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TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JULY 22, 2013**
FROM:	**EDWARD SOLDO, P. ENG. DIRECTOR, ROADS AND TRANSPORTATION**
SUBJECT:	**GORE ROAD BRIDGE REPLACEMENT MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT**

RECOMMENDATION

That, on the recommendation of the Director, Roads and Transportation, the following actions **BE TAKEN** in respect to the Gore Road Bridge Replacement (TS1214):

(a) The Gore Road Bridge Replacement Municipal Class Environmental Assessment Schedule 'B' Project File **BE ACCEPTED**;

(b) A Notice of Completion for the project **BE FILED** with the Municipal Clerk; and

(c) The Gore Road Bridge Replacement Municipal Class Environmental Assessment Project File **BE PLACED** on public record for a 30 day review period.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- Civic Works Committee – July 17, 2012 – Appointment of Consulting Engineers, Meadowlily Bridge (4-FB-02) Rehabilitation, Schedule 'B' Environmental Assessment & Detailed Design and Gore Road Bridge (4-BR-15) Replacement, Schedule 'B' Environmental Assessment

BACKGROUND

Purpose:

This report provides Committee and Council with an overview of and seeks approval to finalize the Gore Road Bridge Replacement Municipal Class Environmental Assessment (EA). The completed Schedule 'B' Project File, documents the EA process undertaken for the replacement of the Gore Road Bridge, which spans the Pottersburg Creek east of Hamilton Road.

Background:

The Gore Road Bridge (4-BR-15) is a 73 year old structure, which is nearing the end of its service life. Originally constructed in 1940, it is a simple span T girder structure which carries two (2) lanes of traffic with a pedestrian sidewalk cantilevered off the north face of the structure. The 2011 Structural Inspection identified that the abutments are in poor condition and that there are undermined wingwalls due to the inadequate slope protection. Additionally, the deck structure is in poor condition with numerous cracks, locations where the steel has corroded and spalling is occurring. Repair records show escalating costs over the last ten (10) years, and the structure is rapidly becoming beyond economical repair.

This structure serves as a connection for vehicles and pedestrians over Pottersburg Creek. Permanent removal of this structure would leave communities on the east side of Pottersburg Creek with the need to re-route north to Trafalgar Street or south to Hamilton Road (via Clarke Road) respectively, in order to access Highbury Avenue.

A Schedule 'B' Municipal Class EA and preliminary design was completed as the first step in the bridge replacement process in order to communicate, assess and address the needs of all the stakeholders impacted by the replacement of this structure.

DISCUSSION

Environmental Assessment Summary:

This EA has been carried out in accordance with the Schedule "B" process of the Municipal Engineers Association (MEA) Municipal Class Environment Assessment document (October 2000, as amended in 2007 and 2011)

Evaluation

In accordance with the process, the EA evaluated the following alternatives:

- Do Nothing;
- Rehabilitate the existing bridge;
- Replace the existing bridge.

The evaluation of the alternatives was based on the criteria of Engineering (Roadway Network, Hydraulic Deficiencies, Side Slope Failures, and Design Considerations), Socio-Economic (Transportation Modes, Transit), Cultural (Cultural Heritage Features), Natural Environment (Fish, Aquatic habitat and Terrestrial Ecosystems including snakes and birds) and Cost (Initial Capital Costs, Long Term Operating/Maintenance Costs).

Preferred Alternative

The preferred alternative recommended through the EA is to completely remove the existing structure and replace it with a new concrete deck on steel girder structure supported by semi-integral abutments on spread footings. The new bridge will be wide enough to allow for two through lanes, a sidewalk on both sides and the potential for future on road cycling lanes.

With connections to the Kiwanis Park Pathway (north/west side of Pottersburg Creek), discussions have been held with the Parks Planning Division to identify preliminary plans for the pathway system. Provision has been made within the preferred alternative to extend the pathway under the new bridge, and tie back into the existing pathway system north and south of Gore Road. The existing 'at road grade' crossing of the pathway system will be modified slightly, but it will still be maintained as there will be periods of time throughout the year where the crossing under the bridge will be flooded out by flows in the Pottersburg Creek.

Approach Works

The new bridge will result in a profile raise for Gore Road of about one (1) metre. A new storm sewer will be installed on the east side of the bridge from the Creek to approximately Braesyde Avenue. This storm sewer will be sized to accommodate flows from lands to the east and south in the future. The existing storm outlet on the west side of the creek will be relocated to accommodate the new wider bridge being installed. The existing watermain, which currently crosses under the Pottersburg Creek will be abandoned, and a new (upsized) watermain will be attached to the underside of the new structure.

