Clause No. 24 of the Committee of the Whole meeting was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting on September 26, 2013.

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CONSULTANT SERVICES FEE FOR ADDITIONAL SCOPE BATHURST STREET HIGHWAY 7 TO ELGIN MILLS ROAD/TESTON ROAD CITY OF VAUGHAN AND TOWN OF RICHMOND HILL

1. RECOMMENDATION

It is recommended that:

1. Council approve the increased scope of work required to complete the detailed design and obtain environmental approvals for the reconstruction and widening of Bathurst Street (Y.R. 38), from Highway 7 (Y.R. 7) to Teston Road/Elgin Mills Road (Y.R. 49), in the City of Vaughan and the Town of Richmond Hill, thereby increasing the assignment to Delcan Corporation from $2,053,373 to $2,754,680, excluding taxes.

2. PURPOSE

This report seeks Council authorization to increase Blanket Purchase Order B00012954 for consulting engineering services to address the increased scope of services related to detailed design and environmental approvals for the Bathurst Street reconstruction and widening from Highway 7 to Elgin Mills Road/Teston Road, in the City of Vaughan and Town of Richmond Hill (see Attachment 1).

3. BACKGROUND

An Environmental Assessment Study for Bathurst Street from Highway 7 to Teston Road/Elgin Mills Road has been completed and detailed design is underway

The detailed design assignment for the Bathurst Street improvements was successfully awarded in June of 2011. This stretch of Bathurst Street is six kilometres long and includes 14 signalized intersections, four un-signalized intersections and 11 watercourse crossings. The planned improvements include widening the existing four-lane cross-section to six lanes including bike lanes, a landscaped median, noise barriers, culvert replacements full illumination and continuous sidewalks on both sides.
The estimated cost of the project has increased from $25 million based on the approved Environmental Assessment to over $40 million based on the current design.

The technical scope of the Bathurst Street improvement project is based on the work completed to support the Environmental Assessment (EA) which was approved in 2009. The estimated construction cost of the project based on the EA work and the regulatory requirements at that time was $25 million. As the design process has progressed, the engineering design is being refined and the current requirements of regulatory authorities are being incorporated. The estimated construction cost of the current project is $40 million.

The increase in the estimated construction cost reflects the increased complexity which is a result of numerous changes that have occurred since the technical work to support the EA was completed over four years ago.

The changes are discussed in the sections below.

The Purchase Order has already been increased to facilitate additional work through the current assignment.

Over the two years since the project has been underway, several additional items have been added to the existing assignment under the scope and contingency provisions of the Region’s Purchasing Bylaw. These items were added since it was more cost effective than retaining separate consultants. These additional scope items include:

- Extending the southerly project limit to address an operational issue at the Highway 7 ramp that was identified after the EA.
- Adding comprehensive utility location investigations to the consultant assignment rather than procuring this work as a separate assignment. The underground utilities have been found to be significantly more complex than was identified in the EA. The cost of this work will be cost-shared with utility companies; and
- Undertaking additional environmental investigations because additional plant and wildlife species have been added to the Provincial endangered species list.
4. **ANALYSIS AND OPTIONS**

The environmental requirements to secure permits from the Ministry of Natural Resources and Toronto Region Conservation Authority have increased from what was known during the EA.

A significant portion of the additional work required is related to the numerous watercourses and the increasing environmental requirements. There are eleven watercourse crossings within the project limits and because many of the crossings are considered to be habitat for endangered Redside Dace fish, they require special treatment to satisfy the requirements of the Provincial Ministry of Natural Resources (MNR) and the Toronto and Region Conservation Authority (TRCA). The extent of this work was realized recently on the Warden Avenue project which was delayed for over two years to obtain an MNR permit. The key additional environmental tasks are summarized as follows:

- Addressing the Province’s extension of the limits of the endangered Redside Dace fish habitat to include the East Don River. During the EA, only Patterson Creek was considered Redside Dace fish habitat.

- Replacing proposed pre-fabricated culverts with more significant and individually designed structures to obtain TRCA and MNR approval.

- Developing comprehensive staging plans and erosion/sediment control plans for the new culvert structures because they are large, deep, and constrained by underground utilities and constrained as to when work can occur in/around watercourses.

- Re-aligning the stream south of Mill Creek. The EA anticipated little impact on this watercourse; however, more work with the approval agencies is required to determine what is feasible in this area.

- Redesigning the drainage in the area of Rumble Pond. Since the completion of the EA, the Town of Richmond Hill has decided to re-construct Rumble Pond to the north of Mill Street; and

- Extending the timeframe during which the consulting team will be available to address questions and comments from the regulatory agencies in order to secure the necessary permits.

