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TO:	CHAIR AND MEMBERS BUILT AND NATURAL ENVIRONMENT COMMITTEE MEETING ON OCTOBER 17, 2011
FROM:	JOHN BRAAM, P. Eng. DIRECTOR OF WATER & CITY ENGINEER
SUBJECT:	INCREASE IN ENGINEERING FEES: ELGIN MIDDLESEX PUMPING STATION – PUMPING UPGRADES TO THE CITY OF LONDON PROJECT No. EW3540

RECOMMENDATION

That, on the recommendation of the Director of Water & City Engineer, Environmental & Engineering Services, the following actions **BE TAKEN** with respect to increasing the scope of work and provision of engineering services for the Elgin Middlesex Pumping Station Pump Upgrades Project (EW3540).

- (a) That the scope of work for the preliminary design and design be amended to take into account changes and the engineering fees for AECOM Canada Ltd., 410 – 250 York Street, Citi Plaza, London, Ontario, N6A 6K2, **BE INCREASED** in the amount of \$93,181.00 to a revised total of \$157,784.00 (excluding H.S.T.), for this project, the Elgin Middlesex Pumping Station Pump Upgrades (EW3540). It being noted that the scope change is driven by revised design criteria, but will result in annual hydro cost savings of almost 20%.
- (b) the financing for this project **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix "A". This request for increase in funds is within the existing funding allocation for the project;
- (c) the consulting fees for the project **BE IN ACCORDANCE** with the estimate, on file, based upon the Fee Guideline for the Professional Engineering Services, recommended by the Ontario Society of Professional Engineers; and in accordance with Section 15.2 (g) of the City of London's Procurement of Goods and Services Policy;
- (d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project;
- (e) **IT BE NOTED** that the Corporation previously entered into a formal contract with AECOM Canada Ltd. to undertake the preliminary design and design of this project, and this work is an extension of that contract.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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The reports below can be found at <http://www.london.ca/Council/meetingpackages.htm>:
none

BACKGROUND

Purpose:

This report recommends an increase in the engineering design fees in order to address changes of scope to the design since the original award of the project.

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This project is being undertaken in order to replace the existing pumps at the Elgin Middlesex Pumping Station which have exceeded their life expectancy, with smaller more energy efficient pumps which will be suited to our operating strategy for this facility in conjunction with the Southeast Pumping Station and Reservoir.

Discussion:

Project Background

The Elgin Middlesex Pumping Station (EMPS) is part of the Elgin Water Supply Secondary System which conveys water to London, St. Thomas and Aylmer. Within this pumping station, there are 3 sets of pumps, one set owned by each municipality, for conveyance of water to that municipality.

The London pumps were installed in 1994, and were designed for the peak demands (68 ML/day) and emergency flows which would be conveyed to the City of London. As London has been taking the minimum requirement or slightly more of an average of 22.7 Million Litres per day (5 million gallons per day), these pumps were not efficient for day to day use and consumed significantly more energy than would be necessary if they were sized more appropriately. As well, the significantly lower pumping rate has caused the pumps to wear out. Pumps P4 and P5 have had significant maintenance problems.

The Consultant was formally retained to undertake the Modeling and Preliminary design engineering for this project in November 2005. This work was sole sourced by and authorized by Purchase Order as the Engineering Assignment originally in the amount of \$32,865.00 (excluding gst). This was below the threshold of \$75,000.00 for which a consultant could be directly appointed at that time.

A second purchase order for design services authorized in October 2008 in the amount of \$64,603.00 (exclusive of gst).

Subsequently, the scope of the design has increased, some of the information assumed in the design criteria needs to be revisited due to updates in Water Supply System Masterplans for the City of London and for the Elgin Water Supply System, and Scada and Instrumentation Standards, and there is an opportunity to apply for energy efficiency grants through the Ontario Power Authority. It is now requested that the design fee be increased from \$64,603.00 (exclusive of gst) to \$157,784.00 (exclusive of hst).

Reasons for Cost Increases

The estimated increased cost in consulting fees required to complete the project is \$93,181.00 and is based on the listing as follows:

- Change of design criteria. Since the beginning of the project, the design basis has changed. The timing of expansion of the Elgin Water Supply System has been deferred significantly (Elgin Water Supply System Update, 2008), and how the City would take water from the Elgin Water Supply System has been looked at in more detail.
- Additionally, different pumping scenarios have been considered, considering single speed vs variable speed pumping, time of day pumping vs 24/7 operation and whether or not the London pumps should continue to service St. Thomas and Aylmer or service London only
- Increased hydraulic modeling for the above has significantly increased costs over the originally anticipated expenditure.
- The above changes have necessitated some of the original pre-design and design work to be redone.
- Additional effort is being put into SCADA and Instrumentation from the original proposal, and there will be additional work undertaken to reconfigure operational controls in order to gain efficiency in operation.
- Additionally work will be undertaken so that the power consumption at the site can be allocated appropriately based on usage by each of the 3 municipalities.

