

COMMITTEE OF THE WHOLE – MARCH 23, 2010

TERMS OF REFERENCE WATER / WASTEWATER MASTER PLAN AND STORM DRAINAGE / STORM WATER MANAGEMENT MASTER PLAN CITY WIDE

Recommendation

The Commissioner of Engineering and Public Works recommends:

1. That the general Terms of Reference for the preparation of the Water / Wastewater Master Plan and Storm Drainage / Storm Water Management Master Plan, included as Attachments No. 1 and No. 2 respectively to this report, be approved by Council; and
2. That the Development / Transportation Engineering Department initiate the request for proposal process to retain qualified engineering consulting firms to complete the Water / Wastewater and the Storm Drainage / Storm Water Management Master Plans.

Contribution to Sustainability

The City's Community Sustainability and Environmental Master Plan (Green Directions Vaughan) objectives will be used as a guide to the conclusions and recommendations of the Water / Wastewater and Storm Drainage / Storm Water Management Master Plan Studies. Specific sustainability objectives applicable to these studies include:

- Objective 1.1** *Reduce greenhouse gas emissions and move towards carbon neutrality for the City of Vaughan's facilities and infrastructure.*
- Objective 1.3** *Support enhanced standards of storm water management at the City and work with others to care for Vaughan's watersheds.*
- Objective 1.4** *Ensure efficient and appropriate use of potable water in City facilities.*
- Objective 2.1** *Achieve sustainable growth and development.*
- Objective 2.3** *Create a City with sustainable built form.*
- Objective 5.1** *Share sustainable best practices and ideas between and among municipal staff and the community.*

Policies, decision making framework and implementation programs related to sustainability, will become the cornerstones of the City's new municipal servicing master plans.

Economic Impact

The following approved Capital Budget Projects allocate funds for the completion of various components of the City's municipal servicing master plan studies.

DT-7032-09	Water / Wastewater Master Plan	\$412,000
DT-7033-09	Storm Drainage / Storm Water Management Master Plan	\$257,500
DT-7029-09	Woodbridge Core Master Servicing Strategy	\$98,000
DT-7030-09	Jane-Rutherford Master Servicing Strategy	\$98,000

Funding for the above noted approved Capital Budget Projects is from the engineering component of the City-Wide Development Charges.

Communications Plan

The Terms of Reference for the municipal servicing master plan studies envisage an integrated and comprehensive consultation program involving all affected stakeholders. The public consultation program will be conducted in close consultation with staff from the City, the Region of York and the Toronto and Region Conservation Authority in accordance with the Master Plan requirements of the Municipal Class Environmental Assessment (Class EA) process. It is anticipated that the public consultation program will include multiple public open house meetings at key stages throughout the duration of the studies. In addition, stakeholder consultation group(s) and a technical advisory committee will be established. The Terms of Reference for the master plan studies will require interested consultants to detail the specifics of the communications program and stakeholder consultation process.

A Notice of Study Commencement will be issued as a first point of contact with the public and relevant stakeholders. This notice and all subsequent study notices will be published in local press and are intended to allow the public to participate from the beginning of the study, resulting in a proactive, transparent consultation process. In addition, a communications database will be established and kept up to date of all agencies, stakeholders, property owners and other individuals contacted over the duration of the studies.

Purpose

The purpose of this report is to seek Council's approval of the Terms of Reference for the City-Wide Water / Wastewater and Storm Drainage / Storm Water Management Master Plan Studies, and to seek Council's authority to initiate the process of retaining qualified engineering consulting firms to concurrently complete each of the two assignments.

Background - Analysis and Options

Purpose of the Municipal Servicing Master Plan Studies

In 2007, Council approved the Terms of Reference for the new Vaughan (City-Wide) Official Plan, a component of the City's Consolidated Growth Management Strategy to a planning horizon of 2031. When finalized, the new Official Plan will be a contemporary, state-of-the art document updating the City's community planning policies in a manner consistent with the principles of sustainability. Work on the new Official Plan began in October 2007. Now that the framework for continued urban growth to 2031 is unfolding through the new Official Plan, it is appropriate for the City to solicit proposals from qualified consulting engineering firms to undertake the preparation of city-wide municipal servicing master plan studies. Two concurrent master plan studies will be required, one for water and wastewater infrastructure and one for storm drainage and storm water management. In order to effectively manage the work load required to complete each master plan study, two independent municipal engineering consulting firms will be retained by the City. One firm to complete the City-Wide Water / Wastewater Master Plan and a second firm to complete the City-Wide Storm Drainage / Storm Water Management Master Plan.

