REGIONAL MUNICIPALITY OF WATERLOO
PLANNING AND WORKS COMMITTEE
AGENDA

Tuesday, May 3, 2011
9:00 A.M.
Regional Council Chamber
150 Frederick Street, Kitchener, Ontario

1. DECLARATIONS OF PECUNIARY INTEREST UNDER THE MUNICIPAL CONFLICT OF INTEREST ACT

2. DELEGATIONS

3. REPORTS – TRANSPORTATION AND ENVIRONMENTAL SERVICES

ADMINISTRATION

a) E-11-006, Consultant Selection – Transportation and Environmental Services Departmental Asset Management Implementation Project (staff presentation)

b) Overview of Major Issues and Priorities (Water, Wastewater and Waste Management) (staff presentation)

DESIGN AND CONSTRUCTION

c) E-11-036, Consultant Selection – Class Environmental Assessment, Detailed Design and Services During Construction, Bishop Street Improvements from Conestoga Boulevard to Concession Road, City of Cambridge

d) E-11-047, Franklin Boulevard Improvements, Pinebush Road to Myers Road, City of Cambridge – Detailed Design and Construction Phasing Update

e) E-11-049, Consultant Selection – Preliminary Design, Detailed Design and Construction Administration and Inspection Services, Notre Dame Drive and Snyder's Road Reconstruction, Petersburg Settlement Area, Township of Wilmot

f) E-11-051, Elmira Wastewater Treatment Plant Upgrades – Extension of Consultant Assignment

g) River Road Extension, From King Street to Manitou Drive, City of Kitchener Information Package in Advance of PCC

WATER

h) E-11-041.1, Water Efficiency Advisory Committee Terms of Reference 2011

i) E-11-040.1, Residential Water Softener Performance Study Update # 2

j) E-11-053, Maple Grove Road and Fountain Street Water Supply System Class Environmental Assessment - Extension of Consultant’s Assignment

k) E-11-055, Consultant Selection for the 2011 Water Supply Master Plan Update

m) **Biosolids Master Plan Update**, Public Information Centre

**REPORTS – PLANNING, HOUSING AND COMMUNITY SERVICES**

**COMMUNITY PLANNING**


**TRANSPORTATION PLANNING**

o) **P-11-044**, Implementation of Grand River Transit Fare Change on July 1, 2011

p) **P-11-045**, Hespeler Area Transit Service Public Consultation Centre

4. **INFORMATION/CORRESPONDENCE**

a) **Memo re: Highway 7/8 Construction Staging** – Fischer-Hallman Road to Courtland Avenue – 2011 to 2015

b) **Memo re: Notification of Upcoming East Side Lands Master Environmental Servicing Plan and Community Plan Public Information Centre #1** – June 14, 2011

c) **Memo re: Lake Erie Source Protection Region Public Consultation on the Draft Amended Assessment Report for the Grand River Source Protection Area**

5. **OTHER BUSINESS**

a) **Council Enquiries and Requests for Information Tracking List**

6. **NEXT MEETING** – May 24, 2011

7. **MOTION TO GO INTO CLOSED SESSION**

THAT a closed meeting of the Planning & Works and Community Services Committees be held on Tuesday, May 3, 2011 immediately following the Planning and Works Committee meeting in the Waterloo County Room in accordance with Section 239 of the Municipal Act, 2001, for the purposes of considering the following subject matters:

a) receiving of legal advice that is subject to solicitor-client privilege in relation to a legal agreement

b) proposed or pending acquisition and disposition of property in the City of Waterloo

c) proposed or pending acquisition of property in the City of Waterloo and the Township of Wilmot and receiving of legal advice that is subject to solicitor-client privilege

8. **ADJOURN**
# NEXT MEETINGS

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<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Description</th>
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<tbody>
<tr>
<td>Planning and Works Committee</td>
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<tr>
<td>May 24, 2011</td>
<td>9:00 A.M.</td>
<td>Planning and Works Committee</td>
<td>Council Chamber 2nd Floor, Regional Administration Building 150 Frederick Street Kitchener, Ontario</td>
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<tr>
<td>June 7, 2011</td>
<td>9:00 A.M.</td>
<td>Planning and Works Committee</td>
<td>Council Chamber 2nd Floor, Regional Administration Building 150 Frederick Street Kitchener, Ontario</td>
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<td>Planning, Housing and Community Services</td>
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<tr>
<td>May 12, 2011</td>
<td>4:00 P.M. – 8:00 P.M.</td>
<td>Hespeler Area Transit Service Public Consultation Centre</td>
<td>Hespeler Public Library Main Floor 5 Tannery Street Cambridge, Ontario</td>
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<tr>
<td>June 14, 2011</td>
<td>5:30 P.M. – 8:00 P.M.</td>
<td>East Side Lands Master Environmental Servicing Plan and Community Plan Public Information Centre</td>
<td>Ecole Secondaire Pere-Rene-de-Galinee 450 Maple Grove Road Cambridge, Ontario</td>
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<td>Transportation and Environmental Services</td>
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<td>May 4, 2011</td>
<td>5:00 P.M. – 8:00 P.M.</td>
<td>Biosolids Master Plan Update Information Package</td>
<td>Wilmot Recreation Complex, 1291 Nafzinger Road, Baden</td>
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<tr>
<td>May 5, 2011</td>
<td>5:00 P.M. – 8:00 P.M.</td>
<td>Biosolids Master Plan Update Information Package</td>
<td>David Durward Centre, 62 Dickson Street, Cambridge</td>
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<td>May 10, 2011</td>
<td>5:00 P.M. – 8:00 P.M.</td>
<td>Biosolids Master Plan Update Information Package</td>
<td>Waterloo Recreation Complex, 101 Father David Bauer Drive, Waterloo</td>
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<td>May 11, 2011</td>
<td>5:00 P.M. – 8:00 P.M.</td>
<td>Courtland Avenue Reconstruction – Highway 7/8 to Queen Street, Pre-construction Open House</td>
<td>Courtland Avenue Public School, 107 Courtland Avenue East, Waterloo</td>
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<td>May 12, 2011</td>
<td>5:30 P.M. – 8:00 P.M.</td>
<td>Westmount Road Improvements, Queens Boulevard to Highland Road, Information Package in Advance of PCC</td>
<td>Faith Lutheran Church 247 Westmount Road E. Kitchener</td>
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<td>May 17, 2011</td>
<td>4:30 P.M. – 8:00 P.M.</td>
<td>River Road Extension – Information Package in advance of PCC</td>
<td>Knights of Columbus Hall, 110 Manitou Drive, Kitchener</td>
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<td>Rapid Transit Public Consultation Centre and Information Booth</td>
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<td>May 3, 2011</td>
<td>1:30 P.M. – 8:30 P.M.</td>
<td>Rapid Transit Public Consultation Centre</td>
<td>Calvary United Church, 48 Hawkesville Rd., St. Jacobs</td>
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<td>May 4, 2011</td>
<td>1:30 P.M. – 8:30 P.M.</td>
<td>Rapid Transit Public Consultation Centre</td>
<td>AHQ Front Lobby 150 Frederick St., Kitchener</td>
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<td>Rapid Transit Public Consultation Centre</td>
<td>McCormick Arena 500 Parkside Drive, Waterloo</td>
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<td>Rapid Transit Public Consultation Centre</td>
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<td>Rapid Transit Public Consultation Centre</td>
<td>Cambridge Centre for the Arts, 60 Dickson Street, Cambridge</td>
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<td>Rapid Transit Public Consultation Centre</td>
<td>United Kingdom Club, 35 International Village Dr., Cambridge</td>
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<td>Rapid Transit Public Consultation Centre</td>
<td>Kitchener Gospel Temple, 9 Conway Dr.</td>
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<td>Rapid Transit Public Consultation Centre</td>
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<td>May 12, 2011</td>
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<td>Rapid Transit Public Consultation Centre</td>
<td>St. Agatha Community Centre, 1791 Erb’s Road, St. Agatha</td>
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<td>May 14, 2011</td>
<td>9:00 A.M. –</td>
<td>Rapid Transit Information Booth</td>
<td>Fairview Park Mall, 2960 Kingsway Dr., Kitchener</td>
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<td>May 14, 2011</td>
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<td>Rapid Transit Information Booth</td>
<td>Conestoga Mall, 550 King St. N., Waterloo</td>
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<td>May 18, 2011</td>
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<td>Rapid Transit Public Consultation Centre</td>
<td>St. Clements Community Centre, 1 Green St., St. Clements</td>
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<td>May 31, 2011</td>
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<td>Rapid Transit Public Input Meeting</td>
<td>150 Frederick St.</td>
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<tr>
<td>June 1, 2011</td>
<td>6:00 P.M.</td>
<td>Rapid Transit Public Input Meeting</td>
<td>150 Frederick St.</td>
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TO: Chair Jim Wideman and Members of the Planning and Works Committee
DATE: May 3, 2011
FILE CODE: A02-20/TAMP, C06-60
SUBJECT: CONSULTANT SELECTION – TRANSPORTATION AND ENVIRONMENTAL SERVICES DEPARTMENTAL ASSET MANAGEMENT IMPLEMENTATION PROJECT

RECOMMENDATION:
THAT the Regional Municipality of Waterloo enter into a Consulting Services Agreement with GHD Inc., of Markham, Ontario to provide consulting services for the Asset Management Implementation Project for the Transportation and Environmental Services Department, at an upset fee limit of $3,290,193.50 plus applicable taxes.

SUMMARY:
The Region recognizes the importance of Asset Management (AM) as identified in one of its current Strategic Plan goals entitled Infrastructure. The goal is to “provide high quality infrastructure and asset management to meet current needs and future growth”. Asset Management is currently part of the duties of each operating Division within the Transportation and Environmental Services Department (TES). Since the infrastructure owned and operated by the Transportation and Environmental Service Department (Transportation (Roads and Airport), Water Services and Waste Management Divisions) represents the vast majority of assets owned by the Region with a current replacement value of $4.1 billion (Appendix A), the goal of this Consultant assignment is to implement a strategic infrastructure plan that includes a high standard of asset management for the Department and Divisions within TES.

In 2009, the Transportation and Water Services Divisions completed separate AM Gap Analysis and Assessment studies. Based on recommendations from these studies, Region’s staff identified benefits to the TES Department to implement AM not only at a Divisional level but also at the Departmental level.

This project will be undertaken in four phases; Phase 1 includes the completion of the Gap Analysis and Assessment studies for the Airport Section within the Transportation Division and the Waste Management Division; Phase 2 includes the implementation of AM best practices identified in Phase 1 of the project and the previously approved Gap Analysis and Assessment studies completed for the Transportation (Roads) and Water Services Divisions including Asset Pilot Projects and Asset Management Plan #1; Phase 3 includes the Selection, Procurement and Implementation of Asset Management Systems; and, Phase 4 includes the preparation of a Continuous Improvement Plan and Asset Management Plan #2 within TES with the goal of evolving from Basic Asset Management to Advanced Asset Management.
It should be noted; Phase 3 of the Asset Management Implementation Project is not included in this Consultant assignment but will be defined further with an implementation plan, schedule and budget during Phase 2 of this project.

The Region’s Consultant Selection team have concluded that GHD’s proposal and work plan has met the Region’s requirements, that it is appropriate for the scope of this project and that the upset fee is competitive. Based on this proposal, work plan and GHD’s past performance during the Gap Analysis and Assessment studies for Transportation and Water Services Divisions, the Project Team recommends that GHD be awarded this assignment for a total upset fee of $3,290,193.50 plus applicable taxes.

Subject to Council’s approval of this consulting assignment, it is anticipated that the project will be completed by late 2013.

REPORT:

Background

The Region currently builds, owns and maintains transportation (road and airport), water, waste water and waste management infrastructure that supports the areas economy and quality of life (Appendix A includes a detailed listing on the TES Department infrastructure assets). For the past 25 years, the Region as well as other municipalities have been caught in a fiscal squeeze caused by growing responsibilities and reduced revenues. These responsibilities include rapid growth, more stringent environmental and regulatory requirements, public demands for high levels of service, aging infrastructure and increased exposure to liability and risk.

Due to the above factors, the Region has in a number of instances deferred investment in TES assets, resulting in infrastructure deterioration, adding to the infrastructure deficit, reduced levels of service and/or increased risk. For example, the current Transportation Roads infrastructure deficit is $265 million and based on the current long term funding strategy approved by Council, the infrastructure deficit is expected to be $240 million in 2034 (assuming a 3% construction inflation factor moving forward). As this deficit continues, maintenance will continue to be delayed, assets will reach the end of their intended service life, and repair and replacement costs will escalate. It is now recognized by all municipalities that deferring investment on infrastructure assets is not sustainable over the long term.

Recently, many municipalities have begun to adopt practices to set and meet required levels of service and manage assets in a more cost effective manner, at acceptable levels of risk. Collectively known as Asset Management, the International Infrastructure Management Manual describes the key elements of this practice as:

- Taking a lifecycle approach
- Developing cost-effective management strategies for the long-term
- Providing a defined level of service and monitoring performance
- Understanding and meeting the impact of growth through demand management and infrastructure investment
- Managing risks associated with asset failures
- Sustainable use of physical resources
- Continuous improvement in asset management practices.
The goal of infrastructure asset management is to meet a required level of service, in the most cost effective manner, through the management of assets for present and future customers. A formal approach to the management of infrastructure assets is essential in order to provide services in the most cost-effective manner, and to demonstrate this to customers, investors and other stakeholders.”

Implementing asset management practices typically includes the following:

- Enacting an **Asset Management Policy** that sets the broad framework for undertaking asset management in a structured and coordinated way across the organization as a whole;
- Improving the organization’s ability to manage its assets through implementation of the **Asset Management Strategy** that outlines the set of actions to be undertaken to enhance the organization’s asset management practices. Implementing the Strategy enables a better understanding of the full costs and risks to deliver the current levels of service and to compare the benefits, as perceived by the community, to these costs; and
- Preparing an annual **Asset Management Plan** that outlines the asset lifecycle activities and resources required to provide defined levels of service in the most cost effective way.

**Current Status of TES Asset Management Practice**

The Department has already made significant investment in developing asset management practices, including business processes, data, systems and staff competencies. In 2009, Transportation and Water Services Divisions within TES Department completed separate Asset Management Gap Analysis and Assessment studies. The output from these studies was a 2009 report: **Transportation Infrastructure Management Program Review**; and for the Water Services Division a 2010 report: **Water Services Division Asset Management Assessment**, which outline, the current status of asset management for these Divisions’.

Through a series of workshops and interviews with Division staff and others, the consultant team developed a comprehensive understanding of the Division’s current practices related to asset management and conducted a gap analysis between current practices and best appropriate practices (BAP). The results of this assessment are shown in Figure 1 below for the Transportation Division which illustrates the Division’s current and target ratings compared to the BAP. A similar assessment was completed for Water Services. It should be noted, the acceptable target rating applicable to the Region is generally lower than the BAP, as achieving the top BAP target rating may not necessarily provide the Region with the best return on investment from a risk, cost benefit or level of service perspective.
Highlights of current accomplishments for these two Divisions include:

- Regional Council and senior management have shown support to implementing asset management principles in accordance with, **Strategic Plan Focus Area 5: Infrastructure** provide high quality infrastructure and asset management to meet current needs and future growth;
- A TES Department steering committee is in place which include members from Finance, Corporate Resources and Planning, Housing and Community Services Department;
- AM strategies were developed for the Transportation and Water Services Divisions in 2009/10;
- Over time, both Divisions have developed processes, supporting systems, and the roles to deliver the services for which they are responsible and to manage associated assets;
- Service standards related to regulatory compliance are defined and performance is reported;
- Current and future service demand and asset capacity are understood;
- Compliance with Public Services Accounting Board (PSAB) Tangible Capital Asset;
- Remaining life of most assets has been determined based on current condition;
Risk based approach is used to make decisions, even though applied informally;
The Capital Programming processes select and prioritize capital projects for the 10-year capital program based on needs including age and condition of assets;
The Divisions participate in Ontario Municipal Benchmarking Initiative (OMBI) Performance Measures benchmarking; and
Substantial investment has been made in data collection, storage and display of some asset types.

Identified gaps include:

- Asset Management Policy needs to be developed to provide the broad framework for undertaking asset management in a structured and coordinated way across the Department as a whole, including the organizational context and importance of asset management;
- Gap analysis and AM strategies have not been developed for waste management and the airport, leaving these service areas without a clear understanding of asset management best practices and the set of actions to be undertaken to enhance their asset management practices;
- In many cases, asset management practices have evolved intuitively and outside of a best practices framework, and are not standardized, coordinated, or formally documented;
- Levels of service should be better defined, linked to business drivers, and documented, except as related to regulatory compliance;
- Many assets are inventoried and valued for PSAB Tangible Capital Assets compliance at very high levels and more detail is needed for proper Asset Management;
- Remaining asset life has been determined based on current condition and age which may not be the imminent failure mode and is generally not predictive;
- Maintenance procedures are not optimized and are generally based on regulatory requirements or vendor recommendations;
- Knowledge management systems need to be developed to transfer knowledge on processes or assets among staff;
- Asset Management Plans need to be prepared to outline the asset lifecycle activities and resources required to provide defined levels of service, in the most cost effective way;
- The Capital Programming processes should include in the evaluation and validation of proposed projects. Risk and benefit cost lifecycle analysis and a confidence level approach;
- Asset hierarchies and data standards should be more comprehensive for all assets at the level required for informed decision-making; and
- A comprehensive Asset Management System Master Plan needs to be developed for the Department to guide effective procurement and management of shared data and information systems.

Recommended TES AM Practice Enhancements
Based on the gap analysis completed for the Transportation and Water Services Divisions, Region staff recognized that there are common elements in both Divisions and potential benefits to the TES Department to implement Asset Management not only at the Division level but also at the Departmental level. Some of the recognized benefits include economies of scale as well as a developing and implementing consistent processes and outputs relating to asset management within the TES Department and Divisions.

The Asset Management Implementation Project, subject to Council approval of this report, consists of four phases. A summary of the AM Implementation Project work plan and schedule is shown in Figure 2 below, followed by an overview of the objectives and benefits. A summary of the scope of work is detailed in Appendix B. Note that Phase 3 (Selection, Procurement and Implementation of an AM System) is not in the scope of this Consultant assignment but will be defined further with an
implementation plan, schedule and budget during Phase 2 of this project.

It should also be noted that Regional staff from all Divisions within the TES Department, Information Technology Services (ITS), Facilities and Fleet, Transportation Planning, Financial Services and Procurement and Supply Divisions and other Regional staff as required will be key participants in the project implementation project to ensure the project meets the Region’s standards and requirements.

**Figure 2**

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<th>Section</th>
<th>2011</th>
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<tr>
<td><strong>PHASE 1 – Gap Analysis &amp; Assessment for Airport &amp; Waste Mgmt</strong></td>
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<td>Presentation to AM Steering Committee</td>
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<td><strong>PHASE 2 – Implementation of AM Best Practices</strong></td>
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<td><strong>Section 1 – AM Planning &amp; Business Process Framework</strong></td>
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<td>LoS, Failure Mode &amp; Risk Analysis</td>
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<td>Asset Management Plan #2</td>
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Overview of Objectives and Benefits

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<th>PHASE / Section</th>
<th>Objectives</th>
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<tr>
<td><strong>PHASE 1</strong></td>
<td><strong>Gap Analysis and Assessment for Airport and Waste Management</strong> \ The objectives of this first phase of the Project are to understand the current status of the Airport Section’s and Waste Management Division’s AM practices using the principles employed in the similar studies completed for the Transportation and Water Services Divisions.</td>
<td>Benefits include a common understanding of asset management best practices by the entire TES Department, and prioritization of enhancement of practices for the Airport Section and Waste Management Division.</td>
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<td><strong>PHASE 2</strong></td>
<td><strong>Implementation of AM Best Practices including Asset Pilot Projects and Asset Management Plan #1</strong> \ The objectives of this phase are to enhance the Department’s asset management practices as outlined in the Asset Management Strategy to enable a better understanding of the full costs and risks to deliver the current levels of service, and enable improved decision making considering all viable options.</td>
<td>Benefits include improved governance and accountability, enhanced service management and customer satisfaction, improved financial efficiency, and more transparent and sustainable decision-making.</td>
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<td><strong>Section 1</strong></td>
<td><strong>AM Planning and Business Process Framework</strong> \ The objectives of this section of the Project are to develop the “top down” Department wide common frameworks and processes for Asset Management, and then to implement them from the “bottom up” on three pilot asset groups for each of the Transportation, Water Services, Airport and Waste Management service groups and, at the same time, building practices to suit the specific asset groups.</td>
<td>Benefits include development, documentation and implementation of standardized, coordinated processes based on best practice AM principles to set and meet required levels of service and manage assets in a cost effective manner, at acceptable levels of risk.</td>
</tr>
<tr>
<td><strong>Section 2</strong></td>
<td><strong>Data Registry and Standards</strong> \ The objectives of this section are to gather, review, and document current AM system processes, workflows and data; and undertake an analysis and definition of the users’ perceived future needs. \ A procurement and implementation plan will be prepared to provide recommendations for acquiring and implementing a solution, including proposed budget, process impacts, data management strategies, and project management requirements.</td>
<td>Benefits include enabling support for asset management through technology, including the ability to store, manipulate and retrieve timely, accurate, valid, reliable and complete data through enterprise systems. This enterprise system will create efficiencies by ensuring the correct number of systems that need to be maintained by the Region.</td>
</tr>
<tr>
<td>PHASE / Section</td>
<td>Objectives</td>
<td>Benefits</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Section 3</strong></td>
<td><strong>Organization and People</strong> The objectives of this section of the Project are to identify required organizational and staffing changes to support asset management best practices, to develop a change management and communication strategy and plan for staff, Council and the community to build a common understanding of principles and ensure consistent implementation of asset management practices across the Department, develop an asset management training and development program, and a knowledge management strategy.</td>
<td>Benefits include a more successful and sustainable implementation of the enhanced asset management practices.</td>
</tr>
<tr>
<td><strong>Section 4</strong></td>
<td><strong>Asset Management Plan #1</strong> The objective of this section of the Project is to develop an initial asset management plan for managing the Department's transportation, water services, waste management and airport assets based on existing information and basic asset management practices, and including strategic goals, asset portfolio, performance standards, demand forecast, asset lifecycle activities, and cash flow forecasts.</td>
<td>Benefits include more transparent and sustainable decision-making that considers the entire asset portfolio and all viable options, and provides higher confidence that the solutions guide investment in the right work, at the right time, at the lowest lifecycle cost.</td>
</tr>
<tr>
<td><strong>PHASE 4</strong></td>
<td><strong>Continuous Improvement Plan and AM Plan #2</strong> The objectives of this final phase of the Project are to develop a continuous improvement process for ongoing development of asset management capacity within the Department, and to develop the second asset management plan for managing the Department's transportation, water services, waste management and airport assets based on an expanded set of assets and the more advanced asset management practices implemented since commencement of the Project.</td>
<td>Benefits include more transparent and sustainable decision-making that considers the entire asset portfolio and all viable options, and provides higher confidence that the solutions guide investment in the right work, at the right time, at the lowest lifecycle cost.</td>
</tr>
</tbody>
</table>
In summary, the expected benefits of the multi-year Asset Management Implementation Project are as follows:

**Cost Savings**
- Optimisation of maintenance expenditure and asset lifecycle activities

**Improved Governance and Accountability**
- Demonstrating Sustainable service delivery
- Transparently balancing service/price/quality trade-offs
- Published performance and financial measures
- Clear audit trail for decisions taken and risk accepted

**Enhanced Service Management and Customer Satisfaction**
- Improved performance and control of service delivery
- Improved understanding of service requirements
- Formal agreement with users on the service levels
- A holistic approach to business and asset management

**Improved Risk Management**
- Knowing the probability and consequences of asset failure
- Knowing the criticality and priority of assets
- Having formal risk management strategies in place

**Improved Financial Efficiency**
- Improved decision-making based on costs and benefits of alternatives
- Prioritization of investments and lifecycle activities
- Justification for long term funding requirements
- Recognition of all costs of owning/operating assets

**Consultant Selection**

Due to the complexity and new concepts involved in the Implementation of Asset Management for public utilities, TES staff agreed in discussion with staff from the Procurement and Supply Services Division of the Finances Department to split the Consultant selection in two phases. The first phase consisted of Pre-Qualification of Consultants with the pre-qualified Consultants required to meet minimum technical criteria in order to be short listed. The second phase consisted of submission of detailed proposals by the pre-qualified Consultants including submission of a detailed work plan and schedule, and upset fee budget for completion of the project. A two envelope approach was used for the second phase submission. The first envelope consisted of the work plan and schedule, and the second envelope consisted of the upset fee budget, which would only be opened upon completion of the detailed review and evaluation of the proposals based on Quality and Equity Factors.

In July 2010, a Request for Pre-Qualification was advertised in the Kitchener-Waterloo Record, Ontario Public Buyers Association, Biddingo, and the Region’s Procurement and Supply Services web site.
In September 2010, three Consultants submitted a proposal for the Request for Pre-Qualification. All Consultants met the Pre-Qualification requirements, and were requested to submit detailed proposals for the second phase of the Consultant selection process. The three pre-qualified Consultants were:

- Associated Engineering Limited;
- GHD Inc.; and
- Stantec Consulting Limited.

The staff project team involved in the review of the proposals and upset fee budget consisted of:

Katrina Howald, Project Manager, Information Technology
David Peplinski, Business Analyst, Information Technology
Robert Gallivan, Manager, Transportation Program Development, Transportation
Shawn Buckley, Senior Transportation Infrastructure Engineer, Transportation
Kevin Campbell, Manager, Airport Operations, Transportation
Jon Arsenault, Manager, Engineering and Programs, Waste Management
Richard Pinder, Senior Project Manager, Asset Management, Water Services
Jorge Cavalcante, Manager, Engineering and Planning, Water Services
Charles Whitlock, Director, Procurement and Supply Services (Observer), Finance

Consultants were initially evaluated on their proposal based on Quality and Equity Factors listed below. Upon evaluation of the Quality and Equity Factors it was the intent of Region staff to open the second envelope and evaluate the Price Factor.

Consultants were evaluated based on the following weighted evaluation factors:

1. Quality Factors (80%)
   - Project Understanding and Approach 25%
   - Project Director and Project Managers 25%
   - Project Support Staff 20%
   - Firm's Experience on Similar Projects 10%

2. Equity Factors (5%)
   - Current Regional Workload 3%
   - Local Office 2%

3. Price Factor (Upset Fee Budget) 15%

The number of hours proposed by each Pre-Qualified Consultant for undertaking this assignment was within ±5% of the average number of hours for all three submissions. Based on the results of the Quality and Equity Factors for the three Pre-Qualified Consultants, the Consultant Selection Project Team unanimously agreed that the project team, approach and work plan presented by GHD was clearly superior to the submissions from the other two Consultants.

The hourly price provided by GHD for its team was compatible with the price provided by GHD on previous Consultant assignments with Transportation (Roads) and Water Services Divisions. GHD’s upset fee for the Transportation and Environmental Department Asset Management Implementation project is $3,290,193 plus applicable taxes (Appendix B includes a detailed breakdown of the Consultants upset fee).
Scope of Work

For this assignment the Consultant will perform the following:

- **Phase 1**: complete Gap Analysis and Assessment Studies for the Airport Section and Waste Management Division similar to the work already completed for Transportation (Roads) and Water Services Divisions;
- **Phase 2**: develop and implement Asset Management Best Practices for TES including implementation of asset pilot projects for three assets in each Division and preparation of the initial Asset Management Plan for TES;
- **Phase 4**: prepare a Continuous Improvement Plan for Asset Management within TES with the goal of evolving from Basic Asset Management to Advanced Asset Management, preparation of a subsequent Asset Management Plan for TES and planning for the completion of future Asset Management Plans for TES.

Phase 3 requirements will be set in Phase 2 of this work; however; implementation will be part of a separate assignment.

Schedule

Subject to Council’s approval of this consulting assignment, it is anticipated that the project will begin in early 2011 and be completed by late 2013.

CORPORATE STRATEGIC PLAN:

The project meets the Corporate Strategic Plan Focus Area 5: “Provide high quality infrastructure and asset management to meet current needs and future growth” regarding the following Strategic Objectives:

1) Optimize the use of existing infrastructure and ensure it is adequately maintained; and
2) Provide infrastructure needed to accommodate planned growth.

FINANCIAL IMPLICATIONS:

Ten Year Capital Programs for the Transportation and Environmental Services Department Divisions prior to 2011 included funds for infrastructure inspections, for completing preliminary work for the implementation of Asset Management such as PSAB Tangible Capital Assets compliance, Gap Analysis and Assessment studies, and other related work. Based on the results of the Gap Analysis and Assessments for the Transportation (Roads) and Water Services Divisions in 2009 and 2010 and the Airport Section and Waste Management Division requirements as part of this project, funds have been allocated for the implementation of Asset Management in the Council approved 2011 Ten Year Capital Programs.

The 2011 Ten Year Capital Programs for the Transportation, Water Services and Waste Management Divisions includes a combined total funding of $3,400,000 for this project over the years 2011 to 2013 and will be funded from the Roads Rehabilitation, Water and Development Charge Reserve Funds and debentures. This will be adequate funding to cover GHD’s upset fee of $3,290,193.50 plus applicable taxes (Appendix C includes a detailed breakdown of the Consultants upset fee).
OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

NIL

ATTACHMENTS

Appendix A – TES Departmental Infrastructure Assets
Appendix B – Detailed Summary of the Scope of Work
Appendix C – Breakdown of Consultant’s Upset Fee

PREPARED BY:  Robert Gallivan, Manager, Transportation Program Development
                Richard Pinder, Senior Project Engineer, Asset Management

APPROVED BY:  Thomas Schmidt, Commissioner, Transportation and Environmental Services
In the Region infrastructure assets are considered stationary systems (or networks) that serve the community where the system as a whole is intended to be maintained indefinitely to a specified level of service by the continuing replacement and refurbishment of its components.

