York Region

Clause No. 1 in Report No. 5 of the Transportation and Works Committee was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting on May 19, 2005.

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CONSULTANT SELECTION FOR THE STAGE 3 EXPANSION DUFFIN CREEK WATER POLLUTION CONTROL PLANT PROJECT 73720

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, April 26, 2005, from the Commissioner of Transportation and Works:

1. RECOMMENDATIONS

It is recommended that:

1. The consulting engineering consortium of Team Duffin be engaged to undertake the Stage 3 Liquids Process Expansion of the Duffin Creek Water Pollution Control Plant (WPCP) in an amount of $15,295,112.00, excluding GST.

2. The consulting engineering consortium of Team Duffin be engaged to undertake the Stage 3 Solids Process Expansion of the Duffin Creek Water Pollution Control Plant (WPCP) in an amount of $14,602,462.00, excluding GST.

2. PURPOSE

The purpose of this report is to recommend an award of the engineering assignments to the selected engineering consultants for the Stage 3 Liquids Process Expansion and the Stage 3 Solids Process Expansion of the Duffin Creek WPCP. The report also briefly discusses measures to expedite the project. Another report will be brought forward in June 2005 to obtain Regional Council approval for additional measures to fast track the project.

3. BACKGROUND

The Duffin Creek WPCP provides treatment for sewage flows from the Regional Municipalities of York and Durham. Approximately eighty percent of the treated flows at the plant originate from the Regional Municipality of York. The Duffin Creek WPCP is jointly owned by the two Regions and management of the Duffin Creek WPCP is governed by the York Durham Sewage System (YDSS) Primary System Co-owners agreement (executed on November 28, 1997).

The update to the Long Term Wastewater Master Plan has identified the Stage 3 Expansion Projects at the Duffin Creek WPCP to increase wastewater treatment capacity to be able to service growth in York Region. The Stage 3 Expansion Projects will accomplish the following:

- Increase the liquids process treatment capabilities from 420 MLD to 630 MLD.
- Increase the solids treatment process to provide a firm treatment capacity of 270 Dry Tonnes per day.

A Schedule C, Class Environmental Assessment (Class EA) for these projects is presently ongoing and is expected to be completed in late 2005. Retaining the consultants for the engineering work at this stage will allow the Region to expedite the preliminary engineering and design phases of the work. The Region has also retained project planning consultants to assist with project planning and control. Regional staff are exploring additional measures to expedite the project including prepurchase of equipment and pre-authorization from the two Regional Councils for award of specific contracts or proposals. A report addressing these issues is planned for the June Regional Council meeting.

3.1 Scope of Services

The Duffin Creek WPCP treats the raw sewage by separating the waste solid material from the wastewater. After separation, the liquid wastewater treatment process is known as the secondary activated sludge treatment where aerobic (oxygen breathing) bacteria is cultivated. The aerobic bacteria purifies the water by feeding on the other soluble and small particulate contaminants. Further treatment to disinfect the cleaned water is done prior to the disposal into Lake Ontario.

The solid material is processed separately. Some of the solids, 10 – 20 %, are pumped to digesters where anaerobic (non-oxygen breathing) bacteria is cultivated. During this process, the volatile portion of the material is converted to methane gas for use as a fuel for heating purposes. The waste solids from this process are mixed with the other majority of the solids, pass dewatering equipment to remove excess water, and then are fed into high temperature incinerators for destruction. Most of the remaining ash material is used by the cement producing industry.

Generally speaking, the scopes of services for the project are as follows:

- Consulting engineering services to perform the pre-design, detailed design, contract administration and resident inspection for a complete new liquids process train to treat 210 MLD and upgrades to the existing processes to treat the increase in projected flow rates to continuously meet or exceed the Ministry of Environment effluent discharge parameters.

- Consulting engineering services to perform the pre-design, detailed design, contract administration and resident inspection for a new biosolids treatment and incineration

complex and upgrades to the existing processes to treat the increase in projected biosolids' production to continuously meet or exceed the Ministry of Environment air discharge parameters.

4. ANALYSIS AND OPTIONS

It is anticipated that the design and construction process will require about five years to complete.

In 2004, an Expression of Interest P-04-67 was issued for the engineering services and five submittals were received. The following two consortiums were pre-qualified to respond to Request for Proposal P-05-29:

1. Team Duffin (CH2MHILL, Earth Tech Inc., Macviro Consultants Inc., Simcoe Engineering Group Limited and Totten Sims Hubicki Limited).
2. KMK Consultants/Black and Veatch.

The two consortiums assembled project teams with personnel specialized in specific components of the assignment. Regional staff from York and Durham evaluated the technical proposals.