Both master plan studies will be conducted in accordance with the Master Plan process as outlined in the *Municipal Engineers Association Municipal Class Environmental Assessment* document (October 2000, as amended in 2007). The Master Plan Class Environmental Assessment (EA) process includes public and review agency consultation, an assessment of the problem and opportunities, evaluation of alternative solutions, assessment of potential effects on the environment, and identification of reasonable measures to mitigate any adverse effects. The preferred solution(s) will be determined based on engineering requirements, environmental considerations, public input and information gathered during the studies.

Study Area and Timing

The City's new Official Plan process is currently scheduled for completion by the fall of 2010. The municipal servicing master plan study areas will generally encompass the entire City of Vaughan and will be generally premised upon a planning horizon of 2031 (consistent with the new Official Plan). Servicing scenarios beyond 2031 will also be considered to efficiently plan for municipal infrastructure requirements in anticipation of full build-out throughout the City. It is expected that both municipal servicing master plan studies will be completed concurrently. The duration of the master plan studies will be approximately one year with an anticipated completion date approximately 6 months behind the on-going Official Plan process.

Components of the Master Plan Studies

The municipal servicing master plan studies will include a comprehensive city-wide evaluation of the local water, wastewater, storm drainage and storm water management infrastructure needed to efficiently accommodate the population and employment growth projections resulting from the implementation of the City's Growth Management Strategy. A key component of the master plan studies will be the coordination and integration with current sustainable initiatives by the Region of York and the Toronto and Region Conservation Authority (TRCA). It is expected that staff will work closely with both these agencies to ensure all final master plan recommendations are consistent with and complimentary to Regional and TRCA initiatives.

It is anticipated that several new secondary plans will be prepared in conjunction with the completion of the new Official Plan process. The development pressures in these areas have made it necessary for the City to proceed with master plan servicing related studies in advance of the completion of the new Official Plan process. The municipal servicing related master plan studies currently underway (or recently completed) by the City, in support of these various secondary plan areas include:

- Kleinburg-Nashville Servicing Strategy Master Plan Class EA;
- Vaughan Metropolitan Centre Servicing Strategy Master Plan Class EA;
- OPA 620 Steeles Corridor Servicing Strategy Master Plan Class EA;
- Black Creek Optimization Study Master Plan Class EA;
- Highway 400 North Employment Lands – OPA 637 Servicing Study; and
- Yonge Street Intensification Servicing Study.

In addition to the City initiated studies noted above, the following significant development driven servicing studies are currently underway by the development community:

- Block 40 / 47 – Master Environmental / Servicing Plan; and
- Block 61 West – Nashville Heights Master Environmental / Servicing Plan.

It is expected that the City-Wide Master Plan Studies will incorporate the conclusions and recommendations of the above noted City initiated studies and will guide the approval and implementation of the development related studies currently underway for Blocks 40/47 and 61 West.

New Secondary Plan Areas

The scope of the master plan study assignments will include the preparation of secondary plan level master servicing strategies for the following secondary plan areas within the new Official Plan:

- Woodbridge Core Servicing Strategy
(*water, wastewater, & storm water management*)
- West Vaughan Enterprise Zone Servicing Strategy
(*water, wastewater & storm water management*)
- Kleinburg-Nashville Storm Water Management Servicing Strategy
(*storm water management*)

Future Secondary Plan Areas

Based on the anticipated implementation policies of the new Official Plan, it is expected that future secondary plans shall be prepared for the following areas:

- Blocks 27 and 41;
- Vaughan Mills Centre;
(bounded by Hwy 400, Rutherford Rd., Jane St. and Bass Pro Mills Dr.)
- Block 60 East; and
- Block 31 West (Rutherford Rd. to Bass Pro Mills Dr.)

