

REGIONAL MUNICIPALITY OF WATERLOO ADMINISTRATION AND FINANCE COMMITTEE AGENDA

Tuesday, May 3, 2011
Immediately following Closed Session
(Time is Approximately 11:00 a.m.)
Regional Council Chamber
150 Frederick Street, Kitchener, Ontario

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1. **MOTION TO RECONVENE INTO OPEN SESSION**
 2. **DECLARATIONS OF PECUNIARY INTEREST UNDER THE MUNICIPAL CONFLICT OF INTEREST ACT**
 3. **DELEGATIONS**
 4. **REPORTS – Finance**
 - a) [F-11-029](#), 2011 Average Residential Property Value 1
 - b) [F-11-030](#), Quarterly Summary of Tenders/Proposals Approved by the Chief Administrative Officer 3
 - REPORTS – Human Resources**
 - c) [CA-HR-11-004](#), Health and Safety Policy 6
 - REPORTS – Corporate Resources**
 - d) [CR-FM-11-010](#), Temporary Use Agreement for 60 Victoria Street North, Kitchener by J.M. Drama Alumni 9
 - e) [CR-FM-11-011](#), Region of Waterloo's Corporate Greenhouse Gas Action Plan 11
 - f) [CR-FM-11-012](#), The Climate Collaborative: A Community-Wide GHG Action Plan 31
 5. **INFORMATION/CORRESPONDENCE**
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 - a) [Council Enquiries and Requests for Information Tracking Sheet](#) 34
 7. **NEXT MEETING – May 24, 2011**
 8. **ADJOURN**



REGION OF WATERLOO
FINANCE DEPARTMENT
Treasury Services Division

Report: F-11-029

TO: Chair T. Galloway and Members of the Administration and Finance Committee

DATE: May 3, 2011 **FILE CODE:** F22-20

SUBJECT: 2011 AVERAGE RESIDENTIAL PROPERTY VALUE

RECOMMENDATION:

For Information

SUMMARY:

Over the past year, a number of comments have been raised about how realistic the average residential property value is when providing tax rate impacts. Staff has reviewed the issue and this report addresses the change in the average residential property value for property tax impacts for 2011.

REPORT:

The Region and the Area Municipalities provide tax rate impacts based on an average residential property value or average household. This gives Councillors and residential taxpayers a reference point for budget impacts in a given year and enables taxpayers to estimate impacts for their own properties. The use of the same average residential property value for all components of the property tax bill (Region, Area Municipal and Education) provides the residential taxpayer with consistency and enables meaningful year to year comparisons. When the new Ontario Fair Assessment System was implemented in 1998, the average residential property value was calculated at \$138,000. The average value was then adjusted in years where there was a reassessment or reassessment phase-in. The adjustment was based on the change in value for the residential property class resulting from the reassessment. By 2010, the average residential property value had increased to \$225,000. The comparable value for 2011 would be \$236,000.

The Area Treasurers group has been reviewing the value of the average residential property to be used for tax impacts in 2011. The methodology of adjusting the average residential property value by reassessment or phase-in impacts has resulted in a difference between the actual average residential value in the region and the average used in the tax impact calculations. The Area Treasurers considered a number of options to determine the average and have agreed on using the Municipal Property Assessment Corporation (MPAC) total current value assessment and number of units for fully taxable residential assessment. For 2011, this results in an average residential property value of \$254,000 for tax impact calculations.

Committee may recall that a province wide reassessment was conducted during 2008 for 2009 with properties valued as of January 1, 2008. The preceding reassessment had been based on January 1, 2005 values so assessment increases are being phased-in over 4 years (2009-2012). Due to the phase-in, there is a gap between the average residential value based on current value assessment (used to determine taxes) and the actual average realized in the market place. The 2011 phase-in value of \$254,000 is essentially equivalent to a 2007 actual value. Assuming a 5% increase in values per year, the actual value of an average residential property in 2011 would be approximately

\$308,000.

In order to ensure comparability to 2010 tax impacts, the 2010 average residential property value will be restated to \$242,000 to adjust for the reassessment phase-in impacts for 2011. The average residential property value will be reviewed each year based on the revised calculation methodology. The 2011 final program budget book will use the updated 2011 and 2010 values noted above.

