City of Peterborough

To:	**Members of the General Committee**
From:	**Michael Papadacos** **Interim Commissioner of Infrastructure and Planning Services**
Meeting Date:	**June 13, 2022**
Subject:	**Television Road Bridge South Meade Creek Class EA Approval IPSTR22-009**

Purpose

A report to approve the recommendations of the Municipal Class Environmental Assessment for the replacement of the Television Road bridge over South Meade Creek.

Recommendations

That Council approve the recommendations outlined in Report IPSTR22-009, dated June 13, 2022, of the Interim Commissioner of Infrastructure and Planning Services as follows:

a) That the presentation from BT Engineering on the matter of the Municipal Class EA for the replacement of the Television Road Bridge over South Meade Creek be received;

b) That the recommendations of the Municipal Class EA for the replacement of the Television Road Bridge over South Meade Creek be approved; and

c) That staff be directed to post the final Environmental Study Report for the Municipal Class EA for the replacement of the Television Road Bridge over South Meade Creek for the 30-day review period.

Budget and Financial Implications

Approval of the recommendations have no direct financial implications.

The environmental assessment was initiated using approved funding from the Television Road – Lansdowne Street to Parkhill Road project (based on the previous Transportation Master Plan)

The 2022 Capital budget for the bridge replacement includes committed funding of $700,000 for design and property acquisitions (Capital Project 5-11.02).

The estimated cost for the interim proposed bridge replacement project is $12,600,000, including a 40% contingency to account for refinements during detailed design, cost escalation, site inspection costs, and anticipated costs for property acquisition, permitting, environmental monitoring and utility relocations. The ultimate construction cost, including future widening of the bridge to four-lanes is estimate at an additional $5,150,000 including 40% contingency, engineering, site inspection and additional environmental monitoring. Staff will seek and pursue any funding opportunities to offset some the required capital costs.

As design work progresses, cost estimates will be updated and will be incorporated into future capital budget requests for the construction of the bridge.

Background

The 2012 Transportation Master Plan (2012 TMP) update included a recommended project to widen Television Road to four-lanes within the 2021-2026 horizon. Following approval of the previous transportation plan, annual capital budgets have included a project for this future widening.

In 2016 an Ontario Structure Inspection assessment of the Television Road bridge crossing South Meade Creek revealed that the bridge condition had deteriorated such that replacement of the bridge was necessary. Given the conditions of the structure, the need for the bridge replacement is required before the widening of Television Road could be completed.

In 2018, RFP P-18-32 was issued and awarded to BT Engineering for a Municipal Class Environmental Assessment to plan the replacement of the bridge. Notices of Commencement for the Study were issued in July 2019, including mail delivery to potentially affected property owners, newspaper notices and postings on the City website.

Initially, BT Engineering completed a new structural review of the bridge. The updated review confirmed the earlier findings that the bridge had deteriorated beyond repair.

A separate traffic assessment confirmed the 2012 TMP conclusion that eventual widening of Television Road would be necessary. The recently approved 2022 Transportation Master Plan and the EastSide Transportation Study reached the same conclusion, with the widening of Television Road being recommended for the 10-20 year horizon (2032-2042).

The traffic assessment completed as part of the Class EA study also considered potential traffic staging options during construction, including a complete closure with detour routes or partial bridge closure with traffic signals to alternate traffic flow in a single lane on the existing bridge. It was identified that available detour routes were far removed from the site and would not be suitable for the volume of traffic and number of heavy trucks that would be expected to be detoured. Further, closing a single lane during construction would result in much more complex bridge construction activities and would result in traffic queues exceeding a kilometre in length, which would potentially impact operations of the Highway 7/115 south of the Lansdowne Street intersection, causing safety concerns on this high speed freeway segment, especially during summer peak periods.

In November 2019 the first public information centre (PIC #1) was held. Notices were placed in Peterborough This Week, on the City website, on a road side signboard, and mailed to agencies and potentially affected property owners. At PIC #1 the following information was provided:

- **The Problem Statement**
  The bridge over South Meade Creek is in poor structural condition and needs to be replaced. The existing bridge also has a deficient waterway opening for current storm events, which can lead to flooding.