Accordingly, the ultimate build-out, anticipated land-use and municipal servicing requirements for these areas shall be considered in the final conclusions and recommendations of the City-Wide Master Plan Studies.

Phasing Requirements

The City-wide municipal master plans shall address all necessary phasing requirements based on the following horizon year development scenarios:

- Existing Base Conditions;
- 2016, 2021, 2026, and 2031 Horizons; and
- 2051 City-Wide Build-Out of “White-Belt” Lands + Additional Intensification.

The consultants retained to complete the City’s municipal servicing master plan studies will review and incorporate the conclusions and recommendations of all other servicing studies completed and currently underway, in order to prepare final comprehensive city-wide infrastructure master plans.

The key objectives for each master plan study are identified in the draft Terms of Reference for the City-Wide Water / Wastewater and Storm Drainage / Storm Water Management Master Plan Studies, and are included as Attachments No. 1 and No. 2 respectively.

Public Consultation Requirements

The public consultation process will involve all individuals and interest groups having a stake in the City’s municipal servicing master plans including, local residents, ratepayer groups, the business community, the development community, public agencies and other special interest groups. The process will include public open houses, stakeholder workshops and presentations, all of which will require participation from various stakeholders to succeed.

It is anticipated that a Technical Advisory Committee will be established as well as one or more Stakeholder Consultation Groups (SCG’s) to represent interests for specific areas and to provide ongoing input throughout the process. Details of the proposed consultation process will be provided in the submissions of candidate consulting engineering firms.

Consulting Engineering Requirements

The Studies will require the services of a multi-disciplinary team with expertise in municipal services / infrastructure planning and engineering, the environment, sustainable development and public consultation. Each consulting team will be required to collaborate with, and be informed by, the Environmental Master Plan (Green Directions Vaughan), the new Official Plan and each of the various other engineering consultants currently involved in the area specific servicing related studies noted above.

Products of the Studies

The study process, conclusions and recommendations will ultimately be documented in various reports which will be available for reference by staff, agencies, stakeholders and the public. The recommendations of the master plan studies will expand upon the policies, goals and objectives of the new Official Plan and will be used as a guide to facilitate the approval of development applications, the update the City's engineering component of the Development Charges By-law and the establishment of a long term capital plan in a timely and efficient manner.

Project Administration

The project will be managed by the Development/Transportation Engineering Department in close cooperation with the Policy Planning Department. Input, participation and coordination will be required from the core consulting team for the new Official Plan, Public Works, Engineering Services, Development Planning, and other City departments and external agencies.

Procurement Process

In accordance with the City's procurement policy, study proposals will be publically solicited and accepted from qualified consulting engineering firms for the completion of each master plan study. Staff will report to the Committee of the Whole on the results of each of the proposal calls together with recommendations to retain the successful engineering firms for each of the master plan assignments.

Final Scope of Master Plan Studies

The scope of work identified within the proposed Terms of Reference included as Attachments No. 1 and No. 2, represent a significant listing of detail-oriented engineering analysis and other related tasks, all to be considered by consultants interested in submitting proposals. The technical evaluation committee will rely upon information provided within the engineering proposals received in order to determine a final scope of work that will be most manageable, efficient and economical given the available study time-frame and approved budget. Accordingly, it may be appropriate to defer or phase specific components of the work plan to a future study.

Relationship to Vaughan Vision 2020/Strategic Plan

In consideration of the strategic priorities related to Vaughan Visions 2020, the recommendations of this report will assist in:

- The pursuit of excellence in service delivery;
- Ensuring and enhancing community safety, health and wellness;
- Leading and promoting environmental sustainability;
- Planning and managing growth and economic vitality;
- Ensuring financial stability; and
- The demonstration of leadership and promotion of effective governance.

This report is therefore consistent with the priorities previously set by Council.

Regional Implications

The City's municipal servicing master plan studies will have regard for the existing and planned Regional infrastructure throughout the City. The master plans will establish the City's local municipal servicing related infrastructure needs and guidelines in support of future development. The master plan studies will accommodate the Region's forecast growth estimates for Vaughan and will be closely coordinated with on-going Regional water and/or wastewater infrastructure initiatives including the recently completed Regional Water & Wastewater Master Plan Update.

