridge Rehabilitation Project.

The Ava Road Bridge is undergoing significant structural repairs due to deterioration. The structure rehabilitation construction is ongoing, and involves replacing the bridge's superstructure, rehabilitating the bridge's substructure (i.e. piers and abutments), and reconstructing the watermain along Ava Road.

The rehabilitation project has experienced several design revisions, delays, and quantity overruns due to unanticipated site conditions, CN Rail permit delays, and extensive substructure deterioration discovered during construction necessitating additional remediation work. Multiple change order requests and a Notice of Delay have been issued by the contractor, Sierra Bridge Inc., and change orders approved for the City's consultant, Egis Canada Limited, throughout the project. Several change order requests from Sierra Bridge Inc. are pending review and approval following contract negotiations and funding availability.

The additional funds will be utilized towards costs associated with winter construction (e.g. heating costs and reduced productivity), project delays (e.g. extended insurance, bonding, equipment rentals and consultant services), quantity overruns and additional costs due to unforeseen site conditions (e.g. contractor downtime, extensive substructure deterioration and restoration), CN Rail crash wall construction cost increases, and internal costs (e.g. staff time).

Overall, City staff recommend increasing the capital budget for the Ava Bridge (CNR) – OSIM 102 Bridge Rehabilitation Program and Intersection Improvements project (BR1805) by \$1,243,000. It is recommended that an increase of \$558,000 be funded from the OCIF Reserve Fund (RF0448), and that the remaining increase of \$685,000 be funded from the Contingency Reserve Fund (RF0554). With these additional funds, the project is expected to be completed by the end of April 2025, weather permitting.

## **5.0 Purpose and Overview**

The purpose of this report is to update Council on costs that have been incurred and recommending additional funds to be approved to complete the construction of the Ava Bridge (CNR) – OSIM 102 Bridge Rehabilitation Program and Intersection Improvements project (BR1805). These additional costs are due to

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tender omissions, design revisions, project delays, unanticipated site conditions, and higher than estimated construction costs.

## 6.0 Background

In July 2020, the City retained engineering services of McIntosh Perry Engineers Ltd. (MP) through the public procurement process (RFP 2020-66) for the design of Phase 2 of the EA. During the preliminary design MP completed an Enhanced OSIM inspection (detailed up-close visual inspection) of the bridge which revealed newly discovered deficiencies in the superstructure that have not been previously identified during regular OSIM inspections (visual inspections from the ground). Due to the severity of the deficiencies, on June 23, 2021, as per the MP recommendation, the traffic lanes over the bridge were reduced from four to two lanes to eliminate vehicle load over the deficient structural components of the bridge and protect the traveling public. A semi-permanent lane configuration constructed using concrete barriers was put in place to provide a safe alternative for pedestrians and the traveling public. After the lane closures, the rehabilitation work for the bridge was reassessed to identify the best rehabilitation option based on the life cycle cost (Present Value) for the structure.

Report No. [2021-647](#)<sup>1</sup> and [2021-746](#)<sup>2</sup> were received by Council on December 7, 2021 detailing the emergency work and funding for lane reductions and related work, and funding required for the non-competitive procurement of services from MP to complete the structural engineering for the Ava Road Bridge rehabilitation / replacement.

Option 2 from Report No. [2021-746](#) was approved and design work proceeded. As part of the preliminary design for Option 2, the replacement of the superstructure was proposed to be completed in stages over a period of two construction seasons with a winter work shutdown in between. The overall construction duration was estimated to take approximately 55 working weeks with winter shutdown lasting approximately 24 working weeks.