Lighting levels on and near the bridge will be reviewed and adjusted as necessary. An existing London Hydro pole line, located along the south side of Gore Road will need to be relocated in order to accommodate the planned widening of the bridge. An existing Hydro One transformer tower line also transects the project location. Coordination with Hydro One will be required throughout the project in order to comply with all the relevant utility regulations.

Full Road Closure During Construction

As the existing bridge is being removed and replaced, the road connection across the Pottersburg Creek cannot be maintained during construction. For vehicles, the official signed detour will be via Hamilton Road and Clarke Road.

A pedestrian traffic count was completed as part of the EA. There were approximately 100 pedestrians crossing the existing bridge daily. Provision of a temporary pedestrian crossing north of the existing bridge to maintain pedestrian access across the creek for students and other pedestrians was considered. Rental of a temporary crossing and associated installation costs is estimated to be in the order of $50,000 to $75,000.

Concern has been raised about cut-through traffic on Braesyde Avenue during the construction period. Braesyde Avenue connects Gore Road to Hamilton Road just east of the bridge, but it is a tar and chip surfaced local road, not suitable for arterial road traffic volumes. Measures to limit traffic on this street will be investigated during the detailed design phase which could include signage & the installation of temporary speed cushions on the road surface.

Environmental Impact and Mitigation Measures

The work involved in removing the existing structure and installing the new structure will result in temporary disturbance to the area, such as loss of vegetation, minor in-water works, etc. Mitigation measures will be developed and implemented to minimize the effects of construction. Discussions and any necessary permits/approvals from the Upper Thames River Conservation Authority (and all other agencies) will be obtained during detailed design phase. Monitoring of the construction will be ongoing to measure effectiveness of the mitigation strategies.

Consultation

The EA process included a public consultation process with input from relevant agencies, affected landowners, First Nations communities and members of the public. A Notice of Study Commencement was mailed out to the relevant agencies and study area property owners/residents on September 11th, 2012 and an advertisement was placed in 'The Londoner' on September 13th, 2012 and September 20th, 2012. Direct correspondence and some meetings were held with LTC, MOE, MNR, UTRCA and the First Nation communities.

In accordance with the EA process, a Public Information Centre (PIC) was held on March 6th, 2013. This PIC presented the preferred design for the Gore Road Replacement project including identifying approach works for input and comment. Over 30 residents and interested parties attended the PIC, and/or submitted comments throughout the process. Comments were generally favourable in nature, with concerns being expressed about traffic management/detours during construction, and sight line issues at the intersection of Montebello Drive and Gore Road.

In accordance with the City of London Official Plan, an Environmental Impact Study (EIS) was prepared and presented to the Environmental and Ecological Planning Advisory Committee for review/comments on May 16, 2013. Comments were received from the EEPAC on June 21, 2013.

Following the PIC and EEPAC review/responses, the preferred design and EA Project File were finalized. A copy of the executive summary for the Project File is contained in Appendix A.

Financial Impact:

The preliminary construction cost estimate for the Gore Road Bridge Replacement project is $4.2 million. This project requires an increase in the funding allocated under TS1213. The increase in value is partially due to greater length of road works due to the increased height of structure, watermain relocation, London Hydro relocations, drainage improvements on the roadway and the temporary pedestrian crossing. With preliminary design now complete, additional funding will be included in the 2014 Capital Budget for consideration in order to proceed with this project.

CONCLUSION

Summary and Next Steps:

A Municipal Class EA has been undertaken to consider options for the existing Gore Road Bridge which spans the Pottersburg Creek, east of Hamilton Road. An EA Project File has been completed and is ready for final public review. It was prepared with public and agency participation, and includes a preliminary design which provides mitigation measures for impacts associated with the bridge replacement.

Pending Council approval, a Notice of Completion will be be filed, and the EA Project File be placed on public record for a 30 day review period.

- Stakeholders are encouraged to provide input and comments regarding the study during this time period.
- Should stakeholders feel that issues have not been adequately addressed, they may provide written notification within the 30-day review period to the Minister of the Environment requesting further consideration.
- Subject to no requests for a Part II Order being received, the project will be in a position to move forward to the detailed design and construction stages in accordance with the recommendations of the study.
- Construction is anticipated to begin in 2014 subject to Council approval of the 2014 Capital Budget.

Acknowledgements:

This report was prepared with assistance from Jane Fullick, C.E.T., Technologist II, Karl Grabowski, P. Eng., Transportation Design Engineer of the Transportation Planning and Design Division.

