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**AUTHORIZATION OF CONSULTING SERVICES
BATHURST COLLECTOR AND LANGSTAFF TRUNK SEWER
CITY OF VAUGHAN, PROJECTS 77090 AND 77100**

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, January 21, 2005, from the Commissioner of Transportation and Works:

1. RECOMMENDATIONS

It is recommended that:

1. The upset limit for the Marshall Macklin Monaghan (MMM) assignment for services related to project management, design-build process management, environmental and ecological impact assessments and regulatory approvals associated with the Bathurst Collector and Langstaff Trunk Sewer, be increased by \$1,083,804.49 (from \$2,489,577.00 to \$3,563,381.49 excluding GST).
2. Ogilvie, Ogilvie & Company in association with Data Shepherd be retained to assist with stakeholder relationship management including the development and maintenance of a web site for the project, at an upset fee of \$207,329.00 excluding GST.
3. The Chief Administrative Officer and the Commissioner of Transportation and Works be authorized to retain the services of the following: environmental specialists, peer review experts and project planning consultants as required to expedite the procurement process for this critical project.
4. The Chief Administrative Officer and the Commissioner of Transportation and Works be authorized to execute agreements in respect of the above mentioned services, on York Region's behalf, subject to the prior review of Legal Services.

2. PURPOSE

The purpose of this report is to update Transportation and Works Committee and Regional Council on the status of the Bathurst Collector and Langstaff Trunk Sewer project. In addition, this report is submitted to:

- Obtain Regional Council approval to increase the upset limit amount for the incumbent consulting engineer, MMM.
- Obtain authorization to procure services to assist with stakeholder relationship management, create and maintain a project specific web site for the next three years, and offer public facilitation services on the Bathurst Collector and Langstaff Trunk Sewer Project.

- Obtain authorization to retain experts to review all technical studies prepared in support of this project.

3. BACKGROUND

3.1 Basis for Project

In 1997, The Regional Municipality of York completed a Master Plan Study for the York-Durham Trunk Sewer System. The Master Plan identified construction of the Bathurst Collector and the Langstaff Trunk as “strategic” projects required to meet approved growth projections and commitments. The Region’s 2004 10-year Capital Budget and the 2002 Master Plan Update also identified the Bathurst Collector and Langstaff Trunk Sewer as “strategic” projects.

The Bathurst Collector will extend the York Durham Sewerage System northward to provide relief to the Maple Collector via the Langstaff Trunk as well as provide sanitary servicing for new development in the City of Vaughan. Phase 1 of the Bathurst Collector will be constructed north along Bathurst Street from Steeles Avenue to north of Highway 7. The Langstaff Trunk will be constructed along Langstaff Road from the Bathurst Collector to the Maple Collector at the Canadian National Railway (C.N.R.) tracks west of Keele Street (*see Attachment 1*).

A Class Environmental Assessment (EA) Study was completed and approved in 2000 for Phase 1 of the Bathurst Collector and for the Langstaff Trunk Sewer. An addendum to the original Class EA was also completed and approved in 2001 that identified the need for a northern extension of the Bathurst Collector (Phase 2) to Major Mackenzie Drive. The area developers will design and construct Phase 2 of the Bathurst Collector. Phase 2 is planned to be designed and constructed using different construction methods and should be in service prior to Phase 1. The Region previously approved an interim sewage servicing capacity of up to 11,764 persons through the connection to the existing North Don Collector Sewer. Subsequently, an additional interim capacity of 8,000 persons was approved. As a result, Phase 2 is a separate project, not covered in this report.

3.2 Funding

York Region entered into a pre-paid development charge agreement with landowners in Block 10, 11 and 12 (*see attachment 2*) for the advanced construction of Phase 1 of the Bathurst Collector with a total capital budget of \$26.5 million. Construction of Phase 1 of the Bathurst Collector is scheduled to start in 2006 with completion by 2008. Due to rapid growth in the City of Vaughan and limited available capacity in the Maple Collector, in November 2002, York Region entered into a pre-paid development charge agreement with landowners in Blocks 18 and 33-West (*see attachment 2*) for the advanced construction of the Langstaff Trunk Sewer with a total capital budget of \$17.5 million. Construction of the Langstaff Collector is scheduled to start in 2006 with completion by 2008.

