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CONSULTANT SERVICES FEE FOR ADDITIONAL SCOPE REQUIRED FOR LANGSTAFF ROAD, HIGHWAY 50 TO HIGHWAY 27, CITY OF VAUGHAN

The Transportation Services Committee recommends the adoption of the recommendation contained in the following report dated April 26, 2010, from the Commissioner of Transportation Services.

1. RECOMMENDATION

It is recommended that:

1. Regional Council approve the increased scope of work required to undertake design revisions for the reconstruction and widening of Langstaff Road (Y.R. 72) from Highway 50 (Y.R. 24) to Highway 27 (Y.R. 27) related to the planning for the future Highway 427 extension at a cost of \$120,894 thereby increasing the assignment to Earth Tech Canada Inc., now AECOM Transportation, from \$447,579 to \$568,473.

2. PURPOSE

This report seeks Regional Council authorization to increase Blanket Purchase Order Number B00009060 for consultant engineering services for Langstaff Road reconstruction and widening from Highway 50 to Highway 27.

The Region's Purchasing By-law requires Regional Council authorization to increase the value of a purchase order in excess of 15% for contingencies and 20% for additional scope activities. As the additional fees being requested will exceed the staff authorities provided for in the Purchasing By-law, Regional Council approval is required for this increase.

3. BACKGROUND

Regional Council authorized award of the assignment in June 2005

On June 23, 2005, Regional Council authorized the award of the detailed design assignment for Langstaff Road to Earth Tech Canada Inc., now AECOM Transportation, in the amount of \$229,200, plus GST.

The terms and conditions for the detailed design assignment for the reconstruction and widening of Langstaff Road between Highway 50 and Highway 27, in the City of Vaughan, was based on the preliminary design recommended under the Environmental Assessment Study (EA) completed for the project in 2003.

Fee increase approved by Council in 2008

On September 18, 2008, Regional Council authorized an increase of the approved expenditure limit for the engineering fees in the amount of \$102,340, to accommodate additional scope changes required to complete the work.

Provisions for project contingency and scope have been used

The project cost increased once already due to changes required to accommodate Toronto and Region Conservation Authority (TRCA) requirements for the bridge replacement over the Rainbow Creek. These design changes, which amounted to approximately \$116,039 resulted in an increase in fees.

Additional design work was required to accommodate the planning for future Highway 427 extension

The Region's design for Langstaff Road considered that the future Highway 427 extension would be carried over Langstaff Road. On completion of the Ministry of Transportation (MTO) planning for the Highway 427 Extension, it was proposed that Highway 427 be carried under Langstaff Road and therefore the Region's design for Langstaff Road needed to be revised.

4. ANALYSIS AND OPTIONS

Highway 427 planning was not in line with the current Langstaff Road design

Following the completion of the Environmental Assessment (EA) for the project in 2003, the detailed design for the widening of Langstaff Road commenced in 2005. During the EA, the planning for the reconstruction and widening of Langstaff Road was based on the understanding that Highway 427 would be carried over Langstaff Road in the future. Staff from the Ministry of Transportation (MTO) were an integral part of the Langstaff Road design project team throughout the detailed design process.

During the course of the Provincial EA undertaken by the MTO from 2007 to 2008 for the future extension of Highway 427 north of Highway 7, the MTO did not provide details for the Highway 427 extension at Langstaff Road. It was only in the spring of 2009, the MTO revealed that Highway 427 would be carried under Langstaff Road.

Highway 427 extension has not yet been scheduled for construction

The Provincial EA for the Highway 427 Transportation Corridor extends from Highway 7 to Major Mackenzie Drive and recommends a full highway interchange at Langstaff Road, Rutherford Road and at Major Mackenzie Drive. While the Highway 427 project does not have EA approval or budget within MTO's Highway Program, Langstaff Road improvements are required now and the project is scheduled for tender in 2010 under the Region's 2010 – 10 Year Roads Construction Program.

Langstaff Road design cannot be modified to suit the Highway 427 planning

The Region's design for Langstaff Road preceded the completion of MTO's planning process and considered Highway 427 would be carried over Langstaff Road and included detailed design for a new bridge structure with a 27 metre span across Rainbow Creek. As the MTO's final planning proposed Highway 427 be carried under Langstaff Road, the profile of Langstaff Road will need to be raised in the future and requires a 70 metre span bridge crossing Rainbow Creek.

Given Highway 427 Provincial EA was only filed in January 2010, the MTO does not have Ministry of Environment approval to construct any element of the Highway 427 project and therefore there was no opportunity to incorporate MTO planning under the Region's Langstaff Road contract by acquiring additional property for the raising of Langstaff Road and construction of a larger bridge at the Rainbow Creek.

An interim alternative design was required to minimize the Region's capital construction costs

If the Region had proceeded to construct Langstaff Road as designed, it would have resulted in the Region investing in significant infrastructure which would be lost when the Highway 427 extension was implemented. In order to continue with the Region's project and minimize capital construction costs for the Langstaff Road project, as an interim solution, TRCA approval was obtained to extend the existing corrugated steel pipe culvert at Rainbow Creek thus eliminating the need for a new bridge structure at Rainbow Creek and reducing some storm sewer and asphalt pavement construction within the Highway 427 corridor. Extensive modifications were required to the design drawings, specifications, and tender documents for extending the existing culvert and altering drainage plans to provide for cheaper roadside ditches in the area of the future Highway 427 construction.