- The Ontario Power Authority (OPA) currently has energy efficiency grants available for projects which will demonstrate reduction in energy use, and the revised work includes additional effort to prepare information, reports and studies for applications for these grant monies for the replacement of the London Pumps.

Summary:

It is recommended that an increase in AECOM's engineering fees in the amount of \$93,181.00 to a revised total of \$157,784.00 (excluding H.S.T.), be authorized in order to provide for the completion of the project. It is estimated that the design of the project will be completed in 2011 and the upgrade work would take place in 2012.

There are no anticipated operating costs anticipated due to the increase consulting fees.

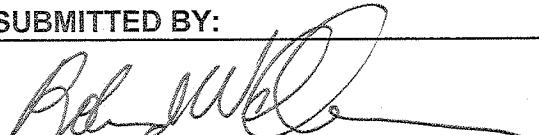

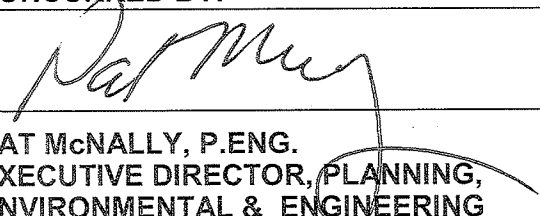
London's portion of the hydro costs for the site are approximately \$270,000.00 annually. It is anticipated that with the implementation of smaller pumps better suited to the operating strategy, and having the ability to pump at off peak consumption period, this cost will be reduced by approximately \$50,000 annually. These operating costs should be addressed in the 2013 Water Budget.

Conclusions:

The City has reviewed AECOM's proposal for changes of scope to the project and deemed the additional fees to be acceptable and appropriate for this scope of work, in accordance with the City of London's Procurement Policy.

Acknowledgements:

This report has been prepared by Patricia Lupton, P.Eng., Environmental Services Engineer, of the Water Engineering Division.

SUBMITTED BY:	RECOMMENDED BY:
	
ROLAND WELKER, P. ENG. MANAGER, WATER ENGINEERING	JOHN BRAAM, P.ENG. DIRECTOR OF WATER & CITY ENGINEER
CONCURRED BY:	
	
PAT McNALLY, P.ENG. EXECUTIVE DIRECTOR, PLANNING, ENVIRONMENTAL & ENGINEERING SERVICES	

October 4, 2011

PAL

Attach: Appendix "A" – Sources of Financing
 c.c. AECOM Canada Ltd.
 Andrew Henry, P.Eng., Regional Water Supply

Chair and Members
Built and Natural Environment Committee

October 6, 2011
(Increase in Engineering Fees)

RE: Elgin Middlesex Pumping Station - Pumping Upgrades to the City of London
Capital Project EW3540 - Elgin Middlesex Pumping Station
AECOM Canada Ltd. - \$157,784.00 (excluding H.S.T.)

FINANCE DEPARTMENT REPORT ON THE SOURCES OF FINANCING:

Finance Department confirms that the cost of this project can be accommodated within the financing available for it in the Capital Works Budget and that, subject to the adoption of the recommendations of the Director of Water & City Engineer, the detailed source of financing for this project is:

<u>ESTIMATED EXPENDITURES</u>	<u>Approved Budget</u>	<u>Committed to Date</u>	<u>This Submission</u>	<u>Balance for Future Work</u>
Engineering	\$175,000	\$64,975	\$94,821	\$15,204
Construction	525,000	10,223		514,777
City Related Expenses	700,000	126,424		573,576
NET ESTIMATED EXPENDITURES	<u>\$1,400,000</u>	<u>\$201,622</u>	<u>\$94,821</u> 1)	<u>\$1,103,557</u>

SOURCE OF FINANCING:

Capital Water Rates	\$1,400,000	\$201,622	\$94,821	\$1,103,557
TOTAL FINANCING	<u>\$1,400,000</u>	<u>\$201,622</u>	<u>\$94,821</u>	<u>\$1,103,557</u>

Financial Note:


- 1) Estimated Expenditure
Less: Amount previously approved
Contract Price
Add: HST @13%
Total Contract Price Including Taxes
Less: HST Rebate
Net Contract Price

AECOM

\$157,784
64,603
93,181
12,114
105,295
10,474
<u>\$94,821</u>

- 2) There are no anticipated operating costs due to the increase in consulting fees.

JG



Alan Dunbar

Manager of Financial Planning & Policy