The infrastructure assets in the TES Department consist of the following (excluding land and fleet):

**Water Services ($1.9 billion)**
- 116 wells
- 17 water treatment plants
- 36 storage facilities
- 38 pumping stations
- 13 waste water treatment plants
- 6 sewage pumping stations
- 2 biosolids storage lagoons
- 1 biosolids transfer facility
- 218 km of Regional water mains
- 73 km of co-owned water mains

**Waste Management ($0.1 billion)**
- 2 waste management facilities
- Recycling centre
- Maintenance buildings
- 2 landfill gas collection system
- Retention ponds
- WRESTRC

**Transportation ($2.1 billion)**

**Roads ($2.05 billion)**
- Approximately 700 kilometres of road
- 169 bridges
- 478 signalized intersections
- 7,543 street lights
- Approximately 15 kilometres of noise walls
- 11 maintenance operations buildings

**Airport ($0.05 billion)**
- Approximately 360,000 square meters of asphalt which consists of 2 runways, 5 taxiways, 5 Aircraft parking aprons and a series of groundside roads and vehicle parking lots
- 49,000 metres storm sewer piping network
- 500 edge lights, 40 guidance signs, 4 precision approach path indicator (PAPI) systems, 2 approach lighting systems, 8 constant current regulators including approximately 28,392 metre of underground cabling including 2 emergency generators and a computerized control system located in a dedicated field electric centre
- Approximately 2,233 metres of overhead and 442 metres of underground 3 phase hydro distribution including 13 pole mount transformers, 5 pad mount transformers, 3 load break switches and 46 hydro consumption meters
- 32 street lights and light standards including underground cabling
- Approximately 2,258 meters of underground fibre optic
• Telecommunication cabling.
• 5 administration and maintenance operations buildings
• 32 camera CCTV security system including cabling and digital video recording system
• 24,000 metre security / wildlife fencing network including 50 security gates
• 2,600 metre water pipeline network including 22 gate valves, 8 curb stops and 13 fire hydrants.
• 1,700 metre sanitary pipeline including 21 sanitary manholes and 1 pumpingstation.
PHASE 1: Gap Analysis and Assessment for Airport and Waste Management

The scope of work includes separate gap analysis and assessments for the Airport Section and Waste Management Division, including:

- Definition of business drivers;
- Identification of current practices through workshops and interviews;
- Conducting a gap analysis between current and best practices;
- Determining and documenting enhancement roadmaps; and
- Presentation to the AM Steering Committee.

PHASE 2: Implementation of AM Best Practices

The scope of work includes enhancing TES asset management practices including:

- Developing an Asset Management Policy;
- Building Department-wide frameworks and processes;
- Building and piloting asset specific processes;
- Building data registries;
- Making recommendations on systems for implementation in Phase 3;
- Developing the supporting organization and people;
- Developing the initial asset management plan for managing the Department’s assets; and
- Documentation and presentation to the AM Steering Committee at key decision points.

This phase comprises the bulk of the work on the Project and has been subdivided into four sections.

Section 1: AM Planning and Business Process Framework

The scope of work includes both developing top down Department-wide frameworks and processes, and developing and piloting bottom up asset specific processes including documenting asset attribute information.

- Developing the top down Department-wide frameworks and processes for Strategic AM Planning, Performance Measurement and Continuous Improvement, and Capital Programming includes:
  - Reviewing existing documents and information, developing the frameworks;
  - Reviewing and finalizing the framework with stakeholders by consensus;
  - Developing Department-wide processes at a series of four workshops;
  - Documenting the work; and
  - Reviewing and revising it throughout the Project as more detailed bottom up processes are developed and piloted.

- Developing and piloting the bottom up asset specific processes for each of the Transportation, Water Services, Airport and Waste Management service groups includes developing, piloting, reviewing and finalizing the bottom up asset specific processes for Levels of Service, Failure Mode and Risk Analysis, Renewal Planning, Maintenance Planning and Capital Programming.
Section 2: Data Registry and Standards

The scope of work includes both developing a data registry and data standards, and conducting an information and data management systems review.

- The development of the data registry and data standards for each of the Transportation, Water Services, Airport and Waste Management service groups includes:
  - Reviewing existing documents and information;
  - Developing an asset data map and outlining responsibilities;
  - Developing asset hierarchy structures;
  - Developing data standards;
  - Assessing asset gaps and developing a data strategy; and
  - Developing the asset register for pilot assets.

- The information and data management systems review includes:
  - Assessing asset management information practices and system architecture;
  - Assessing asset management systems including developing a systems functional requirements table; and
  - Developing an asset management systems procurement and implementation plan.

Section 3: Organization and People

The scope of work includes:

- Conducting an organizational roles and responsibilities review and developing a strategy;
- Developing a change management and communication strategy and plan;
- Developing a training and development strategy and plan; and
- Developing a knowledge management strategy and plan.

Section 4: Asset Management Plan #1

The scope of work includes preparation of asset management plans for each of the service groups, plus a Department-wide summary Plan. Specific tasks include:

- Requesting, gathering and reviewing existing asset information for the asset register including:
  - PSAB PS 3150 TCA inventories, useful lives, and valuations;
  - Levels of service including goals and objectives, customer feedback from surveys and call centers, and current and future levels of service;
  - Growth and demand including future demand of services related to growth;
  - Lifecycle analysis including failure predictions, risk assessments, and asset remaining life; and
  - Lifecycle management strategies including treatment types and timing to renew the assets.

- Computation of long term (100 year) funding and short term (10 year) investment needs;
- Determination of a confidence level rating, documentation;
- Review of the resultant AM Plans with each of the service groups; and
- Review and modification of the Strategic AM Planning Framework and Processes for development of Asset Management Plans, including roles and responsibilities.
PHASE 4: Continuous Improvement Plan and AM Plan #2

The scope of work includes:

- Development of a continuous improvement framework and continuous improvement plans for each of the Transportation, Water Services, Airport and Waste Management service groups; and
- Preparation of the Department’s second set of asset management plans as described above.
<table>
<thead>
<tr>
<th>Project Initiation</th>
<th>$196,344.58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1 – Gap Analysis and Assessment of the Airport Section and Waste Management Division</td>
<td>$102,157.65</td>
</tr>
<tr>
<td>Phase 2 - Asset Management Implementation - Project Management</td>
<td>$71,462.39</td>
</tr>
<tr>
<td>Phase 2 - Section 1 - Asset Management Planning and Business Process Framework</td>
<td>$1,350,374.32</td>
</tr>
<tr>
<td>Phase 2 - Section 2 - Data Registry and Standards</td>
<td>$476,507.32</td>
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<tr>
<td>Phase 2 - Section 3 - Organization and People</td>
<td>$439,908.25</td>
</tr>
<tr>
<td>Phase 2 - Section 4 - Initial Asset Management Plan</td>
<td>$287,790.87</td>
</tr>
<tr>
<td>Phase 3 - Not Part of this Consultant Assignment</td>
<td>$</td>
</tr>
<tr>
<td>Phase 4 - Continuous Improvement Plan for Asset Management and 2&lt;sup&gt;nd&lt;/sup&gt; Asset Management Plan</td>
<td>$365,648.11</td>
</tr>
<tr>
<td><strong>Total Consultant Upset Fee</strong></td>
<td><strong>$3,290,193.50</strong></td>
</tr>
</tbody>
</table>
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: C04-30, 5404

SUBJECT: CONSULTANT SELECTION – CLASS ENVIRONMENTAL ASSESSMENT, DETAILED DESIGN AND SERVICES DURING CONSTRUCTION, BISHOP STREET IMPROVEMENTS FROM CONESTOGA BOULEVARD TO CONCESSION ROAD, CITY OF CAMBRIDGE

RECOMMENDATION:

THAT the Regional Municipality of Waterloo enter into a Consultant Services Agreement with Delcan Corporation of Kitchener, Ontario to provide consulting engineering services for a Class Environmental Assessment, detailed design, contract administration and construction inspection for Bishop Street improvements from Conestoga Boulevard to Concession Road in the City of Cambridge at an upset limit of $374,585 plus applicable taxes for the Class Environmental Assessment and detailed design phase and with contract administration and construction inspection to be paid on a time basis.

SUMMARY:

The Region of Waterloo wishes to proceed with the reconstruction of Bishop Street from Conestoga Boulevard to Concession Road in the City of Cambridge in 2015. In order to meet this timeline, an engineering consultant must be hired now to undertake the Class Environmental Assessment (Class EA), detailed design and construction administration. Staff has determined that it is necessary to commence the engineering for this project now in order to provide sufficient time to complete the Class EA, design and obtain all necessary property acquisition, utility relocation and approvals in advance of construction.

An invitation for Letters-of-Interest to provide engineering services was advertised in the Waterloo Region Record. Thirteen (13) firms submitted proposals and four (4) firms were short-listed and invited to submit detailed work plans and fee estimates.

Based on the evaluation criteria, review of the detailed work plans, schedules and upset fees provided, the Evaluation Team recommends that Delcan Corporation be retained to undertake this assignment at an upset fee limit of $374,585 plus applicable taxes for the Class EA and detailed design phase with contract administration and construction inspection to be paid on a time basis.

Delcan’s fees of $374,585 plus applicable taxes for the Class EA and detailed design phase are within the consulting fee allowance provided for in the total project budget of $5,590,000.
REPORT:

1. Background

Bishop Street from Conestoga Boulevard to Concession Road is identified in the Region’s approved 2011 Transportation Capital Program and 10-Year Capital Forecast for reconstruction in 2015 to address the deteriorated pavement condition. This section of Bishop Street is identified in the Region’s 2004 Cycling Master Plan as a core on-road cycling facility. Accordingly, on-road cycling lanes will be considered as part of the roadway reconstruction. Other elements that will be considered during the planning phase of this project include urbanization of the roadway with curb and gutter, sidewalks, intersection improvements, replacement of underground infrastructure and enhanced boulevard landscaping. Additionally, potential implementation of roundabouts will be considered at the intersection of Bishop Street and Industrial Road and at the intersection of Bishop Street and Conestoga Boulevard during the planning phase. Planning for these roadway improvements will be completed in accordance with the Schedule “B” requirements of the Municipal Class Environmental Assessment (Class EA).

The Region’s approved 2011 Transportation Capital Program and 10-Year Capital Forecast includes funding in the amount of $5,590,000 in 2011 to 2016 inclusive for the Bishop Street improvements from Conestoga Boulevard to Concession Road. Regional staff is fully committed to other capital projects and therefore staff recommends that an external consultant be hired to complete this project. Staff has determined that it is necessary to commence the engineering for this project now in order to provide sufficient time to complete the Class EA Study, complete the detailed design, obtain any required property, undertake utility relocations and obtain required approvals in advance of construction in 2015.

2. Consultant Selection

An invitation for Letters-of-Interest to provide engineering services for this project was advertised in the Waterloo Region Record. Thirteen (13) consultants submitted a Letter-of-Interest. From a review of the submissions, four (4) firms were short-listed based on their qualifications and these consultants were asked to submit a detailed work plan and upset fee for the Class EA and detailed design phase. The short-listed consultants were also requested to submit an estimate of fees for contract administration and construction inspection services.

The four short-listed consultants were:

- Delcan Corporation;
- HDR Corporation;
- McCormick Rankin Corporation; and
- Stantec Consulting Limited

The Evaluation Team involved with the consultant selection consisted of:

Dave Weiler, Head, Transportation Capital Projects, Design and Construction Division
Robert Gallivan, Manager, Transportation Program Development
Samer Inchasi, Senior Project Manager, Design and Construction Division
Delton Zehr, Project Manager, Design and Construction Division
The evaluation criteria used for selecting the successful consultant were consistent with the Region’s Purchasing Bylaw which includes price as a factor in the selection process. These evaluation criteria and their respective weightings were as follows:

**Quality Factors**

- Project Approach and Understanding: 35%
- Experience of the Project Manager: 20%
- Experience of the Project Support Staff: 15%
- Experience on Similar Projects: 10%

**Equity Factors**

- Current Workload for Region: 3%
- Local Office: 2%

**Price Factor**

- Upset Price: 15%

The Letters-of-Interest submitted by all four short-listed consultants demonstrated a good understanding of the project with capable project teams and experience on numerous similar projects. When considering the combination of quality, equity and price factors described above, Delcan Corporation (Delcan) scored the highest of the four (4) short-listed consultants. Delcan’s upset fee of $374,585 plus applicable taxes for the Class EA and detailed design component was the lowest of the prices submitted.

Based on the above evaluation criteria, including a review of the detailed work plans, schedules and upset fees provided, the Evaluation Team recommends that Delcan be retained to undertake the Class EA, detailed design, contract administration and construction inspection of this project.

### 3. Scope of Work

For this engineering assignment, the consultant will complete the following tasks: review all background information, conduct a Schedule “B” Class EA Study, complete traffic, archeological, drainage and other required studies; conduct a public consultation program; develop and present design alternatives at Public Consultation Centres; complete final design of the road improvements; prepare contract drawings, specifications and tender documents; develop traffic staging plans; obtain all necessary agency approvals; assist during the tendering period; provide contract administration and site inspection services during construction; prepare record drawings; and provide post-construction services during the warranty period. A breakdown of the successful consultant’s upset fee is included in Appendix ‘B’ attached to this report.
4. Schedule

Subject to Council’s approval of this consultant assignment, the proposed project schedule is outlined below. This preliminary schedule is dependent upon the extent and timing of any property acquisitions necessary to implement the proposed improvements.

- Class EA and Preliminary Design: May 2011 – August 2012
- Detailed Design and Approvals: September 2012 – May 2013
- Property Acquisition & Utility Relocation: April 2013 – April 2015
- Construction: April 2015 – November 2015

5. Consultant’s Upset Fee

The short-listed consultants were each requested to submit an upset fee for professional services to complete the Class EA and detailed design and were also requested to submit an estimate for contract administration and construction inspection fees. For road and bridge projects, the time required for contract administration and construction inspection can vary significantly depending on weather conditions, the actual contractor hired for construction and other unknown variables. Because an upset fee does not lend itself well to these types of services, it has been the Region’s practice on road and bridge projects to pay for contract administration and construction inspection fees on a time basis. It is recommended that this same practice be followed for this project. For budgetary purposes, staff has estimated the cost of contract administration and construction inspection services to be $145,500 plus applicable taxes, which is based on the preliminary estimate of fees submitted by Delcan and a review of costs on similar projects. The upset limit for Delcan to undertake the Class EA and detailed design phases for this assignment is $374,585 plus applicable taxes for consultant fees and disbursements.

The Region’s total budget for the road reconstruction and improvements on this project is $5,590,000. Based on this total value of $5,590,000, the consultant’s upset fee limit for the Class EA Study and detailed design services represents approximately 6.7% of the estimated total cost for this project which is at the low end of the range for a project of this type and complexity.

CORPORATE STRATEGIC PLAN:

Construction of the Bishop Street improvements from Conestoga Boulevard to Concession Road in the City of Cambridge meets Corporate Strategic Focus Area 5 – Infrastructure by ensuring we provide high quality infrastructure and asset management to meet current needs and future growth.

FINANCIAL IMPLICATIONS:

Based on the upset fee schedule received from Delcan, the total costs for the Class EA and detailed design phases are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upset Consulting Fee (Class EA &amp; Detailed Design)</td>
<td>$374,585.00</td>
</tr>
<tr>
<td>HST (13%)</td>
<td>+$48,696.05</td>
</tr>
<tr>
<td>Sub-Total</td>
<td>$423,281.05</td>
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<tr>
<td>Less: Municipal Rebate of 86.46% of HST</td>
<td>-$42,102.60</td>
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<tr>
<td>Net Cost of Consulting Assignment</td>
<td>$381,178.45</td>
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</table>
The Region’s approved 2011 Transportation Capital Program and 10-Year Capital Forecast includes a total of $5,590,000 for the Bishop Street improvements in years 2011-2016 inclusive for Project Number 5404 to be funded from the Roads Rehabilitation Reserve Fund, including $470,000 in 2011. The cost of replacing any City of Cambridge underground infrastructure will be funded by the City.

In order to provide sufficient time to complete the Class EA, detailed design and obtain all necessary property acquisition, utility relocation and approvals in advance of construction, it is necessary to commence the engineering for this project in 2011.

Delcan’s fees for the detailed design phase of this consulting assignment in the amount of $374,585 plus applicable taxes are within the consulting fee allowance provided for in the total budget of $5,590,000 for this project.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE: NIL

ATTACHMENTS:

Appendix “A” – Key Plan  
Appendix “B” – Delcan Corporation, Upset Fee Breakdown

PREPARED BY: Samer Inchasi, Senior Project Manager

APPROVED BY: Thomas Schmidt, Commissioner, Transportation and Environmental Services
APPENDIX A

BISHOP STREET IMPROVEMENTS
CONESTOGA BOULEVARD TO
CONCESSION ROAD
CITY OF CAMBRIDGE

Region of Waterloo
### APPENDIX B

**Delcan Corporation – Upset Fee Breakdown**  
**Bishop Street – Conestoga Boulevard to Concession Road,**  
**City of Cambridge**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>1. Project Initiation / Data Collection / Base Plan Preparation</td>
<td>$68,074.15</td>
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<td>2. Class EA and Preliminary Design</td>
<td>$121,084.71</td>
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<td>3. Detailed Design and Approvals</td>
<td>$157,198.25</td>
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<tr>
<td>5. Disbursements</td>
<td>$2,000.00</td>
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</table>

**Sub-Total** $374,585.00

**HST (13%)** $48,696.05

**Total** $423,281.05
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: T04-20, 5549

SUBJECT: FRANKLIN BOULEVARD IMPROVEMENTS, PINEBUSH ROAD TO MYERS ROAD, CITY OF CAMBRIDGE – DETAILED DESIGN AND CONSTRUCTION PHASING UPDATE

RECOMMENDATION:

For Information.

SUMMARY:

This report has been prepared by Region Staff for information purposes to provide an update on the schedule and construction phasing for the road improvements on Franklin Boulevard (Regional Road 36), from Pinebush Road to Myers Road, in the City of Cambridge. Please refer to Appendix ‘A’ Figure 1 for a key plan of the project limits.

The proposed roadway improvements include approximately 8.0 km of road along Franklin Boulevard with the construction of eleven modern roundabouts. As part of detailed design staff identified an initial critical task was the development of a construction phasing plan to provide for the timely delivery of the road improvements. A Design Team, comprising Region staff, George Elliott, Commissioner of Transportation and Public Works for the City of Cambridge, and Stantec Consulting Ltd. was formed to develop the construction phasing plan.

In recognition of the potential for significant impacts on traffic and disruption to the local community during the project’s construction phases, staff developed and analyzed several construction phasing alternatives for minimizing the duration of construction and minimizing disruption to adjacent property owners and the travelling public. As a result of this construction phasing analysis, staff have identified a Construction Phasing Plan that schedules construction of Franklin Boulevard over two years, starting in 2014 with completion by the end of 2015, as follows:

2014 Construction
- Pinebush Road to north of Can-Amera Parkway
- north of Clyde Road southerly to south of Main Street

2015 Construction
- north of Can-Amera Parkway southerly to north of Clyde Road
- south of Main Street southerly to south of Champlain Boulevard

Please refer to Appendix ‘A’ Figure 1 for a key plan of the Construction Phasing Plan. A more detailed breakdown of the construction phasing with the evaluation of benefits is included in the report below.

This Construction Phasing Plan recognizes the project complexities and traffic operation constraints along the corridor and has been developed to best meet the Region and City transportation needs while minimizing the negative impacts on the travelling public and the local community.
REPORT:

1.0 Background

This report has been prepared by Region Staff to provide an update on the schedule and construction phasing for the road improvements on Franklin Boulevard (Regional Road 36), from Pinebush Road to Myers Road, in the City of Cambridge. Please refer to Appendix A Figure 1 for a key plan of the project limits.

The proposed roadway improvements encompass approximately 8.0 km of road along Franklin Boulevard and an additional 3.5 km of related side street improvements. Included with this work is the construction of eleven modern roundabouts. A Class Environmental Assessment was completed by the Region and approved by Regional Council on March 24, 2010. Detailed design for this project commenced in September of 2010.

The preliminary phasing of the Franklin Boulevard project as incorporated in the 2011 Transportation Capital Program includes commencement of construction in 2013 with completion in 2015. Staff identified an initial critical task of the detailed design assignment was the development of a phasing plan for construction to provide for the timely and effective delivery of the road improvements. A Design Team, comprising Region staff, George Elliott, Commissioner of Transportation and Public Works for the City of Cambridge, and Stantec Consulting Ltd. was formed to develop the construction phasing plan.

Early on in the development of the construction phasing, the Design Team recognized the significant impact this project will have on all traffic and the local community in Cambridge. With this in mind, the Design Team identified the main goals of the construction phasing were to:

1. Minimize the duration of the construction.
2. Complete the construction as soon as possible.
3. Minimize disruption and inconvenience to adjacent property owners and the travelling public during construction.

The Design Team also recognized that because of the sheer magnitude of the project, it was necessary to finalize the construction phasing as early as possible so that design, property acquisition and utility relocation efforts could be focussed in the areas to be constructed first.

2.0 Construction Phasing Alternatives

In consideration of the goals noted above, the Design Team developed the following main alternatives for the construction phasing:

Alternative 1: 1 Year of Construction, 1 Contract or Multiple Contracts
Alternative 2: 2 Years of Construction, 1 Contract or Multiple Contracts
Alternative 3: 3 Years of Construction, Multiple Contracts

For all three alternatives it is recognized that some preconstruction activities for utility relocations and property alterations, such as parking and sign relocations, will occur in advance of any road construction. It is also recognized that surface asphalt will be placed one year after the initial year(s) of constructing the road to base asphalt. These additional activities are expected to result in minor disruption to traffic and minimal disruption to local property and business access.
3.0 Evaluation of Construction Phasing Alternatives

3.1 Factors Considered in the Evaluation of Construction Phasing Alternatives

In addition to the main goals of the construction phasing, the Design Team considered a number of other factors that would affect the timing of construction, the overall cost of construction and the degree of potential impact and inconvenience to the community during construction of the project. These factors include:

Property Requirements

There are 76 property parcels required for the road improvements. The scope and complexity of the property takings vary widely over the length of this project. The purchase of the land parcels range from a small strip of land across the frontage or flankage of a property, to complete buyouts of some properties to accommodate the improvements.

Based on the number of parcels required for a particular project phase, and the complexity of property impact mitigation measures involved, some property acquisitions could take a number of years. The time required to acquire properties in a certain area will have an impact on the ability to start improvements in that area in 2013 or 2014.

Utility Relocations

Construction of this project will require extensive utility relocations in advance of the road work, with some of the utility relocations requiring advance property purchases. The scope and complexity of the utility relocations varies in different locations over the length of the project.

Traffic Operations

In order to best manage network traffic flow during construction, Region and City of Cambridge staff have identified construction constraints for ensuring specific intersections are not under construction at the same time, such as: Pinebush Road and Can-Amera Parkway, Avenue Road and Clyde Road, and Main Street and Dundas Street. Similarly, intersections that are closely spaced to each other operate in unity and must be constructed together at the same time, such as Can-Amera Parkway and Saginaw Parkway.

In addition, transportation network operational constraints for the coordination of Franklin Boulevard construction phasing with other Regional and City road works in the area has been reviewed. Further consideration was also given to possible early construction of those sections of Franklin Boulevard that are experiencing unusually high collision rates, such as at the Clyde Road intersection, and or areas experiencing significant traffic congestion, such as at the Pinebush Road intersection.

Construction Efficiencies

The potential benefits associated with larger scale construction phases was also considered in recognizing that typically better contract prices occur with larger contract quantities and economies of scale. In addition, larger scale phases will reduce the number of overall contracts thereby minimizing the costs of construction administration and management. Fewer contracts can also reduce the need for construction overlaps and the additional costs associated with temporary works.
Local Community Disruption

Completing construction in the shortest most manageable time frame would minimize potential access impacts to local properties and businesses. It would also minimize the duration of inconvenience to the travelling public.

Design and Construction Complexities

Larger and more complex phases typically require more time for acquiring property and relocating utilities in advance of construction. This in turn constrains the ability to construct an initial phase in 2013. In addition, the time required in securing necessary approvals, such as Ministry of Transportation approvals at the Pinebush Road intersection, will have an impact on the scheduling of improvements at the north limit of the project.

3.2 Evaluation of Construction Phasing Alternatives

Potential adverse impacts during construction are a recognized concern to the Region, the City of Cambridge, and the Community at large. In order to minimize the potential impacts and inconveniences to the community during construction a careful approach to the determination of a suitable construction phasing plan has been undertaken by staff. Due to the anticipated magnitude of the work and the expected disruption during construction, the goal of an effective construction phasing plan is to provide a flexible approach to implementation while maintaining a controlled schedule, optimizing project costs and managing adverse impacts to the greatest practical extent.

In identifying a construction phasing plan for this project, staff assessed the feasibility and benefits of initiating a first phase of construction as early as 2013. Staff determined that although specific areas of construction might be possible, a majority of the areas require acquisition of property and utility relocations that could not be completed in time to facilitate any meaningful construction in 2013. In addition, since only limited areas were possible for construction in 2013 it was recognized that their construction in 2013 would create the need for scattered contracts, thereby creating multiple overlaps and transitions, more community disruption over 3 or more years, and higher project costs.

Assessment of Alternative 1: 1 Year of Construction

The complete construction over one year would require deferral in starting the works to 2015 in order to provide the necessary time for all required property acquisitions and utility relocations. In addition, in order to complete all works within one year, the Contractor would be required to work in as many as 4 or more separate sections along the corridor at one time. This would result in unacceptable impacts to traffic and access operations during construction. Although the larger scale construction may generate slightly lower prices associated with economies of scale through one or two contracts, there would be some increased risk in not fully completing the works in 2015. Based on this assessment, the Design Team concluded that Alternative 1 was not preferred.

Assessment of Alternative 3: 3 Years of Construction

Construction over 3 years starting in 2013 through multiple contracts would generate higher costs due to additional temporary works resulting from a greater number of construction overlaps. In addition, spreading construction over 3 years will increase the duration of traffic disruption along the corridor as compared to the one or two year alternatives. The Design Team agreed that a three year construction duration was unacceptable and concluded that Alternative 3 was not preferred.
3.3 Proposed Construction Phasing Plan

Based on the evaluation of the alternatives in consideration of all factors including the main goals, the Design Team identified Alternative 2, 2 Years of Construction as the best Construction Phasing Plan for this project. This plan comprises construction of the project over two years, starting in 2014 with completion by the end of 2015.

A more detailed breakdown of this Construction Phasing Plan is as follows:

**2014 Construction**
- Franklin Boulevard from Pinebush Road to north of Can-Amera Parkway, and Pinebush Road westerly of Franklin Boulevard to Wayne Avenue, including roundabouts at Pinebush Road, Sheldon Drive, and Bishop Street
- Franklin Boulevard from north of Clyde Road southerly to south of Main Street, including roundabouts at Clyde Road, Savage Drive, and Main Street

**2015 Construction**
- Franklin Boulevard from north of Can-Amera Parkway southerly to north of Clyde Road, including roundabouts at Can-Amera Parkway, Saginaw Parkway, and Avenue Road
- Franklin Boulevard from south of Main Street southerly to south of Champlain Boulevard, including roundabouts at Dundas Street, and Champlain Boulevard

Please refer to Appendix ‘A’ Figure 1 for a key plan of the Construction Phasing Plan. Construction of the required improvements will be further refined during detail design with respect to identifying the optimal number of contracts required in best completing the road improvement works in accordance with the planned phasing over two years.

**Benefits of the Proposed Construction Phasing**

The Design Team assessed that the Construction Phasing Plan will provide the following benefits:

- Addresses the traffic operation constraints by scheduling works at separated times, and or current times, as needed to maintain network traffic operations;
- Limits the risks associated with potential construction delays by minimizing construction overlaps;
- Optimizes the duration and disruption to through traffic and the local community to only two years;
- Initiation of construction in some areas in 2014 and deferring construction of other areas until 2015 provides sufficient time to ensure that all property acquisition necessary for the improvements is completed well in advance of construction;
- Deferring the initiation of works to 2014 and spreading them out over two years ensures that all utility relocation is completed well in advance of construction;
- Deferring the start of works to 2014 and constructing them over two years provides for better cost budgeting in spreading the costs over two years;
- Scheduling the works to be competed within two years more effectively coordinates the construction of Franklin Boulevard with the construction of other Regional and local municipal road network improvements in the area;
• Initiation of construction in 2014 and completing the works within two years provides for the timely delivery of needed improvements in addressing areas of unusually high collision rates and existing traffic congestion along the corridor;

• Limiting construction to two years separates the work into larger contracts that typically generate economies of scale and lower construction costs;

• Limiting construction to two years separates the work into larger contracts which minimizes the need for temporary works from construction overlaps and will result in lower construction costs.

Staff presented the Construction Phasing Plan to City of Cambridge Council on April 18, 2011. Cambridge Council members expressed few concerns regarding the proposed construction phasing. Cambridge Council members did express concerns regarding: designing roundabouts for transport trucks, designing the roundabout at Saginaw Parkway for the safety of students crossing at this intersection, and maintaining some degree of traffic flow along Franklin Boulevard during construction. Staff will address these design and construction issues as part of detailed design and construction staging for this project.

3.4 Constructing Some Initial Roundabouts on Franklin Boulevard as a Trial Before Fully Constructing all Eleven Roundabouts in the Corridor

Regional Planning and Works Committee comments at the time of approving the Class Environmental Assessment for Franklin Boulevard Improvements expressed consideration of building some 3 lane roundabouts first and then assessing them as a trial before building the rest. The Design Team has reviewed this idea, saw it as problematic and therefore did not incorporate it in the Construction phasing Plan for this project. This approach would result in a two to three year delay in the completion of this project thereby delaying implementation of needed improvements that will reduce unusually high collision rates and existing traffic congestion along the corridor. In addition, the resulting 2 to 3 year delay would adversely impact the scheduled construction of other Regional and City road projects in the area and create unacceptable traffic and local community disruption over a longer period of time.

