

Clause 12 in Report No. 4 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on March 24, 2016.

12

Value Engineering Services for  
West Vaughan Sewage Servicing Project

Committee of the Whole recommends adoption of the following recommendation contained in the report dated February 10, 2016 from the Commissioner of Environmental Services:

1. Hatch Mott MacDonald be engaged to undertake value engineering services related to the West Vaughan Sewage Servicing project as outlined in this report, at a fee of \$244,098.00 excluding HST.

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Report dated February 10, 2016 from the Commissioner of Environmental Services now follows:

1. Recommendation

It is recommended that:

1. Hatch Mott MacDonald be engaged to undertake value engineering services related to the West Vaughan Sewage Servicing project as outlined in this report, at a fee of \$244,098.00 excluding HST.

2. Purpose

This report seeks Council authorization to retain value engineering services related to the West Vaughan Sewage Servicing project.

The Region's Purchasing Bylaw requires Council authorization to award Request for Proposals over \$2,000,000 or when the recommended proponent is not the lowest cost. In this case, the recommended proponent is not the lowest cost.

### 3. Background

West Vaughan Sewage Servicing project will provide sewage servicing for planned growth in the City of Vaughan

The purpose of the West Vaughan Sewage Servicing project is to provide sewage servicing to accommodate planned growth for employment in the City of Vaughan. The Environmental Assessment was completed in 2013 and detailed design, contract administration and site inspection contract was awarded in 2014. The project is currently at the end of the preliminary design phase.

The West Vaughan Sewage Servicing project proposes nearly 14 kilometres of sewer tunnels traveling from the Kleinburg Water Resource Recovery Facility and ending at the Humber Sewage Pumping Station. The project also includes expansion of the Humber Sewage Pumping Station from a capacity of 1,700 litres per second to 2,400 litres per second.

### 4. Analysis and Options

Purpose of value engineering is to obtain the best project at the lowest cost without sacrificing quality or reliability

Value engineering is an organized and systematic technique for analyzing infrastructure projects with the aim to improve functions and quality while reducing cost. The Region's approach to value engineering follows a proven, structured, systematic review process that identifies unnecessary and/or inefficient functions and then suggests alternative ways to perform and/or improve required functions at a lower life cycle cost. In essence, the purpose of a value engineering analysis is to obtain the best project at the least cost without sacrificing quality or reliability. Value engineering methodology will be conducted in accordance with the Region's value engineering guideline, where this approach is typically applied to complex projects or if the estimated construction cost is over \$10 million. In this case, the project is complex and over \$10 million.

The Region's goals for applying recognized value engineering methodologies to this project are to:

- Ensure the project is accomplishing necessary functions
- Identify areas of unnecessary or excessive costs
- Identify and evaluate cost-reducing alternatives including:

## Value Engineering Services for West Vaughan Sewage Servicing Project

- Utility relocation options
- Property acquisition options
- Energy conservation measures
- Examine opportunities to add value to the project
- Identify methods to manage costs and schedule risks

Value engineering studies were previously used on several Environmental Services capital projects including, Southeast Collector Trunk Sewer, Duffin Creek Water Pollution Control Plant expansions and Upper York Sewage Servicing. These studies identified operational risks, constructability concerns, potential procurement issues and generated cost saving opportunities that were incorporated into the final design.

Value engineering workshops to include subject matter experts to drive opportunities for optimization

The value engineering approach will include three workshops and include subject matter experts in the following fields: tunnel design, sewage pumping station design, constructability and cost estimating.

Value engineering studies will be complete at the end of preliminary design, 30% design and 60% design phases. It is preferable to perform value engineering studies as early as possible as fewer decisions have been made and more opportunities for optimization are available.

For the West Vaughan Sewage Servicing project, a separate third-party value engineering approach was selected as this separate team provides independence from the design consultant, Delcan-GEODATA Joint Venture, which is desirable for projects of this complexity.

Request for Proposal P-15-187 was issued in January 2016

In accordance with the Purchasing Bylaw, Request for Proposal P-15-187 was released in January 2016 to obtain value engineering services for the West Vaughan Sewage Servicing project.

The request for proposal detailed the scope of work required, which included the following services:

- Review of relevant background project information.
- Three separate five-day workshops throughout the detailed design phases of the project.
- Project management and control.

Value Engineering Services for West Vaughan  
Sewage Servicing Project

- Preparation of a comprehensive value engineering report for each of the three workshops, including recommendations on design optimization and constructability resulting in capital and life cycle cost savings.

Nine proponents obtained the bid document and three proponents submitted proposals in response to the request for proposal.

Proposals evaluated using two-envelope system

Proposals were evaluated using the two-envelope system with technical and financial information submitted in two separate envelopes. The overall proposal score was evaluated based on a weighting of 80 points for the technical proposal and 20 points for the financial proposal. Technical proposals were evaluated prior to any knowledge of financial information.

The Region's proposal evaluation team reviewed three technical proposals based on the following criteria as listed in Request for Proposal P-15-187:

- Corporate experience
- Value engineering team leader experience
- Key and technical staff/sub-consultant experience
- Project understanding
- Project approach methodology
- Project work plan and deliverables
- Project management approach

Technical components of the proposal must achieve a minimum technical score of 60 per cent (48 points out of the potential 80 points) to have the financial portion of the proposal considered. If a proponent fails to achieve this minimum technical score, their financial proposal is returned unopened. Technical and financial results are summarized in Table 1.

**Table 1**  
**Proposal Evaluation Summary**

Firm	Technical Score (out of 80)	Total Fee (excluding taxes)	Financial Score (out of 20)	Total Score (out of 100)
Hatch Mott MacDonald	56.75	\$ 244,098	18.46	75.21
Arup Group Inc.	48.10	\$ 225,350	20.00	68.10
MMM Group Limited	50.10	\$ 361,000	12.48	62.58

Evaluation of proposals revealed Hatch Mott MacDonald achieved the highest total score

The proposal submitted by Hatch Mott MacDonald demonstrated a clear understanding of project requirements and provided an experienced team committed to working with Environmental Services staff and other third parties as required. The proposal submitted by Hatch Mott MacDonald represents the best value for the Region.

Supplies and Services Branch reviewed the evaluation summary and issued their report confirming that Hatch Mott MacDonald be recommended as the successful overall proponent to undertake the value engineering services for the West Vaughan Sewage Servicing project.

Link to key Council-approved plans

Innovative and cost-effective delivery of water and wastewater infrastructure aligns with the Region's *2015 to 2019 Strategic Plan* objective of optimizing critical infrastructure systems capacity.

## 5. Financial Implications

The fee for this proposed work is \$244,098.00 excluding HST. Adequate Capital Spending Authority is included in the approved 2016 Budget to award this assignment.

## 6. Local Municipal Impact

The West Vaughan Sewage Servicing project is a significant expansion of infrastructure in the York Region Sewage System and represents an important investment for the Region. To avoid impacts to funding levels, the Region is required to cost effectively deliver the project. The value engineering study is one approach taken to enhance performance of this wastewater project for the resources expended over the service life of the project.

## 7. Conclusion

Three proposals were received and evaluated for this project in accordance with the Region's Purchasing Bylaw. The proposal from Hatch Mott MacDonald represents the best value for money to the Region.

It is recommended that Hatch Mott MacDonald be engaged to undertake value engineering services for the West Vaughan Sewage Servicing project at a cost of \$244,098.00 excluding taxes.

For more information on this report, please contact Mike Rabeau, Director, Capital Planning and Delivery, Environmental Services at ext. 75157.

The Senior Management Group has reviewed this report.

February 10, 2016

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