Since the signing of the pre-paid development charge agreement the scope of the project has grown substantially. Due to pressure from environmental agencies York Region has conducted a review of alternative construction techniques and is proceeding with the construction of Bathurst Collector and Langstaff Trunk Sewer using Earth Pressure Balance (EPB) technology. This will limit the amount of dewatering required. Current cost estimates for the completion of the project using EPB technology are approximately \$42 million for Bathurst Collector and \$29 million for the Langstaff Collector. The developers were updated as to the status of the project and the associated increase in project costs in a presentation held on August 20th, 2004. York Region's review of alternative construction technologies was presented to the developers at this time as was the Region's decision to construct the Bathurst Collector and Langstaff Trunk Sewer using EPB technology.

3.3 Design-Build Process Development

In April 2002, York Region retained Marshall Macklin Monaghan Limited to provide Process Consulting Services for Phase 1 of the Bathurst Collector project. The assignment was extended in September 2002 to include similar services for the Langstaff Trunk Sewer contingent upon Blocks 18 and 33 West entering into an agreement for the advanced construction of the Langstaff Trunk. This was outlined in a report to the Transportation and Works Committee and Regional Council in April 2002 (Clause 16 of Report No. 4).

In May 2002, York Region retained Northway Photomap Inc. to provide aerial photography and mapping for both projects.

In June 2002, York Region authorized Marshall Macklin Monaghan Limited to retain DST Engineering Limited to provide Geotechnical and Hydrogeological Engineering Services for Phase 1 of the Bathurst Collector. The assignment was extended in September 2002 to include similar services for the Langstaff Trunk Sewer contingent upon Blocks 18 and 33 West entering into an agreement for the advanced construction of the Langstaff Trunk. This was outlined in a report to the Transportation and Works Committee and Regional Council in June 2002 (Clause 17 of Report No. 7).

In February 2004, York Region authorized Marshall Macklin Monaghan Limited to proceed with a Dewatering Environmental and Ecological Impact Assessment (DEEIA); the DEEIA is required to obtain permits from environmental approval agencies. Marshall Macklin Monaghan was also retained to provide environmental monitoring before, during and after construction. The Council approved Contract Change Fast Track Approval process was used for this authorization.

3.4 Pre-qualification Process

A Request for Qualification (RFQ) was issued in October 2002 and closed in late November 2002. The purpose of the RFQ was to create a shortlist of Design-Build teams qualified to design and construct the Bathurst Collector and Langstaff Trunk Sewer. Submissions were received with respondents from Canadian and American based companies.

In December 2003, due to the length of time that had passed since the previous evaluation, design-build teams who initially submitted were asked to re-submit documents to ensure that the pre-qualification process was still valid. One of the selected teams failed to re-submit. Pre-qualification documents were evaluated and four design-build teams were selected as being qualified. In June 2004 one of the pre-qualified teams withdrew from the process.

In October 2004, York Region cancelled the RFQ process due to substantial changes to the originally proposed construction methodology. The original RFQ assumed that conventional Tunnel Boring Machines (TBMs) with open face technology would be utilized on the project. As a result of a review of construction techniques to reduce the need to dewater, York Region has decided to pursue construction technologies that require EPB tunnelling to be employed in connection with the project. Conditions along the Bathurst Collector and Langstaff Trunk Sewer are very favourable for the use of EPB technology. As the EPB technology represented a fundamental change to the previous pre-qualification process a new pre-qualification process was initiated on January 4, 2005.

3.5 Environmental Approvals

In April 2004, after months of discussions with the regulatory agencies the Region initiated a review of construction methodologies that could reduce the environmental impact associated with the construction of the Bathurst Collector and Langstaff Trunk Sewers. The need for this review was further solidified by a number of conditions set forth by the Minister of the Environment in an October 1, 2004 letter which imposed a number of project specific conditions that have resulted in significant changes in the scope of this project. The following provides a summary of the conditions specific to this project:

- Conduct review of sewer design and construction techniques, including an Earth Pressure Balance Machine.
- Develop monitoring and mitigation measures for dewatering activities.
- Hold a public information meeting to present mitigation and monitoring measures.
- Assess and address any cumulative impacts on the environment of additional dewatering activities occurring as a result of other Regional projects.
- Maintain a well complaint review committee process and provide technical advisory support for property owners.
- Public accessibility of all York Region documents.
- Consult public prior to applying for a permit to take water.
- Ensure that all technical studies prepared in support of the project be peer reviewed by appropriate experts.
- Conduct a detailed assessment of the impacts of any dewatering activities required.

