THE REGIONAL MUNICIPALITY OF YORK

REPORT NO. 6 OF THE REGIONAL COMMISSIONER OF TRANSPORTATION AND WORKS

For Consideration by The Council of The Regional Municipality of York on December 14, 2006

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AUTHORIZATION OF CONSULTING SERVICES SCHOMBERG WATER SYSTEM UPGRADES

1. RECOMMENDATION

It is recommended that the upset fee for engineering services for the Schomberg Water System Upgrades, Community of Schomberg, Township of King, carried out by Hatch Mott MacDonald Ltd. be increased by $383,526.12 from $249,998.00 to $633,524.12.

2. PURPOSE

The purpose of this report is to obtain Regional Council approval to increase the approved scope of services and the corresponding increase to purchase order amount for the services of Hatch Mott MacDonald Ltd. on the Schomberg Water System Upgrades project.

The purchasing by-law requires that where fee increases due to additional scope exceeds 20% of the original fee, the increase must be authorized by Regional Council.

3. BACKGROUND

3.1 Scope of the Original Assignment

The existing water supply system serving the Community of Schomberg consists of two production wells (Schomberg Well No. 2 and Schomberg Well No. 3) with a combined rated capacity of 3.93 ML/d and a 1.5 ML elevated storage tank. Both wells draw water from the deep, well-confined Thorncliffe Formation Aquifer. The system serves an estimated population of 2,500 people.

The water quality data for these wells indicates the raw water is high in iron, manganese, ammonia and methane. Because of the high, naturally-occurring ammonia in the raw water, chlorine dosage is maintained at a fairly high level in order to achieve the legislated requirements for free chlorine residual. While the treated water meets all regulatory requirements, the volume of chlorine required to maintain regulatory requirements creates operational difficulties in shipping, handling and storage.

This project is the result of consultation with the Ministry of the Environment. Ministry staff are supportive of the proposed changes to the Schomberg water treatment works. Changes being implemented to the treatment process are to address these issues.

Hatch Mott MacDonald (formerly American Water Services) was retained to provide engineering services for the detailed design, construction supervision and contract administration. This was subject of a Council report considered at its meeting of October 27, 2005.

The original scope allowed for detailed design of an ultraviolet (UV) disinfection system at each of the two well houses to replace the existing chlorination system.

3.2 Project Status

The consultant has completed the Project Definition Report, the Preliminary Design Report and a portion of the detailed design. The Preliminary Design Report indicated that UV disinfection alone is not technically feasible due to the measured, low UV transmittance of the raw water. Essentially, the presence of naturally occurring iron and manganese inhibits disinfection by UV light, as bacteria can “hide” behind the metals and escape exposure to the light. The report recommends removal of the iron and manganese from the raw water by filtration followed by UV disinfection.

4. ANALYSIS AND OPTIONS

4.1 Reasons for Change of Scope

The recommended filtration system will require design and construction of a separate building at the site of Schomberg Well No. 3. Due to space limitations, it is not feasible to construct a filtration building at the site of Well No. 2. Therefore the consultant will be required to design a raw water forcemain from Well No. 2 to the proposed filter building

at Well No. 3 and a watermain to carry the treated water back to the distribution system near Well No. 2.

The additional services to complete the project includes detailed design, tendering and contract administration of the filtration process, filtration building, raw water forcemain and treated water watermain, whereas the original project was limited to the design and construction of a UV Disinfection System.

Additional design work and construction of the filtration building have extended the proposed schedule by 13 months (April 07 to May 08). Conducting a new Request for Proposal (RFP) for detailed design and construction services would delay the project an additional three to four months.

4.2 Option to Address Change in Scope

Given the change in scope, the Region has two options to proceed as follows:

- Terminate the assignment with Hatch Mott MacDonald Ltd. and retain a new consultant to complete the expanded scope of services.
- Increase the scope of services to be provided by Hatch Mott MacDonald Ltd. at an additional cost to the original approved fee.

Given that Hatch Mott MacDonald Ltd. has completed the initial phases of the project and have familiarity with the project, it would be advantageous to have the same consultant complete the engineering assignment. This approach would ensure project continuity and avoid delays to the project that would be incurred if a new consultant were to be selected through a competitive process.

5. FINANCIAL IMPLICATIONS

Hatch Mott MacDonald's assignment was to undertake the detailed design and contract administration of UV disinfection at the two Schomberg well houses. Given the changes in the recommended treatment technology, the increased design and construction effort and the addition of raw and treated water watermains, it is recommended that authorization be given to increase the purchase order by $383,526.12 for Hatch Mott MacDonald Ltd. to complete the detailed design, contract administration and construction supervision to a total cost of $633,524.12 excluding GST. The following table summarizes the additional costs and the status of the individual items of work. Staff has reviewed the extra costs and concur they are reasonable and appropriate. Sufficient funds are available in the 2006 budget.

Table 1
Summary of Work Completed and Additional Costs

Task	Status	Original Cost	Revised Cost	Additional Cost
Project Definition Report	Completed	$6,217.40	$6,217.40	
Preliminary design / Report	Completed	23,611.80	23,561.80	- $50.00
Revision to Preliminary Design			20,161.44	$20,161.44
Detailed Design / Tendering	Commenced	40,439.80	273,399.48	232,959.68
Contract Admin. & Supervision		157,729.00	288,184.00	130,455.00
Material Testing		10,000.00	10,000.00	
Geotechnical Report		12,000.00	12,000.00	
TOTAL (excluding GST)		**$249,998.00**	**$633,524.12**	**$383,526.12**

6. LOCAL MUNICIPAL IMPACT

This project is required to optimize the treatment of the water supply for the Community of Schomberg and has been developed in consultation with the Ministry of the Environment. Delay in implementing a new treatment process will increase the risk of increased levels of disinfection by-products within the water supply. The new treatment process will reduce taste and odour concerns by decreasing chlorination levels currently required in the water supply system.

7. CONCLUSION

The upset fee for engineering services for the Schomberg Water System Upgrades, Community of Schomberg, Township of King, carried out by Hatch Mott MacDonald Ltd. be increased by $383,526.12 from $249,998.00 to $633,524.12.

For more information on this report contact Sharon Richard, Project Coordinator, or Brian Wolf, Manager, Engineering, of the Transportation and Works Department.

The Senior Management Group has reviewed this report.

Respectfully submitted,

December 14, 2006
Newmarket, Ontario

B. Macgregor
Commissioner of
Transportation and Works

(Report No. 6 of the Commissioner of Transportation and Works was adopted, without amendment, by Regional Council at its meeting held on December 14, 2006.)