



Report to: Development Services Committee

Date Report Authored: March 18, 2014

SUBJECT: Main Street Markham South, Highway 407 to Highway 7
PREPARED BY: Dan Foong, Capital Works Engineer, Ext 4055
Alain Cachola, Senior Manager, Infrastructure and Capital Works, Ext 2711

RECOMMENDATION:

- 1) THAT the report entitled "Main Street Markham South, Highway 407 to Highway 7" be received;
- 2) AND THAT the procurement process for the relocation of existing utilities for Main Street Markham South, Highway 407 to Highway 7, including design review and construction coordination be waived in accordance to Purchasing By-law 2004-341 Part II, Section 7, Non-competitive procurement (item b);
- 3) AND THAT the Director of Engineering be authorized to finalize the cost sharing of the proposed work with the utility companies, up to a total value of \$715,000.00 (inclusive of HST), in accordance to the Municipal Access Agreement;
- 4) AND THAT staff be authorized to issue Purchase Orders, for the City's portion of work, to the various utility companies for the relocation of their existing facilities up to a total value of \$715,000.00, (inclusive of HST) to be funded from Capital Account 083-5350-14055-005 (Main Street Markham, Hwy 407 to Hwy 7);
- 5) AND THAT the Engineering Department Capital Administration Fee in the amount of \$32,175.00, inclusive of HST, be transferred to revenue account 640-998-8871 (Capital Admin Fees) from Capital Account 083-5350-14055-05 ((Main Street Markham, Hwy 407 to Hwy 7);
- 6) AND THAT Main Street Markham South, between James Scott Road and Hwy 7 be closed to traffic starting July 2, 2014 to December 31, 2014 to permit the bridge removal and reconstruction;
- 7) AND THAT staff report back to Committee on May 20, 2014 with the traffic management plan, communication plan, construction schedule and update on consultation with stakeholders;
- 8) AND THAT staff be authorized to finalize mitigation measures for the Main Street Markham South residents as identified in the February 12, 2014 Public Liaison Committee (PLC) meeting;
- 9) AND THAT staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

The purpose of this report is to update Council on this project, obtain authorization to proceed with the relocation of utilities, obtain Council endorsement of the closure of Main Street Markham South, between James Scott Road and Highway 7, from July 2, 2014 to December 31, 2014 and update Council on issues arising from Public consultation meetings with residents.

BACKGROUND:

The Class Environmental Assessment (EA) for the reconstruction of Main Street Markham (Highway 48) from Highway 407 to the future connection of the Donald Cousens Parkway north of Major Mackenzie Drive was completed and the Environmental Study Report was completed and endorsed by Council in 2010. The Class EA process included eleven (11) public consultations from 2008 to 2010. The Ministry of the Environment approved the EA on February 24, 2011.

The approved cross section consists of a 3-lane road (two southbound and one northbound lane) and a 3.0m wide multi use path on the east side of the road (Attachment 'A'). The overall project has received capital funding and is proceeding to tender for Summer 2014 commencement of construction. See pages 5 and 6 of this report for draft schedule.

DISCUSSION:***Existing Utility Infrastructures***

Relocation of existing utilities (i.e. Powerstream, Bell and Rogers) is required prior to the start of road / bridge construction so as not to delay the contractor for the project. Utility relocation works are anticipated to commence by April 2014 and be completed by June 2014 in order for the road and bridge reconstruction to commence by July 2014.

The existing utility infrastructures (e.g. Power Stream and Bell) are both above ground (aerial cables on direct buried poles) and below ground (buried conduits and pipes). The proposed widening of Main Street Markham South will require the relocation of joint-use utility poles on the west side of Main Street Markham. The proposed joint-use utility pole locations have been designed to allow for sufficient clearance between the aerial cables and the proposed streetlighting.

Subsurface utility investigation (SUI) was undertaken to determine the location of underground utilities. During the SUI, test pits were conducted to expose the buried utilities to confirm the actual depth and location of the underground utilities. This information was then overlaid on the proposed design to determine any potential conflicts. The SUI identified potential conflicts between the proposed improvements and existing underground Bell conduits and Enbridge gas main. The existing Bell conduits have been identified for relocation and the road and sewer design has been revised to provide clearance of the existing Enbridge gas main. In addition, provisional items will be included in the contract documents to protect (i.e. unshrinkable fill) the existing utility

infrastructures. There are no utility infrastructures on the existing bridge and most of the utility relocation works as identified in this report are within the existing roadway.