York Region has since completed its review of alternative construction techniques and is proceeding with the construction of Bathurst Collector and Langstaff Trunk Sewer using Earth Pressure Balance (EPB) technology. This will limit the amount of dewatering required. Geological and hydrological conditions along the Bathurst Collector and

Langstaff Trunk Sewer alignment are very conducive to the construction of the sealed shafts necessary to build the project without dewatering. A Permit to Take Water for short-term dewatering is still required in case boulders are encountered and need to be removed from the face of the TBM.

4. ANALYSIS AND OPTIONS

The switch to EPB tunnelling methods represents a significant increase in technological sophistication. This increase in sophistication along with the increased effort necessary to satisfy all of the Minister of Environment conditions means a considerable increase in the scope of the project.

4.1 Negotiation of Engineering Services

The Project Team has been working diligently towards developing an aggressive work plan that satisfies and respects the conditions set forth by the Minister of Environment, as well as implements a solution in a time effective manner. Before the Design-Build contract can be awarded and construction started, the following tasks will be completed by Marshall Macklin Monaghan:

- Complete the DEEIA assuming EPB technology.
- Acquire a Permit to Take Water for use on a contingency basis by the Design-Build contractor.
- Revise and re-issue the Request For Qualification and pre-qualify the Design-Build teams.
- Revise and issue the Request For Proposal to the pre-qualified Design-Build teams.
- Identify the preferred proponent.

Once the Design-Build contract is awarded, the following tasks will be completed by Marshall Macklin Monaghan:

- Design compliance monitoring
- Contract administration
- Construction review
- Environmental Monitoring
- Geotechnical and hydrogeological construction services

While some aspects of the above tasks were within the original scope of services, significant enhancements were required to satisfy the minister's conditions and address the project requirement related to the EPB technology.

4.2 Public Consultation and Stakeholder Management

The conditions imposed by the Minister of the Environment stipulated significant consultation requirements with the public and affected stakeholders. The Region recognizes the importance in improved stakeholder relationships and has therefore included a number of enhancements to the standard public consultation process.

A website will be created for the Bathurst Collector and Langstaff Trunk Sewer; the website will allow stakeholders to view all technical studies, reports and other documents prepared for this project. The website will also serve as one aspect of the public consultation process. It is recommended that the Region retain the services of Ogilvie, Ogilvie & Company in association with Data Shepherd to create and maintain the website. Ogilvie, Ogilvie & Company has experience in creating websites for York Region projects and their experience in dealing with the public on sensitive issues is extensive. The architecture of the website is such that there will be varying levels of access for the public, residents, stakeholders, project managers, project consultants and regulators. The website includes these sophisticated features and requires on-going development and maintenance from the Consultant team.

It is also recommended that Ogilvie, Ogilvie and Company design and facilitate all public information forums. Ogilvie, Ogilvie and Company have provided public facilitation services on other York Region projects and are familiar with York Region's processes, practices, staff and the issues on YDSS projects.

Ogilvie, Ogilvie and Company will be able to design a website and public facilitation services quickly and efficiently due to their experience providing similar services on other York Region projects

4.3 Additional Services

The critical nature of this project has identified the need for some additional services including Peer Review Experts. The October 1, 2004 letter from the Minister of the Environment stipulated the following condition specific to peer review experts:

The Regional Municipality of York shall ensure that all technical studies prepared in support of this project be independently peer reviewed by appropriate experts, including, but not limited to, fishery biologists and hydrogeologists, and the review shall be documented in a report.

York Region is currently assembling a peer review team for this project including members of the academia where appropriate. This is intended to ensure a truly independent panel of peer review experts.

Subparagraphs 18.1 (f) (where the purchase of any goods, services or construction is not authorized by this by-law) and 18.1(g) (where otherwise specifically provided in this by-law) of the Purchasing By-law requires Regional Council's authorization to the expenditures requested in this report.

Table 1 provides fee estimates for both project website and the Peer Review Experts.