Given the amended design, new permits and approvals are required from the TRCA to carry out the amended works at Rainbow Creek.

The design revisions carried out under this purchase order will reduce the Region's capital construction cost by \$2.7 million

The difference in cost between extending the existing culvert at the Rainbow Creek and constructing a new 27 metre span bridge is estimated at approximately \$2,500,000 when channel restoration and valley vegetative planting work is considered. It is further recognized that modifications to storm drainage plans and pavement structure further reduces the construction cost by an additional \$200,000.

Although there is currently no certain date for the construction of the Highway 427 extension, construction could start within five years of being scheduled in the Ministry's Highway Program. As such, it was beneficial for the Region to minimize capital construction cost by revising the design.

MTO is responsible for all future costs related to Highway 427 extension at Langstaff Road

As the Highway 427 project does not have EA approval or budget within MTO's Highway Program, there is no opportunity to design for and cost share any new road and bridge construction within the Langstaff Road corridor to suit the future Highway 427 extension and interchange.

Given that MTO may extend Highway 427 at some time in the future, all costs associated with the undertaking, including the raising of Langstaff Road and new 70 metre span bridge over the Rainbow Creek will be the sole responsibility of the MTO.

Additional design fees cost \$120,894

Additional fees in the amount of \$120,894 are required for the consultant to carry out the design revisions, quantity calculations and estimates and to resubmit revised permit applications to the TRCA and Ministry of Environment (MOE) for Certificates of Authorization related to storm sewer pipe construction. Furthermore, a new set of contract drawings were required to be produced for tender, to reflect these changes.

The project is on schedule for 2010 construction

The project is currently on schedule for construction to commence in the summer of 2010.

5. FINANCIAL IMPLICATIONS

The financial impact to the Region with respect to the authorization of additional fees to complete the detailed design and tender documents is \$120,894, which is a fraction of the \$2.7 million savings in capital construction costs.

The design fee increase of \$120,894 requested under this report will bring the total engineering costs for the Langstaff Road project to \$568,473, plus GST. The total engineering costs include \$59,795 in engineering fees that will be recovered from land developers and the City of Vaughan for design work and revisions for sidewalks, street lighting and watermain.

The engineering fees for this project are summarized in Table 1.

Table 1
Revised Purchase Order Amount

Cost Detail	Cost
Original P.O. amount	\$229,200
Funds approved by Regional Council authorization	102,340
Funds approved under Purchasing By-Law provisions	116,039
Additional funds being requested under this report	120,894
Revised P.O. amount excluding G.S.T.	\$568,473

Sufficient funds are available in the 2010 10-Year Roads Construction Program budget. This project is funded based on 12% tax levy and 88% development charge.

From 2003 to 2009, 685 purchase orders with a total value of \$352,973,939 have been issued to secure engineering, consulting and construction services on Road projects. Of these, 35 or 5% of the purchase orders have required increases beyond the increases allowed in the Region's Purchasing By-law. The total value of such increases is \$4,537,246 or 1% of the total original value of the purchase orders.

6. LOCAL MUNICIPAL IMPACT

The reconstruction of Langstaff Road within the project limits will provide substantial community and transportation benefits to the residents of the City of Vaughan. The project will eliminate the existing jog at the Huntington Road intersection, improving the overall roadway geometrics, quality of infrastructure, safety and operations for the travelling public.

With the construction of the Langstaff Road project and the interim arterial extension of Highway 427 to Zenway Boulevard, traffic circulation will be improved within the south-west industrial development area in the City of Vaughan.

Temporary construction impacts will be mainly with respect to the temporary and localized road closure of Langstaff Road. Langstaff Road will be closed in two stages (Highway 50 to Huntington Road and Huntington Road to Highway 27) thus minimizing the construction impacts. Langstaff Road from Highway 50 to Huntington Road will be

temporarily closed for one week and Langstaff Road from Huntington Road to Highway 27 will be closed for a period of six weeks. Local access will be maintained at all times to all properties during the period of temporary road closure and road construction.

Staff of the City of Vaughan are participating as part of the Langstaff Road project team and concur with the proposed temporary road closure and the use of Huntington Road and Fogal Road as viable alternate routes.

All agencies will be advised of the project and temporary road closures. Public, emergency services and school board notification will be undertaken prior to the closure. Local residents will be notified through hand delivered notices and the travelling public by notices in the media and on-site roadway signage.

7. CONCLUSION

The authorization to pay additional fees to Earth Tech Canada Inc., now AECOM Transportation, will enable the Region to advance the Langstaff Road project, under a revised design and schedule, to tender and commence road construction in 2010. Accordingly, it is recommended the purchase order for this assignment be increased to \$568,473 to fund the additional design work.

For more information on this report, please contact Paul Jankowski, General Manager, Roads at Ext. 5901.

The Senior Management Group has reviewed this report.