Other three-lane roundabouts are currently proposed for construction in the Region in advance of those planned on Franklin Boulevard, with one in 2011 at Homer Watson Boulevard and Block Line Road in the City of Kitchener, and another in 2012 at Hespeler Road and Queen Street in the City of Cambridge. Upon construction completion of these 2 three-lane roundabouts, staff will thoroughly observe and analyze how they are operating. Should this analysis result in design refinements that would optimize the operation of future three-lane roundabouts, these “lessons-learned” refinements will be incorporated into the detailed design of the three-lane roundabouts on Franklin Boulevard to ensure they operate safely and effectively.

CORPORATE STRATEGIC PLAN:

This project is consistent with the development of Strategic Focus Area 2 (Growth Management) in terms of:

• Enhancing, developing, promoting and integrating sustainable and active forms of transportation (public transit, cycling, and walking).

It is also consistent with the development of Strategic Focus Area 5 (Infrastructure) in terms of:

• Providing infrastructure needed to accommodate planned growth.
FINANCIAL IMPLICATIONS:

The 2011 10 Year Transportation Capital Program includes $57.0 million over the years 2010 to 2015 for the design, property acquisition, utility relocations and construction of this project to be funded from the Region Development Charges Reserve Fund.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

NIL

ATTACHMENTS

Appendix A – Figure 1: Key Plan – Construction Phasing, Franklin Boulevard Road Improvements

PREPARED BY:  William Gilbert, Senior Project Manager, Transportation Expansion

APPROVED BY:  Thomas Schmidt, Commissioner, Transportation and Environmental Services
APPENDIX “A”

FIGURE 1: Key Plan – Recommended Construction Phasing
Franklin Boulevard Road Improvements
Region of Waterloo
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: C04-30, 5428, 5493, 5614

SUBJECT: CONSULTANT SELECTION – PRELIMINARY DESIGN, DETAILED DESIGN AND CONSTRUCTION ADMINISTRATION AND INSPECTION SERVICES, NOTRE DAME DRIVE AND SNYDER’S ROAD RECONSTRUCTION, PETERSBURG SETTLEMENT AREA, TOWNSHIP OF WILMOT

RECOMMENDATION:

THAT the Regional Municipality of Waterloo enter into a Consultant Services Agreement with MTE Consultants Inc. of Kitchener, Ontario to provide consulting engineering services for the preliminary design, detailed design, contract administration and construction inspection for Notre Dame Drive and Snyder’s Road Reconstruction in the Petersburg Settlement Area, Township of Wilmot at an upset limit of $249,945.00 plus applicable taxes for the preliminary design and detailed design phases with contract administration and construction inspection to be paid on a time basis.

SUMMARY:

The Region of Waterloo wishes to proceed with the Notre Dame Drive and Snyder’s Road Reconstruction in the Petersburg Settlement Area, Township of Wilmot in 2014. This project includes consideration of improvements to address operational and safety concerns along the corridor at the Notre Dame Drive and Snyder’s Road intersection and at various accesses to commercial and residential properties along both roads. The design will also address the poor pavement conditions, storm drainage concerns and the inclusion of pedestrian and cycling facilities. In order to meet the 2014 construction timeline, an engineering consultant must be hired now to undertake the preliminary design, detailed design and construction administration.

An invitation for Proposals to provide engineering services was advertised in the Waterloo Region Record. Seven (7) firms submitted proposals, out of which four (4) were short-listed.

Based on the evaluation criteria, review of the detailed work plans, schedules and upset fees provided by the shortlisted consultants, the Evaluation Team recommends that MTE Consultants Inc. be retained to undertake this assignment at an upset fee limit of $249,945.00 plus applicable taxes for the preliminary design and detailed design phases with contract administration and construction inspection to be paid on a time basis.
REPORT:

1. Background

Notre Dame Drive and Snyder’s Road within the Petersburg Settlement Area are identified in the Region’s 2011 Transportation Capital Program for reconstruction in 2014 in order to address operational/safety concerns at the intersection and at various commercial accesses and residential driveways along both roads. The deteriorated road condition, storm drainage concerns and the inclusion of pedestrian and cycling facilities also will be addressed as part of the reconstruction. Planning of these improvements will be completed in accordance with Schedule ‘A+’ requirements of the Municipal Class Environmental Assessment (Class EA).

Notre Dame Drive and Snyder’s Road are both two lane roadways with urban, semi-urban and rural road cross-sections within the project limits. The urban cross-section is located in the vicinity of the Notre Dame Drive and Snyder’s Road intersection. The semi-urban/rural cross-section is located further away from the intersection. The posted speed limit is 60 km/hr. within the project limits.

The abutting land use on Notre Dame Drive and Snyder’s Road is a mix of residential and commercial. Access to the commercial lands at the south east corner of the intersection is not well defined which is resulting in operational and safety concerns.

The Notre Dame Drive and Snyder’s Road intersection is signalized. Traffic signal modernizations are planned at this intersection. The signal modernization will be coordinated with the reconstruction project. Non-signalized intersections exist at Cecil Kennedy Court, Deerfield Avenue and Reinhart Place. The asphalt surface on both roads is showing signs of distress.

The objectives of this project are to: correct road structural deficiencies; correct drainage deficiencies; provide for concrete curb and gutter, sidewalks and cycling facilities to meet the Transportation Corridor Design Guidelines (Rural Village – Main Street); assess and implement improvements to correct undefined accesses to commercial properties abutting the road; and assess adequacy of the lane configuration, alignment and turning radii at the Notre Dame Drive and Snyder’s Road intersection to accommodate the traffic types and traffic volume.

Improvements under consideration for this project include:

- Installation of storm sewers to address drainage problems;
- Replacement of the existing pavement structure to improve pavement performance;
- Turning radii improvements at intersections where required;
- Define access to commercial land uses abutting the road through the use of curb and gutter to improve operational and safety concerns; and
- Urbanization of the road cross-section with concrete curb and gutters, and provision of pedestrian and cycling facilities and boulevard landscaping (tree planting, topsoil and sod), all in accordance with the “Context Sensitive Regional Transportation Corridor Design Guidelines”.

The Region’s approved 2011 Transportation Capital Program includes funding in the amount of $4,365,000 in 2011-2015 inclusive for the preliminary design, detailed design and construction of the Notre Dame Drive and Snyder’s Road Reconstruction in the Township of Wilmot. Regional staff is fully committed to other capital projects and therefore staff recommends that an external consultant be hired to complete this project. Staff has determined that it is necessary to commence the engineering for this project now, in order to provide sufficient time to complete the design phases, acquire any necessary property and complete utility relocations, if necessary, in advance of construction.
2. Consultant Selection

An invitation for Request for Proposals to provide engineering services for this project was advertised in the Waterloo Region Record on February 22, 2011. Seven (7) consultants submitted Request for Proposals. Following a review of the submissions, four (4) firms were short-listed based on their qualifications. The detailed work plans and upset fee quotes for design activities, plus an estimate of fees for contract administration and construction inspection services from the short listed consultants were then reviewed and a final selection was made based on the evaluation criteria.

The four short-listed consultants were:

- MTE Consultants Inc.;
- McCormick Rankin Corporation;
- Stantec; and
- The Walter Fedy Partnership.

The Team involved with the consultant selection consisted of:

Bob Wheildon, Sr. Project Manager, Design and Construction;
Marcos Kroker, Head, Transportation Rehabilitation Program, Design and Construction

The evaluation criteria used for selecting the successful consultant were in accordance with the Region’s Purchasing By-law and included price as a factor in the selection process. These evaluation criteria and their respective weightings were as follows:

**Quality Factors**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Weighting</th>
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</thead>
<tbody>
<tr>
<td>Project Approach and Understanding</td>
<td>25%</td>
</tr>
<tr>
<td>Experience of the Project Manager</td>
<td>20%</td>
</tr>
<tr>
<td>Experience of the Project Support Staff</td>
<td>15%</td>
</tr>
<tr>
<td>Experience on Similar Projects</td>
<td>20%</td>
</tr>
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</table>

**Equity Factors**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Weighting</th>
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</thead>
<tbody>
<tr>
<td>Current Workload for Region</td>
<td>3%</td>
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<tr>
<td>Local Office</td>
<td>2%</td>
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**Price Factor**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Weighting</th>
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</thead>
<tbody>
<tr>
<td>Upset Price</td>
<td>15%</td>
</tr>
</tbody>
</table>

The Request for Proposals submitted by the four short-listed consultants demonstrated a good understanding of the project, capable project teams and experience on similar projects. When considering all quality, equity and price factors, the submission from MTE Consultants Inc. scored the highest. MTE Consultants Inc. was the second lowest fee received and was 22% lower than the average fee. Based on the above evaluation criteria, including the review of the detailed work plans, project approach, schedules and upset fees provided, the Project Team recommends that MTE Consultants Inc. be retained to provide the preliminary design, detail design, contract administration and construction inspection services for this project.
3. **Scope of Work**

For this engineering assignment, the consultant will: undertake a complete review of required infrastructure for existing and future conditions; develop and assess transportation improvement/reconstruction alternatives; conduct a public participation program; complete the preliminary and detailed design for the road improvements/reconstruction; assess the advantages and disadvantages of different construction staging alternatives; make presentations to Township of Wilmot Council and Regional Planning and Works Committee; prepare contract drawings, specifications and tender documents; obtain all necessary agency approvals; assist during the tendering period; provide contract administration and site inspection services during construction; prepare record drawings; and provide post-construction services during the warranty period. A breakdown of the consultant’s upset fee is included in Appendix B attached to this report.

4. **Schedule**

Subject to Council’s approval of the consultant assignment, the proposed implementation schedule is as follows:

<table>
<thead>
<tr>
<th>Event</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Plan, Preliminary Design and Generation of Alternatives</td>
<td>June 2011 – Winter 2012</td>
</tr>
<tr>
<td>Public Consultation Centre</td>
<td>Winter 2012</td>
</tr>
<tr>
<td>Council Approval of Recommended Alternative</td>
<td>Spring 2012</td>
</tr>
<tr>
<td>Property Acquisition, Utility Relocations, Final Design and Tendering</td>
<td>Spring 2012 – Spring 2014</td>
</tr>
<tr>
<td>Start of Construction</td>
<td>Spring 2014</td>
</tr>
<tr>
<td>Construction Completion</td>
<td>Fall 2014</td>
</tr>
</tbody>
</table>

5. **Consultant’s Upset Fee**

The short-listed consultants provided an upset fee for professional services for public consultation and engineering design, and also an estimate of contract administration and construction inspection fees. On road and bridge projects, the time required for contract administration and construction inspection can vary significantly depending on weather conditions, unforeseen developments during construction, contractor performance, and other unknown variables. Because an upset fee does not lend itself well to these types of services, it has been the Region’s practice on road and bridge projects to pay for contract administration and construction inspection services on a time basis. It is recommended that this same practice be followed for this project. For budgetary purposes, staff has estimated the cost of contract administration and construction inspection services to be $261,650.00 which is based on the preliminary estimate of fees submitted by MTE Consultants Inc. and a review of costs on similar projects.

The upset limit for MTE Consultants Inc. to undertake the preliminary and detailed design phases of this project is $249,945.00 (plus applicable taxes) for consultant fees and disbursements. The total estimated construction cost for this project is $4,365,000.00. The upset fee of $249,945.00 for the design phases represents 5.7% of the estimated construction value which is considered competitive for a project of this magnitude and complexity. The upset fee includes the assembly of base plans, investigation of various alternatives, coordination with concerned agencies, a public participation program, preliminary design, detail design and preparation of tender documents.
CORPORATE STRATEGIC PLAN:

This project meets the Region’s Corporate Strategic Plan objective to “optimize the use of existing infrastructure and ensure it is adequately maintained” under Focus Area 5 to “provide high quality infrastructure and asset management to meet current needs and future growth”.

FINANCIAL IMPLICATIONS:

The Region’s approved 2011 Transportation Capital Program includes $4,365,000.00 in years 2011-2015 inclusive for this project to be funded from the Road Rehabilitation Reserve Fund.

Based on the $249,945.00 upset fee limit of MTE Consultants Inc. the net cost of this consulting assignment is $254,344.53 as per the following breakdown:

<table>
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<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>MTE Consultants Inc.</td>
<td>$249,945.00</td>
</tr>
<tr>
<td>H.S.T (13%)</td>
<td>+$32,492.85</td>
</tr>
<tr>
<td>Sub-Total</td>
<td>$282,437.85</td>
</tr>
<tr>
<td>Less: Municipal Rebate of 86.46% of HST</td>
<td>-$28,093.32</td>
</tr>
<tr>
<td>Total</td>
<td>$254,344.53</td>
</tr>
</tbody>
</table>

A combined amount of $4,365,000.00 is included for engineering design and construction in the 2011 Ten Year Transportation Capital Program in years 2011 – 2015. MTE Consultants Inc.’s total fees for the preliminary and detail design and contract administration/construction inspection are within the consulting fee allowance provided for in the total budget for this project, which is all to be funded from the Roads Rehabilitation Reserve Fund. The approved 2011 Transportation Capital Program includes $70,000 for this project in 2011, which is sufficient funding to cover the scheduled consultant expenditures in 2011.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

NIL

ATTACHMENTS:

Appendix A: Project Key Plan
Appendix B: Breakdown of Consultant’s Upset Fee

PREPARED BY: Bob Wheildon, Sr. Project Manager, Design and Construction.

APPROVED BY: Thomas Schmidt, Commissioner, Transportation and Environmental Services.
### APPENDIX B

**PRELIMINARY AND DETAILED DESIGN FOR NOTRE DAME DRIVE AND SNYDER’S ROAD RECONSTRUCTION, PETERSBURG SETTLEMENT AREA, TOWNSHIP OF WILMOT**

**BREAKDOWN OF CONSULTANT’S UPSET FEE**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Initiation/Data Collection/Base Plan Preparation</td>
<td>$51,490.00</td>
</tr>
<tr>
<td>2. Preliminary Design</td>
<td>$65,487.00</td>
</tr>
<tr>
<td>3. Detailed Design and Approvals</td>
<td>$59,762.00</td>
</tr>
<tr>
<td>4. Contract Document, Specifications and Tendering</td>
<td>$17,237.00</td>
</tr>
<tr>
<td>5. Project Management</td>
<td>$42,876.00</td>
</tr>
<tr>
<td>6. Disbursements</td>
<td>$13,093.00</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>$249,945.00</strong></td>
</tr>
<tr>
<td><strong>HST</strong></td>
<td><strong>$32,492.85</strong></td>
</tr>
<tr>
<td><strong>Total Upset Fee</strong></td>
<td><strong>$282,437.85</strong></td>
</tr>
</tbody>
</table>
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: E13-01, 8309.C

SUBJECT: ELMIRA WASTEWATER TREATMENT PLANT UPGRADES – EXTENSION OF CONSULTANT ASSIGNMENT

RECOMMENDATION:

That the Regional Municipality of Waterloo extend Cole Engineering Group Ltd.’s consulting assignment for the provision of engineering services for detailed design and services during construction of the Elmira Wastewater Treatment Plant Upgrades to include additional engineering services during construction at an upset fee limit of $194,328.00 plus applicable taxes and a grand total upset fee of $1,031,074.75 plus applicable taxes.

SUMMARY:

Cole Engineering Group Ltd. (Cole) was retained by the Regional Municipality of Waterloo (Region) in August 2009 (Planning & Works Report E-09-081, dated August 11, 2009) to provide engineering services for the detailed design and services during construction of the Elmira Wastewater Treatment Plant Upgrades (WWTP) at an upset fee limit of $836,746.75 plus applicable taxes. The upgrades are required to improve the treatment processes at the plant and to ensure regulatory compliance. This project includes construction of additional equalization tanks and previously identified treatment process upgrades.

The Ministry of Environment (MOE) requires completion of the new equalization tanks by summer 2011. Construction of the new equalization tanks and process upgrades were scheduled to be undertaken concurrently under one construction contract. During the design phase, Cole and Region staff identified additional processes requiring upgrade. Due to the time required to complete the design of the treatment process upgrades, the project was divided into two separate construction contracts, one for the construction of additional equalization tanks and a second contract for construction of process upgrades. The construction of the new equalization tanks is currently underway under Contract 2010-021 and is scheduled to be completed by summer 2011.

As permitted under the Region’s Purchasing By-law, Staff recommends that Cole’s consulting assignment for the provision of engineering services for detailed design and services during construction of the Elmira WWTP Upgrades be extended to include additional engineering services during construction of the second contract for treatment process upgrades at the Elmira WWTP at an additional upset fee limit of $194,328.00 plus applicable taxes and a grand total upset fee of $1,031,074.75 plus applicable taxes.

Subject to Council’s approval of this consultant assignment extension, it is anticipated that detailed design will be completed to allow tendering of the second contract in summer 2011 with completion of all work by spring 2012.
REPORT:

1. **Background**

The Elmira Wastewater Treatment Plant (WWTP) is located in the Township of Woolwich at 80 First Street East, Elmira. The plant was constructed in 1984 and was last upgraded in 2000/2001. This plant includes a Biological Nutrient Removal (BNR) system with chemical phosphorus removal and ultraviolet (UV) disinfection. It has a rated design capacity of 7,800 m$^3$/day. The treated effluent is discharged to the Canagagigue Creek, a tributary of the Grand River. The plant is owned by the Region and operated by the Ontario Clean Water Agency (OCWA).

In 2009 the Region retained Cole to complete the detailed design and provide services during construction of the Elmira WWTP Upgrades. This project includes construction of two additional equalization tanks to improve plant efficiency and effectiveness during wet weather periods. The project also includes installation of a new biosolids dewatering centrifuge, upgrades to primary and secondary clarifiers, bioreactors and effluent pump station, automation of the existing UV disinfection system, and improvements to plant hydraulics and selected process control systems.

The Ministry of Environment (MOE) requires completion of the new equalization tanks by summer 2011. Originally the construction of the equalization tanks and treatment process upgrades was scheduled to be undertaken concurrently under one construction contract. During the design phase, Cole and Region staff identified additional processes requiring upgrade. To allow sufficient time for the detailed design of the process upgrades and to avoid delays to the construction of the equalization tanks, the project was subsequently divided into two separate construction contracts, one for the construction of additional equalization tanks and a second contract for construction of process upgrades. The construction of the new equalization tanks is currently underway under Contract 2010-021 and is scheduled to be completed by summer 2011. The construction of the process upgrades is scheduled to start in summer 2011 and be fully completed by spring 2012.

2. **Extension of Consultant’s Assignment**

Cole’s original assignment included provision of contract administration and inspection services during construction for one contract of 12 month duration. As a result of the need to separate a portion of the work into a second contract, Cole is now required to provide contract administration and inspection services for an additional 8 months. Because Cole is familiar with the project, they can provide the additional contract administration and inspection services at a lower cost than other consultants.

An upset fee of $194,328.00 plus applicable taxes was negotiated with Cole for the provision of engineering services during construction of the second contract for the treatment process upgrades at the Elmira WWTP. Staff has thoroughly reviewed and evaluated the additional fees required during construction of the second construction contract and has concluded that the $194,328.00 upset fee for these services is fair, reasonable and good value to the Region.

Therefore, as permitted under the Region’s Purchasing By-law, staff recommends that the upset fee for Cole’s current consulting assignment for the provision of engineering services for detailed design and services during construction of the Elmira WWTP Upgrades be increased by $194,328.00 plus applicable taxes to include additional engineering services during construction of treatment process upgrades at the plant.
3. Additional Scope of Work

The additional work to be provided by the Consultant for the treatment plant upgrades includes assistance during the tender period, construction administration and site inspection services, review shop drawings, oversee commissioning of the facility, coordinate and schedule SCADA programming activities, provide warranty administration, prepare record drawings, provide operation and maintenance manuals and asset management data meeting Region standards, and provide operator training.

4. Public Notification

Although this project is proceeding under Schedule A of the Municipal Class Environmental Assessment process, a Public Information Package will be distributed to adjacent property owners/occupants prior to commencing construction of the second contract to inform the public of the proposed construction timing for this work.

5. Schedule

Subject to Council’s approval of additional consulting fees, it is anticipated that the contract will be tendered in summer 2011 with completion of all work by spring 2012.

CORPORATE STRATEGIC PLAN:

The Elmira WWTP Upgrade project meets the Corporate Strategic Plan Objective to “protect the quality and quantity of our water sources” under Strategic Focus Area 1 to “protect and enhance the environment”.

FINANCIAL IMPLICATIONS:

The Region’s 2011 Ten Year Wastewater Capital Program provides a total budget of $6,500,000 for process upgrades at the Elmira WWTP, which will be funded from Regional Development Charges and Wastewater Reserve Fund. The $194,328.00 for Cole’s additional upset fee can be accommodated within the total project budget.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

NIL

ATTACHMENTS:

PREPARED BY: Jerry Borovicka, Project Manager, Environmental Engineering

APPROVED BY: Thomas Schmidt, Commissioner of Transportation and Environmental Services
Regional Municipality of Waterloo

RIVER ROAD EXTENSION
From King Street to Manitou Drive
City of Kitchener
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

PUBLIC CONSULTATION CENTRE
INFORMATION PACKAGE

May 17, 2011

Drop-In 4:30 p.m. – 7:00 p.m.
Presentation 7:00 p.m. – 7:30 p.m.
Question & Answer Period 7:30 p.m. – 8:00 p.m.

Knights of Columbus Hall
110 Manitou Drive
Kitchener

Region of Waterloo

Please fill out the comment Sheet at the end of this Information Package and place it in the box at this Centre or send it to the address on the Comment Sheet.
1. **What is the History of the South Kitchener Transportation Corridor Study?**

In 2004, the Region initiated the South Kitchener Transportation Corridor Study. The study limits include an area bounded by Fairway Road to the north, Wabanaki Drive to the south, Manitou Drive to the west and King Street to the east. The study area also includes the Hidden Valley natural area. The purpose of the study was to develop transportation planning alternatives, including the establishment of possible transportation corridors, to provide additional east-west mobility in South Kitchener for people and goods movement. The traffic work done as part of this study and as part of the Region’s approved 2010 Transportation Master Plan concludes that:

- A River Road extension would provide road network continuity in south Kitchener by connecting River Road at King Street to Bleams Road at Manitou Drive. This would create a much needed additional continuous east-west arterial route in south Kitchener;

- This new continuous east-west arterial road would off-load traffic from Fairway Road which is already at capacity;

- A River Road extension and new Highway 8 interchange would provide additional access to the widened highway for the continued movement of people and goods in south Kitchener; and

- A River Road extension would provide improved access for the Hidden Valley business park and residential development lands designated in the Kitchener Official Plan.

In July 2006, upon completion of Phases 1 and 2 of the Municipal Class Environmental Assessment (EA) process for the South Kitchener Transportation Corridor Study, the Regional Municipality of Waterloo (Region) endorsed a Preferred Alternative for the planned extension of River Road from King Street to Manitou Drive as shown in Appendix “A”.

On February 27, 2007, this Preferred Alternative was presented to the public at a Public Consultation Centre. It was reported at that time that the Preferred Alternative was selected primarily because, of all the alternatives studied that solved the transportation problem, it had the least impacts on the Hidden Valley area’s natural environment.

2. **What is the Purpose of this Public Consultation Centre?**

This centre is intended to continue the public consultation and input process for this project, and in particular, to update the public about:

- The 2007 field survey results that confirmed the presence of a threatened species, the Jefferson Salamander, in the study area;

- How the Endangered Species Act (2007) regulations affect the alignment of the Preferred Alternative;

- The results and conclusions obtained from other field surveys and additional technical project work conducted since February 2007; and

- The results of a recent revised evaluation of the previous Preferred Alternative.

Based on the information provided, the Project Team is asking for public comments on the Preferred Alternative for consideration by Regional Council in completing the Class EA for the River Road Extension.
We kindly request that you fill out the Comment Sheet attached to the back of this Information Package and place it in the box at this Public Consultation Centre or send it to the address indicated on the Comment Sheet.

Your comments will be considered by the Project Team, in conjunction with all other relevant input, to complete the Class EA study.

3. **Why Was the Project Put on Hold in 2007?**

After the February 27, 2007 Public Consultation Centre, members of the public requested that further investigations be conducted to continue to explore the possible presence of a Threatened Species in the study area, namely the Jefferson Salamander.

There were updated Ministry of Natural Resources (MNR) survey methods in 2007 that were not available before 2006 so an advanced species survey was conducted in the winter of 2007 that followed the updated MNR survey methods. In April 2007, because of the updated survey methods, the presence of Jefferson Salamanders in the Hidden Valley area was determined.

The Class EA Study was then put on hold in order to;
- Complete additional studies. (Please see section 4, below.);
- Await new threatened species habitat regulations from the MNR under the new Endangered Species Act (2007) and understand the implications of the new legislation on the project;
- Investigate thoroughly, the potential impacts of the proposed road on the Jefferson Salamander population and its habitat; and
- Consult a technical sub-committee consisting of experts from the MNR and the University of Guelph to direct additional studies and review the findings concerning Jefferson Salamanders.

4. **What Additional Studies Have Been Completed Since 2007?**

Since 2007, the following additional work has been completed:

- Additional field study using updated MNR survey methods to confirm the presence and extent of the Jefferson Salamander population in the Hidden Valley Forest;
- Obtained Endangered Species Act (2007) regulations from the Ministry of Natural Resources including a 2010 assessment of how the regulations affect the alignment of the Preferred Alternative;
- Development and analysis of six additional roadway network alternatives to address south Kitchener transportation needs, four of which did not involve a River Road extension;
- Approval, in 2010, of a new Regional Transportation Master Plan (RTMP) that confirmed the need and justification for increased capacity in the east-west direction in the River Road / Bleams Road corridor. In particular, the River Road extension was identified in the Master Plan as the preferred solution for this capacity need after considering other road network, transit, walking, cycling and transportation demand management options for the area;
- Review of alternative Highway 8 access designs with the Ministry of Transportation, and confirmation of the feasibility of implementing a River Road Extension following the completion of the current widening of Highway 8; and
- Additional study of the proposed Schneider Creek crossing hydraulic requirements.
5. **Re-evaluation of Planning Alternatives Under the Class Environmental Assessment (Class EA) Process:**

This Class EA Study is being directed by a “Project Team” consisting of staff from the Region of Waterloo, City of Kitchener, Grand River Conservation Authority (GRCA), Ministry of Natural Resources (MNR), Ministry of Transportation Ontario (MTO), Regional Councillors Jim Wideman, and Jean Haalboom, and City of Kitchener Councillors John Gazzola and Berry Vrbanovic. Consultants from IBI Group and LGL Limited are assisting the Project Team. Please refer to Appendix “B” for an explanation of the Class EA process.

Coming several months after Regional Council’s decision to endorse a River Road extension as the Preferred Alternative for the traffic needs in South Kitchener, the observation of Jefferson Salamanders in the Hidden Valley area represented significant new information. In 2010, the Ministry of Natural Resources (MNR) delineated, confirmed and released the Regulated limits of the Jefferson Salamander habitat within the Hidden Valley Forest area. Based on this new information, it became necessary for the Project Team to re-evaluate the original planning alternatives and their potential impacts on this species and its identified habitat to confirm whether the River Road Extension can still be recommended as the Preferred Alternative for this study.

6. **What Planning Alternatives to Extending River Road Have Been Studied?**

In the context of Regional Council’s 2006 decision to endorse a River Road extension as the preferred planning alternative for the transportation needs in South Kitchener, the identification of Jefferson Salamanders in the Hidden Valley area has made it necessary for the Project Team to re-evaluate the original planning alternatives and their potential impacts on the natural environment to confirm whether the River Road Extension is still the preferred planning alternative for this study.

In the early phase of this Class EA Study, the Project Team developed and evaluated ten (10) alternatives (listed and briefly described in Appendix “C”) to reduce the demand for private vehicle transportation in south Kitchener. These ten alternatives were presented to the public at the second Study Public Consultation Centre held on January 19, 2005, and included City and Region-wide strategies using public transit and other alternative modes of transportation, plus development restrictions and other measures to reduce future travel demands. None of these ten planning alternatives (which do not include extending or widening Regional Roads) were found, (in isolation or in combination), to have the potential to solve travel demand problems in the South Kitchener Corridor.

As a result of Regional Council’s approval of the 2010 RTMP, the Region has confirmed the need for increased transportation capacity in the Fairway Road transportation corridor. As part of this Class EA, the Project Team studied and evaluated in 2009, six (6) more planning alternatives as shown in Appendix “D”, These six alternatives included no River Road extension, widening Fairway Road to six lanes, adding a southbound lane onto Highway 8 from Fairway Road and other network changes. None of these alternatives (which did not include a River Road extension with partial Highway 8 interchange) was shown to meet the transportation capacity needs in the South Kitchener Transportation Corridor as effectively as a River Road extension with partial Highway 8 interchange. As a result, none of these six alternatives warrants additional review in this study.
7. **What Is the Result of the Recent Re-evaluation of All Planning Alternatives for this Project?**

The evaluation of Planning Alternatives included in **Appendix “C”** of this Information Package was developed and presented to the public at the third Public Consultation Centre held on October 4, 2005. A list of the specific evaluation criteria is also included in **Appendix “C”**, as well as a summary of the 2005 evaluation results. The 2005 evaluation results showed that Alternatives 4B and 5A, each with a River Road Extension from King St. to Bleams Rd., ranked the best at addressing all criteria. Discussions with the Ministry of Transportation confirmed that a full Highway 8 interchange at River Road would not be permitted owing to the need to maintain a minimum safe traffic weaving distance from the existing Fairway Road interchange. Alternative 5A, which included a full Highway 8 interchange, was dropped from further consideration and Alternative 4B was left as the Preferred Alternative for this Class EA study.