4.4 Development Charge Credit Agreements

York Region has entered into a pre-paid development charge agreement with landowners in Block 10, 11 and 12 for the advanced construction of Phase 1 of the Bathurst Collector with a total capital budget of \$26.5 million. York Region also entered into a pre-paid

development charge agreement with landowners in Blocks 18 and 33-West for the advanced construction of the Langstaff Trunk Sewer with a total capital budget of \$17.5 million. Current cost estimates for the completion of the project are approximately \$42 million for Bathurst Collector and \$29 million for the Langstaff Collector.

The developer group was updated as to the status of the project and the associated increase in project costs in a presentation held on August 20, 2004. York Region's review of alternative construction technologies was presented to the developers at that time as was the Region's decision to construct the Bathurst Collector and Langstaff Trunk Sewer using EPB technology.

York Region is currently in the process of formally advising the respective developer groups on the revised work plan, revised construction methodology and the revised project cost projections and the reasons for them.

4.5 Schedule

Current timelines for key milestones for the project are as follows:

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| • Issue request for Qualification. | January 2005 |
| • Select three or more qualified respondents. | March 2005 |
| • Issue Request for Proposals (RFP). | April 2005 |
| • Receive Design-Build proposals. | August 2005 |
| • Award Design-Build contract. | January 2006 |
| • Completion of Bathurst Collector – Phase 1. | July 2008 |
| • Completion of Langstaff Trunk Sewer. | April 2008 |

5. FINANCIAL IMPLICATIONS

5.1 Consulting Fees

Marshall Macklin Monaghan's original assignment was to provide process development services throughout the project as well as contract administration and construction review services. The assignment was later expanded to include extensive geotechnical and survey work, RFP revisions, a DEEIA report, permit applications and environmental monitoring at an upset fee of \$2,489,577.00. Given the increase in technological sophistication and the need to satisfy the conditions set out in the Minister of the Environments letter dated October 1, 2004, an increase to Marshall Macklin Monaghan's purchase order amount of \$1,083,804.49 excluding GST is required to complete all tasks necessary for delivery of the Bathurst Collector and Langstaff Trunk Sewers as outlined above.

Table 1 provides a listing of the fees required for the complete engineering services for this project.

Table 1
Breakdown of Fees

Allocation of Funds	Cost
Marshall Macklin Monaghan	
Approved Purchase Order Amount	\$2,479,577.00
Recommended Purchase Order Increases:	
Additional DEEIA/PTTW Project Facilitation Work	\$135,699.31
Additional DEEIA/PTTW Permit Documentation Work	\$383,742.56
Process and Project Mangagement	\$482,362.62
Supplementary Geotechnical Investigation Work	\$82,000.00
Total Recommended Purchase Order Inrease	\$1,083,804.49
Total Revised Purchase Order Value	\$3,563,381.49
Ogilvie, Ogilvie & Company in Conjunction with Data Shepherd	
Recommended Purchase Order Amount	
Stakeholder Sensitivity Analysis	\$15,295.00
Design and Build a Website	\$39,000.00
Maintain and Operate Website for 3 years	\$50,400.00
Design and Facilitation of Public Information Forums	\$102,634.00
Total Recommended Purchase Order Amount	\$207,329.00
Additional Services	
Peer Review Experts ¹	\$250,000.00
Total	\$4,020,710.49

Note: Peer Review Experts¹ is an estimate.

The project team has developed a comprehensive services proposal with detailed tasks, project plan and a fee schedule. The Region has reviewed the detailed proposal to ensure best value. A review of the work packages, hourly rates and resources has been completed and we agree with the breakdown detailed in Table 2. Regional staff concur that the workplan, fees and hourly rates are reasonable.

6. LOCAL MUNICIPAL IMPACT

This sewer is required to accommodate future growth within York Region as well as alleviate constraints within the Maple Collector by intercepting flows at Langstaff and diverting them through the Bathurst Collector. The trunk sewer expansion will also provide sanitary servicing for new development in the City of Vaughan.

7. CONCLUSION

The Project Team is committed to an aggressive schedule. However in order to accomplish this, approval to proceed with the expedited procurement of additional consulting, engineering and peer review services is necessary.

The Senior Management Group has reviewed this report.

(The attachments referred to in this clause were included in the agenda for the February 2, 2005 Committee meeting.)