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REQUEST FOR ADDITIONAL FUNDING FOR CLASS EA, DETAILED DESIGN, AND CONTRACT ADMINISTRATION SERVICES FOR THE AURORA SEWAGE EQUALIZATION TANK TOWN OF AURORA – PROJECT 70340

The Transportation and Works Committee recommends that Council adopt the recommendation contained in the following report dated December 16, 2008, from the Commissioner of Environmental Services.

1. RECOMMENDATION

It is recommended that:

1. Blanket Purchase Order number P-03-82 issued to R.V. Anderson Limited for the Class Environmental Assessment, detailed design, contract administration and site inspection for the Aurora Equalization Tank be increased from \$731,052 to \$1,001,252 excluding GST, for additional engineering services related to emergency repairs to existing infrastructure and extended duration of contract administration outside of the original scope of work.

2. PURPOSE

This report seeks Regional Council authorization to increase the purchase order issued to R.V. Anderson Limited for the Class Environmental Assessment, detailed design and contract administration for the Aurora Equalization Tank.

The Purchasing By-law requires Regional Council authorization to increase the value of a purchase order (PO) in excess of 15% for contingencies and 20% for additional scope activities. As both of these limits have already been reached, Regional Council authorization is required for this purchase order increase.

3. BACKGROUND

Additional project activities related to geotechnical investigation, design work and contract administration

In January 2004, R.V. Anderson Limited (RVA) was retained to provide engineering services for the Class Environmental Assessment (Class EA), detailed design and contract administration of a new Equalization Tank located at the site of the Aurora Pumping Station.

Additional design and contract administration services were provided over the last 3.5 years. Accordingly, PO number P-03-82 issued to RVA for this assignment is currently at its maximum allowable limit of \$731,052. These additional services were:

- Out-of-scope activities related to the geotechnical investigation required to identify the quality of contaminated soil to be excavated and disposed of off site, as well as to determine if a Ministry of the Environment Permit to Take Water was required during construction, (\$59,865).
- Additional design activities requested by Operations staff for implementation of various minor mechanical improvements at the adjacent Aurora Pumping Station, (\$29,667).
- In April 2008, the PO was increased for 25 weeks of additional contract administration, including site supervision services not provided for in the original scope for this project. This value was established by RVA's proposal which stipulated that the fee for all "out of scope" contract administration and site inspection services would be \$4,000 per week (\$100,000).

The project is currently under construction. The Equalization Tank will be commissioned and in operation by the end of 2008, however, total completion of the contract, including site restoration, will not take place until the spring of 2009. Further additional services including emergency design work and contract administration services that have been provided by RVA, or will be required prior to the completion of the project, are outlined below.

4. ANALYSIS AND OPTIONS

Emergency design work required to repair maintenance hole

The construction contractor recently encountered a large sinkhole on the Aurora Pumping Station site adjacent to an existing maintenance hole. Upon investigation, it was discovered that the structural integrity of the maintenance hole was severely compromised and adjacent ground was being lost into the sewer system. This was considered to be an emergency situation. As such, RVA was instructed to immediately prepare a design for the repair of this maintenance hole for implementation by the construction contractor. The design was completed and the repair work is currently underway. The fee associated with design of this maintenance hole emergency repair is \$50,200.

Actual duration of construction requires 55 additional weeks of contract administration and site inspection services primarily resulting from weather-related construction issues

Given the physical constraints at the Aurora Pumping Station site, a relatively innovative and complex excavation shoring system was specified in the contract. The system involved drilling a series of shafts to below final grade prior to excavation. Over 200 shafts were dug side by side around the entire perimeter of the excavation each to an average depth of 23 metres. An "I" beam was inserted into every other shaft and each shaft was then filled with a strong mix concrete. During this complex shoring operation, the contractor continually encountered large boulders, which significantly delayed the completion of this critical path activity. Once the excavation was completed, the large quantity of snowfall experienced during the winter of 2007-2008, followed by the extreme number of rainfall events throughout 2008, introduced further delays as the contractor was continually frustrated in his attempts to keep the excavation in a dry and workable condition. Furthermore, the maintenance hole issue outlined above introduces an additional delay in achieving substantial performance of the contract. At the current stage of construction, the total additional fee for contract administration and site inspection services that have already been provided or are still to be provided by RVA is estimated to be \$220,000 (i.e. 55 additional weeks at \$4,000 per week). The project is now scheduled for completion in spring 2009.

A summary of these additional activities and associated fees is provided in the following Table 1:

Table 1
Summary of Additional Required Project Activities

Description	Fee
Additional Design of Maintenance Hole Repair	\$50,200
55 Weeks of Additional Contract Administration	\$220,000
TOTAL	\$270,200

Since 2002, 686 purchase orders with a total value of \$1,257,887,574 have been issued to secure engineering, consulting and construction services on water and wastewater projects. Of these, 64 or 9% of the purchase orders have required increases beyond the increases allowed in the Regional Purchasing Bylaw. The total value of such increases is \$36,197,666 or 3% of the total original value of the purchase orders.

5. FINANCIAL IMPLICATIONS

The total cost for the above additional detailed design and contract administration services on this assignment, which are in excess of the contingency and additional scope allowances, equals \$270,200.

There are sufficient funds in the 2008 Capital Budget for this project to cover these additional expenditures.

All outstanding expenditures on this project will be funded 93% from development charges and 7% from wastewater rate reserve.

6. LOCAL MUNICIPAL IMPACT

This work provides a higher capacity of the Aurora sewage pumping station to manage peak flows during wet weather events and reduces the probability of spills to the Holland River at the Newmarket and Aurora pumping stations.

7. CONCLUSION

R.V. Anderson Limited is required to provide additional services on their Class EA, detailed design and contract administration assignment for the Aurora Equalization Tank, which are in excess of the contingency and additional scope allowances provided for in the Region's Purchasing By-law. Accordingly, it is recommended that their Purchase Order for this assignment be increased from \$731,052 to \$1,001,252, excluding GST, to fund these necessary additional services.

The construction contract for the Aurora Equalization Tank project has a current value of approximately \$14.3 million. As such, this budget increase will result in the fees for RVA's Class EA, detailed design and contract administration services equalling approximately 7.0% of the value of construction. This is typical of the expected fees for engineering services for these types of projects.

For more information on this report, contact Bala Araniyasundaran, Director of Capital Planning and Delivery, Environmental Services, at extension 5131.

The Senior Management Group has reviewed this report.