Based on MNR’s recent development of a map of the regulated habitat for the Jefferson Salamander in Hidden Valley, the natural environment impacts are now more thoroughly defined with respect to Jefferson Salamanders. With this new information, the Project Team has fully re-evaluated all Planning Alternatives and concluded that Alternative 4B is still the Preferred Alternative under this Class EA study.

In reaching this evaluation conclusion the Project Team notes that the 2005 evaluation of impacts on the Environmentally Sensitive Policy Areas /Provincially Significant Wetlands included the same lands as the 2007-2008 observed and 2010 regulated Jefferson Salamander habitat.

Therefore, after carefully evaluating all reasonable South Kitchener strategic transportation planning alternatives, including those identified since 2005, the Project Team has concluded that Alternative 4B, a four lane extension of River Road between King Street and Manitou Drive is the Preferred Alternative to address existing and future transportation demands in south Kitchener.

8. **What are the Potential Impacts of the Preferred Alternative on the Confirmed Jefferson Salamander Habitat in Hidden Valley?**

In 2010, the Ministry of Natural Resources (MNR) delineated, confirmed and released the Regulated limits of the Jefferson Salamander habitat within the Hidden Valley Forest area, which shows that the Preferred Alternative of the River Road extension is outside this regulated area, as shown in **Appendix “E”**. However, the previously-shown alignments of the existing Hidden Valley Road connection to the River Road extension (to provide a required second access point for the Hidden Valley residential area) was shown as traversing the regulated area. As a result the Project Team has identified a revised alignment for the connection of Hidden Valley Road to the River Road Extension that does not traverse the regulated area.

Although the proposed River Road extension alternative does not encroach on the Jefferson Salamander Regulated Habitat, there is some risk that any Jefferson Salamanders that have travelled beyond the limits of the regulated habitat could be impacted by the construction and operation of the new road. Because of this potential risk, the Region will apply for a Permit under Section 17 of the Endangered Species Act. The purpose of the permit is to establish the measures for the Region to follow in the event that future road construction may encounter Jefferson Salamanders. Preparation of the Region’s request for the Permit and MNR review of that request would proceed as part of this Class EA.
9. **What are the Potential Impacts of the Preferred Alternative on Other Natural Environmental Features?**

In addition to impacts related to the Jefferson Salamander Habitat, the amount and type of impacts on other natural environmental features will depend on final design details of the preferred River Road Extension and Hidden Valley Road connection alignment. At this time, the possible range of impacts of the Preferred Alternative on these other environmental features is summarized as follows:

- **The Direct Impacts** to the Environmentally Sensitive Policy Area (ESPA) lands ranges from 5.3 to 7.6 hectares out of a potential total of 52 hectares of ESPA lands. **Direct Impact** is a measure of the total amount of ESPA lands removed by the proposed road, including the impact of earthworks for road construction. This directly impacted area includes an early successional woodland and a thicket marsh.

- **The Indirect Impacts** on the ESPA are estimated to range from 5.0 to 7.3 hectares for the Preferred Alternative. **Indirect Impact** is a measure of impact from close exposure to the wind, noise, salt spray and other indirect impacts for the natural environment within 110 metres from the road versus the protection provided by being within the deep forest.

- It is estimated that 1.2 hectares of the Schneider Creek valley and 0.9 hectares of natural areas on the east side of Highway 8 will be removed (**direct impact**) or will be negatively impacted as described above due to the proximity of the new road (**indirect impact**).

10. **What are the Benefits of a River Road Extension?**

The benefits of a four lane extension of River Road from King Street to Manitou Drive include the following:

- Reduced congestion and delay for all modes of traffic in the Fairway Road transportation Corridor and other East-West routes in South Kitchener;
- Ability to implement a cycling facility that would facilitate cycling trips in the east-west direction in south Kitchener and provide for a new cycling and pedestrian link in South Kitchener as planned in the Regional Transportation Master Plan;
- Reduced noise and air pollution which would result from vehicle idling and increased travel time due to congestion;
- Utilization of existing road alignments for most of the proposed new road will minimize the segregation of adjacent lands including environmentally sensitive lands, help conserve more of the core environmental features and minimize the direct and indirect impacts on those adjacent lands. and
- Lower cost to construct and operate in comparison to other alternatives which would result in substantially lower improvements in delay and congestion for all modes of traffic.

11. **What Alternative Design Features Would Be Considered in the Design of the Preferred Alternative?**

In completing the Class EA, alternative intersection designs would be evaluated, including the use of roundabouts compared to traffic signals or stop signs. In addition, the Project Team will be considering ways of designing the road to reduce vehicular speed and to minimize or mitigate adverse impacts on any natural features along the road alignment. The Project Team will also consider alternative cross-section elements (such as medians, sidewalks, multi-use trails, on-road cycling lanes) to reduce the “footprint” of the road.
12. **What Measures Can be Implemented to Mitigate Potential Impacts as Part of Any River Road Extension Design?**

In order to reduce or mitigate some of the negative impacts on the natural environment, Region staff will implement the following measures, where appropriate and feasible:

- Apply minimum acceptable road design standards in some locations to minimize the loss of Provincially Significant Wetland (PSW) and mature woodland area loss caused by the roadway and fill slopes along elevated portions across Hidden Valley and the Schneider Creek Valley;
- Use bio-engineering techniques to create steeper reinforced side slopes along the road extension to reduce the “footprint” of the road near all environmentally sensitive areas;
- Complete a hydrogeological assessment of potential impacts on the quality and flows of groundwater and surface water in the study area, as part of the Class EA Study, and develop a stormwater management plan which incorporates appropriate Best Management Practices (BMPs) to protect the quality and quantity of groundwater and surface flows so that they continue to flow after road construction as they did before. This could be achieved by maintaining the drainage regime in the study area and through use of available best management practices for treating stormwater flows (possibly through the use of settling ponds) prior to discharge to PSW’s to reduce road runoff contaminants;
- Provide for safe wildlife passage, beneath the bridge structure over Schneider Creek and further reduce the potential for wildlife mortality by reducing accessibility to the proposed new road surface through the Hidden Valley and Schneider Creek natural areas;
- Consider means to control public access from the new road to the Hidden Valley natural area;
- Include passage of the existing Balzer Road Trail under the proposed new bridge structure at Schneider Creek;
- Develop an erosion and sedimentation control plan to prevent sedimentation into the adjacent natural areas during construction. Ensure that controls remain in place and in good working order until the road side slopes of the fill areas are stabilized and re-vegetated;
- Utilize open areas created by the new road for extensive tree planting such as on the side slopes of the River Road extension between Manitou Drive and Wilson Avenue and between Wabanaki Drive and Stonegate Drive;
- As soon as feasible after acquiring any required property for the road extension, pre-stress the future new edges of the woodland (i.e. selectively clear some of the trees/vegetation on the surrounding edges) along the approved road right-of-way to allow the residual trees some time to adjust to increased exposure to sun, wind, etc.;
- Identify and implement measures to protect the population of Regionally significant Fringed Gentian (a rare plant) through protection from indirect impact and/or transplanting the plants to nearby suitable habitat;
- Ensure that Schneider Creek remains navigable under the proposed new bridge structure;
- Implement an environmental monitoring and remediation response plan to assess the effectiveness of measures to mitigate impacts of the new road on the natural environment, identify opportunities to improve the mitigation plan, and enforce compliance with the plan.

13. **Has Traffic Noise Been Considered In This Class EA Study?**

Yes, traffic noise impacts are included as an evaluation criterion for this project along the section of the River Road Extension between King Street and Highway 8. Residential properties along this section could experience noise level increases that may warrant a noise attenuation wall in accordance with Regional Policy; however this cannot be confirmed until a Preferred Design Concept is selected, later in this Class EA study. The location of any proposed noise wall would be subject to the results of a future noise study undertaken as part of the
preliminary design phase of this Class EA study. Upon completion of the future noise study, the Project Team will convey the results as part of a future meeting to be held for this project.

14. Has the Impact on Existing Hidden Valley Road Been Considered?

Yes, the existing intersection of Hidden Valley Road with Wabanaki Drive and Goodrich Drive would be maintained, although a modern roundabout at that location would be considered as part of the preliminary design phase of this EA study. The Preferred Alternative requires a portion of the existing Hidden Valley Road alignment along Highway 8 to be closed, as shown on a display board at this PCC. As a result, the residential area would require a new second access to the road network which would intersect with the River Road Extension at a location as shown on a display board at this PCC. With this new second access, Hidden Valley Road would remain a residential street linking the River Road Extension with Wabanaki Drive.

15. How will the Intersection of River Road and Stonegate Drive be Treated?

The Project Team is aware of the concerns some residents of the Stonegate Drive area have about increased traffic volumes on Stonegate Drive that may occur as a result of a River Road extension and its intersection with Stonegate Drive. The Region met with residents in 2006 to discuss this issue, and a number of traffic control solution options for the River Road/Stonegate Drive intersection were presented. These options will be further developed and evaluated through the River Road extension Class EA process, including further discussions with affected residents. These options will be the subject of a future Public Consultation Centre. All residents in the Stonegate area will be notified of the timing of this future meeting.

16. Will Property Need to be Acquired if River Road is Extended, and What Happens if Some of my Property is Required?

While it is the intent of the design process to minimize the need to acquire property, the preferred River Road extension alignment will require acquisition of private property at several locations. The amount and exact location of property that would need to be acquired will not be known until a preliminary design of the Preferred Design Concept is prepared as part of this Class EA study. When a Preferred Design Concept is identified, possible land acquisition requirements for that Preferred Design Concept will be identified and presented to the public.

For any property identified for acquisition, the owner would be reimbursed by the Region of Waterloo for the required land at fair market value. An independent appraisal would be conducted for the property to determine fair market value. Please refer to Appendix “F” for a summary of the Region’s Property acquisition process.

17. How Much Will it Cost to Construct the Preferred River Road Extension Alignment?

The estimated cost of the River Road Extension, including the Highway 8 interchange, environmental protection and mitigation, utility relocation, property acquisition and associated works depends on what design is ultimately approved. At this point, the estimated construction cost of the Preferred Alternative ranges between $58 million and $66 million.
18. **What Would be the Next Steps in Completing the River Road Extension Class EA?**

All comments will be considered by the Project Team, in conjunction with all of the other relevant information, to review the Project Team’s Preferred Alternative for the River Road Extension.

To complete this Class EA study, the major completion milestones would be:

- Recommend to Regional Council in June, 2011 the reconfirmation of Alternative 4B as the Preferred Alternative for Phase 2 of the Class EA study;
- Complete Phase 3 of the Class EA: additional studies, preliminary design and evaluation of Alternative Design Concepts for the Preferred Alternative, additional public consultation and select a Preferred Design Concept for presentation to the public;
- Hold a Public Consultation Centre in late 2011 to present Alternative Design Concepts to the public and obtain comments from the public;
- Hold a Public Input Meeting with Regional Council in 2012 to present the Project Team’s Preferred Design Concept and obtain input from the Public;
- Consider Public Input and prepare a Recommended Design Concept for presentation to the Public and to Regional Council for approval;
- Following Regional Council endorsement of a Recommended Design Concept, filing of the Environmental Study Report with the Ministry in the autumn of 2012, followed by a period of review by the public and Ministry of the Environment;
- Detailed design, property acquisition, and utility relocations would occur in 2013-2016; and
- Road construction is planned to commence in 2016, subject to budget approval.

19. **How Will I Receive Further Notification Regarding this Project?**

Adjacent property owners and tenants, as well as members of the public who have signed in at this and previous Public Consultation Centres will receive any forthcoming additional information and be notified of future meetings via mail and/or hand delivered notices.

20. **How Can I Register my Comments and Opinions About the River Road Extension Class EA Study at this Stage?**

In order to assist the Project Team in addressing any comments or concerns you might have regarding this study, we ask that you please fill out the attached Comment Sheet and leave it in the box provided at the registration table. Alternatively, you can mail, fax or e-mail your comments to the Region of Waterloo, not later than **May 31, 2011**.

We thank you for your involvement and should you have any questions please contact:

Mr. Wayne Cheater, P. Eng.  
Senior Project Manager  
Regional Municipality of Waterloo  
150 Frederick St., 6th Floor  
Kitchener, ON, N2G 4J3  
Phone: 519-575-4757 Ext. 3183  
Fax: 519-575-4430  
Email: WCheater@regionofwaterloo.ca

Mr. Don Drackley, MCIP, RPP, MITE  
Senior Associate  
IBI Group  
379 Queen Street South  
Kitchener, ON N1S 5A5  
Phone: 519-745-9455  
Fax: 519-745-7647 ext. 1302  
Email: ddrackley@ibigroup.com
ONTARIO ENVIRONMENTAL ASSESSMENT ACT

The purpose of the Ontario Environmental Assessment Act (EA Act) is to provide for “the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management of the environment in Ontario”. Environment is applied broadly and includes the natural, social, cultural, built and economic components.

The key principles of successful environmental assessment planning include:

- Consultation with stakeholders and affected members of the public;
- Consideration of a reasonable range of alternatives;
- Assessment of the environmental impacts for each alternative;
- Systematic evaluation of alternatives; and
- Clear documentation of the process followed.

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (EA)

The Municipal Class EA is a planning process approved under the Environmental Assessment Act that is used by municipalities to plan infrastructure enhancement projects while satisfying the requirements of the Environmental Assessment Act. Under the Class EA process, Schedule “C” projects are described as:

Schedule “C” - Includes larger, more complex projects with the potential for significant environmental affects.

- These projects are subject to all phases of the Class EA and require a minimum of 3 points of public contact.

PUBLIC INVOLVEMENT

Members of the public that have a stake in the project are encouraged to provide comment throughout the Class EA process. For Schedule “C” projects there are a minimum of three (3) opportunities for public contact. These typically include two Public Information Centres and the Notice of Study Completion.
### APPENDIX C-1

#### South Kitchener Transportation Corridor Alternative Planning Solutions

<table>
<thead>
<tr>
<th>Alternative Planning Solution</th>
<th>Summary Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alternative 1: Baseline</strong></td>
<td>No road capacity improvements within the South Kitchener area except for those already approved, including MTO's Highway 8 widening, the Fairway Road extension and Manitou Drive widening by the Region, and Block Line Road extension and Wabanaki Drive extension by the City. These roadway projects are common to all South Kitchener Planning Alternatives. It also includes a planned increase in the overall transit mode share from 5% in 1996 to 7% in the AM Peak Hour by 2016 as per the Regional Transportation Master Plan (RTMP). No other structural or travel pattern changes in the South Kitchener Corridor are included, so this is a baseline condition against which other Planning Alternatives will be compared.</td>
</tr>
<tr>
<td><strong>Alternative 1A: Baseline with Development Cap</strong></td>
<td>Includes an added hypothetical development cap with no new Hidden Valley area and Fairway Road development require rezoning being built to 2021. This did not include other planned Hidden Valley residential development projects with draft plan of subdivision have since been built. The intent of a cap is to remove the associated trip-generation from the Study Area, including trips generated by up to 3,000 employment positions within the planned Hidden Valley Business Park.</td>
</tr>
<tr>
<td><strong>Alternative 2: Original River Rd. Extension Plan</strong></td>
<td>Includes the widening of Fairway Road to six lanes from Highway 8 to King Street with a further widening to Wilson Avenue. It also includes the River Road extension from King Street to Manitou Drive as a four-lane arterial road through the Hidden Valley area and over Schneider Creek as recommended in the 2010 Regional Transportation Master Plan.</td>
</tr>
<tr>
<td><strong>Alternative 3: Transit Emphasis</strong></td>
<td>Improvements to traffic conditions within the South Kitchener corridor will take place through approved road projects and as much intersection capacity optimization as possible. This alternative includes no full River Road Extension from King Street to Wabanaki Drive as originally planned in the RTMP. Instead, this alternative includes the extension of a two-lane Goodrich Drive west from Wilson Avenue to Bleams Road at Manitou Drive. Also assumes a significant transit mode share increase beyond the planning target of 7% by 2016 to an average of 15% by 2021.</td>
</tr>
<tr>
<td><strong>Alternative 3A: Transit Emphasis with Partial Highway 8 Interchange</strong></td>
<td>Alternative #3 Transit Emphasis with a partial Highway 8 interchange on the east side of Highway 8 to provide movement on and off the Highway northbound only, connecting to an extended two lane River Road to King Street. No River Road extension west of the highway is included in this test.</td>
</tr>
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## Alternative Planning Solution

<table>
<thead>
<tr>
<th>Alternative Planning Solution</th>
<th>Summary Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 4: Hybrid River Rd. Extension with Partial Interchange</td>
<td>A hybrid of the original River Road extension plan (Alternative 2) with Bus Only/High Occupancy Vehicle lanes and the Transit Emphasis (Alternative 3), but with a partial Highway 8 interchange. Also includes widening Homer Watson Blvd to 6 lanes from Bleams Rd. to Highway 401, and widening Fairway Road to 6 lanes from King Street to Wilson Avenue.</td>
</tr>
<tr>
<td>Alternative 4A: Alternative 4 with Mixed Traffic Lanes</td>
<td>Same as Alternative 4 except that all 4 lanes of a River Road extension would be available for mixed traffic (2 lanes would not be dedicated to buses and other high occupancy vehicles as in Alternative 4).</td>
</tr>
<tr>
<td>Alternative 4B:</td>
<td>Same as 4A but with no widening of Homer Watson Blvd. to 6 lanes. <strong>Performed best at addressing all criteria of the 10 alternatives evaluated.</strong></td>
</tr>
<tr>
<td>Alternative 5: Hybrid River Rd. Extension with Full Interchange</td>
<td>Same as Alternative 4 but with full interchange at River Road Extension and Highway 8, and Fairway Road widened to 6 through lanes from King Street to Wilson Avenue.</td>
</tr>
<tr>
<td>Alternative 5A: Alternative 5 with Mixed Traffic and Full Interchange</td>
<td>Same as Alternative 5 but with all 4 lanes of a River Road extension available for mixed traffic. <strong>Also performed best at addressing all criteria of the 10 alternatives evaluated.</strong></td>
</tr>
</tbody>
</table>

## Alternative Planning Solutions Evaluation Criteria

1. Transportation Criteria:
   1.1 Roadway Network Performance
   1.2 Transportation System Performance
   1.3 Transit System Performance
   1.4 Transit Ridership
   1.5 Cycling/Walking Network Performance
   1.6 Roadway Network Continuity
   1.7 Good Movement Performance
   1.8 Transportation System Accessibility
2. Social-Cultural Environment Criteria:
   2.1 Direct Property Impact
   2.2 Regional Growth Management Strategy
   2.3 External Traffic Impacts
   2.4 Cultural Landscape Impact
   2.5 Noise Impact
   2.6 Visual Impact
3. Natural Environment Criteria:
   2.1 Natural Area Impact
   2.2 Groundwater Impact
   2.3 Surface Water Impact
   2.4 Air Quality Impact
   2.5 Resource Consumption
4. Economic Environment Criteria:
   4.1 Capital Cost
   4.2 Operation & Maintenance Cost
   4.3 Property Impact Potential
The two highest scoring alternatives:

- **Alternative #4B** with a new River Road extension from King Street to Manitou Drive utilizing existing road allowances around as much of the Hidden Valley area north edge as possible, and extending west along Goodrich Drive to Manitou Drive, and with a partial interchange on the east side of Highway 8 and a new southbound Highway ramp from Fairway Road; and

- **Alternative #5A** with the same River Road extension alignment, but with a full interchange at Highway 8.
APPENDIX D-1

South Kitchener Transportation Corridor, 6 Additional Alternatives, 2009

Network Alternative A
(River Road extension with Hwy 7/8 access)

Network Alternative A2
(River Road extension with Hwy 7/8 access & 6-lane portion of Fairway Rd.)

Network Alternative B
(No River Road extension with Hwy 7/8 access)
Network Alternative C
(No River Road extension with Hwy 7/8 access and 6-lane portion of Fairway Rd.)

Network Alternative D
(No River Road extension and longer 6-lane portion of Fairway Rd.)

Network Alternative E
(No River Road extension with Hwy 7/8 access and longer 6-lane portion of Fairway Rd.)
APPENDIX F-1

Property Acquisition Process Information Sheet
(Projects requiring Class Environmental Assessment Approval)

The following information is provided as a general overview of the property acquisition process and is not legal advice. Further, the steps, timing and processes can vary depending on the individual circumstances of each case.

Once the Class Environmental Assessment is complete and the Environmental Study Report outlining the Recommended Design Concept has been approved, the property acquisition process and the efforts of Regional Real Estate staff will focus on acquiring the required lands to implement the approved design. Regional staff cannot make fundamental amendments or changes to the approved design concept.

Property Impact Plans
After the project has been approved and as it approaches final design, the project planners will generate drawings and sketches indicating what lands and interests need to be acquired from each affected property to undertake the project. These drawings are referred to as Property Impact Plans (PIP).

Initial Owner Contact by Regional Real Estate Staff
Once the PIPs are available, Regional Real Estate staff will contact the affected property owners by telephone and mail to introduce themselves and set-up initial meetings to discuss the project and proposed acquisitions.

Initial Meetings
The initial meeting is attended by the project engineer and the assigned real estate staff person to brief the owner on the project, what part of their lands are to be acquired or will be affected, what work will be undertaken, when, with what equipment, etc and to answer any questions. The primary purpose of the meeting is to listen to the owner and identify issues, concerns, effects of the proposed acquisition on remaining lands and businesses that can be feasibly mitigated and/or compensated, and how the remaining property may be restored. These discussions may require additional meetings. The goal of staff is to work with the owner to reach mutually agreeable solutions.

Goal – Fair and Equitable Settlement for All Parties
The goal is always to reach a fair and equitable agreement for both the property owner and the Region. Such an agreement will provide compensation for the fair market value of the lands and address the project impacts (such as repairing or replacing landscaping, fencing, paving) so that the property owner will receive the value of the lands acquired and the restoration of their remaining property to the condition it was prior to the Project.

The initial meetings will form the basis of an initial offer of settlement or agreement of purchase and sale for the required lands or interests.

Steps Toward Offer of Settlement or Agreement of Purchase and Sale
The general steps towards such an offer are as follows;

1) the Region will obtain an independent appraisal of the fair market value of the lands and interests to be acquired, and an appraisal of any effect on the value of the rest of the property resulting from the acquisition of the required lands and interests;
2) compensation will be estimated and/or works to minimize other effects will be defined and agreed to by the property owner and the Region;
APPENDIX F-2

3) reasonable costs of the owner will be included in any compensation settlement;
4) an offer with a purchase price and any other compensation or works in lieu of compensation will be submitted to the property owner for consideration; and
5) an Agreement will be finalized with any additional discussion, valuations, etc as may be required.

Depending on the amount of compensation, most agreements will require the approval of Council. The approval is undertaken in Closed Session which is not open to the public to ensure a level of confidentiality.

Expropriation
Due to the time constraints of these projects, it is the practice of the Region to commence the expropriation process in parallel with the negotiation process to insure that lands and interests are acquired in time for commencement of the Project. Typically, over 90% of all required lands and interests are acquired through the negotiation process. Even after lands and interests have been acquired through expropriation an agreement on compensation can be reached through negotiation, this is usually referred to as a ‘settlement agreement’.

Put simply, an expropriation is the transfer of lands or an easement to a governmental authority for reasonable compensation, including payment of fair market value for the transferred lands, without the consent of the property owner being required. In the case of expropriations by municipalities such as the Region of Waterloo, the process set out in the Ontario Expropriations Act must be followed to ensure that the rights of the property owners provided under that Act are protected.

For information on the expropriation process, please refer to ‘Expropriation Information Sheet’.
APPENDIX G
COMMENT SHEET
REGIONAL MUNICIPALITY OF WATERLOO
RIVER ROAD EXTENSION FROM KING STREET TO MANITOU DRIVE
May 17, 2011

Please complete and hand in this sheet so that your views can be considered for this project. If you cannot complete your comments today, please take this home and mail, fax or e-mail your comments to us May 31, 2011.

Mr. Wayne Cheater, P. Eng.  Mr. Don Drackley, MCIP, RPP, MITE
Senior Project Manager  Senior Associate
Regional Municipality of Waterloo  IBI Group
150 Frederick St., 6th Floor  379 Queen Street South
Kitchener, ON N2G 4J3  Kitchener, ON N2G 1W6
Phone: 519-575-4757 Ext. 3183  Phone: 519-745-9455 Fax: 519-745-7647
Fax: 519-575-4430  Email: ddrackley@ibigroup.com
Email: WCheater@regionofwaterloo.ca

Question #1 - Please indicate your opinion on the Preferred Alternative for this project shown in Appendix A:

I Support it ☐
Why?
________________________________________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________________________________________
________________________________________________________________________________________________________________________________________________________________________________________________________________________
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I Do Not Support it ☐
Why not?
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Please continue to next page 2 of 2
COMMENT SHEET (cont’d)

Question #2 – Do you have any concerns or suggestions not identified or adequately addressed through this Class EA study?

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TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: C06-60

SUBJECT: WATER EFFICIENCY ADVISORY COMMITTEE TERMS OF REFERENCE 2011

RECOMMENDATION:

THAT the Regional Municipality of Waterloo approve the Water Efficiency Advisory Committee Terms of Reference as detailed in Report E-11-041.1 dated May 3, 2011.

REPORT:

The mandate of Water Efficiency Advisory Committee (WEAC) is to advise Regional staff on issues of water demand management and long-term program review for the residential and industrial/commercial/institutional sectors. The committee also acts as an expanded public forum regarding efficient water use as it relates to the Water Supply Strategy.

Proposed 2011 Membership

WEAC membership consists of a balance between members of Regional Council and volunteers from the community. Regional Councillors Armstrong, Galloway, Millar and Wideman, and Chair Ken Seiling, have been appointed to WEAC for the current term of Council (December 8, 2011 Council Report RC-11-001).

WEAC members from the community are appointed for three-year terms on a staggered basis to promote knowledge continuity. During closed session on March 8, 2011, Planning and Works Committee approved the re-appointment of incumbents Lou Lima and Christopher Toal to WEAC (E-11-029). The six citizens currently appointed to WEAC are detailed below, with expiry dates.

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Term Expiry</th>
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<tbody>
<tr>
<td>Tammy Bellamy</td>
<td>Toyota Motor Manufacturing Canada</td>
<td>31/12/2011</td>
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<tr>
<td>Mark Dorfman</td>
<td>Environmental Association</td>
<td>31/12/2011</td>
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<tr>
<td>Lou Lima</td>
<td>Waterloo Region District School Board</td>
<td>31/12/2013</td>
</tr>
<tr>
<td>Katherine Waybrant</td>
<td>Neighbourhood Association</td>
<td>31/12/2011</td>
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<tr>
<td>James Robinson</td>
<td>University of Waterloo</td>
<td>31/12/2011</td>
</tr>
<tr>
<td>Christopher Toal</td>
<td>Greater K-W Chamber of Commerce</td>
<td>31/12/2013</td>
</tr>
</tbody>
</table>
Amendments to WEAC Terms of Reference

The proposed 2011 WEAC membership includes a reduction of one Regional Councillor and one community member, for a total of 11 voting members. The proposed membership reduction will help the WEAC achieve quorum more easily, while maintaining a voting balance of four Councillors, the Regional Chair, and six citizens. The community seat recommended for elimination was held for a “major water user” that had not attended a WEAC meeting in more than five years. The recommended change also reflects a return to the original mandate of including only one representative from a “major water user” on WEAC.

It is recommended that the Terms of Reference be amended to reflect the proposed membership above, and to reduce the quorum required to six (6) voting members. Attachment A contains the WEAC Terms of Reference, with recommended changes indicated in bold.

Water Efficiency Advisory Committee Endorsement

The Water Efficiency Advisory Committee (WEAC) reviewed its Council approved membership at a meeting on April 14, 2010. Staff recommended minor changes to the WEAC Terms of Reference to reflect the revised membership and voting quorum requirements. A recommendation to approve the revised WEAC Terms of Reference (changes in bold, Attachment A), as detailed in Report E-11-041.1, was passed unanimously.

CORPORATE STRATEGIC PLAN:

The implementation of water efficiency programs relate to the Strategic Focus Area 3: “Protect and Enhance the Environment” and is consistent with the objective to “Protect and Enhance the Quantity and Quality of Local Water Resources.”

FINANCIAL IMPLICATIONS: NIL

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE: NIL

ATTACHMENTS:

Attachment A – Regional Municipality of Waterloo Water Efficiency Advisory Committee Terms of Reference

PREPARED BY: Steve Gombos, Manager, Water Efficiency, Water Services

APPROVED BY: Thomas Schmidt, Commissioner, Transportation and Environmental Services
ATTACHMENT A - REGIONAL MUNICIPALITY OF WATERLOO

WATER EFFICIENCY ADVISORY COMMITTEE (WEAC)
TERMS OF REFERENCE

1.0 Name of Committee

The name of the committee shall be the Water Efficiency Advisory Committee (WEAC) of the Regional Municipality of Waterloo.

2.0 Mandate of the Committee

The mandate of the committee is to advise Regional staff on issues of demand management and long-term program review for the residential, educational and industrial/commercial/institutional sectors. This committee will also act as an expanded public forum regarding efficient water use as it relates to the Water Supply Strategy. The committee will make program recommendations to staff and through staff to Planning and Works Committee and Regional Council. The implementation of initiatives which are approved for action will be overseen by this committee.

3.0 Membership of the Committee

3.1 The committee will comprise of the following:

- **four** Regional councillors, and Regional Chair, and
- **six** citizen appointees representing the following areas:
  1. Representative from a Region of Waterloo School Board
  2. Representative from Waterloo Region Chamber of Commerce
  3. Representative from the academic community
  4. Representatives (2) from either environmental or neighbourhood association groups
  5. **Representative (1)** from major Regional water user

3.2 In addition, non-voting staff resources to the committee include:

1. Director, Water Services
2. Manager, Water Efficiency

3.3 Advertisements will be placed as required in local newspapers through the Regional Clerk’s office to invite applications for persons wishing to sit on this committee.

