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CONSULTANT FEE INCREASE MAJOR MACKENZIE DRIVE WATERMAIN

The Transportation and Works Committee recommends the adoption of the recommendation contained in the following report, March 19, 2008, from the Commissioner of Environmental Services:

1. RECOMMENDATION

It is recommended that:

1. Approval be granted to increase Genivar's fees for engineering services during the Contract Administration and Site Inspection phase of the Major Mackenzie Drive Watermain project by \$350,000 plus GST, from the current purchase order amount of \$699,921 to \$1,049,921.

2. PURPOSE

The purpose of this report is to obtain Regional Council approval to increase the purchase order amount for the previously retained consulting engineer.

3. BACKGROUND

The consulting services referred to above relate to Regional Contract Number T-06-02 for the construction of the Major Mackenzie Drive Watermain from Woodbine Avenue to the Pugsley Avenue pumping station in the Towns of Markham and Richmond Hill.

The Major Mackenzie Watermain Project is approximately 3.6 km of new 750 mm diameter watermain and 2.3 km of 1050 mm diameter watermain and includes a crossing of Highway 404. The estimated construction cost is \$17 million and the watermain is currently being constructed by Clearway Construction Inc. under Contract T-06-02.

On July 18th, 2007, a large depression was observed around the east shaft at the proposed German Mills Creek tunnel crossing, measuring approximately 40 metres in diameter. The settlement caused cracking in the surrounding ground including the asphalt surfaces and curbs in the adjacent parking lot at 286 Major Mackenzie Drive. The settlement was likely the result of an upward flow of water into the shaft.

Although the shaft was backfilled by Clearway immediately upon observing the infiltration of water into the shaft, there was concern as to the stability of the YDSS sewer running parallel to the proposed watermain and within the disturbed ground area. As a contingency, an emergency sewage by-pass system was set up to protect against a potential failure of the YDSS sewer.

To minimize this risk and prevent further ground settlement, compaction grouting was used for soil stabilization.

Due to the critical operational requirements of the YDSS sewer, in addition to the remedial work which was implemented immediately, further precautionary measures were taken. A structural liner was installed inside the existing pipe for approximately 150 meters to reinforce the integrity of the YDSS sewer.

As a result of this incident, construction of the portion of the watermain between Newkirk Road and Dunsmore Crescent in the Town of Richmond Hill has been suspended pending additional investigation and a re-design by Genivar.

4. ANALYSIS AND OPTIONS

Genivar was retained originally to provide engineering services for the Major Mackenzie Watermain project including detailed design, contract administration and full time site supervision.

Genivar's Geotechnical sub-consultant, GeoTerre Limited ("GeoTerre") originally provided a geotechnical report for this project indicating that dewatering/depressurization was not required for the area between Newkirk Avenue and Dunsmore Crescent.

Additional Work being added to Genivar's original Scope

Since the settlement incident, Genivar and GeoTerre have been asked to provide a report identifying the cause of the ground settlement and to re-assess the original design including the need to dewater/depressurize in the vicinity of the German Mills Creek crossing.

Genivar has recommended that GeoTerre perform further geotechnical work to determine the best possible route for realignment of the watermain and to confirm whether dewatering/depressurization is necessary.

GeoTerre recently provided the Region with a supplementary geotechnical investigation program to assess the cause of the settlement and to provide further subsurface information to complete the remaining portion of watermain.

The increase in Genivar's purchase order is being sought to pay for the additional/supplementary geotechnical investigation program, and for the ultimate redesign of the watermain between Newkirk Avenue and Dunsmore Crescent.

5. FINANCIAL IMPLICATIONS

Genivar's assignment was to undertake the environmental assessment, detailed design and contract administration services for the Major Mackenzie Watermain Project at an upset fee of \$699,921. Given the various changes to the scope of work and the additional services required as a result of the German Mills Creek shaft failure, we recommend that authorization be given to increase the purchase order for Genivar and its team to complete contract administration and site inspection services at a cost of \$1,049,921 plus GST. Staff has reviewed the extra costs and concur they are reasonable. Sufficient funds are available in the proposed 2008 budget.

Upon the completion of the re-design, Clearway has agreed to complete the installation of the watermain without charging stand-by fees for delays associated with the re-design.

6. LOCAL MUNICIPAL IMPACT

This fee increase will have no direct impact to the local municipality. Timely completion of construction of this short section of watermain is required to ensure adequate servicing of growth within the Town of Markham.

7. CONCLUSION

Genivar is committed to completing this project in a timely manner; however, to accomplish this, an increase in the current purchase order is necessary.

For more information on this report, contact Bala Araniyasundaran, extension 5131, Director, Capital Delivery of the Water and Wastewater Branch in the Environmental Services Department.

The Senior Management Group has reviewed this report.