SUBMITTED BY:	**RECOMMENDED BY:**
DOUG MACRAE, P. ENG. **DIVISION MANAGER** **TRANSPORTATION, PLANNING & DESIGN**	**EDWARD SOLDO, P. ENG.** **DIRECTOR, ROADS AND TRANSPORTATION**
REVIEWED & CONCURRED BY:	
JOHN BRAAM, P. ENG. **MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**	

Attach: Appendix “A” – Environmental Assessment Executive Summary

c: S. Stanlake/C. Haines, Dillon Consulting Limited

APPENDIX A

Environmental Assessment Executive Summary

INTRODUCTION

Constructed in 1940, the existing Gore Road Bridge is a single-span cast-in-place concrete T-beam bridge crossing Pottersburg Creek in southeast London. Gore Road is at the south limit of Kiwanis Park. The bridge carries two lanes of undivided traffic with a sidewalk on the north side of the bridge. The original bridge did not include a sidewalk, but a wood-framed sidewalk was added years ago and replaced in 2008. The bridge has a 50 degree skew to accommodate the natural alignment of the creek.

Gore Road is currently designated as an arterial road in Schedule 'C' of the City's Official Plan with an average annual daily traffic (AADT) volume of 13,000 vehicles per day and is anticipated to remain as a two lane cross section for the foreseeable future. The City's Bicycle Master Plan designates Gore Road as a secondary commuter route. Gore Road is a designated transit route used by London Transit Commission (LTC).

The area in the immediate vicinity of the bridge has a number of constraints that were considered in the design. There is an existing Hydro One transmission line that crosses from the south side of Gore Road to the north side, approximately 150m west of the bridge and a London Hydro distribution line along the south side of Gore Road. There are no storm sewers east of the bridge on Gore Road and the storm sewers to the west are currently undersized. In addition, there is an existing sanitary sewer that crosses the creek via a syphon, immediately south of the bridge.

The City of London retained Dillon Consulting Limited to complete the Class Environmental Assessment (EA) and preliminary design for the replacement of the Gore Road Bridge as a Schedule "B" project following the Municipal Class EA. As required by the Class EA process, a range of alternatives were reviewed for the bridge:

- **Do Nothing.** As required by the Class EA, the "Do Nothing" option was considered which includes completing minimal maintenance on the structure. Due to the current condition, it is anticipated this option would result in permanent closure of the bridge within 5-10 years.
- **Rehabilitate Bridge.** Based on the evaluation completed, this alternative was not recommended as the bridge is 73 years old and is near the end of its useful life. There is significant deterioration to the structure and an extensive rehabilitation would potentially extending the life of the bridge by 15 to 20 years.
- **Replace Bridge.** This alternative is preferred as it provides the best value to the City and minimizing ongoing maintenance costs compared to the rehabilitation alternative.

The Class EA also considered a number of super structure types for the new bridge:

- A **concrete rigid frame**, which requires little maintenance characteristics and has a relatively shallow structure depth, however the span exceeds the normal limits for this type of bridge and the construction would require extensive temporary in-water work
- A **large buried structure** (similar to the structure that was recently constructed at the Sarnia Road/CPR crossing). Conflict with the siphon, cost considerations and abutment type limitations eliminated this option from consideration
- A **slab-on-girder bridge with steel girders** is recommended as it avoids temporary work in the water for construction of the superstructure, accommodates longer spans and is a cost-effective bridge type.

The existing bridge will be replaced with a single span, concrete deck on steel girder structure supported by semi-integral abutments on spread footings. The roadway portion of the new bridge will accommodate a 13 m wide roadway to allow for two through lanes, a sidewalk on both sides and potential for future on road cycling lanes. Initially, the bridge will be painted as a “share the road” lane for bicycles as Gore Road does not currently have separate cycling lanes. The bridge will support additional features including a raised profile to improve sightlines and a new watermain hung from the structure. The bridge has also been designed to accommodate the extension of the Kiwanis Park Pathway under the bridge.

The main branch of Pottersburg Creek passes under Gore Road Bridge and is designated a “Significant Corridor” in the Official Plan. Lands within the study area are primarily residential, with a commercial/light industrial area to the east. An active Barn Swallow nest, a species at risk, was observed on the bridge. An Environmental Impact Study (EIS) was completed as part of the Class EA and was presented to the Environment and Ecological Planning Advisory Committee for comments.

This study and bridge design has been completed in coordination with the ongoing Pottersburg Creek Subwatershed Study Update.