The technical evaluation was based on the project management, project team organization, appropriate allocation of resources, project implementation approach and understanding, quality assurance and quality control, innovations and construction management methods. Consensus scores for the two technical proposals from Team Duffin and KMK Consultants/Black and Veatch, were then finalized after consultation among Durham and York Region staff.

The technical and price proposals were submitted in separate envelopes. The price proposals were opened once the technical evaluations were complete. The prices were factored into the proposal evaluation using standard procedures.

Table 1
Consultant Proposal Evaluation Summary

Firm	Technical Score (Out of 40)	Upset Limit Excluding GST	Financial Score (Out of 60)	Total Score (Out of 100)
Liquids Process Expansion				
Team Duffin	27.5	$15,299,112	60.0	87.5
KMK Consultants/Black and Veatch (B & V)	30.0	23,887,750	38.4	68.4
Solids Process Expansion				
Team Duffin	28.5	14,602,462	60.0	88.5
KMK Consultants/Black and Veatch (B & V)	30.5	$20,467,610	42.8	73.3

1. **The Stage 3 Liquids Process Expansion**
   The KMK Consultants/Black and Veatch proposal addressed all of the requirements for this assignment and achieved the better technical score due to strength in the areas of project team organization and quality assurance/quality control. While the Team Duffin proposal scored slightly lower in those areas, the Regions are satisfied they meet all the requirements for the assignment.

   The Team Duffin financial proposal was ranked the higher, with KMK Consultants/Black and Veatch the lower.

   The proposal from Team Duffin ranked highest in the overall evaluation and both Regions' staff believes it represents the best value.

   Team Duffin proposed fast tracking the detailed design of the Liquids process expansion. The Regions will be asking Team Duffin to provide details and expand on their proposal on how they could implement the fast track approach. The Regions will then review this proposal for compliance with the requirements of the Request for Proposal.

2. **The Stage 3 Solids Process Expansion**
   The KMK Consultants/Black and Veatch proposal addressed all of the requirements for this assignment and achieved the better technical score due to strength in the areas of project team organization and quality assurance/quality control. Similarly to the Liquids proposal, Team Duffin scored slightly lower in two categories, however, the Regions are satisfied that they meet all the requirements of the Request for Proposal.

   The Team Duffin financial proposal was ranked the higher, with KMK Consultants/Black and Veatch the lower.

   The proposal from Team Duffin ranked highest in the overall evaluation and both Regions' staff believes it represents the best value.

   The Team Duffin consortium contains the companies that are: a) currently executing the Class Environmental Assessment for the Expansion and b) currently designing and performing the contract administration for the optimization project. Though not directly connected, the Regions' staff believe that there are time and financial advantages to the Team Duffin proposal.

5. FINANCIAL IMPLICATIONS

1. **The Stage 3 Liquids Process Expansion**
   The Regional Municipality of York will be responsible for 100% of the cost of this project, as the liquids expansion will benefit only York Region. This is in accordance with the YDSS Primary System Co-owners Agreement.

2. **The Stage 3 Solids Process Expansion**
   The Regional Municipality of York will be responsible for 62% and the Regional Municipality of Durham will be responsible for 38% of the cost of the project, as the solids expansion will be required to support future growth in both Regions. This is in accordance with the YDSS Primary System Co-owners Agreement. The contributions estimated for York Region is $9,053,526 and for Durham Region is $5,548,936 not including GST based on cost-sharing agreements that have been established for this system.

York Region will be the primary point of contact and will engage the services of the selected consultant for this assignment.

The York Durham Sewage System Management Committee has reviewed, discussed and approved the requirements of these projects. The presently estimated Cost of Construction for the Stage 3 Liquids Expansion project is $170 million and the Stage 3 Solids Expansion project is $150 million, including the engineering fees, for a total of $320 million. The estimated cost share for York Region or engineering in 2005 is $4 million. Sufficient funds have been included in the 2005 Capital Works Budget and the 10 year plan for these projects.

6. LOCAL MUNICIPAL IMPACT

The Duffin Creek WPCP is presently at 85% - 90% treatment capacity. Implementation of the Stage 3 Expansion Projects is critical to ensuring that sufficient treatment capacity will be available to service short and long term growth to 2025 within both York and Durham Regions.

7. CONCLUSION

The Stage 3 Process Expansion
The Team Duffin proposals addressed all of the requirements for both the liquids and solids process expansion assignments including qualified and knowledgeable personnel, and proposed a sound methodology to complete these assignments. The proposals represent the best overall value to York and Durham Region.

The Region is expediting the implementation of this project by initiating the engineering services prior to the completion of the Class EA. Regional staff will be bringing forward a report in September, 2005 to propose additional measures to expedite the project.

The Senior Management Group has reviewed this report.