Staff has been in discussions with the utility companies in the past year to finalize the road design and utility relocation plans. Based on recent design information, staff anticipates that the cost estimate related to the utility relocation work will be in the order of \$715,000, inclusive of HST. Staff will be finalizing the overall cost and cost sharing of the utility relocation works in accordance to the Municipal Access Agreements.

Bridge Removal and Replacement

The existing bridge structure over the Rouge River was assessed in 2008 by McCormick Rankin Company (now MMM Group) during the Class EA study, completed in 2010. The bridge underwent rehabilitative measures in spring 2010 to extend its life for 5 Years until the bridge is replaced. Based on the bridge assessment completed in 2010, as well as the phasing of the overall Main Street Markham reconstruction, the bridge will require full removal and replacement in 2014. In accordance to the approved EA, the new bridge will be constructed with the approved three (3) lane cross section and a multi use pathway (MUP) on the east side of the road as shown in Attachment 'A'.

Environmental Agency Requirements

The Rouge River is defined as a coldwater habitat by the Ministry of Natural Resources (MNR) and the Canadian Department of Fisheries and Oceans (DFO). MNR and DFO have identified construction timing windows which restrict work to occur within a controlled waterway, such as the Rouge River. In accordance to the current requirements from MNR and DFO, the in-water-works can only occur between July 1 and September 30.

The works that are required for the construction timing window includes, but are not limited to the removal and replacement of the existing bridge footings and piers. All other works for the project (i.e. sewers, watermain and road construction) outside the environmental regulated areas can commence and be completed at any time.

Review of Construction Options

As the bridge has to be totally removed and reconstructed, staff and our design consultant have reviewed the following options:

1. Partial Road Closure

Maintaining at least a single lane of traffic on Main Street Markham South would require at least two (2) construction seasons (e.g. July 1, 2014 to September 30, 2014 and July 1, 2015 to September 30, 2015) to undertake the bridge work with a 3rd season to complete the remainder of the project. One lane of traffic would be maintained on one side of the existing structure with the other half of the bridge removed then a portion of the new structure built within the construction timing

window. Once the new section of the bridge is completed, the traffic would be diverted to the newly constructed portion and the remaining bridge removal and reconstruction can be completed.

Staff has reviewed this option with the design consultant as well as bridge contractors, and confirmed that;

- Significant safety concerns to both motorist / pedestrian being in close proximity of the construction area
- Safety concerns regarding the structural integrity of the bridge
- The construction period will be longer (± 1 year)
- It will be a more expensive option ($\pm \$1.0$ million)
- This option is technically constrained and not recommended

2. Full Road Closure

A full road closure of Main Street Markham South for approximately six (6) months, from July 1, 2014 to December 31, 2014, will allow the contractor to remove and rebuild the bridge footings, piers, and deck all at the same time.

Staff has also reviewed this option with the design consultant and contractors and can confirm that:

- The construction period will be shorter compared to partial closure (± 1 year)
- This option will be the least expensive option ($\pm \$1.0$ million)
- This option reduces the safety concerns as the contractor can complete their work without accommodating any vehicular and pedestrian traffic across the bridge during the duration of the bridge construction.
- Once the bridge is re-built and deck poured, the road can be re-opened to at least one lane of traffic, while the contractor completes the remaining surface work.
- The schedule also allows the contractor to minimize the amount of time spent within the environmentally sensitive areas.

3. Recommendation

Based on the above, staff recommends that Council endorse the proposed full road closure for approximately six (6) months, starting July 2, 2014 to December 31, 2014. The benefits of the full road closure include, but are not limited to the following:

- There will be a significant cost savings for the full road closure compared to the partial closure

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- Not feasible to construct portions of the bridge at a time due to its structural integrity
 - Shorter construction period (± 1 year)
 - Reduced impact to the aquatic and terrestrial habitat within the bridge area.
 - Reduces the safety concerns related to vehicular and pedestrian access through the bridge

Public Consultation

Staff held a Public Information Meeting (PLC #1) for Main Street Markham, Hwy 407 to Hwy 7 section on February 12, 2014. The intent of the public meeting was to provide information to the public on the proposed road and bridge reconstruction work. Residents and business owners within the area attended the meeting and the following concerns were brought up that require further review by staff and design consultant.