In addition, it is expected that Regional Staff will be involved throughout the duration of the City's master plan studies by participating in all established Stakeholder Consultation Groups and on the Technical Advisory Committee.

Conclusion

The proposed Terms of Reference provide the basis for carrying out the City's Water / Wastewater and Storm Drainage / Storm Water Management Master Plan Studies. Similar to the approach taken for the new Official Plan, this work will be forward-looking, state-of-the-art and reflective of the principles of sustainability.

Should Council concur with the Terms of Reference for the proposed City-Wide Master Plan Studies, the recommendations associated with this report should be approved to enable staff to proceed with the consultant selection process.

Attachments

1. City-Wide Water / Wastewater Master Plan - Terms of Reference
2. City-Wide Storm Drainage / Storm Water Management Master Plan – Terms of Reference

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CITY-WIDE WATER / WASTEWATER MASTER PLAN TERMS OF REFERENCE

General Objectives of The Master Plan

The City-Wide Water/Wastewater Master Plan shall be conducted in accordance with the Master Plan process as outlined in the *Municipal Engineers Association Municipal Class Environmental Assessment* document (October 2000, as amended in 2007).

Undertake a capacity analysis of existing water and wastewater networks as required to meet the City's growth projections.

Identify alternative infrastructure planning strategies and select the preferred alternative to meet the City's growth needs.

Review the City's existing water and wastewater design criteria / standards and policies and recommend improvements and/or updates that will provide the basis for future infrastructure planning and design.

Establish the need and justification for a sewage flow monitoring program to be implemented by the City over the course of the Master Plan horizon years. Detail the implementation requirements for the program.

Undertake a water audit based on existing conditions and in accordance with the specifications of the American Water Works Association.

Establish water and wastewater infrastructure phasing requirements to facilitate each of the required Master Plan horizon years.

Identify and consult with all necessary stakeholders including public groups and the development industry.

Scope of Consultant's Work

The following is intended to provide an overview of the scope of work associated with the City-Wide Water / Wastewater Master Plan Study. However, it is not intended to be an exhaustive listing of the required work activities. The successful consultant shall provide a clear indication of all necessary personnel, mapping and resources necessary to complete the assignment. The master plan study shall include / consider:

1. A comprehensive review of all related water and wastewater background reports and information.
2. The preparation of all comprehensive reports and attendance at meetings as required to support the new Official Plan and associated secondary plan areas (with maps and illustrations as appropriate) examining the current state of water and wastewater infrastructure in Vaughan, and identifying issues and opportunities for improvement.
3. The preparation of detailed engineering cost estimates for all proposed infrastructure and associated improvements as required in support of the City's Development Charges Update and Background Study.

4. A review of and recommendations on the current water and wastewater design criteria and associated standard drawings.
5. The preparation of plans and associated mapping for water and wastewater infrastructure to complement and support the City's preferred land use scenarios for the following planning horizons:
 - Existing Base Conditions;
 - 2016, 2021, 2026, 2031 Horizons; and
 - 2051 City-Wide Build-Out of 'White-Belt' Lands + Intensification.
6. A clear direction for the implementation of the preferred water and wastewater infrastructure network. Identify key trigger points and benefitting areas associated with the timing of all proposed infrastructure as it relates to the development scenarios noted above.
7. The development of a long-term water and wastewater infrastructure network to support the City's future allocation of population and employment growth and provide a framework by which decisions regarding the City's water and wastewater infrastructure network can be intelligently made.
8. The development of a sustainable water and wastewater infrastructure network to support, complement and conform to the recently finalized York Region Water and Wastewater Master Plan Updates.
9. In developing the proposed overall water and wastewater infrastructure network, consider and evaluate the environmental policies of the new Official Plan and the sustainability objectives of the City's Environmental Master Plan, from a water and wastewater engineering perspective. Quantify the short-term and long-term impacts of all proposed water and wastewater projects on the environment and identify and recommend possible alternatives to reduce any adverse impacts.
10. An examination of the form, function and characteristics of the City's existing water and wastewater infrastructure network, identify any problematic areas or inefficiencies, and incorporate lessons learned from this analysis into the overall proposed water and wastewater infrastructure network.
11. The preparation of all required mapping and illustrations as appropriate, in consultation with other consultants retained by the City.
12. The preparation of local secondary plan area servicing strategies for the following areas:
 - Woodbridge Core
 - West Vaughan Enterprise Zone
13. The identification of all necessary approvals and related processes, including possible land acquisition, easements etc., for all proposed water and wastewater infrastructure requirements.