- **Potential Solutions and Evaluation**
  After identifying the problem and opportunity, the next aspect of the study is to develop potential solutions to the problem and evaluate the solutions. In this case the following high-level solutions were proposed:

  a. Do nothing – does not address the problems, hence not recommended,
  b. Transportation Demand Management – does not address the problems but does support other City goals, including the Cycling Master Plan, and therefore will be incorporated into the final recommendations
  c. Limit development – While this may limit the growth of potential future traffic volumes, it does not address the problems and numerous developments have already been approved, hence it is not recommended,
  d. Provide New or Improved Transportation Infrastructure – does provide an opportunity to address the problems and was recommended to be carried forward for more detailed planning.

- **PIC #1 Public Response**
  The PIC was well attended by many interested people. Four written comments forms were submitted, and a number of verbal comments were provided to staff and consultants attending the event.

  The following is a general summary of the comments received during and after the PIC:

  - There are a lot of turtles and the project should provide habitat near the water for nesting to keep turtles off the road
  - The traffic warrants 4-laning
  - The new subdivision (Ashborough Village) will trigger increased traffic on Television Road
  - Support for the 4-lane bridge
  - Support for maintaining 2 lanes open during construction
  - Support for including a new multi-use path
  - Support for a connection from the road/MUP to the wetland
  - Consider wetland habitat and PSW boundaries east of Television Road (where does it end on the southeast bank?)
  - There is considerable traffic at the Parkhill Road/Television Road intersection
  - The lack of left turn lanes at Maniece Avenue and turning left into driveways is a safety concern
  - The City should accelerate the schedule of construction of the bridge by closing Television Road
  - The speed limit on Television Road should be reduced to 60 km/h for the entire length
  - If Ashburnham Drive is widened to 4 lanes then Television Road does not need to be widened
  - Recommend widening to the east to avoid the wetland and avoid one residential property
  - How will property be acquired?
  - Support for the longer bridge to support wildlife crossing under the bridge
  - Cycling and pedestrians could be accommodated on Ashburnham Drive rather than Television Road

Following PIC #1 the preferred solution was confirmed and additional planning was completed to develop and assess design options considering structural, hydraulic and alignment alternatives. Four alternatives were considered to address the structural deficiencies identified as summarized in Table 1:

Table 1 – Structural Alternatives Considered

Alternative	Discussion	Conclusion
1. Do Nothing	Does not address structural and hydraulic deficiencies	Do not carry forward
2. Rehabilitation	Does not address structural and hydraulic deficiencies	Do not carry forward
3. Replace bridge with similar span	Does not provide for suitable opening for hydraulic purposes	Do not carry forward
4. Replace bridge with longer span	A new long span bridge will address the structural deterioration and the hydraulic requirements	**Carry forward**

After the structural recommendation to replace the bridge with longer span bridge had been established, the consultant was able to develop and evaluate the hydraulic alternatives for the replacement bridge. Under existing conditions, the roadway and bridge would be over-topped by the 100 year and Regional Storm events, leading to up stream flooding and leaving Television Road impassable for traffic and emergency vehicles.

An extensive study of flood risks, associated with the design of the new bridge was completed. This included a detailed hydraulic analysis of various bridge openings (spans) and road grade changes coupled with an assessment of upstream (and downstream) flood implications. It was determined through several iterations, that increasing the bridge opening to a 30 metre span, along with an increase in the road grade, would result in an improved flood condition over the road during major storm events while not increasing the risk of upstream or downstream flooding, as summarized in Table 2.

Table 2 – Hydraulic Alternatives Considered

Alternative	Discussion	Conclusion
1. Elevate road (no flooding during regional storm)	Causes increase in upstream flooding	Not recommended
2. Elevate road (allow 300 mm flooding during regional storm)	Causes increase in upstream flooding and road floods during Regional Storm	Not recommended
3. Elevate road, allow no flooding during 100-year storm, do not allow upstream increase in flooding	Road does not flood during 100-year, storm, less flooding than current situation during Regional Storm, no increase in upstream flooding, improved situation compared to existing	**Recommended**

With the structural and hydraulic recommendations in place, the consultant focused next on the alignment alternatives for the replacement bridge, as summarized in Table 3.

After analysis, including an assessment of the natural environment, particularly the adjacent wetland and creek, it was recommended that the bridge be replaced with a new bridge built to the east of the existing bridge. This option resulted in the smallest area of impact on the wetland and creek and allows for the existing bridge to remain operational during construction. When appropriate, the widening of the bridge to four-lanes would be completed where the existing bridge currently sits, limiting future disturbances to already disturbed areas.