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<sup>1</sup> Hyperlink to Council Report 2021-674 – Emergency Procurement to Design, Develop and Implement Lane Restrictions on the Ava Road Bridge, [https://brantford.escribemeetings.com/COWO\\_Dec07\\_2021/eSCRIBE%20Documents/eSCRIBE%20Attachments/PW-ENG%20Emergency%20Procurement%20for%20Structural%20Engineering%20for%20the%20Ava%20Road%20Bridge%20-%202021-674.pdf](https://brantford.escribemeetings.com/COWO_Dec07_2021/eSCRIBE%20Documents/eSCRIBE%20Attachments/PW-ENG%20Emergency%20Procurement%20for%20Structural%20Engineering%20for%20the%20Ava%20Road%20Bridge%20-%202021-674.pdf)

<sup>2</sup> Hyperlink to Council Report 2021-746 - Non-competitive Procurement for the Structural Engineering of the Ava Road Bridge, <https://pub-brantford.escribemeetings.com/filestream.ashx?DocumentId=9465>

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Report No. [2023-181](#)<sup>3</sup> was received by Council on March 7, 2023 detailing two (2) options for completion of the Ava Road Bridge Rehabilitation project; full closure or partial closure, along with the cost impacts of each option. The full closure of the Ava Road Bridge was approved by Council.

Following the design completion of Phase 2 by Egis Canada Limited (Egis), formerly McIntosh Perry Engineers Ltd., the project was tendered and awarded to Sierra Bridge Inc. (Sierra) with Egis' services secured for construction inspection and contract administration. Construction is currently ongoing.

CN Rail requires the installation of a crash wall around the existing piers adjacent to the CN Rail tracks as track protection. The crash wall is necessary as the existing piers do not have sufficient track clearance and are substandard to CN Rail's current requirements for new structures. An estimated cost of \$1.3 million was received from Egis, with \$1,066,000 allocated to construction costs, and \$234,000 allocated to design, contract administration, construction inspection, permitting, and other associated costs. Report 2024-188 was approved and funding for the design, construction, contract administration, and construction inspection of the crash wall in the amount of \$1.3 million was added to the project budget. A Letter of Understanding between CN Rail and the City was signed by the City on May 14, 2024 requiring that the crash wall be constructed by October 1, 2026, and that the costs be funded by the City. Design of the crash wall has been completed and it is ready for construction pending contractor authorization and permitting from CN Rail.

## 7.0 Corporate Policy Context

Completion of the Ava Road Bridge would further the City of Brantford Council Strategic Theme #3, "Move people more effectively".

This strategic theme is achieved through providing the necessary funding to complete the Ava Road Bridge Rehabilitation project, restoring a minor arterial road serving as a vital link from Brant Avenue to Paris Road. Restoring this vital link will allow for the restoration of typical transit routes, reducing service times; the restoration of a truck route, reducing truck traffic on adjacent truck routes; and the removal of vehicular and pedestrian detours, shortening commute times.

## 8.0 Input From Other Sources

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<sup>3</sup> Hyperlink to Council Report 2023-181 – Ava Road Bridge Rehabilitation Update, <https://pub-brantford.escribemeetings.com/filestream.ashx?DocumentId=15834>

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This report was completed with input from the City's Engineering Services, Business Support & Sustainability, and Finance Departments. The City's Legal Services Department has provided input to City staff on the notice of delay received from Sierra and, subsequently, the negotiation of project delay costs.

## 9.0 Analysis

The original completion date was scheduled for September 2024. With the delays encountered to date, the anticipated completion date has been extended to April 2025.

A notice of delay has been issued by Sierra with regards to the delays which requests additional funds for the increased efforts related to winter work including material heating, snow removal, reduced productivity, equipment rentals and labour, and insurance and bonding extensions.

### 9.1 Summary of Project Delays

The project has experienced multiple delays ranging from delayed CN Rail permitting, the availability of CN Rail work blocks for work to be completed over the CN Rail right-of-way, tender quantity increases, and unforeseen site conditions. The original construction start date following the ordering of structural steel and application for a CN Rail work permit was set for February 26, 2024, with the completion date for the project initially scheduled for September 4, 2024.

The delays have resulted in an extension of the project completion date by 120 working days. The delays push the completion date from September 4, 2024 to February 25, 2025. Given the weather-dependent nature of the work, particularly temperature-sensitive tasks, Egis has indicated that the completion date may extend to the end of April 2025.

