MARKHAM

Report to: Development Services Committee Report Date: October 1, 2013

SUBJECT: Future Urban Area Subwatershed Studies
PREPARED BY: Brian Lee, Sr. Manager, Dev Eng & Transportation, Ext. 4838

RECOMMENDATION:

1) **THAT** the report entitled "Future Urban Area Subwatershed Studies" dated October 1, 2013, be received;

2) **AND THAT** the tendering process for the Future Urban Area Subwatershed Studies and the terrestrial environment advisor be waived in accordance with Purchasing By-Law 2004-341, Part II, Section 7 (1) (h) in order to expedite the completion of the Subwatershed Studies;

3) **AND THAT** the Future Urban Area Subwatershed Studies be awarded to AMEC Environment & Infrastructure at a cost of $2,016,165.00 (including 10% contingency and HST impact) subject to confirmation of funding by the Future Urban Area landowners;

4) **AND THAT** the terrestrial environment advisory assignment be awarded to North South Environmental at an upset limit of $61,056.00 (including HST impact) subject to confirmation of funding by the Future Urban Area landowners;

5) **AND THAT** the final cost of the subwatershed studies and the terrestrial environment advisory assignment be included in a future Area Specific Development Charges by-law for the Future Urban Area and the appropriate development charges credit be provided to the upfronting landowners;

6) **AND THAT** a new capital project be created in the Engineering Department in the amount of $2,077,221.00 to be funded by the Future Urban Area landowners;

7) **AND THAT** staff report back on a Future Urban Area landowners funding agreement, to be executed prior to the commencement of any work;

8) **AND THAT** Staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

The purpose of this staff report is to seek Council's authorization to retain AMEC Environmental & Infrastructure (AMEC) and North South Environmental as the Preferred Suppliers to undertake the Subwatershed Studies for the Future Urban Area (FUA), and to act as terrestrial environment advisor to the City respectively.

BACKGROUND:

The City of Markham is preparing a new Official Plan (OP). The new OP is based on a Council endorsed Growth Alternative for accommodating population and employment growth to 2031 through intensification in centres and corridors, and limited expansion of the urban area. The new OP identifies an urban expansion area of approximately 975 ha in northwest Markham, referred to as the Future Urban Area (FUA). Current estimates suggest this area will accommodate a population of approximately 40,000 persons and approximately 19,000 jobs.

Developable lands within the City of Markham for ground-oriented residential development are rapidly running out. In order to position Markham and York Region to meet population and employment targets established by the Province, developable lands within the Future Urban Area are urgently required. There is a need to expedite the completion of planning and engineering studies in order to have the FUA ready for development by 2017.

The new OP requires preparation of subwatershed studies prior to development occurring in the FUA. The subwatersheds to be studied are Berczy Creek, Bruce Creek, Eckhardt Creek and Robinson Creek as per Attachment A.

OPTIONS/ DISCUSSION:

Subwatershed Studies Required

The new OP places great emphasis on the ecological functions and linkages between the various natural features and systems. The protection of Markham's significant environmental features reflects the "Environment First" approach to land use planning. Policies in the new OP require that boundaries of various natural features including hydrological features be refined or modified based on a subwatershed study, master environmental servicing plan and various environmental evaluation. Therefore, the limits of development and conditions for urban expansion cannot be established until a subwatershed study has been completed. The subwatershed studies will also address groundwater conditions and the management of endangered species.

The subwatershed studies of Berczy, Bruce, Eckhardt, and Robinson as per Attachment A will inform all the development related studies required in support of new growth in the Future Urban Area including, Servicing Study, Transportation Study, land use master plan, and other technical studies.

Subwatershed studies are specialized studies that only qualified consultants can undertake. A subwatershed study typically comprises 3 phases:

Phase 1 – Subwatershed Characterization
Phase 2 – Impact Mitigation
Phase 3 – Management Strategies and Implementation

The specific areas of study and impact assessment due to urbanization are:

- Surface Water
- Groundwater
- Stream Morphology
- Water Quality/Temperature
- FisheriesTerrestrial Resources

The study area is based on the subwatershed boundaries and not on the limits of the Future Urban Area. Therefore, a subwatershed study is more comprehensive and considers all the parameters and impact that are both upstream and downstream of the new development areas.

Retaining AMEC Environmental & Infrastructure as the Preferred Supplier
Subwatershed studies are quite specialized, and there are only a limited number of qualified consultants (or groups of consultants) who can successfully carry out this task in a short timeframe. AMEC Environmental & Infrastructure has a track record of successfully completing subwatershed studies. The stakeholders of the urban expansion area including landowners and approval agencies concur that AMEC is well qualified to complete this work.