Table 3 – Alignment Alternatives Considered

Alternative	Discussion	Conclusion
1. Widen to the West	Allows for construction staging, but significant effects on Natural Environment, utilities, and private property	Not recommended
2. Widen on centre line	Does not effectively allow construction staging, some effects on natural environment, property and utilities, most costly	Not recommended
3. Widen to the East	Allows for construction staging, least natural environment effects, does effect utilities and private property	**Recommended**

During this period staff and the consultant team met with local First Nations representatives to discuss the planning of the project. City staff engaged the services of a second consultant at the request of Curve Lake First Nation, to review the previous work and provide specialized input from the First Nation perspective. This further information from the First Nation is being incorporated into the Final Study report and project recommendations. As part of the Class EA recommendations a commitment is also being made to continue to engage with local First Nations during the early stages of detailed design for the new bridge.

A second PIC, (PIC # 2) was held virtually, as a result of the pandemic, from August 11 to 25, 2021. Notices were placed on the City website, in Peterborough This Week, and mailed to agencies and potentially effected property owners.

PIC #2 presented a summary of the study, the preliminary design alternatives and analysis, bridge opening assessment, preliminary design and mitigation measures along with interim and ultimate recommended plan.

The following comments were received during PIC #2:

- Concerns about property effects from the new bridge and future road widening
- The Eastside Transportation Study should be completed first to reduce redundancy
- Concern for safety as result of alignment shift at new bridge
- Support for multi-use pathway
- Support for flexibility for final locations of sidewalk and multi-use path
- Concern for the cost of the bridge and future widening that may occur
- Were climate changes considered
- Concern for muskellunge population and spawning habitat in the Downer's Corners wetland, and the opportunity for the bridge to improve habitat.

After considering the comments received the recommended plan was confirmed, and the consultant noted that the majority of the comments received were able to be addressed through work already completed or through commitments to further refinements and design work to be completed during the detailed design stage of the project.

Recommended Plan

The Class EA Study has recommended that the Television Road bridge over South Meade Creek be completely replaced. With the recent Council Approval of the recommendations of the Cycling Master Plan (Report IPSTR22-001), the EastSide Transportation Study (Report IPSTR22-002), and the 2022 Transportation Master Plan (Report IPSTR22-003) the need for ultimate widening of Television Road to 4/5 lanes was confirmed, and the plan to incorporate new cycling facilities on the future Television Road was also confirmed.

These approved study recommendations confirm the recommendations developed during the Class EA study for the bridge replacement, which include:

- A new two-lane bridge would be built to the east of the existing structure, allowing the existing bridge to remain in place and open to traffic until the new bridge is complete;
- A new 4 lane bridge should be planned for the future, with construction of the additional two lanes to coincide with future widening of Television Road to four lanes;
- The new bridge should be designed to increase the bridge span to 30 metres, combined with an increase in the road grade on Television Road to reduce flooding over the road during major storm events, without increasing upstream flooding;
- The new bridge should include a multi-use path to accommodate both walking and cycling users;

- After construction and opening of the new bridge, the existing bridge will be removed, and if sufficient funding is available, the foundations for a future widened bridge would be constructed and restoration would be completed to limit natural area disturbances to a single occurrence; and
- Extensive measures to mitigate the potential effects of the project should be incorporated into the project including retaining walls to limit incursion into the wetland, restoration and enhancement of disturbed areas using native plantings, creation of a wildlife passage under the new bridge, creation of new breeding habitat, and a commitment to more extensive studies (fisheries, wildlife, species at risk) and engagement with First Nations and agencies during detailed design.

Appendix A provides preliminary drawings of the interim and ultimate bridge configuration.

Summary

The Municipal Class EA for the replacement of the Television Road bridge over South Meade Creek has been completed. The study is recommending the existing bridge be replaced with a new bridge that includes active transportation facilities. The new bridge is to be built to the east of the existing bridge. This allows the existing bridge to remain in service while the new bridge is built. At the same time, constructing to the east minimizes effects on the adjacent wetland.

Both the City-wide Transportation Master Plan and the EastSide Transportation Study recommended that Television Road ultimately be widened to four-lanes and the recommended plan protects for an ultimate four-lane bridge, with the future additional two-lanes to be constructed where the existing bridge is today. The ultimate widening of Television Road and construction of the additional two lanes would be subject to a future Class EA study, approval by Council, and the allocation of future funding through the annual capital budget process.