Applications received will be reviewed by Water Efficiency staff, who will make recommendations for appointments to Planning and Works Committee and Regional Council. Citizens will be appointed on the basis of experience, how their knowledge and skills complement the expertise of the committee and their availability to attend meetings.
4.0 Reporting Structure

4.1 The Water Efficiency Advisory Committee will give direction and make recommendations regarding water-efficiency initiatives and program development to staff and through staff to Planning and Works Committee. Recommendations may originate from staff and committee members.

4.2 The Water Efficiency Advisory Committee will advise the Region by resolution on matters referred to them. Any minority view together with the view of the majority opinion will be recorded in the minutes.

4.3 The Water Efficiency Advisory Committee will be informed of the outcome of Planning and Works Committee as the decisions pertain to water efficiency matters.

5.0 Meetings

5.1 Meetings will be held at six to twelve week intervals as required.

5.2 The Chair and Vice-Chair of the Water Efficiency Advisory Committee will be elected from among the members at the first meeting of each calendar year. The Chair should be able to devote some time between meetings to working informally with Regional staff when circumstances warrant.

5.3 The quorum for a meeting shall be six (6) members.

5.4 The Water Efficiency Advisory Committee shall, from time to time, invite other persons or groups to address the committee and participate (non-voting) in discussions on subjects before the committee or to be briefed on water efficiency initiatives and activities by other organizations or agencies.

6.0 Conflict of Interest Policy

All members shall adhere to the Conflict of Interest Policy for Advisory Committees, approved by Council on May 28, 2003. All members shall annually review and complete the agreement and signature form attached to the policy. Signature forms are to be returned to the Committee Clerk for safe keeping.

Members are expected to undertake their responsibilities on an impartial and objective basis. Any member whose financial interests could be in conflict with the interests of the Region is obliged to disclose same at the meeting. Members will not participate in any decision or recommendation in which they or their immediate family has any financial interest except in common with residents of the municipality.
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011           FILE CODE: C06-60/P&W/WS.11; E07-40

SUBJECT: RESIDENTIAL WATER SOFTENER PERFORMANCE STUDY UPDATE #2

RECOMMENDATION:

THAT the Region of Waterloo continue with the Residential Water Softener Performance Study in 2011, as detailed in E-11-040.1 dated May 3, 2011.

SUMMARY:

Water Efficiency Advisory Committee Endorsement, April 14, 2011

Water Services tested the performance of several residential ion exchange water softeners beginning in 2009. The Water Efficiency Advisory Committee (WEAC) reviewed technical results and recommendations resulting from water softener testing during a meeting held April 14, 2011. Following the review and discussion, a motion was passed to approve recommendations as detailed in Report E-11-040.1.

REPORT:

The Region of Waterloo supplies water to the seven area municipalities, servicing a population base of approximately 550,000 people. The Region is unique in that 25% of its source water comes from surface water and 75% from groundwater. One of the main characteristics of groundwater is that of being considered as “hard water” which leads to the usage of water softeners in many homes. Specifically, approximately 135,000 (or 72% of) homes in the Region of Waterloo have ion exchange water softeners.

When reviewing the efficacy of water softeners, initial research found no independent test results on water softener performance that could be passed on to local consumers. To address this question, the Region of Waterloo, in partnership with the City of Guelph, constructed a water softener test rig at the William Street Pumping Station and nine water softeners were tested over a one-year period. The details and results of these tests are outlined in the attached Testing Report #1.

Publishing Results and Educating Consumers

The Region of Waterloo water softener performance testing has generated positive feedback from government representatives, industry associations, interest groups, manufacturers, consumers and plumbers across North America. The U.S. Environmental Protection Agency (EPA) issued a “Notification of Intent” in November of 2010 that it plans to develop specifications for the improvement of water and salt efficiency standards for “cation exchange water softeners.” The
EPA process will lead to higher performance benchmarks worthy of “WaterSense” labeling. The WaterSense program identifies and promotes water using appliances that are at least 20 percent more efficient than standard units. Municipal representatives are now working with officials at Environment Canada to formalize recognition of “WaterSense” labeling in Canada. Meanwhile, several municipalities in Canada, including Waterloo Region, have already adopted the WaterSense performance standard for their high efficiency toilet (HET) rebate programs.

Region staff has shared early results of the Residential Water Softener Performance Study with consultants developing the new WaterSense standard. Feedback has been positive about the benefit of having Waterloo Region’s independent test results for use in developing new standards.

**Funding Partnership**

The City of Guelph also supplies very hard water, and the majority of its households use ion exchange water softeners. As a result, Guelph has committed ongoing funding to support the water softener study. Guelph provided $17,500 funding in 2009 (50% of costs) and $15,000 in 2010 (37% of costs). City of Guelph has pledged additional funding of up to $20,000 in 2011 if Waterloo Region continues the project.

**Recommendation # 1**

It is recommended that the attached report, “Region of Waterloo Residential Water Softener Performance Study: Testing Report #1, April 2011, be published on the internet and distributed to interested parties including U.S. EPA, water softener suppliers, manufacturers, plumbers and others requesting the information. It is further recommended that additional updates, addendums and results be published as developed by Water Services.

**Recommendation #2**

It is recommended that Region of Waterloo develop a web page, printed literature and public education surrounding residential water softener usage, performance and tips on how to purchase them. The promotion would be created in 2011 and launched in late 2011 or early 2012. The City of Guelph has expressed its desire to continue the joint effort and cost-sharing of this initiative.

Region staff also plans to include further information about the water softener test results through a plumber education event scheduled for September 2011.

**Further Testing Recommended**

Water Services staff believe it will be important to continue testing water softeners in 2011 to build a larger database of results for publication, and to gain better knowledge about the performance of ion exchange water softeners. There is much to be learned about the variety of ion exchange softeners available on the market, their sizes, components, settings, and performance.

In the longer term, Region staff expects other independent agencies will be interested in performance testing water softeners. Research scientists and consultants already involved in water-related performance testing have expressed interest in purchasing Waterloo Region’s test rig.
Recommendation #3

It is recommended that the Region of Waterloo continue testing the performance of ion exchange water softeners in 2011, to a maximum expenditure of $37,500. Staff from the City of Guelph has pledged funding if the study continues. Early in 2012, staff will provide Committee with a report summarizing further study results, and recommendations about whether in-house testing should continue, or if the test rig should be sold.

CORPORATE STRATEGIC PLAN:

Implementation of the Water Softener Testing Project relates to the Strategic Focus Area 3: “Protect and Enhance the Environment” and is consistent with the objective to “Protect and Enhance the Quantity and Quality of Local Water Resources.”

FINANCIAL IMPLICATIONS:

The approved 2011 total Water Efficiency Research and Development Capital Budget is $50,000. A total of $27,500 has been committed to the American Water Works Association “End Uses of Water” study scheduled to begin in April 2011. The Region’s proposed share of the 2011 Residential Water Softener Performance Study will not exceed the remaining 2011 budget allocation of $22,500. The $22,500 will cover operating expenses, equipment and consulting fees.

City of Guelph has committed a maximum of $15,000 toward the 2011 project at 50 percent cost sharing, which brings the maximum allowable expenditure for the 2011 water softener testing to $37,500.

As detailed above, staff recommend Region of Waterloo and City of Guelph develop a joint web page, literature and other public education materials surrounding residential water softening. Region of Waterloo’s $5,000 (50%) share of the estimated costs would come from the Water Efficiency general communications budget. The approved 2011 Water Efficiency communications budget of $50,000 covers the cost of two Environews publications, other literature, printing, and general advertising.

Water Efficiency capital projects are financed through Regional Development Charges.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE: Nil

ATTACHMENTS:
Attachment A - Region of Waterloo Residential Water Softener Performance Study: Testing Report #1, April, 2011

PREPARED BY: Steve Gombos, Manager, Water Efficiency, Water Services

APPROVED BY: Thomas Schmidt, Commissioner, Transportation and Environmental Services
REGION OF WATERLOO

Residential Water Softener Performance Study

Testing Report #1

April, 2011
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1.0 Introduction

The Region of Waterloo and the City of Guelph, Ontario, supply their customers with some of the “hardest” groundwater in Canada – as high as 960 ppm or 56 grains per U.S. gallon. Approximately 72% of the homes in the Region of Waterloo and the City of Guelph have ion exchange water softeners. In the Region of Waterloo it is estimated that 134,723 household water softeners use an estimated 1.3 million litres of potable water and over 32,000 tonnes of salt per year for softener regeneration.

Initial research by the municipalities found no independent test results on water softener performance or satisfactory benchmarks that could be passed on to local consumers. As such, the two municipalities partnered to construct a water softener test rig at William Street Pumping Station in the Region of Waterloo. From late 2009 to the end of 2010, nine different water softener models were tested. Eight of the softeners had regeneration cycles based on throughput (demand initiated regeneration or DIR) and one test softener used a sensor to determine when resin beds needed to be recharged. Softeners using simple timers to trigger regenerations were deemed to be obsolete and were, therefore, not tested\(^1\). This report presents the cumulative results of these water softener tests.

To make the testing as real as possible, automated flow control valves on the water supply piping to each softener simulated typical residential water demand profiles – a separate demand profile for each day of the week based on residential water demand data provided by the Region of Waterloo.

The parameters monitored as part of this program were:

- volume of water softened,
- volume of water wasted to drain during regeneration,
- weight of salt used during regeneration,
- hardness of water before and after softening,
- frequency of regeneration, and
- the energy used per volume of water softened (kWh).

The most common type of regeneration media in the Region of Waterloo and the City of Guelph is sodium chloride (salt). This was the media used to regenerate the softeners in this study.

2.0 Water Softeners Tested

Eight of the nine water softeners tested in this study are widely available and are of similar capacity. Each residential softener was “installed” by the manufacturer’s representative and adjusted based on a water hardness of 580 ppm\(^2\) (34 grains per U.S. gallon\(^3\)) and a household occupancy of 3 persons. One of the water softeners tested is manufactured in and imported from Germany, and is not currently available through local retail outlets.

\(^1\) Most softeners available in the marketplace today use DIR.
\(^2\) The hardness of the water supply to the test rig is 580 ppm (34 grains per U.S. gallon). The average water hardness in the Region of Waterloo is approximately 400 ppm, though values can reach 960 ppm. The average water hardness in the City of Guelph is 460 ppm, with a range of between 340 to 580 ppm.
\(^3\) 1 grain = 0.0648 grams; 1 grain per U.S. gallon = 17 mg per litre (or ppm) of hardness (calcium & magnesium)
Residential water softeners employ an ion exchange process where calcium and magnesium ions in the water are replaced (exchanged) with sodium ions contained in the softener’s resin bed – essentially a mass of small plastic beads. Unlike calcium and magnesium, sodium does not precipitate in pipes, water heaters, appliances, or cause soap scum – thus water containing no calcium or magnesium ions is deemed to be “soft”. Once all of the sodium ions have been removed from the resin bed and replaced with calcium or magnesium ions, the bed must be regenerated. Regeneration involves flushing the resin bed with a strong brine solution. Water softeners must regenerate more frequently as the hardness of the supply water increases. The sodium in brine relaces the calcium and magnesium ions that have built up in the resin bed with sodium ions. After regeneration the softening process is ready to begin again. The remaining brine, as well as the calcium and magnesium removed from the water, is discharged to drain during the regeneration process. An efficient softener will discharge a minimum volume of brine (water) to drain and use a minimum amount of salt during regeneration.

The water softeners tested through this study include:

1. **Culligan**
   - Medallist Series Automatic Water Conditioner, Model: Plus 30
   - Exchange capacity at Salt Dosage Per Recharge = 27,700 grains @ 12 lb.
   - Controller: Medallist (30 & 45) Gen2 Soft-Minder. Part No: 01016379D

2. **Ecowater**
   - Automatic Water Conditioner, Model: GS6225D
   - Exchange capacity at Salt Dosage Per Recharge = 28,700 grains @ 12 lb.
   - Controller: 500 Series valve and controller. Part No: 7276759

3. **Novatek**
   - Automatic Water Softener, Model: Model NT32SE
   - Exchange capacity at Salt Dosage Per Recharge = 30,000 grains @ 10 lb per cu ft.
   - Controller: Metermatic SE, Model 7500EM

4. **Kinetico**
   - 2040S Mach Series – twin tank
   - Capacity 5,222 grains @ 1 lb. salt
   - Controller: 0.3-25.0 polypropylene turbine Kinetico Mach

5. **General Electric**
   - Smart Water™ Softening System
   - Model: GXSF30H
   - 30,200 grains @ 12.5 lb. salt
   - Ecowater high flow valve and electronic controller

6. **Culligan Sensor**
   - 9” QH Gold Series Model 30
   - 27,700 grains @ 12lb. salt
   - Controller: Culligan Gold 1”
7. **Ontario Soft Water**
   - 255 Performa Series
   - 25,460 @ 7lb salt
   - Controller: Logix 762

8. **Crystal Clear**
   - CL Series, Model: 01-8301 ES1CS-30
   - 32,000 grains @ 10 lb. salt
   - Controller: CLACK WS1CS, 1” valve

9. **Aqa Perla**
   - PNR 6-500050/11299
   - Twin resin tanks BNC-0521-A8E
   - Total grain capacity 3,692 (1,846 per tank) @ 250 grams salt per tank regeneration
   - Item #950 000 020

Retail purchase prices of the tested water softeners ranged from approximately $800 to $3,000.

### 3.0 Methodology

A computer-controlled test rig capable of automating three water softeners at once was constructed at William Street Pumping Station in Waterloo in the fall of 2009.

The primary components of the test rig are as follows:
- Hard water supply
- Weigh scale, to measure salt use
- Water meter to measure volume of soft water produced
- 1.5 inch automated butterfly control valve used to simulate typical residential demands
- Soft water drain line
- Water meter to measure volume of water used during regeneration
- Automatic hardness analyser: Hach Aquatrend APA 6000 Analyser
- Power monitor to record energy usage: P4460 Kill A WattEZ, Electricity Usage Monitor

To keep the water hardness analyzer used in this study functioning accurately, a constant flow of water from a separate (not tested) water softener was maintained. Accuracy of the hardness analyzer was routinely checked through sampling and analysis by Region of Waterloo’s Laboratory Services.

Accuracy of the following test rig components was certified:

- Seametrics 20mm disc flow meters +/- 2% (measures wastewater from regeneration)
- Burkett Type 8081 instant flow meters +/- 2.5%
- Force Flow model PVC150KHA17 high accuracy carboy scales +/- 2.5%
- Hach model APA6000 hardness analyser 10-1000 ppm +/- 2.5%
Water softeners purchased for testing were “off the shelf” models and not modified. Each supplier was asked to install and set up their own softener on the test rig as if it were supplying a typical household of three people using a raw water hardness of 580 ppm.

During softener test cycles, salt was loaded into brine tanks sitting on electronic weigh scales. Flow and weigh scale data were downloaded to computer by Region staff regularly. An independent consulting engineer was contracted to analyse, verify and summarize results.

**Schematic of Test Rig**

The photograph below shows the test rig and three water softeners being tested. The hardness analyser can be seen on the right side of the photo.
4.0 Water Use Profiles

As mentioned earlier, the water demands used in this study were meant to simulate typical household water demands. The demand patterns used in this study were based on the results of a household monitoring program completed in Waterloo Region. A separate demand profile was used for each day of the week, which recreated typical water uses for a family of three in a detached home.

The demand profile called for an average of 700 litres per household per day to flow through the test softeners. Occasionally, the instrumentation failed to keep flow rates and daily volumes within 5-7% of target values. These data were not included in the analysis.

Each softener remained on the test rig for at least 30 days. However, results detailed in this report reflect only those days when flow rates and daily volumes were within target parameters. Reported results range from 14 - 42 days of testing.

The six parameters logged for each water softener are as follows:
- Instantaneous flow rate (lpm) logged every 2 minutes
- Cumulative volume (litres) logged every 30 minutes
- Wastewater flow rate (US gpm) logged every minute
- Weight of salt (kg) logged every hour
- Water hardness (ppm) logged every 5 minutes
- Kwh per day of energy use

5.0 Test Results

For ease of comparison, regeneration water and salt usage data has been reported on a per cubic meter (m$^3$) of softened water produced.$^4$ Table 1 below indicates how many litres of regeneration water went to drain (waste) for every m$^3$ soft water produced. Table 2 indicates how many kilograms (kg) of salt were used to produce every m$^3$ of soft water. Table 3 reports energy demands in kilowatt hours (Kwh) per day.

5.1 Regeneration

<table>
<thead>
<tr>
<th>Softener</th>
<th># Test Days</th>
<th>Regeneration: Litres per m$^3$ Produced</th>
<th>Approx. Regeneration Frequency in days</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE</td>
<td>14</td>
<td>43</td>
<td>2.8</td>
</tr>
<tr>
<td>Kinetico</td>
<td>42</td>
<td>57</td>
<td>1.0</td>
</tr>
<tr>
<td>Ont. Soft Water</td>
<td>42</td>
<td>69</td>
<td>3.3</td>
</tr>
<tr>
<td>Novatek</td>
<td>23</td>
<td>80</td>
<td>4.0</td>
</tr>
<tr>
<td>Aqa Perla</td>
<td>14</td>
<td>83</td>
<td>2.8</td>
</tr>
<tr>
<td>Crystal Clear</td>
<td>14</td>
<td>89</td>
<td>3.4</td>
</tr>
<tr>
<td>Culligan Sensor</td>
<td>37</td>
<td>91</td>
<td>3.0</td>
</tr>
<tr>
<td>Ecowater</td>
<td>20</td>
<td>98</td>
<td>1.3</td>
</tr>
<tr>
<td>Culligan</td>
<td>20</td>
<td>105</td>
<td>3.3</td>
</tr>
</tbody>
</table>

$^4$ 1 cubic metre (m$^3$) = 1,000 litres
Most water softeners are set to regenerate when the resin tanks have used up about 75% of capacity in order to prevent household water from getting hard during higher demand days. Water softeners are typically set to regenerate over night when water is not being used, and the 25% buffer helps to provide soft water until the evening regeneration time arrives.

The Kinetico and Aqa Perla softeners were the only units tested that recharge at any time during the day or night. These units contain two smaller resin tanks, so that when one tank is exhausted and recharging, water continues to be softened through the second tank. These systems may allow for better utilization of resin capacity and ensure that soft water is supplied at all times.

5.2 Weight of Salt Used

<table>
<thead>
<tr>
<th>Softener</th>
<th>Number of Test Days</th>
<th>Kg Salt per m$^3$ of Soft Water Produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinetico</td>
<td>42</td>
<td>0.8</td>
</tr>
<tr>
<td>Culligan</td>
<td>20</td>
<td>1.0</td>
</tr>
<tr>
<td>Novatek</td>
<td>23</td>
<td>1.2</td>
</tr>
<tr>
<td>Ecowater</td>
<td>20</td>
<td>1.3</td>
</tr>
<tr>
<td>Culligan Sensor</td>
<td>37</td>
<td>1.3</td>
</tr>
<tr>
<td>GE</td>
<td>14</td>
<td>1.3</td>
</tr>
<tr>
<td>Crystal Clear</td>
<td>14</td>
<td>1.5</td>
</tr>
<tr>
<td>Ontario Soft Water</td>
<td>42</td>
<td>1.6</td>
</tr>
<tr>
<td>Aqa Perla</td>
<td>14</td>
<td>1.9</td>
</tr>
</tbody>
</table>

5.3 Power Used

Energy use is not considered to be a big operating factor for residential ion exchange water softeners. The Kinetico softener is the only unit tested to date that operates on a strictly mechanical (kinetic) basis and requires no electricity. The other units tested use very little energy. In three cases, energy consumption was so low that it was not detectable by the instrumentation used. Table 3 summarizes the energy consumption in kilowatt hours (kWh) per day.

<table>
<thead>
<tr>
<th>Softener</th>
<th>Number of Test Days</th>
<th>kWh/Day Energy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinetico</td>
<td>42</td>
<td>0.00</td>
</tr>
<tr>
<td>Ecowater*</td>
<td>20</td>
<td>0.00</td>
</tr>
<tr>
<td>GE*</td>
<td>14</td>
<td>0.00</td>
</tr>
<tr>
<td>Crystal Clear*</td>
<td>14</td>
<td>0.00</td>
</tr>
<tr>
<td>Aqa Perla</td>
<td>14</td>
<td>0.01</td>
</tr>
<tr>
<td>Ontario Soft Water</td>
<td>42</td>
<td>0.06</td>
</tr>
<tr>
<td>Culligan</td>
<td>20</td>
<td>0.11</td>
</tr>
<tr>
<td>Novatek</td>
<td>23</td>
<td>0.11</td>
</tr>
<tr>
<td>Culligan Sensor</td>
<td>37</td>
<td>0.16</td>
</tr>
</tbody>
</table>

* equipment not able to measure the low energy demands; no data available
5.4 Estimated Operating Costs

For comparison purposes, annual operating costs were calculated for each water softener tested. Assumptions were that the average household uses 251 m³ per year of water; a 20 kg bag of salt, delivered to the home, costs $9.44; the combined water/sewer rates are $3.26 per m³ and energy costs $0.11 per kW-h.5

<table>
<thead>
<tr>
<th>Softener Name</th>
<th>$ Water/sewer</th>
<th>$ Salt</th>
<th>$ Power</th>
<th>Tot. Cost/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinetico</td>
<td>46.63</td>
<td>94.70</td>
<td>0</td>
<td>$141</td>
</tr>
<tr>
<td>Gen. Electric</td>
<td>35.17</td>
<td>153.90</td>
<td>0</td>
<td>$189</td>
</tr>
<tr>
<td>Culligan</td>
<td>85.89</td>
<td>118.38</td>
<td>4.42</td>
<td>$209</td>
</tr>
<tr>
<td>Novatek</td>
<td>65.44</td>
<td>142.06</td>
<td>4.42</td>
<td>$212</td>
</tr>
<tr>
<td>Ecowater</td>
<td>80.17</td>
<td>153.90</td>
<td>0</td>
<td>$234</td>
</tr>
<tr>
<td>Culligan Sensor</td>
<td>74.44</td>
<td>153.90</td>
<td>6.43</td>
<td>$235</td>
</tr>
<tr>
<td>Ont. Soft Water</td>
<td>56.44</td>
<td>189.41</td>
<td>2.41</td>
<td>$248</td>
</tr>
<tr>
<td>Crystal Clear</td>
<td>72.80</td>
<td>177.57</td>
<td>0</td>
<td>$250</td>
</tr>
<tr>
<td>Aqa Perla</td>
<td>67.90</td>
<td>224.92</td>
<td>0.40</td>
<td>$293</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>$224</strong></td>
<td><strong>$224</strong></td>
<td><strong>$224</strong></td>
<td><strong>$224</strong></td>
</tr>
</tbody>
</table>

5.5 NSF/ANSI 44 Performance Standard

The project team compared test results in this study with a voluntary water softener performance standard established jointly by the American National Standards Institute (ANSI) and the National Sanitation Foundation (NSF). The NSF/ANSI Standard 44 for “Cation Exchange Water Softeners” was first published in 1987 following an examination of the U.S. Water Quality Association (WQA) S-100 test criteria. Products passing the NSF/ANSI Standard 44 are certified for the removal of hardness (calcium and magnesium). Table 5 below quantifies the performance standard in both U.S. units of measure, and in metric units of measure.6

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal removal capacity of 3,350 grains per pound of regenerant salt consumed</td>
</tr>
<tr>
<td>1,000 grains hardness removal capacity per 5 U.S. gallons of regeneration water discharged</td>
</tr>
<tr>
<td>478 grams hardness removed per 1 kilogram regenerant salt consumed</td>
</tr>
<tr>
<td>342 grams hardness removed per 100 litres regeneration water discharged</td>
</tr>
</tbody>
</table>

---

5 Based on 2010 costs in the City of Kitchener.
6 1 grain = 0.0648 grams; 1 grain per U.S. gallon = 17 mg per litre (or ppm) of hardness (calcium & magnesium)
Although the results in this study were used to compare against the performance benchmarks established in the NSF/ANSI Standard 44, it should not be construed that the softeners pass or fail against the standard. The tests in this study were not refereed by NSF/ANSI, and test methodology used in Waterloo is not the same as that used by NSF/ANSI.

All the water softeners tested in Waterloo exceeded NSF/ANSI 44 performance standards for water efficiency. In some cases, the softeners used half to one-third the regeneration water allowed in the standard.

Six of the nine water softeners tested may not have been able to meet the NSF/ANSI 44 performance standard for salt usage. Future reporting will provide more details regarding performance standards and how softeners may be adjusted or modified to perform more efficiently in Waterloo Region and Guelph.

6.0 Conclusions

1. When functioning according to manufacturer design, test water softeners removed virtually all the hardness\(^7\), with the resulting water having hardness levels below 17 ppm. Any level below 17 ppm, or one grain per gallon, is considered soft\(^8\). According to Canadian Water Quality Association Executive Director Kevin Wong, household water users cannot tell the difference between 17 ppm (1 grain per U.S. gallon) and 51 ppm (3 grains per U.S. gallon) of hardness. The water still “feels” soft to humans at 51 ppm of hardness.

2. The results indicate that the most water efficient water softeners are not necessarily the most salt efficient and vice versa.

3. Although water softener controllers are adjustable, suppliers installed and set test units to factory settings. This proved beneficial for the purposes of this study, but may be the reason that some showed weak results when compared to the NSF/ANSI benchmark for salt consumption. Further testing is warranted.

4. There is an opportunity to share this water softener test data with the U.S. Environmental Protection Agency (EPA) “WaterSense” benchmarking initiative. The EPA issued a “Notification of Intent” to establish performance standards for cation exchange water softeners on November 10, 2010. The goal of EPA is to establish higher performance benchmarks for water softeners than those established by NSF/ANSI. Water using appliances passing the WaterSense benchmark are at least 20 percent more water-efficient than conventional models, and are given the WaterSense label. WaterSense labelling is visible across the United States and is in the process of being recognized in Canada.

\(^7\)The Water Quality Association-reported ranges of hardness are: soft < 17 ppm; slightly hard 17–60 ppm; moderately hard 60–120 ppm; hard 120–180 ppm; very hard >180 ppm.

\(^8\)Note: To soften water at William Street Pumping Station in Waterloo, test softeners would need to remove 565 grams of total hardness from 1 m\(^3\) of supply water. This would bring hardness to 15 ppm, which is just below 1 grain of hardness per U.S. gallon.
5. There is a need to continue measuring the performance of residential ion exchange water softeners of varying capacity and design to build a larger database for comparison and reporting purposes.

6. Preliminary short-duration testing was done on three softeners with potassium chloride in place of sodium chloride salts. Although results were not conclusive, indications were that softeners may perform significantly differently when potassium chloride is used instead of sodium chloride. Further testing is required.

For more details, contact: Steve Gombos, Manager, Water Efficiency, Water Services Region of Waterloo, 150 Frederick Street, 7th Floor Kitchener, ON N2G 4J3 519-575-4503; sgombos@regionofwaterloo.ca
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

CODE: C06-60/E02-60/4134-20

SUBJECT: MAPLE GROVE ROAD AND FOUNTAIN STREET WATER SUPPLY SYSTEM

CLASS EA – EXTENSION OF CONSULTANT’S ASSIGNMENT

RECOMMENDATION:

THAT the Regional Municipality of Waterloo extend MTE Consultants Inc. consulting assignment for the Maple Grove Road and Fountain Street Class Environmental Assessment (Report E-09-048 of April 21, 2009) to increase the duration of the pumping test from 7 to up to 40 days, to expand the monitoring network, and to drill a new test well at an additional upset fee limit of $140,238 plus applicable taxes for a grand total of $458,238 plus applicable taxes as set out in Report E-11-053 dated May 3, 2011.

SUMMARY: NIL

REPORT:

Background

In 2005, the Regional Municipality of Waterloo (Region) initiated the Integrated Urban System Groundwater Supply Optimization and Expansion Project (IUS Project). One of the tasks in this study was to assess the performance of the aquifer in the Maple Grove Road and Fountain Street area; and to augment the water supply in this area. A new (203 mm) test well and three monitoring wells were installed in the study area and tested in conjunction with well P16 to better understand the confined aquifer in the area. These tests confirmed that this area has potential for additional water supply.

In 2009, MTE Consultants Inc. was retained by the Region to conduct a Class Environmental Assessment (EA) and preliminary design to develop new water sources in Maple Grove Road and Fountain Street area of the City of Cambridge. MTE was to undertake the assignment at an upset fee of $318,000.00 plus applicable taxes (Planning and Works Report E-09-048 of April 21, 2009).

As part of the technical evaluation; this project included installing a full size (305 mm) production test well at the Region’s Maple Grove Road facility and conducting long term (7 day) pumping test. The production well was to be installed beside the existing test well drilled as part of the IUS Project.

The Class EA portion of the study is to include the identification of the alternative design concepts and ultimately recommend the preferred conceptual design. The final recommended solution along with documented accounts of the public input process will be filed in an Environmental Study Report (ESR).

Following completion of the ESR, preliminary design of the recommended solution will be developed; and all major treatment and equipment needs as well as distribution system connection requirements will be identified.
Changes to Consultant's Assignment and Upset Limit

The Ministry of the Environment (MOE) has recently required longer aquifer testing to approve Permits to Take Water (PTTW) for new groundwater sources. For this reasons, the Region has decided that a 7-day pump test, as initially recommended for this project, would likely be insufficient to obtain the new PTTW. Based on the above, the Region has asked MTE to provide a work plan and cost estimate to extend the pump test up to 40 days and to expand the monitoring network accordingly. Report E-09-48 inadvertently quoted the pump tests as 30-day instead of the 7-day recommended in the Request for Proposal.

Prior to the construction of the proposed full size production test well, the Region had recommended to drill a second test well to optimize the location of the full size production well above.

The 40 day pumping test will include both the new well at the Region’s Maple Grove Road facility and the existing well P16. Well P16 was last rehabilitated in 2005 as part of the IUS Project and has been offline for most of the duration. An allowance for any rehabilitation has also been included in the additional upset fee from MTE.