### 9.2 Additional Costs

Staff have a summary of authorized and anticipated additional expenses for Sierra's and Egis' contracts on file, which includes over 25 change orders either approved, pending or under negotiation.

For the initial construction contract (RFT 2023-86) with Sierra, a bid value of \$6,907,841.50 was received. The total value of additional expenses anticipated is \$1,448,662.39 (excluding the CN Rail crash wall). The purchase order (OS 2604) is expected to exceed the initial bid value by

approximately 21%. Purchase orders are able to carry a 10% contingency within Corporate Policy 012 (Purchasing Policy) under section 8.04 (c). The 10% contingency is expected to be exceeded by 11% of the initial bid value, not including construction of the CN Rail crash wall.

When work is set to proceed on construction of the CN Rail crash wall, additional services may need to be secured from Egis under purchase order OS 2670. Costs associated with the contract administration, construction inspection, and miscellaneous costs (e.g. internal staff time, material testing, etc.) for the CN Rail crash wall have already been secured through Report 2024-188. Funding is available up to a total of \$234,000.00 for these costs based on Report 2024-188.

## 10.0 Financial Implications

The additional budget and funds required to complete construction of the Ava Road Bridge Rehabilitation project, inclusive of the CN Rail crash wall, are summarized in Table 1. Table 1 provides the funding summary of capital account BR1805 funding the project, the additional funds required for Egis' and Sierra's scope of work, the costs required to construct the CN Rail crash wall, the additional funds needed to cover internal expenses, and the resulting funding deficit.

Table 1: Summary of Current and Required Funding for Capital Account BR1805

Description	Value (\$)
Council Approved Budget	\$11,220,000
Actual + Encumbered	\$10,134,796
Current Remaining Funds Available	<b><u>\$1,085,204</u></b>
Additional Funds Required for CN Rail Crash Wall (Subtotal)	\$1,601,743
Additional Funds Required for Sierra Bridge Inc. Excluding CN Rail Crash Wall Construction Costs Captured Above (Subtotal)	\$672,912
Additional Funds Required for Internal & Miscellaneous Costs (Subtotal)	\$32,000
Total Additional Funds Required for Project Completion less Current Remaining Funds Available (Subtotal)	\$1,221,451
Non-Refundable HST Component for Additional Funds Required (1.76%)	\$21,498
Total Additional Funds Required for Project Completion less Current Remaining Funds Available Rounded to Nearest \$1,000 (Inclusive of Tax)	<b><u>\$1,243,000</u></b>

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Based on the anticipated construction costs, costs for pending and outstanding change order requests (amounts may be reduced through negotiations between the City, Sierra, and Egis), and the internal costs to complete the project, an additional \$1,221,451 + 1.76% non-refundable HST of funding is required. The post-tax value totals approximately \$1,243,000. This equates to an increase of approximately 11% when compared to the previous Council approved capital budget of \$11,220,000.

## 11.0 Climate and Environmental Implications

As the extension of the construction timeline will push temperature-sensitive construction into cold weather, there will be an associated increase in construction and vehicle greenhouse gas (GHG) emissions. Additional GHG emissions will be generated through winter heating and snow removal. Winter heating is achieved using heaters that burn diesel to generate power / heat. A total of 53,585 L of diesel is estimated to be burned for winter heating. Using the Climate Lens Tool, it is estimated that approximately 147 tonnes of CO<sub>2</sub>e will be generated due to project delays.

## 12.0 Conclusion

The Ava Road Bridge is a vital connection over the Canadian National Railway tracks linking Brant Avenue to Paris Road, and is an essential part of the City's transportation network. To complete the construction of the Ava Road Bridge Rehabilitation project, it is recommended that a funding increase for capital account BR1805 totaling \$1,243,000 be approved. These funds will be utilized to ensure construction continues uninterrupted, and to see the project through to completion



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Inderjit Hans, P.Eng., PMP  
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Senior Project Manager Structures, Engineering Services

Attachments (if applicable)

Copy to:

In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required  yes  no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk  yes  no

Is the necessary by-law or agreement being sent concurrently to Council?  yes  no