Submitted by,

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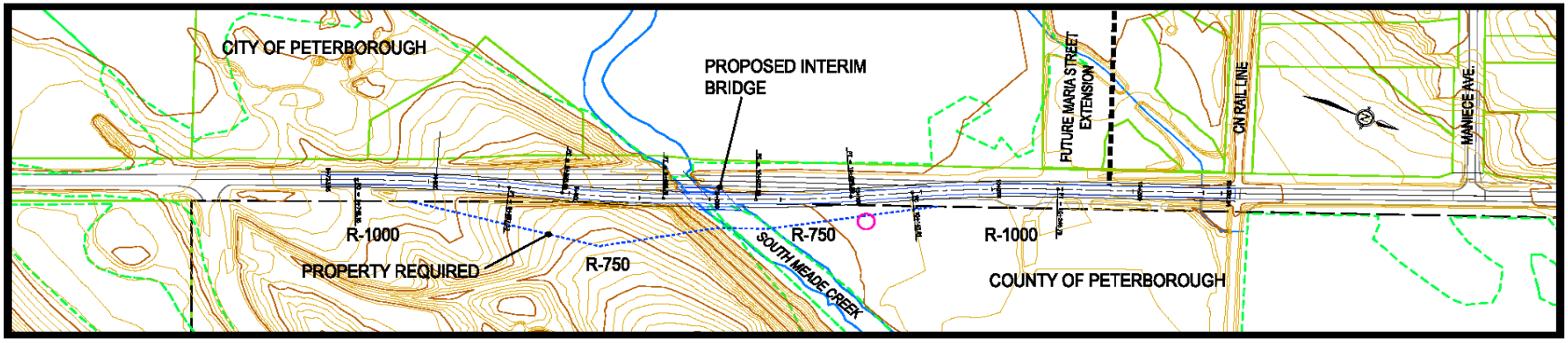
Attachments

Appendix A – Preliminary Bridge Drawings

Appendix A

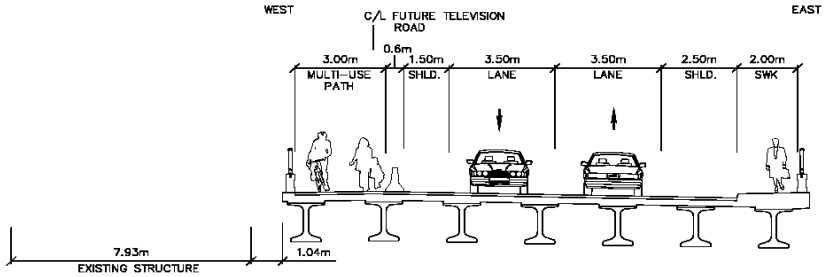
TELEVISION ROAD
RECOMMENDED INTERIM PLAN