An upset fee for the expanded work plan of $140,238 plus applicable taxes was negotiated for consulting fees and disbursements with MTE. A breakdown of the consultant's upset fee is included in Appendix A attached to this report.

In accordance with the Purchasing Bylaw, 10-028, the Chief Purchasing Officer can acquire any goods or services through negotiations where the extension of the existing contract is beneficial (clause 21.1.g).

CORPORATE STRATEGIC PLAN:

The Maple Grove Road and Fountain Street Class EA and preliminary design support the Corporate Strategic Plan Focus Area 5: “Infrastructure” by “Providing high quality infrastructure and asset management to meet current needs and future growth.”

FINANCIAL IMPLICATIONS:

The Council approved 2011 Ten Year Water Capital program includes a total combined budget of $5,585,000 for the implementation of the Maple Grove Road and Fountain Street water supply system, including $1,085,000 in the years 2011 and 2012 which is sufficient for the planned work. This project has been 100% funded by the Regional Development Charge Reserve Fund.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE: NIL

ATTACHMENTS:
Appendix A: Breakdown of consultant’s upset fee

PREPARED BY: Amy Domaratzki, Senior Hydrogeologist, Water Services

APPROVED BY: Thomas Schmidt, Commissioner, Transportation and Environmental Services
## Breakdown of Consultant’s Upset Fee

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1</td>
<td>Increase pumping test duration from 7 days to up to 40 days</td>
<td>$42,510</td>
</tr>
<tr>
<td>Task 2</td>
<td>Increase monitoring well locations from 2 to 4 and add a new test well</td>
<td>$6,300</td>
</tr>
<tr>
<td>Task 3</td>
<td>Expand private well monitoring from 20 to 40 locations</td>
<td>$21,100</td>
</tr>
<tr>
<td>Task 4</td>
<td>Install 4 mini-piezometers</td>
<td>$1,800</td>
</tr>
<tr>
<td>Task 5</td>
<td>Rehabilitation of P16 (if required)</td>
<td>$13,300</td>
</tr>
<tr>
<td>Task 6</td>
<td>Expanded analysis and reporting</td>
<td>$37,600</td>
</tr>
<tr>
<td>Task 7</td>
<td>Disbursements (3%)</td>
<td>$3,678</td>
</tr>
<tr>
<td>Task 8</td>
<td>Field equipment rental and purchase</td>
<td>$13,950</td>
</tr>
<tr>
<td><strong>Total Consultant Upset Fee:</strong></td>
<td></td>
<td><strong>$140,238</strong></td>
</tr>
</tbody>
</table>
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: C06-60/E02-40/4007-20

SUBJECT: CONSULTANT SELECTION FOR THE 2011 WATER SUPPLY MASTER PLAN UPDATE

RECOMMENDATION:

THAT the Regional Municipality of Waterloo enter into a Consulting Services Agreement with Stantec Consulting Ltd. of Kitchener, Ontario, to provide consulting engineering services for the 2011 Water Supply Master Plan Update, at an upset limit of $582,848 plus applicable taxes, as per Report E-11-055, dated May 3, 2011.

SUMMARY:

On May 10, 2000, Regional Council approved the Region’s Water Supply Master Plan, which outlines the long term water supply strategy for the Region’s Integrated Urban System (IUS) until the year 2041. Subsequently, on June 12, 2007, Regional Council approved the Region’s Water Supply Strategy Update, which updated the Water Supply Master Plan from a planning, technical and regulatory perspective. Major components of the Water Supply Strategy Update included development of additional groundwater sources, construction of the aquifer storage and recovery (ASR) system, and ultimately a Great Lakes water supply.

Municipalities in North America have experienced declining water use in the last decade. This trend is a result of more conscientious water use by municipal customers, water reuse and recycling initiatives by larger water users, reduction of unaccounted for water by municipalities and several other programs aiming to increase water consumption efficiency. The Region of Waterloo has experienced similar trends with potential impact on the Region’s long-term water supply strategy proposed in the 2007 Water Supply Strategy Update. An update of the previous Master Plan is required to address these changes.

A request for Letters of Interest to provide engineering services by prospective consultants was advertised in the Kitchener-Waterloo Record and on the Region’s Website. Based on the Region’s consultant selection policy, which includes a review of the letter of interest, detailed work plans, schedule and upset cost, the consultant selection team recommends that Stantec Consulting Ltd. of Kitchener, Ontario be retained to undertake this assignment at an upset cost of $582,848 plus applicable taxes. Completion of this 2011 Water Supply Master Plan Update is expected to be in early 2013.

REPORT:

On May 10, 2000, Regional Council approved the Region’s Water Supply Master Plan, which outlines the long term water supply strategy for the Region’s IUS until the year 2041. Subsequently, on June 12, 2007, Regional Council approved the Region’s Water Supply Strategy Update, which
updated the Water Supply Master Plan from a planning, technical and regulatory perspective. The primary components of the updated Water Supply Master Plan are:

- Construction of a 23 ML/d (million litres per day) (or 5 migd (million imperial gallons per day) ASR facility in 2 phases;
- Additional 23ML/d (5 migd) of groundwater by 2018; and
- Construction of a Great Lake displacement pipeline by 2035.

Municipalities in North America have experienced declining water use in the last decade. This trend is a result of more conscientious water use by municipal customers, water reuse and recycling initiatives by larger water users, reduction of unaccounted for water by municipalities and several other programs aiming to increase water consumption efficiency. The Region of Waterloo has experienced similar trends with potential impact on the Region’s long-term water supply strategy proposed in the 2007 Water Supply Strategy Update. An update of the previous Master Plan is required to address these changes.

The goals of the 2011 Water Supply Master Plan Update are to evaluate in detail each water source currently supplying the IUS, to determine its efficiency and the potential to extend its useful life beyond the year 2035, when a Great Lake source was deemed necessary. Based on this, the Region would like to further streamline projects currently in its Capital Program to meet future water needs. In addition to updating the previous Water Supply Master Plan, the Region would also like to optimize the operation of each water source for periods of low water use (fall and winter) and high water use (spring and summer), and aim to reduce energy use, greenhouse gas production and other resources used in the water supply system.

It is anticipated that the 2011 Water Supply Master Plan Update will commence immediately upon award of the Consulting Engineering Services assignment by Regional Council.

**Consultant Selection**

A Request for consulting services (C2011-02) for undertaking the 2011 Water Supply Master Plan Update was advertised in the Kitchener-Waterloo Record and the Region’s Procurement and Supply Services website on Tuesday, February 1, 2011. Six consulting firms responded to the advertisement by submitting a Letter of Interest. The following three consulting firms were determined to be highly qualified and experienced for this project and were asked to submit detailed work plans and upset fees:

- Genivar Inc.;
- Stantec Consulting Ltd.; and
- XCG Consultants Ltd.

The Project Team involved in the consultant selection consisted of:

J. Cavalcante, Manager, Engineering and Planning, Water Services;
O. Vrentzos, Manager, Water Operations, Water Services;
R. Wootton, Senior Hydrogeologist, Hydrogeology and Source Water, Water Services; and
K. Yajima, Senior Project Manager, Engineering and Planning, Water Services.

The evaluation criteria used for selection of the successful consultant were consistent with the Region’s Purchasing By-Law and consultant selection policies. The evaluation criteria and their respective weightings were as follows:

**Quality Factors (80%)**
- Project Approach and Understanding (25%);
Experience of the Project Manager (20%);
Experience of Project Support Staff (20%);
Experience on Similar Projects (15%);

Equity Factors (5%)
- Current Regional Workload (3%);
- Local Office (2%); and

Price Factor (15%)
- Upset Price (15%).

The Letters of Interest and Detailed Work Plans submitted by the consultants demonstrated a good understanding of the project, capable project teams and experience on similar projects. After reviewing the letters, detailed work plans, schedules, and upset fees, Stantec Consulting Ltd. scored the highest of the three short-listed consultants. Stantec Consulting Ltd’s upset fee of $582,848 plus applicable taxes was second-lowest fee of the short-listed consultants. Based on the above evaluation criteria, including review of the Letters of Interest, Detailed Work Plans, schedules and upset fees provided, the Project Team recommends that Stantec Consulting Ltd. be retained to undertake the 2011 Water Supply Master Plan Update.

Scope of Work

The scope of work for this assignment includes:

- Start-Up and Data Collection;
- Verify Water Demand Projections;
- Summarize Water Sources and Treatment Facilities;
- Supply-Demand Analysis by pressure zone;
- Water Supply Opportunities and Constraints Analysis;
- Optimization of Sources;
- Master Plan Formulation, Presentation and Reporting; and

Schedule

Subject to Council’s approval of this assignment, the 2011 Water Supply Master Plan Update is expected to last approximately two years commencing mid-May 2011 and ending in early 2013.

Consultant Upset Limit

The upset limit for consulting fees and disbursements for the 2011 Water Supply Master Plan Update is $582,848 plus applicable taxes. A breakdown of the successful consultant’s upset fee is included in Appendix A attached to this report.

CORPORATE STRATEGIC PLAN:

The 2011 Water Supply Master Plan Update project supports the Corporate Strategic Plan Focus Area 5: “Infrastructure” by “providing high quality infrastructure and asset management to meet current needs and future growth.”
FINANCIAL IMPLICATIONS:

The Council approved 2011 Ten Year Wastewater Capital program includes a budget of $662,000 between 2011 and 2013 for the implementation of the 2011 Water Supply Master Plan Update, which is sufficient to cover the costs of this project. Remaining funds will be used for other supporting work for this project. This project is 100% funded by the Development Charge Reserve Fund.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

NIL

ATTACHMENTS

Appendix A: Breakdown of consultant’s upset cost

PREPARED BY: Kaoru Yajima, Senior Project Engineer, Water Services

APPROVED BY: Thomas Schmidt, Commissioner, Transportation and Environmental Services
Appendix A - Breakdown of Consultant’s Upset Cost

<table>
<thead>
<tr>
<th>Task</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1 - Start up and Data Collection</td>
<td>$35,239</td>
</tr>
<tr>
<td>Task 2 - Verify Water Demand Projections</td>
<td>$38,199</td>
</tr>
<tr>
<td>Task 3 - Summarize Water Sources and Treatment Facilities</td>
<td>$118,169</td>
</tr>
<tr>
<td>Task 4 - Pressure Zone-wise Supply-Demand Analysis</td>
<td>$51,698</td>
</tr>
<tr>
<td>Task 5 - Water Supply Opportunities and Constraints Analysis</td>
<td>$100,154</td>
</tr>
<tr>
<td>Task 6 - Optimization of Sources</td>
<td>$125,307</td>
</tr>
<tr>
<td>Task 7 - Master Plan Formulation, Presentation and Reporting</td>
<td>$77,046</td>
</tr>
<tr>
<td>Task 8 - Create Operator Level Guidance Document</td>
<td>$37,036</td>
</tr>
<tr>
<td><strong>Total Consultant Upset Fee:</strong></td>
<td><strong>$582,848</strong></td>
</tr>
</tbody>
</table>
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011  FILE CODE: "Insert File Code"

SUBJECT: COMMENTS ON THE DRAFT PROPOSED UPDATED ASSESSMENT REPORT FOR THE GRAND RIVER WATERSHED

RECOMMENDATION:

THAT the Regional Municipality of Waterloo receives the Draft Proposed Updated Assessment Report (AR) for the Grand River Source Protection Area as presented in Report E-11-057 dated May 3, 2011, and directs staff to:

- Forward this report to the Lake Erie Source Protection Committee (SPC) as the basis for formal comments on the Updated AR
- Request the SPC provide the Region’s comments to develop a better screening criteria to evaluate the impacts of Road Salt threats to groundwater supplies directly to the MOE as part of the Proposed Updated AR
- Request the SPC provide the Region’s objection to including *e-coli* as an *Issue* for the Brantford surface water system directly to the MOE with the submission of the Proposed Updated AR.

SUMMARY:

The Draft Proposed Updated AR for the Grand River Source Protection Area (SPA) was released for public comment on April 14, 2011 as required by the *Clean Water Act*. This report reflects changes to technical information and risk assessment for several municipal water supply systems within the SPA as a result of additional study. For Waterloo Region, the risk assessment resulted in the identification of 2750 properties where *Significant* threats occur and for which risk mitigation measures will be required to be established in the Source Protection Plan (SPP) for the Grand River SPA. This number is slightly higher than that identified in the original AR; although in neither case does the identification indicate actual impacts to drinking water quality.

Region staff have two similar concerns regarding the Draft Proposed Updated AR. Firstly, that the Ministry of the Environment (MOE) criteria for evaluating road-salt impacts is insufficient to meet the Region’s needs to address salt threats to drinking water supply wells. Secondly, that Region staff do not support the identification of *e-coli* as a drinking water *Issue* for the Brantford surface water intake. Accordingly, Region staff recommend that these concerns be appended directly to the Proposed Updated AR and submitted directly to the MOE as required by regulation.

REPORT:

Background

The *Clean Water Act* establishes the legislative framework for undertaking watershed-based source water protection. The purpose of this initiative is to reduce water quality and water quantity risks from threats to drinking water sources. The *Clean Water Act* and related regulations establish a
multiple step process to be undertaken over a number of years to establish a SPP that will contain policies to mitigate risks to drinking water sources. Several recent reports to Regional Council (E-10-082, E-10-012, E-09-110) have provided information on the technical components of the risk assessment which is to be documented in an Assessment Report for each watershed. The Assessment Report provides the technical basis for development of the SPP. The completion of technical work for the Assessment Report and policy development in the SPP is a collaborative effort between municipalities and Grand River Conservation Authority (GRCA) staff. The multi-stakeholder Lake Erie Source Protection Committee (SPC) is responsible for completing the Assessment Report and the SPP.

The Grand River SPA Assessment Report was submitted to the Province on December 20, 2010 and is currently undergoing provincial review. The Region provided formal comments on the Assessment Report to the GRCA (E-10-082). In addition, Region and GRCA staff have been working on an update to the Assessment Report, as allowed under the Clean Water Act, to include new and updated information. A summary of this work was provided to Regional council in report E-11-013 dated February 25, 2011. The additional work completed by the Region was funded by the Province through an amended agreement with the GRCA.

The draft proposed Updated Assessment Report was approved by the SPC for public consultation on April 14, 2011 and is to be submitted to the Province on June 30, 2011. Comments are required to be provided to the SPC by May 13, 2011.

This report provides an overview of the content and implications of the Draft Updated AR to Waterloo Region and area municipalities as well as the next steps in the development of the SPP.

Updated Assessment Report

The Grand River SPA Updated AR contains a detailed assessment of drinking water sources in the watershed, including a risk assessment for each county, region or single-tier municipal system. Risk was determined by identifying and ranking Threats (existing and future land uses and activities, intake water quality Issues and historic water contamination Conditions) in vulnerable drinking water areas including municipal well head and surface water intake protection areas. In addition, risk is calculated for significant groundwater recharge areas and areas of high vulnerability within the watershed. A risk “score” is calculated for each threat in each vulnerable area and any threat where the risk is calculated to be Significant must have a policy in the SPP to mitigate the risk.

Report E-11-013 provides a summary of the changes to the Updated AR from the original AR. These include the following:

- In total, 2750 properties have been identified as having Significant threats. This value is slightly higher than the number of properties identified for the original Proposed Assessment Report (2691) and reflects changes in the protection areas and methods.
- The number of properties with Significant threats increased in approximately half of the well fields (21 of the 39) whereas the remaining well fields had lower numbers of properties or the numbers stayed the same. There was neither a substantial change in the types of threats identified nor substantial change in numbers at any individual well field.

As noted in report E-11-013, the identification of Significant threats does not necessarily indicate any impact to the water supply as this assessment only looks at the potential for impact. It is also important to note that the majority of the significant threats are related to water quality Issues and Region staff are undertaking additional monitoring/assessment, are implementing land-management programs or treatment upgrades to address each Issue.
As noted in the Region’s comments on the AR (E-10-082), several of the Region’s protection areas extend into adjacent jurisdictions. These include protection areas for the New Hamburg well that extend into Perth County, several protection areas for wells in Cambridge that extend into Wellington County, the surface water protection area for the West Montrose well that extends into Wellington County, and the surface water intake protection area for the Hidden Valley intake that extends up the Grand River into Dufferin, Grey, Perth, and Wellington Counties. The vulnerability ranking for each of these areas is low so that it is not possible for significant threats to be identified in these areas. These areas have not changed in the Updated AR. Finally, as noted in report E-11-013, well head protection areas for the North Paris Well Field have been modified and no longer extend into the Region of Waterloo.

Implications and Concerns

The Updated AR contains an additional 59 properties where Significant threats were identified and where risk-mitigation policies will need to be developed in the Source Protection Plan. In its’ comments on the proposed AR (E-10-082), Regional Council approved two recommendations to address Region staff’s concerns with the report. The concerns are listed below along with progress on each issue to date.

The Region requested that the Province recognize that the legislated method for assessing road-salt impacts is insufficient to meet the Region’s needs for addressing salt threats to drinking water supply wells. The current method proposed by the Ontario Ministry of the Environment (MOE) does not result in the identification of any Significant threats in Waterloo Region, which is inconsistent with the increasing concentrations of salt in most of the Region’s drinking water systems. A new “modified method” has been developed and approved by the MOE for the Updated AR. As a result, a total of 1451 properties have been identified as having road-salt related threats. This result does not include municipal roads within the protection areas. And while this result is appropriate for the Region of Waterloo, the rest of the province continues to utilize the provincially approved process and likely underestimates the properties where road salt significant threats apply. Therefore, it is recommended that the Region’s original request be included as a comment on the Updated AR.

The Region objected to including e-coli as an Issue for the Brantford surface water system in the AR. The rationale for this objection was that all sources of e-coli upstream of the intake (i.e. to the headwaters of the Grand River) would be identified as Significant threats and because e-coli is ubiquitous in surface water and the environment in general. Brantford re-evaluated its risk assessment and removed e-coli as an issue as part of the original AR. However, it has been added back into the Updated AR using a different section of the Clean Water Act that facilitates inclusions of a water quality Issue but does not require identifying all the significant threats. This section allows for monitoring to be undertaken to better understand the nature of the threats before any risk management measures are established. Region staff continue to oppose the inclusion of e-coli as an Issue for the Brantford intake because of its ubiquitous presence in surface water and that this widespread occurrence is one of the primary reasons for treatment at all surface water intakes. As noted in report E-10-082, Region staff recognize that reduction of e-coli is an important component of watershed management. However, the appropriate means to mitigate this threat is through the other programs such as the Rural Water Quality Program. Further, if additional monitoring of e-coli over and above current monitoring is necessary, this should be done as part of the Grand River Basin Study currently being undertaken by the GRCA. Region staff recommends that the SPC include the Region’s objection as a comment to be provided directly to the MOE with the submission of the Proposed Assessment Report. GRCA staff have scheduled a meeting with Brantford and Region staff to discuss this issue further.
Next Steps

As mentioned above, the draft proposed Updated AR was approved by the SPC for a 30-day public consultation period on April 14, 2011. Any comments will be incorporated into the document which is to be submitted to the Province on June 30, 2011. As part of this process, notification letters were sent to newly-identified property owners that have Significant threats on their properties in late. The GRCA is hosting a public information centre on May 10 at 150 Frederick Street to solicit feedback on the Updated AR.

Development of the SPP is the next step in the Clean Water Act process. As mentioned above, risk mitigation policies are required in the SPP for every significant threat in the Updated AR. Municipal staff throughout the watershed have begun to work toward development of the policies for the SPP. The following additional activities are being undertaken for development of the SPP.

- Formal notice-of-commencement letters regarding the SPP process will be sent to all property owners identified as having significant threats and to all municipalities within the Grand River watershed in late April/early May 2011.
- Completion of discussion papers for each of the 19 water quality threats prescribed in legislation including a list of possible implementation options for each of the threats by June 2011.
- A series of information sessions regarding the SPP process will be undertaken by the GRCA in May/June 2011.
- It is anticipated that development of policies and public consultation on the policies will occur in the fall 2011.
- Consultation on the SPP is scheduled to occur in March 2012 to facilitate submission of the SPP to the MOE by the August 2012 deadline.

The Regional Official Plan may need to be amended once the SPP is approved by the MOE. The MOE continues to promote that municipalities establish and implement source water protection programs, including policies in their official plans, for their drinking water supplies in advance of approval of the SPP.

CORPORATE STRATEGIC PLAN:

The Region of Waterloo’s inclusion and support of the Grand River Assessment Report under the Clean Water Act, 2006 supports the Corporate Strategic Plan Focus Area 1: Environmental Sustainability by “protecting and enhancing the environment”.

FINANCIAL IMPLICATIONS: NIL

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

Planning Housing and Community Services staff participate in a working group for the GRCA and have been keeping apprised of the progress of the development of the SPP.

ATTACHMENTS: NIL

PREPARED BY: Eric Hodgins, Manager Hydrogeology and Source Water

APPROVED BY: Thomas Schmidt, Commissioner Transportation and Environmental Services
REGIONAL MUNICIPALITY OF WATERLOO

BIOSOLIDS MASTER PLAN UPDATE

INFORMATION PACKAGE

Public Information Centres
May 4, 5, and 10, 2011
5:00 PM to 8:00 PM

in

Wilmot, Cambridge, and Waterloo

There is a comment sheet at the back of this package. If you wish, please fill it out and deposit it in the designated box provided at this Information Centre.
Table of Contents

1. Notice of PIC
2. PIC Panels
3. Hand-out
4. Comment sheet
NOTICE OF PUBLIC INFORMATION CENTRE
Biosolids Master Plan Update

The Region is updating its Biosolids Master Plan to address recent planning, regulatory, environmental, and technological changes, and the adoption of the Region’s new Environmental Sustainability Strategy. Biosolids are generated by the treatment processes at the Region’s wastewater treatment plants. The Biosolids Master Plan Update will help the Region assess the status of its biosolids treatment, management, and disposal facilities. It will reconfirm or develop a preferred biosolids management strategy, to the year 2041, that is environmentally sustainable, economically viable, and that can be maintained over the long term. The Master Plan study will incorporate comments from the public and agencies received through consultation during the course of the study.

A Public Information Centre will be held to receive input and comments from interested members of the community. A display of project information will be available for viewing and staff from the Region and the consultant (CH2M HILL) will be present to discuss the information and answer questions. Information presented will include an overview of and the results of the evaluation process, including the preferred biosolids management strategy.

There will be three opportunities to view the materials from the Public Information Centre:

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wednesday, May 4, 2011</td>
<td>5:00 p.m. to 8:00 p.m.</td>
<td>Wilmot Recreation Complex, 1291 Nafzinger Rd, Baden</td>
</tr>
<tr>
<td>Thursday, May 5, 2011</td>
<td>5:00 p.m. to 8:00 p.m.</td>
<td>David Durward Centre, 62 Dickson St, Cambridge</td>
</tr>
<tr>
<td>Tuesday, May 10, 2011</td>
<td>5:00 p.m. to 8:00 p.m.</td>
<td>Waterloo Recreation Complex, 101 Father David Bauer Dr, Waterloo</td>
</tr>
</tbody>
</table>

If you are unable to attend one of the Public Information Centres, and wish to provide comment, or if you wish to be placed on the project mailing list to receive information, please contact:

**José Bicudo**
Senior Project Engineer, Water Services
Region of Waterloo
150 Frederick Street, 7th Floor
Kitchener, ON N2G 4J3
Phone: 519-575-4757, X3416
Fax: 519-575-4452
E-mail: jbicudo@regionofwaterloo.ca

**Tom Mahood, P.Eng.**
Project Manager
CH2M HILL
72 Victoria Street South, Suite 300
Kitchener, ON N2G 4Y9
Phone: 519-579-3500
Fax: 519-579-8986
E-mail: tom.mahood@ch2m.com

The information presented at Public Information Center #2 will be available at the Region’s website after May 10, 2011: www.region.waterloo.on.ca/bmp

This notice issued April 26, 2011.

If you require accessible services to participate in this meeting, please contact José Bicudo by Friday, April 29, 2011.

All comments and information received from individuals, stakeholder groups and agencies regarding this project are being collected to assist the Region of Waterloo in making a decision. Under the Municipal Act, personal information such as name, address, telephone number, and property location that may be included in a submission becomes part of the public record. Questions regarding the collection of this information should be referred to José Bicudo.
Welcome to
Public Information Centre #2 for the Region of Waterloo Biosolids Master Plan Update
Master Plan Purpose

Purpose of the Study
The purpose of this study is to update the Region of Waterloo Biosolids Master Plan to provide a sustainable strategy for the management of biosolids to the year 2041.

Mission Statement
The Region of Waterloo will develop a comprehensive biosolids strategy that:
• Embodies the Region’s sustainability goals, principles and environmental focus
• Incorporates innovation, diversification and flexibility
• Builds on best practices
• Protects the unique features and resources of the Region for the community now and in the future

Why Now?
The Region’s Biosolids Master Plan was completed in 2003. Since then there have been changes in the planning, provincial regulations, and technologies used in the management of biosolids.
The Master Planning Process

What is a Master Plan
A Master Plan is a long range plan that provides direction for planning and implementing a set of projects over an extended period of time. Master Plans are prepared by following Phases 1 and 2 of the Municipal Class Environmental Assessment (EA) Process.

Public Involvement in the Master Plan
The Master Plan project is led by the Project Team and liaises with 2 committees:
- Steering Committee consists of Region Senior Staff, Councilors, and Area Municipal Staff
- Stakeholder Committee represents the broad sectors of the community
How are Biosolids Managed in the Region of Waterloo?

What happens to the Region’s biosolids?
This is a current snapshot

Liquid and dewatered biosolids produced by Region of Waterloo WWTPs (2009)

- Total Dewatered Biosolids
  - Produced: 5,100 dry tonnes (40% total)
  - 1,000 truckloads per year

- Total Liquid Biosolids
  - Produced: 7,600 dry tonnes (60% total)

- Dewatered Biosolids
  - 15 to 35% solids
  - Not pumpable

- Liquid Biosolids
  - 3 to 7% solids
  - Pumpable

Legend:
- WWTPs without solids stabilization
- WWTPs with Anaerobic Digestion
- WWTPs with Aerobic Digestion
- Lagoons
- Onsite dewatering
- Liquid biosolids
- Dewatered biosolids
- Septage

Note: Biosolids can be land applied or landfilled.

*Septage
- Collected from septic tanks
- Pumpable
- Hauled to a WWTP

*Region’s Septage (under construction)

Legend:
- WWTPs without solids stabilization
- WWTPs with Anaerobic Digestion
- WWTPs with Aerobic Digestion
- Lagoons
- Onsite dewatering
- Liquid biosolids
- Dewatered biosolids
- Septage

Note: Biosolids can be land applied or landfilled.
Decision-Making Process

1. World of Biosolids Alternatives
   - Fatal Flaw Screening
   - The Long List
   - Biosolids Strategies
   - Must Have Criteria
     - Eliminates options that do not meet “Must Have Criteria” (Integration, Sustainability, and Reliability)
   - Create strategies by combining long list options
   - Lower scoring options are eliminated from further evaluation

2. Step 1 (Presented in PIC#1)
3. Step 2
4. Step 3
5. Step 4
6. Step 5
7. Step 6

Legend
- Technologies
- Products
- End Uses
Sustainability is Integrated into the Biosolids Master Plan

<table>
<thead>
<tr>
<th>Priority Area</th>
<th>Goal Statement</th>
<th>Consideration for Biosolids Management Strategies</th>
</tr>
</thead>
</table>
| **Air and Energy**            | Effectively use and manage energy resources and reduce greenhouse gases and other air emissions from Regional activities | - Energy reuse  
- Energy recovery  
- Greenhouse gas decrease |
| **Water**                     | Protect the quality and quantity of our water resources                        | - Protection of groundwater quality  
- Protection of surface water quality |
| **Waste and Material Resources** | Reduce the amount of waste requiring landfill and the demand and impact on natural resources | - Transportation decrease  
- Biosolids to landfill reduction  
- Chemical consumption reduction |
| **Rural and Urban Land**      | Manage and shape land use to ensure a liveable, healthy and sustainable Waterloo Region | - Compatibility with agricultural practices  
- Positive impact on soil quality |
| **Sustainability Culture**    | Foster stewardship of the natural environment and encourage behaviours to reduce environmental impact | - Easy for operators to implement  
- Aesthetics and visual character remain pleasing  
- Noise and odours are tolerable for neighbors and employees |
Step 2: Evaluation Results for the Long-List of Alternative Strategies

Twelve Strategies were developed from the options that met the “must have” criteria (Please refer to the handout for descriptions of each technology).

Multi-Criteria Decision Analysis Results

Legend

<table>
<thead>
<tr>
<th>Economic Environment</th>
<th>Natural Environment</th>
<th>Social/Cultural Considerations</th>
<th>Technical Environment</th>
</tr>
</thead>
</table>

Note: Refer to the handout for general descriptions of each criteria.
Step 3: Short Listed Strategies

From the ranked long list of strategies, the most highly ranked components were used to define four short listed strategies for the final evaluation and selection of the preferred strategy.

Common to all Strategies
Under all four of the short-listed strategies biosolids generated at the New Hamburg, Hespler, and Ayr treatment plants would receive advanced auto thermal thermophilic aerobic digestion (ATAD) and land applied.

Strategy I – Contract Disposal and Land Application
Under this strategy, the biosolids produced at the Region’s largest wastewater treatment plants, Kitchener, Galt, and Waterloo and at Elmira, Preston, St. Jacobs, Wellesley, Heidelberg and Conestogo wastewater treatment plants would be disposed of by contracted services (potentially to incineration to produce energy).

Estimated Capital Cost: $40,075,000
Estimated O&M Cost: $18,054,000 (annually)
Estimated Life Cycle Cost: $201,372,000
Estimated Cost per dry tonne: $1,319
Step 3: Short Listed Strategies Continued

Strategy II – Heat Drying and Land Application
Under this strategy, the Region’s largest wastewater treatment plants, Kitchener, Galt, and Waterloo, would each house a heat drying process and generate a pelletized product for land application. Elmira biosolids are landfilled.