PROPOSED IMPROVEMENTS

The major features of the preferred design include:

- New bridge at Pottersburg Creek:
  - Sidewalks on both sides
  - Widened roadway for on-street cycling (share the road)
  - Extend the Kiwanis Park asphalt pathway under the bridge
- Temporary pedestrian bridge during construction north of the existing bridge to maintain pedestrian access during construction
- Profile change due to hydraulic and road geometric requirements

- Abandon an existing watermain under Gore Road and Pottersburg Creek. A new watermain will be hung from the bridge
- Utility (London Hydro Pole Line, etc.) relocations along the south ROW
- Storm sewers:
    - Construct a new storm sewer system east of the bridge, which will outlet to Pottersburg Creek. The new outfall will be designed to control the quantity of water flowing to the creek.
    - Increase the size of the existing storm sewer west of the bridge and replace the headwall to meet City standards.

Construction will be completed over one construction season, with an anticipated start date of spring 2014.

Based on 2013 dollars, construction is anticipated to cost approximately $4.2 Million.

TRAFFIC

Gore Road is planned to remain as a two lane arterial roadway for the foreseeable future. During construction the bridge will be closed to traffic and a detour will be in place along Clarke Road and Hamilton Road. Temporary traffic calming measures are suggested along Braesyde Road to mitigate cut-through traffic along Braesyde Avenue. The temporary traffic calming measures (speed humps) have recently been used by the City on other construction projects where cut-through traffic and speeds were an issue.

PUBLIC AND AGENCY CONSULTATION

Public and agency consultation was completed throughout the study and included one Public Information Centre (PIC) on March 6, 2013. The PIC was attended by over 30 area residents.

Comments were received throughout the duration of the study and overall were in favor of replacing the bridge. The majority of concerns raised involved traffic management during construction and increased traffic on Braeysde Road. Concerns were also received about sight lines when turning onto Gore Road from Montebello Drive. This project is focused on replacing the bridge and construction will not extend to Montebello Drive to address the existing sightline issues. The City should consider a future project to address the sightline issues at this intersection.

IMPACT ASSESSMENT AND MITIGATION MEASURES

Replacing the Gore Road Bridge will result in temporary impacts due to construction and permanent impacts such as loss of vegetation to widen the structure and construct the temporary pedestrian bridge. Potential impacts were reviewed as part of the design and have been minimized to the extent possible. The following provides a brief summary of potential impacts and mitigation measures. The City is committed to

minimizing potential effects through a combination of design and construction techniques.

- ***Engineering and Traffic:*** Primary impact identified is a result of closing Gore Road at the bridge a providing a signed detour route on Hamilton Road and Clarke Road. Several residents identified concerns related to cut-through traffic on Braesyde Avenue during construction. To address the concerns, Braesyde Avenue will be signed for "Local Traffic Only" during construction and the City is considering providing temporary traffic calming measures on Braesyde Avenue.
- ***Natural Environment:*** In-water works are required to remove the existing abutments and construct the new stormsewer outfalls. Vegetation removals, primarily associated with the new pathway under the bridge and the temporary pedestrian bridge are anticipated include one Norway Maple which is currently in poor condition, four trees recently planted by the City and approximately 600 square metres of low lying shrubs and grasses. The Environmental Impact Study provides a detailed assessment of mitigation measures included in the detailed design and construction stages. Construction activities will comply with the required fisheries timing windows and migratory bird nesting season. One Barn Swallow nest, a Species at Risk, was observed on the bridge and there is potential for Queen Snake, also a Species at Risk to be in the study area. Discussions with the Ministry of Natural Resources are required during detailed design to minimize potential impacts.
- ***Cultural Resources:*** The bridge is not considered to have heritage significance. Based on input from the Ministry of Tourism, Culture and Sport, the need for an archaeological assessment will be assessed during detailed design.

SUMMARY

The Class Environmental Assessment for the Gore Road Bridge Replacement was completed in accordance with the Municipal Class EA (2011) and recommends the existing bridge over Pottersburg Creek be replaced with a single span slab-on-steel girder bridge. To improve connections along the City's pathway system, the project includes extending the Kiwanis Park asphalt pathway under the bridge. During construction, the bridge will be closed and a detour route along Hamilton Road and Clarke Road will be in place. A temporary pedestrian bridge will be constructed to provide access for pedestrians during construction.

The Class EA Project File documents the study process completed, including the public and agency consultation, evaluation process, preferred design and impacts and mitigation measures. The preferred design addresses the objectives of the Class EA study and potential impacts have been mitigated to the extent possible. The detailed design and construction will be completed as outlined in the Project File.