WIDEN TO THE EAST

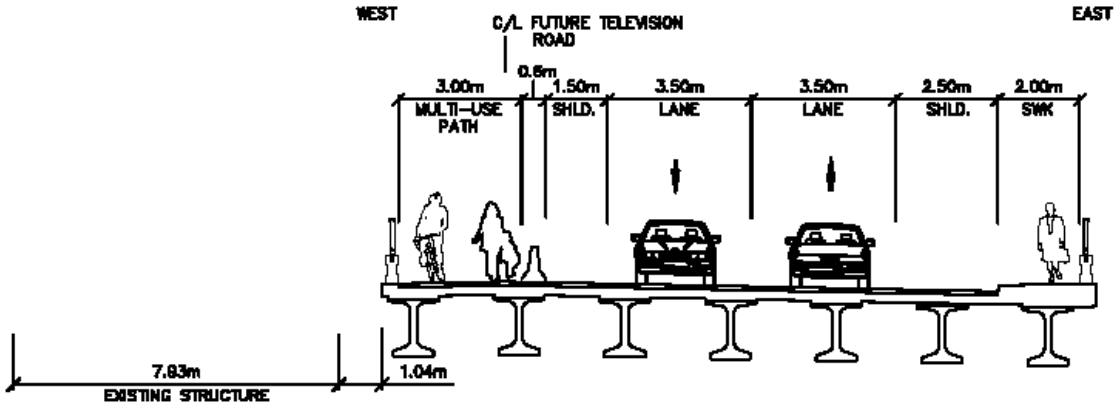


LEGEND:
- PARCEL FABRIC
- CITY BOUNDARY
- WETLAND
- IMPACTED PROPERTY

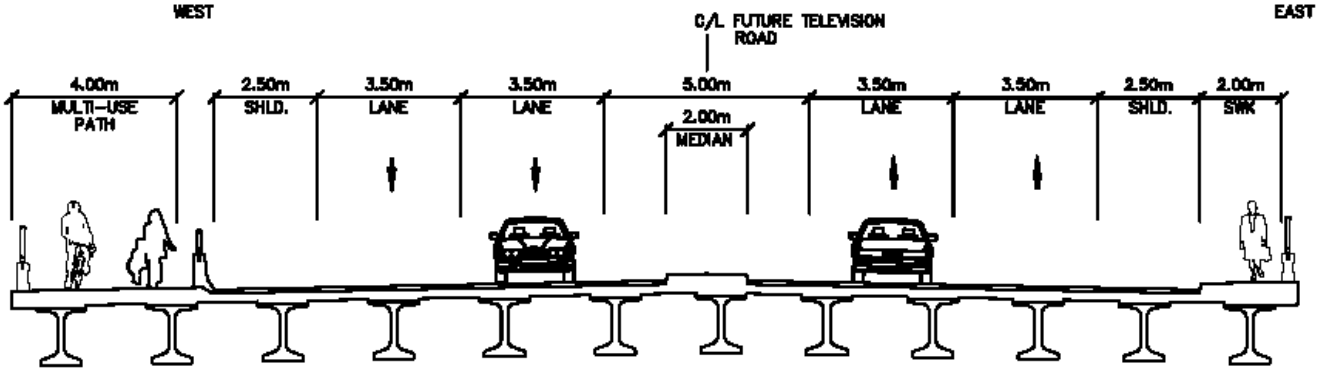
RECOMMENDED INTERIM BRIDGE CROSS SECTION



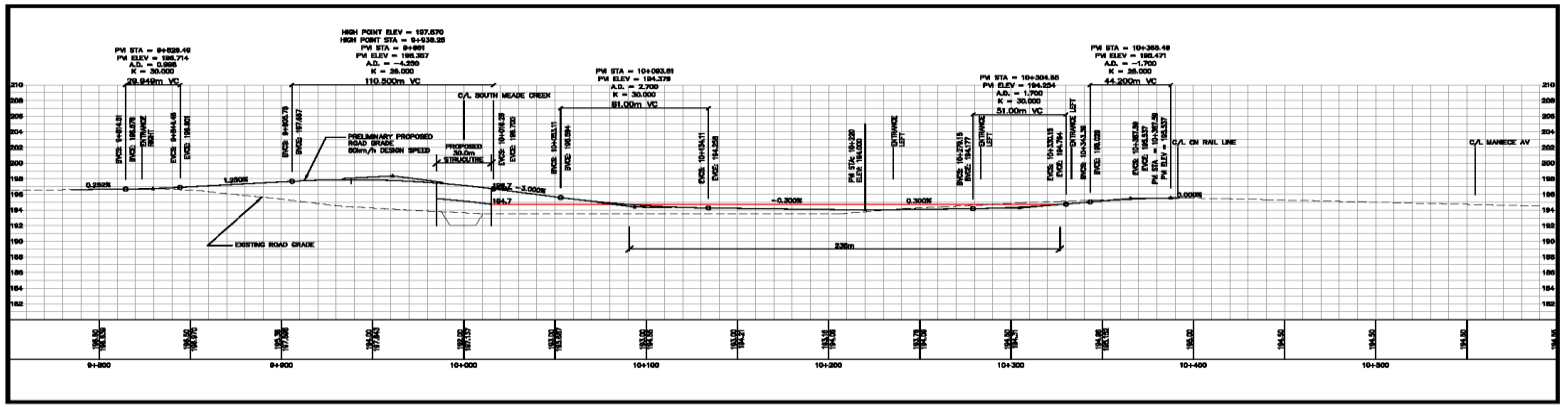
RECOMMENDED INTERIM BRIDGE CROSS SECTION



RECOMMENDED ULTIMATE BRIDGE CROSS SECTION



TELEVISION ROAD
PRELIMINARY ROAD GRADE



JULY 21, 2020