- Estimated Capital Cost: $145,494,000
- Estimated O&M Cost: $16,593,000 (annually)
- Estimated Life Cycle Cost: $293,737,000
- Estimated Cost per dry tonne: $1,670

Strategy IV – Single Heat Drying Facility and Land Application
This strategy would be similar to Strategy II (On-Site Heat Drying), with the exception of the biosolids processing technology being located at a centralized Regional facility. The heat dryer would generate a pelletized product for land application. Elmira biosolids are landfilled.

Option 1:
- Estimated Capital Cost: $100,117,000
- Estimated O&M Cost: $15,185,000 (annually)
- Estimated Life Cycle Cost: $235,780,000
- Estimated Cost per dry tonne: $1,389

Option 2:
- Estimated Capital Cost: $102,989,000
- Estimated O&M Cost: $12,140,000 (annually)
- Estimated Life Cycle Cost: $211,448,000
- Estimated Cost per dry tonne: $1,207

* Note:
- Strategy II - Multiple Heat Drying Facilities and Land Application
- Strategy IV - Single Heat Drying Facility and Land Application
Step 3: Short Listed Strategies Continued

Strategy III – “Other Stabilization” and Land Application
Under this strategy, additional stabilization technology (Lystek) would be added to the Kitchener, Galt, and Waterloo wastewater treatment plants, to further reduce pathogens and improve the biosolids’ physical characteristics to allow for liquid storage and land application at a reduced volume. Produces high solids, pathogen free, high nutrient fertilizer value liquid biosolids for land application. Elmira’s biosolids are landfilled.

Estimated Capital Cost: $51,515,000  Estimated O&M Cost: $18,768,000 (annually)
Estimated Life Cycle Cost: $219,189,000  Estimated Cost per dry tonne: $1,413
Step 4: Life Cycle Assessment

Life Cycle Assessment (LCA) evaluates the technical processes involved in the biosolids management strategies and determines what environmental considerations are important when selecting the preferred strategy. Some of the important environmental considerations include the impacts of the strategy on air and water and the contribution to climate change factors.
Step 4: Life Cycle Assessment Results

Comparison of GHG Emissions

Comparison of Nutrient Emissions to Water

Comparison of Nutrient Emissions to Air

Soil Acidification

Note: These results are rationalized to 100.
Step 5: Risk Assessment

• Each of the four short-listed Strategies were evaluated for their associated risk.
• Twenty-one potential risks were identified and their likelihood and severity were evaluated for each Strategy.
• Some of the risks evaluated include: technology selection, road conditions, tracking accidents/spills, program costs, and WWTP odours.
Step 6: Recommended Preferred Strategy

Strategy IV - Single Heat Drying Facility and Land Application

- Provides a long term solution to management of biosolids
- Provides the Region diversity and flexibility in the management of biosolids
- Reduces the operational footprint of biosolids management
- Uses sustainable energy by recovering waste heat produced by the nearby generation facility
- Cost effective
- Produces a “Class A” material which can be Canadian Food Inspection Agency (CFIA) registered and used as a fertilizer
- Meets the Regions goals for sustainability
Implementation Plan

Environmental Assessment Period
- ATAD (at the Ayr WWTP) - Schedule B
- Heat Drying (at a centralized location in the Region) - Schedule B
- Dewatering (at the Elmira WWTP) - Schedule A
- Cogeneration (at the Kitchener, Galt, and Waterloo WWTPs) - Schedule A

Implementation of the Preferred Strategy
- ATAD at the Ayr WWTP
- Heat Drying at a centralized location in the Region
- Dewatering at the Elmira WWTP
- Cogeneration at the Kitchener, Galt, and Waterloo WWTP

Current
- 2011
- 2016
- 2021
- 2026
- 2031
- 2036
- 2041

Future
Biosolids Strategy Endorsement

When the Class EA decision-making process is completed, there will be a Biosolids Management Master Plan Report that will require endorsement from Regional Council. There are several steps that must be completed to achieve this endorsement to proceed with the Biosolids Management Strategy Implementation.

This report documents the planning and decision-making process to develop the Biosolids Management Strategy. It reports on all consultation activities during the project.

Region staff prepare a recommendation to endorse the Biosolids Master Plan and respective Management Strategy. The recommendation can be accepted or rejected.

When the recommendation to endorse the Biosolids Master Plan and respective Management Strategy has passed through Planning and Works, it is sent to Regional Council for final endorsement. If Council accepts the recommendation, the Biosolids Master Plan and Management Strategy will be endorsed. The report will then be issued for a 30-day public comment period.

The report will be placed in the public record and posted on the Region’s website for a 30-day period. The Region will accept comments from the public during the review period. Following the review period the Biosolids Master Plan Report will be finalized and the implementation of the management strategy will begin.
## Next Steps

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Information Centre material will be available on the Region’s website: <a href="http://www.region.waterloo.on.ca/BMP">www.region.waterloo.on.ca/BMP</a></td>
<td>May 11, 2011</td>
</tr>
<tr>
<td>Comment Sheets from today’s Public Information Centre will be received</td>
<td>May 27, 2011</td>
</tr>
<tr>
<td>Review comments from the Public Information Centre and incorporate into Decision Process</td>
<td>May 27, 2011</td>
</tr>
<tr>
<td>Confirm the Preferred Strategy</td>
<td>May 31, 2011</td>
</tr>
<tr>
<td>Complete Master Plan Report and place for public review and comment</td>
<td>June/July, 2011</td>
</tr>
<tr>
<td>Address any further concerns expressed by the public</td>
<td>September/October, 2011</td>
</tr>
</tbody>
</table>

**Thank you for attending!**

If you have any questions about this study, please talk to any member of the Project Team.
Introduction

The Region of Waterloo (Region) is updating its Biosolids Master Plan to address recent planning, regulatory, environmental, and technological changes, as well as the adoption of the Region’s new Environmental Sustainability Strategy. Biosolids are generated by the treatment processes at the Region’s wastewater treatment plants (WWTPs). The Biosolids Master Plan Update will help the Region assess the status of its biosolids treatment, management, and disposal facilities. It will reconfirm or develop a preferred biosolids management strategy, to the year 2041, that is environmentally sustainable, economically viable, and that can be maintained over the long term.

The Region’s existing Master Plan was completed in 2003. Since that time there have been changes in the planning, provincial regulations, and technologies used to manage biosolids.

A Master Plan is a long-range plan that provides direction for planning and implementing a set of infrastructure projects over an extended period of time. This Information Brief highlights the work completed to-date and upcoming activities.

Master Plan Mission Statement

The Region will develop a comprehensive biosolids strategy that:

- Embodies the Region’s sustainability goals, principles, and environmental focus
- Incorporates innovation, diversification, and flexibility
- Builds on best practices
- Protects the Region’s unique features and resources for the community now and in the future

How are Biosolids Managed in the Region of Waterloo?

The Region has 13 WWTPs. In 2009, these WWTPs treated 188 million litres per day of raw wastewater. The wastewater treatment process consists of the separation of solids and the removal of organic matter and nutrients, primarily through settling and microbial activity. Treated wastewater includes a liquid stream and a residuals (solids) stream. Treatment technologies are used to treat the liquid stream to a quality that is permitted for discharge to receiving waters and the solids stream to a quality suitable for application to agricultural lands or other end uses.

The Decision-Making Process

Master Plans are prepared following Phases 1 and 2 of the Municipal Class Environmental Assessment (EA) process. **Phase 1** activities include defining the need and mission statement for the Master Plan, collecting and reviewing data to understand the existing conditions, identifying long-term needs and opportunities, and identifying alternatives for meeting those needs. **Phase 2** includes a detailed evaluation of alternatives to determine a preferred solution for the Region. Consulting with the community and regulatory agencies is an important component of the decision-making process, which is illustrated in Figure 1, on the following page.
Figure 1 – Decision Making Process

1. Preferred Biosolids Strategy
2. Ranked Strategies
3. The Short List of Biosolids Strategies

Analysis

Life Cycle Assessment

Multi Criteria Decision Analysis

Detailed Evaluation

Biosolids Strategies

The Long List

Fatal Flaw Screening

World of Biosolids Alternatives

Legend:
- Technologies
- Products
- End Uses

Lower scoring options are eliminated from further evaluation

Create strategies by combining long list options

Eliminates options that do not meet "Must Have Criteria"
Biosolids Technologies, Products, and End Uses

There is a wide variety of technologies that can be used to process the biosolids that are generated during wastewater treatment. There are also a number of biosolids products that result from the treatment process, which are suitable for various end uses. The “long list” of technologies, products, and end uses will be screened down to a short list of options. An important step in the Master Planning process is the development of biosolids management strategies that are suitable for the Region, which consist of suitable technologies, products, and end uses. The evaluation process will take a careful look at the biosolids management strategies to determine which one is preferred.
Descriptions of the Technologies Evaluated

Land Application: Biosolids are applied to agricultural land by sub-surface liquid injection or as dewatered cake.

Landfill: Biosolids are dewatered and disposed of in a landfill.

Waste Minimization: The reduction of biological solids is accomplished through an interchange recycle flow between the aerobic activated sludge process and a specially controlled side-stream interchange bioreactor. The product can be land applied as liquid or dewatered cake.

Composting: Biosolids are composted in aerated static pile processing in an enclosed facility. Biosolids could be co-composted with other organic wastes (green-bin).

Alkaline Stabilization: Biosolids are combined with an alkaline material (lime) and dried, producing a class A product, which can be used as a fertilizer.

Heat Drying: Biosolids are heat dried and produce a pelletized product with can be used as a fertilizer.

Incineration: Biosolids are incinerated at a central facility, producing electricity and ash which can be used as an aggregate in cement production.

Contracted Disposal: A third party would be contracted with the Region to be responsible for the disposal of the biosolids.

Thermal Hydrolysis: This process uses high-pressure steam pre-treatment for anaerobic digestion of biosolids. The product can be land applied as a liquid or dewatered cake.

Second Generation Autothermal Thermophilic Aerobic Digestion (ATAD): This process operates at temperatures between 50 to 70 °C, biosolids compost at this temperature the resulting product can be used as a fertilizer (liquid or dewatered).

Other Stabilization: This process adds heat, an alkali, and mixing to produce a liquid product from dewatered biosolids. The product is land applied as a liquid.

Evaluation Criteria

The long-list of strategies were evaluated on four objectives:

Technical Environment: This objective evaluates the strategy’s technical performance, energy requirements, long-term adaptability, chemical consumption, ease of implementation, regulatory acceptance, complexity, renewable energy opportunities, amount of waste going to landfill, and operational compatibility.

Social/Cultural Consideration: This objective evaluates social and cultural considerations that may affect a strategies implementation, including: odour, current agricultural practices, visual characteristics of the end-product, transportation, noise, occupation health and safety on and off-site, and public acceptability.

Natural Environment: This objective evaluates the affect a strategy may have on the natural environment. Areas considered during the evaluation include water quality, terrestrial systems, soil quality, ground water quality and flow, and greenhouse gas emissions.

Economic Environment: This objective evaluates the economic impact of a strategy’s implementation including its life cycle, capital, and operations and maintenance costs.

Short-Listed Strategies

Strategies on the long list were removed from further consideration based on the evaluation. The remaining alternatives resulted in four short-listed strategies:
Common to all Strategies: Under all four of the short-listed strategies biosolids generated at the New Hamburg, Hespeler, and Ayr treatment plants would be receive ATAD and be land applied.

Strategy I – Contracted Disposal and Land Application: Under this strategy, the biosolids produced at the Region’s largest wastewater treatments plants, Kitchener, Galt, and Waterloo and at Elmira, Preston, St. Jacobs, Wellesley, Heidelberg and Conestogo wastewater treatment plants would be disposed of by contracted services (potentially to incineration to produce energy).

Estimated Capital Cost: $40,075,000  Estimated O&M Cost: $18,054,000

Strategy II – Heat Drying and Land Application: Under this strategy, the Region’s largest wastewater treatment plants, Kitchener, Galt, and Waterloo, would each house a heat drying process and generate a pelletized product for land application.

Estimated Capital Cost: $145,494,000  Estimated O&M Cost: $16,593,000

Strategy III – “Other Stabilization” and Land Application: Under this strategy, additional stabilization technology (Lystek) would be added to the Kitchener, Galt, and Waterloo wastewater treatment plants, to further reduce pathogens and improve the biosolids’ physical characteristics to allow for liquid storage and land application at a reduced volume. Produces high solids, pathogen free, high nutrient fertilizer value liquid biosolids production for land application. Elmira’s biosolids are landfilled.

Estimated Capital Cost: $51,515,000  Estimated O&M Cost: $19,768,000

Strategy IV – Single Heat Drying Facility and Land Application: This strategy would be similar to Strategy II (On-Site Heat Drying), with the exception of the biosolids processing technology being located at a centralized Regional facility. The heat drying would generate a pelletized product for land application.

Option 1:
Estimated Capital Cost: $100,117,000  Estimated O&M Cost: $15,185,000

Option 2:
Estimated Capital Cost: $102,989,000  Estimated O&M Cost: $12,140,000

Evaluation of the Short Listed Strategies

Life Cycle Assessment

A Life Cycle Assessment (LCA) evaluates the technical processes involved in the biosolids management strategies and determines what environmental considerations are important when selecting the preferred strategy. Some of the important environmental considerations include the impacts of the strategy on air and water and the contribution to climate change factors, see Figure 2 for more detail.

The results of the LCA are shown in Figure 3 to 6 on the following page.
Risk Assessment

- Each of the four short-listed Strategies were evaluated for their associated risk.
- Twenty-one potential risks were identified and their likelihood and severity were evaluated for each Strategy.
Recommended Preferred Strategy

- Provides a long term solution to management of biosolids
- Provides the Region diversity and flexibility in the management of biosolids
- Reduces the operational footprint of biosolids management
- Uses sustainable energy by recovering waste heat produced by the nearby generation facility
- Cost effective
- Produces a “Class A” material which can be Canadian Food Inspection Agency (CFIA) registered and used as a fertilizer
- Meets the Region goals for sustainability

Figure 7 – Recommended Preferred Strategy

Implementation Plan

0 to 5 years – Environmental Assessment Period:
- ATAD at the Ayr WWTP – Schedule B
- Heat Drying at the Waterloo Erb Street Landfill – Schedule B
- Dewatering at the Elmira WWTP – Schedule A
- Cogeneration at the Kitchener, Galt, and Waterloo WWTPs – Schedule A

5 to 10 years – Implementation of the Preferred Strategy
- ATAD at the Ayr WWTP
- Heat Drying at the Waterloo Erb Street Landfill
- Dewatering at the Elmira WWTP
- Cogeneration at the Kitchener, Galt, and Waterloo WWTP
Next Steps
This is the final Public Information Centre (May 4 – 10, 2011), the project team will continue to work on development the Biosolids Management Master Plan through the spring and will deliver a Master Plan report presenting the recommended strategy and implementation plan. Any comments received as a result of today’s Public Information Centre will be incorporated into the report. The recommended strategy and implementation plan will be reviewed by the Region and available for public comment during a 30-day public comment period.

Commonly Used Terms

Beneficial Use: A disposal process that takes advantage of at least one of the soil conditioning, nutrient, or fuel properties of sludge. Beneficial use practices include land-applying biosolids as a soil amendment or fertilizer supplement and various procedures that derive energy from biosolids or convert them to useful products.

Biosolids Management Strategy: A combination of treatment technology(ies), biosolids product(s), and associated end use(s).

Biosolids: A primarily organic solid product, produced by wastewater treatment processes, that is of a quality that can be beneficially used.

Market: The end use for the biosolids product or the utilization site.

Pathogen: Disease-causing organisms found in wastewater and sludge.

Sludge: Solids removed from wastewater by mechanical or biological means. Sludge and biosolids, as used in the text, mean the same only when the sludge is processed to a biosolids quality.

Wastewater: The spent or used water of a community or industry that contains dissolved and suspended matter. It is a general term for untreated discharge.

If you would like to provide comment or to receive notification of future project activity and Public Information Centres, please contact:

José Bicudo, Ph.D., P.E. Tom Mahood, P.Eng.
Senior Project Engineer, Water Services Project Manager
Region of Waterloo CH2M HILL
150 Frederick Street, 7th Floor 72 Victoria Street South, Suite 300
Kitchener, ON N2G 4J3 Kitchener, ON N2G 4Y9
Phone: 519-575-4757 ext. 3416 Phone: 519-579-3500
Fax: 519-575-4452 Fax: 519-579-8986
E-mail: JBicudo@regionofwaterloo.ca E-mail: tom.mahood@ch2m.com

The information presented at Public Information Center #1 will be available at the Region’s website after May 11, 2011: www.region.waterloo.on.ca/bmp

All comments and information received from individuals, stakeholder groups, and agencies regarding this project are being collected to assist the Region of Waterloo in making a decision. Under the Municipal Act, personal information such as name, address, telephone number, and property location that may be included in a submission becomes part of the public record. Questions regarding the collection of this information should be referred to Mr. José Bicudo.
Thank you for your interest in the Region of Waterloo Biosolids Master Plan Update. The Region is interested in hearing your comments, questions, and concerns relating to this study. Please take a few minutes to complete this comment sheet. Your comments will be carefully considered before the next phase of project activity is initiated.

1. The defined purpose of this project is “to update the Region of Waterloo Biosolids Master Plan to provide a sustainable strategy for the management of biosolids to the year 2041”. Do you have any comments, questions, or concerns with the defined purpose of this project?
   □ No  □ Yes  Please comment: ________________________________________________________

2. The Biosolids Master Plan Update will be conducted in accordance with the Class Environmental Assessment process for Master Plans. Do you have any questions, comments, or concerns about the Strategy evaluation and decision-making process or public consultation process that has been followed?
   □ No  □ Yes  Please comment: ________________________________________________________

3. Do you have any comments, questions, or concerns about the list of biosolids Strategies that the Region of Waterloo is considering through this study?
   □ No  □ Yes  Please comment: ________________________________________________________

4. Do you have any comments, questions, or concerns about the preferred biosolids Strategy of a Single Facility Heat Drying Process that the Region of Waterloo is considering through this study?
   □ No  □ Yes  Please comment: ________________________________________________________

5. Do you have a particular issue or concern related to this study that you wish to see addressed?
   □ No  □ Yes  Please comment: ________________________________________________________
6. Do you have any additional comments or information that you feel would be helpful to the project team?

☐ No  ☐ Yes  Please comment: ________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

7. How would you describe the nature of your interest in this study?

☐ Member of the general public

☐ Land owner

☐ Biosolids hauler (Contractor)

☐ Member of an interest group  Please specify: __________________________________

☐ Agency representative  Please specify: _______________________________________

Please provide your name and contact information. (optional)

__________________________________________________________________________

__________________________________________________________________________

Are you on the project mailing list?

☐ Yes  ☐ No, please add my name and contact information to the mailing list

All comments and information received from individuals, stakeholder groups, and agencies regarding this project are being collected to assist the Region of Waterloo in making a decision. Under the Municipal Act, personal information such as name, address, telephone number, and property location that may be included in a submission becomes part of the public record. Please indicate if you wish to have your comments included anonymously. Questions regarding the collection of this information should be referred to Mr. José Bicudo.

☐ Please withhold my name and contact information from publication in the Class EA Master Plan Report.

You may leave this completed Comment Sheet in the box provided at the registration table or you may email, fax, or mail it, by May 27, 2011 to:

Tom Mahood, P.Eng., Project Manager
CH2M HILL Canada Limited
Suite 300, 72 Victoria Street South
Kitchener, ON, N2G 4Y9
Phone: 519-579-3500 ext. 73241
Fax: 519-579-8986
Email: tom.mahood@ch2m.com

Thank you for your participation in this study!
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: D18-01

SUBJECT: MONTHLY REPORT OF DEVELOPMENT ACTIVITY FOR MARCH 2011

RECOMMENDATION:


SUMMARY:

In accordance with the Regional By-law 01-028, as amended, the Commissioner of Planning, Housing and Community Services has:

1. Approved the following part lot control exemption by-law;
2. Accepted the following plan of subdivision and plans of condominium; and
3. Released for registration the following plan of subdivision and plans of condominium.

REPORT:

City of Cambridge

1. Part Lot Control Exemption By-law 17-11
   Applicant: PIDEL Homes
   Location: Broadoaks Drive and Chester Drive
   Proposal: To permit the creation of 25 townhouse units.
   Processing Fee: Paid March 2, 2011
   Commissioner’s Approval: March 2, 2011

2. Registration of Draft Plan of Subdivision 30T-09101
   Draft Approval Date: June 19, 2009
   Phase: Entire Plan
   Applicant: Manor Woods Home
   Location: 120 Branchton Road
   Proposal: To permit the development of 18 single detached units.
   Processing Fee: Paid November 22, 2011
   Commissioner’s Release: March 15, 2011
3. **Registration of Draft Plan of Condominium 30CDM-10106**

   Draft Approval Date: December 3, 2010  
   Phase: Phase 1  
   Applicant: Preston Meadows  
   Location: 505, 535 and 565 Margaret Street  
   Proposal: To permit the development of 16 townhouse units.  
   Processing Fee: Paid March 1, 2011  
   Commissioner’s Release: March 3, 2011

**City of Waterloo**

1. **Plan of Subdivision Application 30T-11401**

   Date Accepted: March 15, 2011  
   Applicant: BU Holdings Inc. and 907248 Ontario Ltd.  
   Location: 290 and 294 Bridge Street North  
   Proposal: To permit the development of 10 single detached units.  
   Processing Fee: Paid March 4, 2011

2. **Plan of Condominium Application 30CDM-11402**

   Date Accepted: March 8, 2011  
   Applicant: TD Properties Ltd.  
   Location: 28 Elgin Street  
   Proposal: To convert a residential apartment building to 17 condominium units.  
   Processing Fee: Paid February 24, 2011

3. **Registration of Draft Plan of Condominium 30CDM-09404**

   Draft Approval Date: July 8, 2010  
   Phase: Phases 2 and 3  
   Applicant: Kenmore Developments Waterloo Inc.  
   Location: 555 Chablis Drive  
   Proposal: To permit the development of 16 townhouse units.  
   Processing Fee: Paid February 4, 2011  
   Commissioner’s Release: February 18, 2011

**Township of Wilmot**

1. **Plan of Condominium Application 30CDM-11601**

   Date Accepted: March 4, 2011  
   Applicant: PAB Holdings Limited  
   Location: 250 Hostetler Road, New Hamburg  
   Proposal: To permit the development of 13 townhouse units.  
   Processing Fee: Paid February 25, 2011
Residential Subdivision Activity January 1, 2011 to March 31, 2011

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*The acceptance and/or draft approval of plans of subdivision and condominium processed by the City of Kitchener under delegated approval authority are not included in this table.

For comparison, the following table has also been included:

Residential Subdivision Activity January 1, 2010 to March 31, 2010

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<tr>
<th>Area Municipality</th>
<th>Units in Residential Registered Plans</th>
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<td>21</td>
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</table>

*The acceptance and/or draft approval of plans of subdivision and condominium processed by the City of Kitchener under delegated approval authority are not included in this table.

Area Municipal Consultation/Coordination

These planning approvals, including associated consultation with Area Municipalities, have been completed in accordance with the Planning Act. All approvals contained in this report were supported by the Area Municipal councils and/or staff.

CORPORATE STRATEGIC PLAN:

This report reflects actions taken by the Commissioner in accordance with the delegation By-law adopted by Council consistent with the streamlining objectives reflected in Focus Area A: Manage Regional Growth to Enhance Quality of Life in the Corporate Strategic Plan.

FINANCIAL IMPLICATIONS:

NIL

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

NIL

PREPARED BY: Andrea Banks, Program Assistant

APPROVED BY: Rob Horne, Commissioner, Planning, Housing and Community Services
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: D28-60(A)

SUBJECT: IMPLEMENTATION OF GRAND RIVER TRANSIT FARE CHANGE ON JULY 1, 2011

RECOMMENDATION:

THAT the Regional Municipality of Waterloo approve implementation of the Grand River Transit fare change on July 1, 2011 illustrated in Table 2 as described in report P-11-044, dated May 3, 2011.

SUMMARY:

Regional Council approved a moderate 5% increase to Grand River Transit (GRT) fares effective July 1, 2011 in the 2011 Regional Budget. This report outlines proposed 2011 fare changes which would increase passenger revenue in order to offset increased operating costs associated with price inflation and 2011 service improvements. Such an increase would have the effect of increasing 2011 passenger revenue by $450,000 with a total $900,000 annual impact.

GRT’s current fare structure includes a range of discount fares and is one of the lowest among comparable Ontario transit agencies. Please see Appendix 1 for a description of the current and average fare structures at comparable Ontario transit agencies. Staff has developed a fare change proposal that would continue to provide discounts to frequent riders and a relatively low level of fares. The recommended fare changes are detailed in Table 2. In summary, the proposed fare change includes:

- No change to the cash fare ($2.50)
- $0.15 increase to adult tickets ($0.75 for a strip of five)
- $0.10 increase to reduced tickets ($0.50 for a strip of five)
- $3.00 per month increase to adult monthly passes
- $2.00 per month increase to reduced monthly passes and School Board funded term passes

Analysis of the effects of the 2007 and 2009 fare increases indicates that there is no discernable long term effect on ridership growth from a fare increase of approximately 5%. Regular service improvements mitigate the effects of a fare increase on ridership. The current fare structure rewards frequent riders through discount tickets and passes. Typically, a fare increase prompts riders to choose the fare media (cash, ticket or pass) that provides the best value for their riding frequency.

The Transit for Reduced Incomes Program (TRIP) provides qualifying riders with a subsidized bus pass through the Employment and Income Support Division of the Social Services Department. This program has an annual budget of $438,000 and subsidizes the purchase an average of 1,400 passes each month by $26.00. The recommended increase to the adult monthly pass price would impact this program.
To gather feedback on the proposed fare change, staff posted notices at the Ainslie Street Terminal and Charles Street Terminal, posted a notice on www.grt.ca with a link to a feedback form, and consulted with riders at three Public Consultation Centres in March and April. Of the 115 individuals who provided feedback, 77 provided reasons in support of the fare change. The majority stated that the proposed fare increase is a reasonable amount and that they are willing to pay more in fares to support service improvements. 30 comments were received in opposition to the proposed fare increase. The main reasons were that fares are too high and that they would reduce affordability for students and persons with low income. Even with the proposed 2011 fare increase, GRT would continue to offer one of the lowest fare structures in Ontario. Reduced passes and tickets offer considerable discounts to students and the TRIP program subsidizes the monthly pass for eligible low-income individuals.

The 2011-2014 GRT Business Plan will develop a strategy for subsequent changes to the fare structure and levels. The Business Plan will also define future service improvement priorities and guide the implementation of the Regional Transportation Master Plan (RTMP) for 2011-2014.

REPORT:

Transit fares are set in order to generate revenue to support service, attract riders and promote social objectives like affordable mobility. Choosing the structure and level of transit fares requires trade-offs between these multiple objectives. The approved 2011 Regional Budget includes a moderate 5% increase to (GRT) fares effective July 1, 2011 in order to increase passenger revenue and offset increased operating costs associated with price inflation and 2011 service improvements.

As part of the implementation of the new RTMP, GRT staff developed a series of service improvements for 2011. These service improvements will continue and enhance ridership growth momentum towards the modal share targets of the RTMP. Highlights of the proposed improvements include increasing the frequency of iXpress from 15 minutes to 10 minutes on weekdays, the introduction of a new limited stop express service on the Fischer-Hallman Road corridor, and increasing the frequency of Route 52 – Fairview Park/Ainslie St. from 30 to 15 minutes.

A moderate 5% overall increase in fares is comparable to the level of past GRT fare increases. Such an increase would have the effect of increasing annual passenger revenue by $900,000. If approved by Council the fare change would take place on July 1, 2011.

The 2008-2010 GRT Business Plan recommended making fare changes every two years. This period between fare changes allows time to monitor the impact of fare changes, evaluate options for subsequent fare changes and provide time to consult with the public. A fare change in 2011 would be consistent with this policy. The 2011-2014 GRT Business Plan will evaluate the timing of future fare changes.

Fare History

The effects of a moderate fare increase can be countered by making service improvements. Table 1 illustrates the ridership impacts of fare increases in July 2007 and January 2009. In both 2007 and 2009, ridership growth from service improvements outweighed any negative impact the fare increases may have had on ridership.

<table>
<thead>
<tr>
<th>Year</th>
<th>Fare Increase</th>
<th>12 Month Service Increase</th>
<th>12 Month Ridership Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>4.0%</td>
<td>6.2%</td>
<td>9.2%</td>
</tr>
<tr>
<td>2009</td>
<td>5.0%</td>
<td>2.8%</td>
<td>5.3%</td>
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</table>
For 2011, the proposed 5% fare increase is projected to reduce ridership by 180,000 rides or a 0.9% decrease. This minor reduction in ridership will be more than offset by ridership growth from service improvements that have been approved for implementation in 2011 including 10 minute frequency on iXpress. Preliminary forecasts project ridership to increase from 18,050,000 in 2010 to 19,300,000 in 2011, a 7% increase.

**Fare Change Proposal**

The proposed new fare levels continue to provide significant discounts to riders who use tickets and monthly passes. Summarized in Table 2, the proposed fare change includes:

**Table 2: Recommended July 1, 2011 GRT Fares**

<table>
<thead>
<tr>
<th>Fare type</th>
<th>Proposed fare effective July 1, 2011</th>
<th>Current fare</th>
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<tbody>
<tr>
<td>Exact cash fare</td>
<td>$2.50</td>
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<tr>
<td>Adult ticket (strip of 5)</td>
<td>$1.95</td>
<td>$1.80</td>
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<tr>
<td>Reduced ticket (strip of 5)</td>
<td>$1.65</td>
<td>$1.55</td>
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<tr>
<td>Adult monthly pass</td>
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<td>$60.00</td>
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<tr>
<td>Reduced monthly pass</td>
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<tr>
<td>College Pass (per 4 month term)</td>
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<tr>
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<td>Student SUN ONE Pass (July &amp; August)</td>
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At an increased price of $63.00, the GRT unlimited ride monthly adult pass would continue to be the lowest priced adult monthly pass among comparable Ontario municipalities. The GRT adult ticket price would also remain below average among comparable Ontario municipalities. Appendix 1 describes the current and average fare structures in comparable Ontario municipalities. Even following the recommended fare increase the GRT average fare would remain among the lowest.