The main reasons why staff have considered AMEC to be a suitable consultant to complete this assignment in a timely manner are:

i) Working Relationship with TRCA

AMEC staff has a history of successfully completing projects working with and for the TRCA. The relationship has been built on respect and trust, and continues to strengthen over time. AMEC's projects in TRCA's jurisdiction have included watershed/subwatershed support to land use planning initiatives, environmental assessments of flooding and erosion problems, analytical evaluations of watershed scale flood impacts and management, as well as development of a jurisdiction-wide flood management program. This wide variety of projects has allowed the AMEC Team to become familiar with numerous TRCA staff (at all levels) and has also exposed the AMEC Team to a cross-section of policies and procedures associated with fulfilling the TRCA mandate. This latter point is quite important as it ensures that AMEC's deliverables are compliant and consistent with TRCA and related provincial policy.

ii) Experience in the Rouge River Watershed

AMEC has the unique experience of developing a fully integrated hydrologic/hydraulic model of the Rouge River watershed at a highly discrete form on behalf of the TRCA. This numerical model, once suitably updated and refined for the Berczy, Bruce, Robinson and Eckhardt Creeks, will be an extremely powerful tool in evaluating the impacts of the proposed development, again on a local and regional basis. The AMEC Team's inherent familiarity with the model, its

background and use, will prove invaluable to the Markham study, and greatly reduce the learning curve and overall time requirements.

iii) Subwatershed Planning Experience

AMEC, over the last decade, has conducted extensive subwatershed planning studies supporting urban development across Southern Ontario. More recently, AMEC was retained to work on subwatershed studies in the City of Brampton, City of Barrie and the Town of Caledon.

iv) Relationship with Stakeholders

Meaningful consultation with stakeholders (including area landowners) is important and vital to the success of subwatershed plans to support the Conceptual Master Plan, which the City is starting very soon, and subsequent Secondary Plans. Despite sometimes lengthening the early stages of the study process, overall time can be saved, along with resources, if issues and conflicts are resolved during, as opposed to after, the delivery of the Subwatershed Study and subsequent Secondary Plan. AMEC embraces a process of integrated consultation with stakeholders.

v) No Conflict of Interest for Markham Subdwatershed Studies

AMEC has indicated that it does not have a conflict of interest to take on this assignment, thereby providing an unbiased perspective on the project and its recommendations.

iv) Background on Project Manager's Experience Provided in the AMEC Proposal

Mr. Ron Scheckenberger will be the project manager of this project. Mr. Scheckenberger has worked in the Water Resources Engineering field since 1981 spending his entire professional career at the AMEC Burlington office. His expertise extends to all areas of water resources. Mr. Scheckenberger has authored or co-authored over 30 technical papers and presented many of these at conferences in Canada and the United States. He is highly respected at all levels, including municipalities, as well as Provincial and Federal agencies.

Mr. Scheckenberger's project management skills are recognized by many clients as a strength, particularly for large, complex or controversial undertakings. His projects are of high quality and delivered on time and within budget. Since joining AMEC (formerly Philips Engineering Ltd.) over 29 years ago, Mr. Scheckenberger has either been the project engineer or project manager on about 1,100 projects. He has a good working relationship with key environmental agencies, including Ministry of Natural Resources, Department of Fisheries and Oceans, Ministry of the Environment and numerous Conservation Authorities. These professional relationships have been important for several municipal projects. Mr. Scheckenberger has been the Project Manager for several *award-winning* projects

over the past several years including: Red Hill Creek Natural Channel Design; Montgomery Creek Stormwater Management Plan; Mountain Brow Stormwater Management System; and the Niagara Water Quality Protection Strategy. Mr. Scheckenberger has been the Project Manager on several Subwatershed and land use planning studies for the environmental and water resources components.

Retaining North South Environmental as Advisor to City

The City has initiated a contract proposal having an upset limit of $60,000 with North South Environmental to provide services as a Terrestrial Advisor to the City and the AMEC Team during the length of the project. North South Environmental has served as the City's advisor on many Natural Heritage related projects in Markham. City staff and AMEC initiated this advisor role for North South Environmental to assist in providing background information, direction and scoping services to AMEC's Team on the Landscape Scale Analysis and Terrestrial component of the subwatershed studies.

FINANCIAL CONSIDERATIONS AND TEMPLATE: (external link)

The total fee estimate for these studies is $2,016,165.00 including 10% contingency and HST impact. Staff within Development Engineering and Environmental Engineering (Asset Management Department) have reviewed the project budget submitted by AMEC and found it to be reasonable. A comparison was made with recent AMEC projects which were tendered in the open market. The estimate provided by AMEC is similar in the cost per hectare of subwatershed area for the other studies. The landowners have agreed in principleto upfront the cost of the subwatershed studies subject to the appropriate Development Charges Credit in a future Area Specific Development Charges By-law. Staff will report back to Committee with a separate report for authorization to execute a funding agreement with the FUA landowners. The funding agreement will also deal with front-ending of the cost of the related consultant studies and municipal staffing costs to expedite the FUA work program. Similarly, the upset limit of $60,000 for North South Environmental ($61,056.00 with HST impact) is an appropriate fee for the advisory role anticipated. This amount will also be upfronted by the land owners and recovered through Development Charges Credit in a future Area Specific Development Charges By-law.

HUMAN RESOURCES CONSIDERATIONS:

Not applicable.

ALIGNMENT WITH STRATEGIC PRIORITIES:

The preparation of Subwatershed Studies is a requirement under the new Official Plan, and for Toronto & Region Conservation Authority and Ministry of Natural Resources requirements for expansion of urban boundaries. The Subwatershed Studies are vital in understanding the environmental impact of urban expansion consistent with Markham's approach of "Environment First" and the building of sustainable communities.

BUSINESS UNITS CONSULTED AND AFFECTED:
The Planning & Urban Design, Asset Management and Finance Departments have been consulted and their comments have been incorporated into this report.

RECOMMENDED BY:

Alan Brown, C.E.T.
Director of Engineering

Jim Baird, M.C.I.P., R.P.P.
Commissioner, Development Services Commission

ATTACHMENT:
Attachment A – Subwatershed Boundaries

Attachment A