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April 12, 2024 File No. 24-100

Chad Woodhouse, C.E.T.
Manager of Public Works
Township of Wilmot
60 Snyder's Road West
Baden ON N3A 1A1

**RE: BRIDGE 37/B-OXF (WILMOT) / BRIDGE 3 (BLANDFORD-BLENHEIM)
OXFORD-WATERLOO ROAD BRIDGE OVER THE NITH RIVER
REPAIRS/IMPROVEMENTS FOR POTENTIAL RE-OPENING**

Dear Chad,

Per your request we have reviewed two options for the near-term future of the currently closed Oxford-Waterloo Road Bridge over the Nith River.

The following is a broad review of this site if the bridge were to be re-opened for **pedestrian and light utility vehicle (ATV, snowmobile) use only**:

- Repairs to the four interior stringers at the west end are required. These repairs would be like those performed at the east end in early 2022.
- Concrete repairs at the abutment under the east bearings should be performed.
- We recommend the installation of permanent barriers to keep traffic off the structure.
- We recommend the installation of all required regulatory road closed signs, advanced warning signs, no winter maintenance signs, and signs indicating the bridge is for pedestrian use only.
- We would recommend the installation of a pedestrian barricade at all four corners of the road approaches or at the tops of the four wingwalls. The barrier can be a post and rail fence (least costly), other style of fence such as chain-link (with small openings), or a purpose-built fabricated metal railing system (most costly).
- Please note that the existing bridge railing, although in fair condition, does not meet current standards for uses that are purely for pedestrian use due to the size of the openings, height, and use of horizontal rails. The barrier could be modified using a small opening chain link fence modified to mount to the existing rails or a purpose-built fabricated metal railing system.

The estimated costs for the above improvements in order to re-open the bridge for pedestrian use only are $40,000.00 to $65,000.00 (depending on pedestrian fence or metal barricade style chosen). The estimates assume that the work involving signage, barriers and perhaps barricades could be installed by Township forces.

There are still regular maintenance tasks required, some of which are different than if the road were open to vehicle traffic. Regular maintenance tasks that could be expected are hand sweeping the bridge deck, washing of bridge components, path approach erosion repairs, trimming of brush and grass, and unfortunately potential litter clean up and

vandalism repairs. It is assumed that the bridge will not be maintained (plowed or salted) in the winter. If winter maintenance is to be provided this would increase the annual budget needs. Intermittent structural steel and concrete repairs would more likely be due to deterioration than impact or overloading and could be estimated to occur every 5 to 8 years. An annualized maintenance ($2,500) and repair ($7,500) budget total of $10,000 per year could be anticipated. The bridge would require less regular repairs and would have an extended life as a pedestrian crossing than if it were to remain a vehicle crossing.

The following is a broad review of this site if the bridge were to be re-opened for **road traffic with the current 15 tonnes load limit**:

- Repairs to the four interior stringers at the west end are required. These repairs would be like those performed at the east end in early 2022.
- Concrete repairs at the abutment under the east bearings should be performed.
- Overhead portal bracing is to be repaired
- New seals should be installed at both joint openings where currently missing

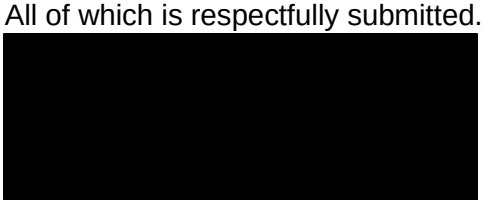
The estimated costs for the above repairs to re-open the bridge to traffic with the current load posting are $50,000.00. Please note that the repairs noted above are the minimum required to re-open the bridge for the short term to a similar level of service prior to its closure and do not address many other deficiencies. The bridge is around 100 years old and has exceeded its useful service life as a vehicle bridge. It has been subject to emergency closures in the past due to impacts with the overhead bracing and will likely experience similar emergency closures in the future. Its time remaining as a vehicle bridge is very limited without major expenditures such as a full replacement to achieve improved levels of service. If this crossing location is to remain for vehicular traffic, the bridge should be replaced in 1 to 5 years for an estimated structure construction cost of $5,000,000.00.

There are still regular maintenance tasks required. Regular maintenance tasks that could be expected are sweeping the bridge deck, washing of bridge components, road approach erosion repairs, and trimming of brush and grass. Intermittent structural steel and concrete repairs will likely be more frequent with vehicle use as the bridge ages. The bridge will likely require repairs every 3 to 5 years due to deterioration and impacts with overhead bracing. Overloaded and over-height vehicles using the bridge do present a risk. An annualized maintenance ($1,000) and repair ($14,000) budget total of $15,000 per year could be anticipated. However, maintenance type repairs can only go so far to keep the bridge in service for vehicles in the short term.

Repairs are to be expected on a regular basis to keep the bridge serviceable for pedestrian or vehicle traffic until such time as the bridge is permanently closed or is replaced.

If you have any questions please do not hesitate to contact the undersigned.

All of which is respectfully submitted.



Trevor Hoard, C.E.T.