**MobilityPLUS Cash Fare/Tickets**

MobilityPLUS urban fares increase with Conventional GRT cash fares. As such, MobilityPLUS fares would remain unchanged.

**School Board Funded Term Passes**

The Waterloo Catholic District School Board and the Waterloo Region District School Board purchase term passes for students who are beyond a specified walk distance to school through Student Transportation Services of Waterloo Region. The current price of these passes is $44.00 per month. Staff recommends increasing the price of these passes to $46.00 per month beginning in September 2011.

Student Transportation Services of Waterloo Region has been notified of the proposed increase and a letter written in response is attached in Appendix 2. Concerns mentioned in the letter and subsequent discussions include the rate of the proposed increase to the pass price and time of day restrictions on pass usage.
Similar school board funded student pass programs exist in some Ontario municipalities. For example, Hamilton Street Railway (HSR) charges the Hamilton-Wentworth District School Board a price of $53.50 per month per student for a pass that is valid between 6:00 AM and 6:00 PM. If not provided with a school board funded pass, the price for a high school student to directly purchase a monthly pass valid during the full HSR service day is $71.00. The school board funded pass is provided at an effective discount rate of 25%. Similarly, York Region Transit charges Student Transportation Services of York Region a price of $55.00 per month per student. The price for a student to directly purchase a monthly pass is $75.00. The school board funded pass is provided at an effective discount rate of 27%.

If the proposed fare change is approved, the price of a school board funded term pass would increase from $44.00 to $46.00 per month. The discount rate compared to a Reduced Monthly Pass which a student could directly purchase would remain 12%. The discount rate offered to Student Transportation Services of Waterloo Region is lower than is offered in other municipalities because GRT fares are lower on average. The actual dollar price per pass which GRT charges is much lower than other transit agencies and provides good value to the School Boards.

**Fare Affordability**

The Transit for Reduced Incomes Program (TRIP) allows persons whose income falls below the low income cut-off as determined by Statistics Canada to apply for a subsidy towards the cost of monthly passes funded through the Employment and Income Support Division of the Social Services Department. In 2010, this program had a budget of $438,000 and subsidized the purchase of approximately 1,500 passes each month by $26.00. This represents approximately 18,000 monthly adult passes per year, or approximately 990,000 annual rides. TRIP currently has a waiting list of approximately 750 persons who qualify for a subsidy but funding is not available to accommodate. During the 2011 Regional Budget process a request for an additional $50,000 funding to increase TRIP enrollment and address a potential fare increase was not approved. To manage an increased adult monthly pass price the following alternatives are available to the program:

- Reduce eligibility and decrease number of persons in the program in order for subsidy per pass to increase
- Reduce subsidy level per pass to maintain enrollment and move burden of pass price increase onto program participants
- Some combination of the above options

GRT staff will continue to consult with Employment and Income Support staff to determine an appropriate response to the recommended fare increase.

**Customer Feedback on Fare Change Proposal**

To gather feedback on the proposed fare change, staff:

- Posted notices at the Ainslie Street Terminal and Charles Street Terminal
- Posted a notice on www.grt.ca with a link to a feedback form
- Consulted with riders at three Public Consultation Centres in March and April

All information provided to riders stated that the proposed change would be considered by Regional Council’s Planning and Works Committee on May 3, 2011. One hundred and fifteen individuals had provided feedback on the proposed fare change as of April 18, 2011. The majority of consulted individuals stated that the proposed fare increase is a reasonable amount and that they are willing to increase fares to pay for service improvements. A summary of the feedback received by staff is included in Appendix 3.
Further Steps

If the recommended fare changes are approved, GRT staff would implement these changes effective July 1, 2011. The 2011-2014 GRT Business Plan will develop a strategy for subsequent fare changes. The Business Plan will also define future service improvement priorities and guide the implementation of the RTMP for 2011-2014.

Area Municipal Consultation/Coordination

This report has been circulated to the City of Cambridge, City of Kitchener, the City of Waterloo, and the Township of Woolwich for information.

CORPORATE STRATEGIC PLAN:

Transit fare increases support Focus Area 5: Infrastructure: Provide High Quality Infrastructure and Asset Management to Meet Current Needs and Future Growth by supporting the implementation of the RTMP.

FINANCIAL IMPLICATIONS:

Implementing the recommended 2011 GRT fare increase would increase GRT operating revenue by $900,000 annually. The effect in 2011 would be an increase in revenue of approximately $450,000.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

The recommended GRT fare increase was developed in collaboration with staff from Transit Services, Transportation and Environmental Services and with staff from Finance. GRT staff will continue to consult with Employment and Income Support staff.

ATTACHMENTS:

Appendix 1 - Current Fare Structures at Comparable Ontario Municipalities
Appendix 2 - Response of Student Transportation Services of Waterloo Region to Fare Increase Proposal
Appendix 3 - Summary of Rider Feedback on Recommended Fare Change

PREPARED BY: Reid Fulton, Principal Planner (Transit)

APPROVED BY: Rob Horne, Commissioner, Planning, Housing and Community Services
### Appendix 1: Current Fare Structures at Comparable Ontario Municipalities

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Exact cash fare</th>
<th>Adult ticket</th>
<th>Reduced ticket</th>
<th>Adult monthly pass</th>
<th>Reduced monthly pass</th>
<th>2009 Average Fare</th>
</tr>
</thead>
<tbody>
<tr>
<td>York Region</td>
<td>$3.25</td>
<td>$2.60</td>
<td>N/A</td>
<td>$105.00</td>
<td>$46.00</td>
<td>$2.54</td>
</tr>
<tr>
<td>Ottawa</td>
<td>$3.25</td>
<td>$1.25</td>
<td>N/A</td>
<td>$91.50</td>
<td>$36.00</td>
<td>$1.40</td>
</tr>
<tr>
<td>Toronto</td>
<td>$3.00</td>
<td>$2.50</td>
<td>$1.65</td>
<td>$121.00</td>
<td>$99.00</td>
<td>$1.77</td>
</tr>
<tr>
<td>Mississauga</td>
<td>$3.00</td>
<td>$2.50</td>
<td>$1.70</td>
<td>$116.00</td>
<td>$44.00</td>
<td>$1.91</td>
</tr>
<tr>
<td>Brampton</td>
<td>$3.00</td>
<td>$2.50</td>
<td>$1.50</td>
<td>$102.00</td>
<td>$47.00</td>
<td>$2.10</td>
</tr>
<tr>
<td>Durham Region</td>
<td>$2.90</td>
<td>$2.63</td>
<td>$1.90</td>
<td>$97.00</td>
<td>$39.00</td>
<td>$1.89</td>
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<tr>
<td>Ontario average</td>
<td>$2.80</td>
<td>$2.15</td>
<td>$1.62</td>
<td>$90.08</td>
<td>$51.09</td>
<td>$1.73</td>
</tr>
<tr>
<td>London</td>
<td>$2.75</td>
<td>$1.90</td>
<td>$1.54</td>
<td>$81.00</td>
<td>$57.50</td>
<td>$1.33</td>
</tr>
<tr>
<td>Hamilton</td>
<td>$2.55</td>
<td>$2.00</td>
<td>$1.65</td>
<td>$87.00</td>
<td>$71.00</td>
<td>$1.50</td>
</tr>
<tr>
<td>Sudbury</td>
<td>$2.50</td>
<td>$1.95</td>
<td>$1.45</td>
<td>$72.00</td>
<td>$44.00</td>
<td>$1.36</td>
</tr>
<tr>
<td>Thunder Bay</td>
<td>$2.50</td>
<td>$2.00</td>
<td>N/A</td>
<td>$69.50</td>
<td>$59.50</td>
<td>$1.33</td>
</tr>
<tr>
<td>GRT (proposed)</td>
<td>$2.50</td>
<td>$1.95</td>
<td>$1.65</td>
<td>$63.00</td>
<td>$53.00</td>
<td>$1.24*</td>
</tr>
<tr>
<td>Windsor</td>
<td>$2.45</td>
<td>$2.13</td>
<td>$1.64</td>
<td>$79.00</td>
<td>$40.00</td>
<td>$1.80</td>
</tr>
</tbody>
</table>

Note: current GRT fares are used to calculate averages, figures sorted by exact cash fare price and adult monthly pass price

* projected 2011 average fare after fare change
Appendix 2: Response of Student Transportation Services of Waterloo Region to Fare Increase Proposal

March 24, 2011

Mr. Eric Gillespie
Director
Grand River Transit
250 Strasburg Road
Kitchener, ON
N2E 3M8

RE: Proposed Rate Increase

Eric;

I have received your proposed rate increase and must provide our concerns and opposition to such a big increase. Our last rate increase was in September 2009.

First, our student rate is already significantly higher than the rate paid to Transit in other jurisdiction. Our monthly pass are valid only for 12 hours/day 5 days/week which is about 47% of the time Transit runs. Secondly the ridership is at about 50% of all the transit passes issued. Yet our rate is 88% of the full rate.

Secondly, our funding increase for the last two years combined was only 2%. The school boards do not have the funds sufficient to cover this rate increase of 4.5%. This increase represents more than double the increased funding we have received for the Province for the same period.

STSWR and the School Boards in Waterloo are committed to support the Grand River Transit and have been doing that for several years, our practice of having the bus pass limited to school day and time not only leverage your assets and network but also introduce the students to the transit system. This experience certainly helps in building your paying customer on evenings, weekends and summer period.

Considering the usage rate, the limited window for usage, and the fact that we support your service in generating additional revenue, we feel this rate increase not justifiable. The education system in Ontario is already stretched, this undue increase is unreasonable and we cannot support it.

We are requesting this increased to be retracted and our rates to be reviewed and adjusted to reflect the real value of the service provided.

Phone: 519-650-4934 Fax: 519-650-2979

Regards,

Benoit Bourgault
General Manager

Student Transportation Services of Waterloo Region Inc.
Appendix 3: Summary of Rider Feedback on Recommended Fare Change

### Reasons to Support Fare Change

<table>
<thead>
<tr>
<th>Reason to Support Fare Change</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasonable amount</td>
<td>37</td>
</tr>
<tr>
<td>Willing to pay more to support service increases</td>
<td>21</td>
</tr>
<tr>
<td>No specific reason</td>
<td>7</td>
</tr>
<tr>
<td>Current fares low</td>
<td>5</td>
</tr>
<tr>
<td>Further increases justified</td>
<td>4</td>
</tr>
<tr>
<td>More affordable than car ownership</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL SUPPORTERS:</strong></td>
<td>77</td>
</tr>
</tbody>
</table>

### Reasons to Oppose Fare Change

<table>
<thead>
<tr>
<th>Reason to Oppose Fare Change</th>
<th>Number of Respondents</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too high</td>
<td>14</td>
<td>GRT fares would still be among the lowest of comparable Ontario municipalities</td>
</tr>
<tr>
<td>Impact on students and persons with low income</td>
<td>8</td>
<td>Discount fare media and TRIP program continue to be available</td>
</tr>
<tr>
<td>Oppose proposed route changes</td>
<td>4</td>
<td>Recommended service changes to be presented to Planning and Works Committee on May 24, 2011</td>
</tr>
<tr>
<td>Improve service quality and customer service</td>
<td>2</td>
<td>RTMP recommends significant service improvements</td>
</tr>
<tr>
<td>Unfair to increase fares for College students but not University students</td>
<td>1</td>
<td>UPASS fees negotiated through agreements with student associations</td>
</tr>
<tr>
<td>No specific reason</td>
<td>1</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>TOTAL OPPONENTS:</strong></td>
<td>30</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL COMMENTS UNCLEAR OR UNEFFECTED:</strong></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL COMMENTS RECEIVED</strong></td>
<td>115</td>
<td></td>
</tr>
</tbody>
</table>
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: May 3, 2011

FILE CODE: D28-50(A)

SUBJECT: HESPELER AREA TRANSIT SERVICE PUBLIC CONSULTATION CENTRE

RECOMMENDATION:

For information

SUMMARY:

Route modifications are being proposed in the Hespeler area of Cambridge to serve new residential developments and to increase service coverage in the area during evenings and on weekends. Current transit service in the Hespeler area is shown in Appendix A.

Staff has developed two service design options. These options are shown as Appendix B and C. Both options include extension of Route 65 FISHER MILLS to new residential development in the Blackbridge Road area and improve evening and weekend service. The proposed service improvements would contribute to continuing ridership growth in Cambridge.

To discuss these service improvement options with area residents, a Public Consultation Centre will be held on:

Thursday May 12, 2012
Hespeler Public Library, Main Floor
5 Tannery Street, Cambridge
4 p.m. to 8 p.m.

Following review of public feedback on these proposals with the Cambridge Service Area Transit Planning Steering Committee, any recommended improvements to Hespeler area service would be presented to Regional Council in May or June for proposed September service implementation.

REPORT:

The Hespeler area is served by three Grand River Transit routes, as shown in Appendix A. Each route connects a portion of Hespeler with Route 51 HESPELER ROAD and with Route 53 FRANKLIN BOULEVARD at the Hespeler Terminal on Holiday Inn Drive.

As shown in Table 1 below, local routes serving the Hespeler area operate at a 30 minute frequency during weekdays. Evening and weekend service is provided at a frequency of every 60 minutes on Route 65 and Route 66. Route 71 does not operate during weekday evenings, Saturday evenings or on Sundays.
Table 1: Hespeler Area Routes Existing Level of Service

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekdays</th>
<th>Weekday Evenings</th>
<th>Saturdays</th>
<th>Saturday Evenings</th>
<th>Sundays</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 Fisher Mills</td>
<td>Every 30 minutes from 6 a.m. to 8 p.m.</td>
<td>Every 60 minutes from 8 p.m. to midnight</td>
<td>Every 30 minutes from 6 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 60 minutes from 11 a.m. to 7 p.m.</td>
</tr>
<tr>
<td>66 Winston</td>
<td>Every 30 minutes from 6 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 30 minutes from 7 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 60 minutes from 11 a.m. to 6 p.m.</td>
</tr>
<tr>
<td>71 Melran</td>
<td>Every 30 minutes from 6 a.m. to 6 p.m.</td>
<td>No service</td>
<td>Every 30 minutes from 6 a.m. to 6 p.m.</td>
<td>No service</td>
<td>No service</td>
</tr>
</tbody>
</table>

Proposed New Service

Staff has identified two service designs for the Hespeler area that extend service to new residential areas.

Option 1 (shown in Appendix B) includes:

- Extend Route 65 to serve new residential development in the Blackbridge Road area.
- Extend Route 66 to commercial development in the Townline Road and Jamieson Parkway area.
- Add a new Route 76 that would be a combination of the existing Route 66 and Route 71, to provide evening and weekend service to the areas currently served by these routes.

Option 2 (shown in Appendix C) includes:

- Extend Route 65 to serve new residential development in the Blackbridge Road area.
- Extend Route 66 to serve central and east Hespeler residential areas, replacing Route 71. This route would operate in both directions during weekdays and Saturdays, and would provide service in one direction on weekday evenings, Saturday evenings and Sundays.

Public Consultation Centre

To discuss these service improvement proposals with area residents, a Public Consultation Centre (PCC) will be held on:

Thursday May 12,
Hespeler Public Library, Main Floor
5 Tannery Street, Cambridge
4 p.m. to 8 p.m.

Public Notification and Advertising

In advance of the PCC, notification will be sent out via various means including:

- Roadside signs will be erected at major intersections in the study area;
- An unaddressed mailer will be sent to households in the Hespeler area inviting them to the PCC;
- Signs will be posted at selected bus stops that show proposed service changes and provide dates and times of the PCC;
Notices will be posted in the local newspapers; 
Posters informing transit riders of proposed changes and PCC will be posted at terminals and on buses; 
Notices of proposed service improvements and changes will be posted on the GRT website: www.grt.ca; 
Comment forms will be available online and at the PCC; 
Mass emailing will be sent to those who subscribe to our rider e-alerts; and 
Information will be sent out via social media including Twitter.

**Next Steps**

Following the PCC, staff will review the responses gathered and develop a preferred course of action. Proposals and public input will then be discussed with the Cambridge Service Area Transit Planning Steering Committee and refined as necessary. Any residents who have indicated an interest during the planning process will be contacted and provided a summary of plans, including any changes. Recommended improvements to Hespeler area transit service would be presented to Regional Council in May or June for proposed September service implementation.

**Area Municipal Consultation/ Coordination**

A Steering Committee was formed to oversee service planning in the Cambridge service area. Membership of the Steering Committees includes Regional and City of Cambridge staff and Council representatives. An ongoing dialogue has been maintained between Regional and City of Cambridge staff regarding service planning. As the service plans move into implementation, and as future plans are developed, Regional Staff will continue to meet and consult with City of Cambridge staff and the members of the Steering Committee.

**CORPORATE STRATEGIC PLAN:**

Review of GRT routes serving the Hespeler area supports the implementation of Council’s Strategic Focus, identified under Focus Area 2: Growth Management: Manage and Shape Growth to Ensure a Livable, Healthy, Thriving and Sustainable Waterloo Region. The plan will aid with Strategic Objective 2.3 to enhance, develop, promote and integrate sustainable and active forms of transportation (public transit, cycling and walking).

The service review also supports Focus Area 6: Infrastructure: Provide High Quality Infrastructure and Asset Management to Meet Current Needs and Future Growth. It is part of the updated Regional Transportation Master Plan noted in Section 6.2.2.

**FINANCIAL IMPLICATIONS:**

The proposed restructuring of Hespeler area routes can be accommodated within the existing transit operating budget. Route 65 can be extended to serve new areas without increasing operating costs by modifying the route to operate along Queen Street instead of Franklin Boulevard. Evening service extensions would be created through a reallocation of service hours currently budgeted for Route 66. Costs of the consultation centre are included in the transit operating budget.
OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

The PCC for the proposed restructuring of Hespeler area routes was prepared in cooperation with staff from Transit Services, Transportation and Environmental Services.

ATTACHMENTS:

Appendix A:  Current Hespeler Area Transit Service
Appendix B:  Proposed Hespeler Area Transit Service Option 1
Appendix C:  Proposed Hespeler Area Transit Service Option 2

PREPARED BY:  Gethyn Beniston, Principal Planner - Transit

APPROVED BY:  Rob Horne, Commissioner, Planning Housing and Community Services
Appendix A: Current Hespeler Area Grand River Transit Service

Current Hespeler Area Level of Service

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekdays</th>
<th>Weekday Evenings</th>
<th>Saturdays</th>
<th>Saturday Evenings</th>
<th>Sundays</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 Fisher Mills</td>
<td>Every 30 minutes from 6 a.m. to 8 p.m.</td>
<td>Every 60 minutes from 8 p.m. to midnight</td>
<td>Every 30 minutes from 6 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 60 minutes from 11 a.m. to 7 p.m.</td>
</tr>
<tr>
<td>66 Winston</td>
<td>Every 30 minutes from 6 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 30 minutes from 7 p.m. to midnight</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 60 minutes from 11 a.m. to 6 p.m.</td>
</tr>
<tr>
<td>71 Melran</td>
<td>Every 30 minutes from 6 a.m. to 6 p.m.</td>
<td>No service</td>
<td>Every 30 minutes from 6 a.m. to 6 p.m.</td>
<td>No service</td>
<td>No service</td>
</tr>
</tbody>
</table>
## Appendix B: Proposed Hespeler Area Transit Service Option 1

### Option 1 Proposed Hespeler Area Level of Service

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekdays</th>
<th>Weekday Evenings</th>
<th>Saturdays</th>
<th>Saturday Evenings</th>
<th>Sundays</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 Fisher Mills</td>
<td>Every 30 minutes from 6 a.m. to 8 p.m.</td>
<td>Every 60 minutes from 8 p.m. to midnight</td>
<td>Every 30 minutes from 6 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 60 minutes from 11 a.m. to 7 p.m.</td>
</tr>
<tr>
<td>66 Winston</td>
<td>Every 30 minutes from 6 a.m. to 7 p.m.</td>
<td>No service</td>
<td>Every 30 minutes from 7 a.m. to 7 p.m.</td>
<td>No service</td>
<td>No service</td>
</tr>
<tr>
<td>71 Melran</td>
<td>Every 30 minutes from 6 a.m. to 6 p.m.</td>
<td>No service</td>
<td>Every 30 minutes from 6 a.m. to 6 p.m.</td>
<td>No service</td>
<td>No service</td>
</tr>
<tr>
<td>NEW Route 76</td>
<td>No service</td>
<td>Every 60 minutes from 7 a.m. to midnight</td>
<td>No service</td>
<td>Every 60 minutes from 7 a.m. to midnight</td>
<td>Every 60 minutes from 11 a.m. to 6 p.m.</td>
</tr>
</tbody>
</table>
### Appendix C: Proposed Hespeler Area Transit Service Option 2

#### Option 2 Proposed Hespeler Area Level of Service

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekdays</th>
<th>Weekday Evenings</th>
<th>Saturdays</th>
<th>Saturday Evenings</th>
<th>Sundays</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>65 Fisher Mills</strong></td>
<td>Every 30 minutes from 6 a.m. to 8 p.m.</td>
<td>Every 60 minutes from 8 p.m. to midnight</td>
<td>Every 30 minutes from 6 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 60 minutes from 11 a.m. to 7 p.m.</td>
</tr>
<tr>
<td><strong>66 Winston</strong></td>
<td>Every 30 minutes from 6 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 30 minutes from 7 a.m. to 7 p.m.</td>
<td>Every 60 minutes from 7 p.m. to midnight</td>
<td>Every 60 minutes from 11 a.m. to 6 p.m.</td>
</tr>
</tbody>
</table>
The Ministry of Transportation has retained Dillon Consulting Limited to complete the Detailed Design and Class Environmental Assessment (EA) process for the reconstruction and widening of Highway 7/8 in the City of Kitchener, Region of Waterloo.

The Project includes:

- Reconstruction and widening of Highway 7/8 from four to six lanes, including a median tall wall barrier, from 1.9 km west of Fischer Hallman Road to 0.8 km east of Courtland Avenue.
- Interchange improvements at Courtland Avenue, Homer Watson Boulevard and Fischer Hallman Road, requiring the temporary closure of some ramps during construction;
- Major rehabilitation and/or widening of the structures at each crossing (including the CNR Overhead) with reduced lanes and short-term(weekend) closures of side roads;
- Construction of a closed median drainage system; and
- Relocation and/or retrofit of existing noise barriers and installation of new noise barriers where warranted and installation of high mast lighting.

At this time, Ministry of Transportation Ontario (MTO) is proposing the following for project phasing and closures:

1. For the majority of time 4 lanes will be maintained on the highway. There may be some overnight closures to facilitate high quality paving operations.

2. There will be no simultaneous lane reductions on Westmount Road and Fischer Hallman Road.

<table>
<thead>
<tr>
<th>Area of Work and Closures</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway 7/8 work</td>
<td>2011 September – November</td>
</tr>
<tr>
<td>• Outside shoulder strengthening and median sewers</td>
<td></td>
</tr>
<tr>
<td>• Single lane traffic at night for outside shoulder strengthening</td>
<td></td>
</tr>
<tr>
<td>Road</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fischer-Hallman Road</td>
<td>Bridge rehabilitation full season, closure of one lane in each direction</td>
</tr>
<tr>
<td></td>
<td>between north ramp terminal and Ottawa Street</td>
</tr>
<tr>
<td></td>
<td>Construction of new eastbound highway ramp</td>
</tr>
<tr>
<td></td>
<td>All vehicle movements to/from the highway are to be maintained</td>
</tr>
<tr>
<td>Westmount Road</td>
<td>Potential for some bridge work</td>
</tr>
<tr>
<td>Courtland Avenue</td>
<td>Bridge and interchange rehabilitation with full season ramp closure</td>
</tr>
<tr>
<td></td>
<td>of the westbound off – ramp</td>
</tr>
<tr>
<td>Westmount Road</td>
<td>Bridge rehabilitation</td>
</tr>
<tr>
<td></td>
<td>Full season closure of one lane in each direction</td>
</tr>
<tr>
<td>Homer Watson Boulevard</td>
<td>Bridge Rehabilitation</td>
</tr>
<tr>
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<td>Westbound off – ramp full season closure</td>
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<td>Highway widening and noise wall construction</td>
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Timing may change and MTO is communicating with Regional and City staff on a regular basis to ensure coordination of Regional / City and MTO construction.
To: Chair Jim Wideman and Members of the Planning and Works Committee

From: Amanda Kutler, Acting Director, Community Planning

Subject: NOTIFICATION OF UPCOMING EAST SIDE LANDS MASTER ENVIRONMENTAL SERVICING PLAN AND COMMUNITY PLAN PUBLIC INFORMATION CENTRE #1 – JUNE 14, 2011

File No: D03-00 East Side MESP

On November 24, 2010 Regional Council retained Dillon Consulting Limited (Dillon) to provide consulting services for the East Side Lands Master Environmental Servicing Plan (MESP) and Community Plan. The MESP will include transportation, servicing and subwatershed work and will fulfill, at a minimum, the first two phases (i.e. up to selecting the preferred solution) in the Planning and Design Process of the Class EA for all non-major road, water and wastewater projects. This will answer the broader questions about the necessary servicing and infrastructure required for the East Side lands to inform specific development proposals. An implementation plan will be included to accompany the recommendations of the study and identify the timing and responsibility for the final phases of the EA process. The MESP also begins the community planning process.

Since November, the Project Team (which includes representatives from the Region, GRCA, City of Cambridge, City of Kitchener, Township of Woolwich, Region of Waterloo International Airport and CTT) has worked with Dillon to finalize the work plan and has met on two occasions. In accordance with the approved work plan, an initial Public Information Centre (PIC) is being planned for Tuesday, June 14, 2011, 5:30 p.m. to 8:00 p.m. at Ecole Secondaire Pere-Rene-de-Galinee on Maple Grove Road in Cambridge. The purpose of the meeting is to introduce the study to the public and present background information collected to date. The meeting will be advertised in the local papers and individual notice will be sent to all landowners within the broader East Side study area. The Project Team is in the process of planning the PIC and more detail will be provided in a report to Regional Council on May 26, 2011.

Background

In June 2007, Regional Council approved Regional Official Policies Plan Amendment (ROPP) No. 28 to designate approximately 150 net hectares of land for large lot employment uses. As a result of an Ontario Municipal Board Settlement (OMB) approximately an additional 50 net hectares west of Fountain Street and south of Allendale Road were included in the ROPP. In June 2009, Council adopted the new Regional Official Plan (ROP) which designates additional employment land west of Fountain Street between Allendale Road and Middleblock Road.
(approximately 100 ha), for a total of approximately 300 net hectares designated as Prime Industrial Strategic Reserve (PISR). A key map is attached.

In addition to designating the land, a number of other related Regional initiatives have been completed that will assist in advancing the development of the East Side, including completion of the Wastewater Treatment Master Plan and associated AECOM East Side Servicing Review, environmental monitoring of the East Side Subwatersheds, and completion of the Regional Transportation Master Plan. The MESP will focus on advancing the Environmental Assessments and community planning processes, moving the lands toward development readiness.

Staff from Transportation and Environmental Services, Region of Waterloo International Airport, City of Cambridge and GRCA staff are on the Project Team and have been consulted with on this initiative and will continue to be consulted with regarding finalizing the material to be presented at the PIC. City of Kitchener staff and Township of Woolwich staff are also members of the Project Team and will be invited to participate in the PIC.

If you require additional information, please do not hesitate to contact me at 519-575-4818 or akutler@regionofwaterloo.ca.
To: Chair Jim Wideman and Members of the Planning and Works Committee  
From: Eric Hodgins, Manager Hydrogeology and Source Water  
File #: E06-80/LE.COMM  
Subject: Lake Erie Source Protection Region Public Consultation on the Draft Amended Assessment Report for the Grand River Source Protection Area

The Lake Erie Source Protection Committee (SPC) will be hosting a public consultation session at the Region of Waterloo Administrative Headquarters on Tuesday, May 10, 2011 from 7 p.m. to 8:30 p.m. regarding the Draft Amended Assessment Report. This is a revised version of the Assessment Report that was the subject of public consultation in 2010. As noted in Report E-11-013, changes have been made to the information for water systems operated by the Regional Municipality of Waterloo. Region of Waterloo staff will be available at the session to answer technical and scientific questions related to the work undertaken to develop the updated Assessment Report.

Additional study and risk assessment resulted in changes to the Assessment Report that include the identification of a further 233 properties where Significant Threats occur and for which risk mitigation measures will be required in the Source Protection Plan. The owners of these properties have been notified of their status through mail and have been invited to the public consultation session. In addition, the Grand River Conservation Authority has advertised the session in local area newspapers.

The Updated Assessment Report will form the basis for developing policies that reduce the risk to drinking water supplies in the Source Protection Plan. The Draft Amended Assessment Report was approved by the SPC for public consultation on April 14, 2011 and is scheduled to be submitted to the Province by June 20, 2011. Comments on the report are due by May 21, 2011.

In addition to the Draft Amended Assessment Report consultation, the SPC will be hosting public information sessions throughout the Lake Erie Source Protection Region about the development process for the Source Protection Plan. All property owners who may be impacted by the Plan will be sent a letter to notify them of commencement of the Source Protection Plan development and invited to the information sessions. One session will be held within the Region of Waterloo on Tuesday, May 31, 2011 at the Grand River Conservation Authority Headquarters in Cambridge.
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<tr>
<th>Meeting date</th>
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<th>Request</th>
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<td>P&amp;W</td>
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<td>Transportation and Environmental Services</td>
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<td>Staff report on Policy for Smoking Around GRT Buses</td>
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