**TERMS OF REFERENCE
STORM DRAINAGE / STORM WATER MANAGEMENT MASTER PLAN
CLASS ENVIRONMENTAL ASSESSMENT STUDY**

General Objectives of the Master Plan

The City-Wide Storm Drainage/Storm Water Management Master Plan shall be conducted in accordance with the Master Plan process as outlined in the *Municipal Engineers Association Municipal Class Environmental Assessment* document (October 2000, as amended in 2007).

Identify storm drainage and storm water management system requirements to support the *Vaughan Consolidated Growth Management Strategy* by establishing / identifying:

- Appropriate methods of accommodating post development storm water runoff, water quality, erosion control and water balance for future development lands identified within the new Official Plan;
- Appropriate storm water management control strategies;
- Areas where more detailed sub-watershed studies may be required;
- Computer models as required to support the selection of preferred servicing solutions;
- The City's overall storm drainage and storm water management infrastructure needs for the year 2031; and
- A preferred and complete set of solutions capable of addressing the City's Storm water infrastructure needs to the year 2031.

Scope of Consultant's Work

The following is intended to provide an overview of the scope of work associated with the City-Wide Storm Drainage / Storm Water Management Master Plan Study. However, it is not intended to be an exhaustive listing of the required work activities. The successful consultant shall provide a clear indication of all necessary personnel, mapping and resources necessary to complete the assignment. The master plan study shall include / consider:

1. An analysis of existing storm sewer infrastructure and operating strategies to identify system upgrades and opportunities for optimum performance of the system in order to accommodate future growth.
2. The establishment of appropriate storm water management practices to maintain / enhance the existing stream system water quality as a result of anticipated future growth.
3. The identification of constraints and opportunities on a resources and infrastructure basis and generate alternative servicing solutions that will address a series of integrated objectives and environmental targets to accommodate future growth.
4. The development of phasing strategies to address the servicing needs for anticipated future growth scenarios.
5. The development of storm water servicing options for the growth scenarios that will be identified and presented to the various stakeholders for their input.

6. The identification of a preferred scenario through the process of evaluation and elimination and the generation of preliminary design concepts for the preferred alternatives.
7. The provision of an implementation plan / program, capital funding estimates and potential funding mechanisms.
8. Relevant information (results and recommendations) of recently completed TRCA studies including the Humber & Don River Watershed Plans.
9. The latest / innovative storm water management treatments developed by TRCA and CVC in the *Draft Low Impact Development Storm Water Management Manual*.
10. The formulation of a storm water management policy for the City of Vaughan and the development of storm water management criteria to be applied by the City under the site plan approval process. The storm water management policy will incorporate a higher level of storm water management in areas that may be intensified through redevelopment or infill development.
11. An evaluation of ecological, environmental and operational impacts of proposed storm water pond locations to accommodate future growth areas.
12. A broad level analysis of emerging ground water management strategies and policies and how they will affect the City's overall storm water management strategy, including potential legal implications and future requirements.
13. The development of a financial contribution policy in lieu of implementing quality treatment for redevelopment or infill development sites less than 5 ha by incorporating the information provided in the recently completed Storm Water Management Retrofit study by Aquafor Beech Limited.
14. An update of the Rainbow Creek Master Drainage Plan based on information provided in the recently completed *City Wide Drainage and Storm Water Management Criteria Study* by Clarifica Consulting and dated August, 2009, complete with hydrological model work as required.
15. A review and recommendations regarding the City's current storm drainage and storm water management criteria by incorporating recent low impact development guidelines and in order to meet existing and evolving legislative requirements.
16. An assessment of existing erosion problems downstream of proposed growth areas (to establish baseline conditions) and the development of an erosion control strategy including a preferred solution (and associated cost estimates) that may be used to update the City's Development Charges by-law.