**Refinements to the EA design are required to minimize property requirements and fit the desired roadway elements within the corridor**
The planned improvements include widening the existing four-lane cross-section to six lanes, adding bike lanes, a landscaped median, noise barriers, culvert replacements, full illumination and continuous sidewalks on both sides. This section of Bathurst Street is also experiencing increased development growth, with a number of new developments now underway along the corridor. The key additional tasks include:

- Optimizing the alignment to minimize impacts on existing properties while achieving the design objectives through the constrained sections of the corridor. Although the Official Plan allows for up to a 45 metre right-of-way along Bathurst Street, in many locations the existing right-of-way is constrained to less than 36 metres. Even with design refinements, it is expected that approximately 70 parcels of land will still require either acquisition or an easement, or both, to facilitate construction.

- Revising the cross-section of the roadway to reflect current design requirements for bicycle facilities.

- Coordinating the roadway design to incorporate three watermain projects as well as a sanitary sewer for Environmental Services Department and the Town of Richmond Hill.

- Coordinating with increased development along the corridor; and

- Increasing work with the utility companies. The limited boulevard space requires an increasing amount of work with the utility companies to determine the location of their future utilities within the constrained corridor.

**The additional work undertaken at the design stage will reduce the overall construction risk and cost of the project**

As with any project of this size there are considerable risks that if not properly managed and understood can lead to added cost and delays during construction. Money invested during the design stage to minimize these risks will have a substantial return during construction. Some of the benefits of additional up-front work on the project include:

- Identifying the exact location of the underground utilities assists in the placement of new features such as storm sewers, culverts, and hydro poles and reduces delays and costs attributed to field adjustments during construction.

- Identifying the environmental requirements will ensure permits are obtained in a timely manner and provide the contractor with guidance during construction to minimize environmental impacts; and

- Increasing efforts to optimize the alignment and minimize property requirements will reduce impact on the adjacent residents, minimize property costs and delays
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associated with the expropriation process and ensure the required infrastructure fits within the available right-of-way.

**Link to key Council-approved plans**

The widening of Bathurst Street between Highway 7 and Teston Road/Elgin Mills Road aligns with the 2011 to 2015 Strategic Plan goal to “continue to deliver and sustain critical infrastructure”. The project provides additional north-south transportation capacity by widening Bathurst Street from four to six lanes.

5. **FINANCIAL IMPLICATIONS**

Additional fees in the amount of $701,307 are required for the consultant to complete the requirements of this assignment. Staff have reviewed and negotiated the request for additional work and consider the work necessary and the fees fair and reasonable. It should be noted that approximately $175,000 of the total design fees will be recovered from the utility companies for work related to the utility investigations.

The total estimated construction cost for this project based on the level of technical work completed for the EA was $25 million. The current construction cost estimate is $40 million based on the design work completed to date. The industry benchmark in terms of fees for detailed design work generally ranges from five percent to seven percent of the expected construction value. If approved, the total design component cost of this project will be $2,754,680. This means the detailed design work represents just under seven percent of the project construction estimate. This indicates that the additional fees are reasonable given the scope of the project as it is currently understood and the benchmarked experience in the industry.

There are sufficient funds in the 2013 Roads Capital Budget to cover this additional work. All expenditures for this project will be funded 90 per cent from Development Charges and 10 per cent from tax levy.

6. **LOCAL MUNICIPAL IMPACT**

Reconstruction of Bathurst Street includes several features that will benefit the local community including bicycle lanes, noise barriers, continuous sidewalks, illumination, and median/boulevard streetscaping.

Construction was scheduled to commence on Bathurst Street in 2014; however, the construction aspect has been deferred given the Bus Rapid Transit (BRT) construction along Yonge Street which will also begin in 2014. The BRT construction on Yonge Street will have significant impacts on traffic and transit operations. Given that Bathurst
Street is one of the few viable alternate routes, having these routes simultaneously under construction would be detrimental to travel within the Region. As a result, construction on this section of Bathurst Street has been rescheduled to begin in 2017, following the completion of the BRT construction. Construction is expected to take approximately three years and temporary detours and other traffic control measures will be required.

7. CONCLUSION

As the design process has progressed, the engineering design is being refined and the requirements of regulatory authorities are being incorporated. This has resulted in additional design work that is necessary but could not have been foreseen at the time the scope was developed. Additional fees in the amount of $701,307 are required to complete the requirements of this assignment, increasing the total value from $2,053,373 to $2,754,680, excluding taxes. The increase in fees is consistent with the increase in overall construction cost of the project from what was projected at the completion of the EA in 2009.

Authorization of the additional fees will enable the Region to complete the design for the improvements to Bathurst Street, between Highway 7 and Elgin Mills Road/Teston Road, in the City of Vaughan and Town of Richmond Hill and work toward obtaining the necessary property and permits, to have the project ready for construction in 2017.

For more information on this report, please contact Brian Titherington, Director Roads at Ext. 5901.

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause is attached to this report.)
Bathurst Street
Highway 7 to Teston Road/ Elgin Mills Road
City of Vaughan and Town of Richmond Hill
Consultant Services Fee Required for Additional Scope
September 11, 2013