1. Request for pedestrian access (i.e. sidewalk) on the West side of Main Street
2. Impact of proposed road closure to Fire, Emergency Services, waste and snow removals
3. Impact to School Bus Service during construction
4. Pedestrian access across the bridge during road closure

Staff are currently working with a number of residents and businesses to address their concerns as well as meeting with internal departments (i.e. Operations, Asset Management, Environmental Services, Fire, etc.) and external agencies (i.e. school board, YRT, TTC, Hwy 407, etc.) to prepare for the anticipated construction. Staff are also in the process of preparing the staging and communication plans for the proposed work. All of this information is to be reviewed with the public at the next PLC meeting, tentatively scheduled for March 20, 2014. Residents also raised the issue of reversible centre lane similar to the City of Hamilton. This option was considered during the EA stage and was not supported by the stakeholders or staff.

Staff will report back to the Development Services Committee on May 20, 2014 on the tender award for the project, construction staging plans, traffic management plans and communications plan.

Draft Schedule

Subject to a number of requirements (i.e. land acquisition, permit requirements, weather, etc.), staff has prepared a draft schedule for the works as follows:

1. Pre-qualification of Contractors – March 14, 2014
2. Public Liaison Meeting (PLC #2) – March 20, 2014
3. Construction Tender Release – March 22, 2014
4. Construction Tender Close – April 21, 2014
5. Award Report to Development Services Committee – May 20, 2014

The following is the draft schedule for the construction related works:

1. Phase 1 – April 2014 to July 2014
 - Utility relocation
2. Phase 2 – July 2014 to December 2014 (Full Road Closure)
 - Bridge removal and replacement
 - Road and sewer works
3. Phase 3 – January 2015 to Spring 2015 (1 or 2 lanes open to traffic)
 - Lanes open to traffic (1 or 2 lanes) subject to completed bridge work
 - Winter Shutdown (Possible bridge work)
4. Phase 4 – Spring 2015 to December 2015 (2 lanes open to traffic)
 - Bridge and road completion
 - Streetscaping and aboveground works completion

FINANCIAL CONSIDERATIONS AND TEMPLATE:

Funds for the relocation of utilities are listed in **Table 1** and budgeted under Capital Account 083-5350-14055-005 (Main Street Markham, Hwy 407 to Hwy 7). The current available budget for the overall project is \$14,873,800.00 (2014 Capital Account).

Table 1 - Utility Relocation

Item	Cost
Power Stream / Rogers / Bell Relocation	\$ 650,000.00
Contingency (10%):	\$ 65,000.00
Sub-Total:	\$ 715,000.00
Capital Admin Fees (4.5%):	\$ 32,175.00
Total:	\$ 747,175.00

*Cost sharing of the utility relocation cost to be finalized in accordance to the MAA

**remaining funds in account 14055 are to be used for construction

ALIGNMENT WITH STRATEGIC PRIORITIES:


The reconstruction of Main Street Markham from Highway 407 to Highway 7 has long been contemplated as a strategic priority. The project provides the necessary upgrades to the existing infrastructure.

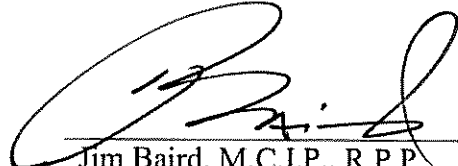
This project is in line with the City of Markham's strategic focus relating to Growth Management, Transportation/Transit, Safety, the Environment, and Municipal Services.

BUSINESS UNITS CONSULTED AND AFFECTED:

The Finance, Asset Management, and Operations Department have been consulted and their comments have been incorporated.

RECOMMENDED BY:



Alan Brown, C.E.T.
Director of Engineering

Jim Baird, M.C.I.P., R.P.P.
Commissioner, Development Services

ATTACHMENTS:

Attachment A – Class EA Approved Cross-section

Attachment 'A' - Class EA Approved Cross Section

3 Lane Alternative