CORPORATE STRATEGIC PLAN:

Providing information on the updated average residential property value used in property tax impact calculations aligns with the strategic objective of ensuring all Regional programs and services are responsive, efficient, effective and accountable to the public.

FINANCIAL IMPLICATIONS:

The use of an average residential property value to present tax rate impacts provides Regional Council and residential taxpayers with a reference point relative to budget impacts and enables relevant year to year comparisons. The cost per household calculations in the final 2011 budget book will be based on an average residential property having a value of \$254,000 for 2011 and \$242,000 for 2010.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE: Nil

ATTACHMENTS: Nil

PREPARED BY: *A. Hinchberger*, Director of Financial Services, Treasury & Tax Policy

APPROVED BY: *L. Ryan*, Chief Financial Officer



REGION OF WATERLOO

**FINANCE DEPARTMENT
Procurement & Supply Services Division**

TO: Chair T. Galloway and Members of Administration and Finance Committee

DATE: May 3, 2011

FILE CODE: F18-30

**SUBJECT: QUARTERLY SUMMARY OF TENDERS/PROPOSALS APPROVED BY THE
CHIEF ADMINISTRATIVE OFFICER**

RECOMMENDATION:

For Information

SUMMARY: Nil

REPORT:

The updated Purchasing By-law which came into effect July 2010 requires that administrative awards for Request for Proposals (RFP's) and tenders between \$100,000 and \$500,000 must be reported to Administration and Finance Committee. Administrative awards for tenders can occur if three criteria are met. These criteria include a minimum of three bids received, awarded to the lowest bidder and the amount of the bid is within budget. For RFP's, the three criteria are a minimum of three bids received, awarded to the highest score and the bid is within budget. See Appendix 1 for details of the awards made by the CAO from January 1, 2011 through March 31, 2011. As required by the by-law, a quarterly summary report will be submitted to Administration and Finance Committee outlining all tenders and proposals awarded by staff. This revised tender/proposal award process has resulted in a more efficient and timely procurement process.

CORPORATE STRATEGIC PLAN:

Supports and meets the objectives of Focus Area 6 "Service Excellence – foster a culture of citizen/customer service that is responsive to community needs, by ensuring a fair and open tender process and that all interested suppliers have an equal opportunity to bid on Regional projects.

FINANCIAL IMPLICATIONS: Nil

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE: Nil

ATTACHMENTS: Appendix 1

PREPARED BY: C. Whitlock, Director, Procurement & Supply Services

APPROVED BY: L. Ryan, Chief Financial Officer

CAO AWARDS (January 1, 2011 to March 31, 2011)

F-11-030 Appendix 1

TENDER NUMBER & NAME	DESCRIPTION	AWARDED	NET COST OF AWARD (Net of HST Rebate)	LIST OF BIDDERS	BID PRICE (Includes HST)	BUDGET (1)	COMMENTS
P2010-67 Real Estate Negotiation Services	For the hiring of Professional Real Estate negotiators specializing in the purchase of partial takings to provide real estate appraisal and negotiation services for the widening of Eagle St. N., Cambridge.	Antec Appraisal Group	\$148,742.12 *Project 5119 and 5617	Antec Appraisal Group Coldwell Banker Altus Group Limited	\$167,579.00 \$212,214.00 \$309,010.00	Total Capital Budget of \$1,620,000	Approved January 26, 2011
T2011-107 Microsoft Enterprise Agreement	For the supply of Microsoft software licenses required for computers and applications used by Regional Staff.	SHI Canada ULC	\$430,546.91	SHI Canada ULC Dell Canada Inc. ONX Enterprise	\$478,103.40 \$478,931.32 \$483,168.77	Total Operating Budget of \$605,000	Approved February 17, 2011
P2011-01 Rain Barrels	To supply a maximum of 3,000 rain barrels which are to be delivered to residents of Waterloo Region.	Shirlon Plastics	\$106,207.00 *Project #04943	Enviro World Corp. Shirlon Plastics Forest City Models Barrel Depot Orbis Canada Ltd. Scepter Corporation RTS Companies Inc.	\$111,870.00 \$117,938.10 \$138,888.30 \$142,102.80 \$146,210.70 \$176,280.00 \$188,992.50	2011 Water Capital Program Budget of \$250,000	Approved February 22, 2011
T2011-105 Waste Removal, Various Regional Buildings	To supply labour, equipment, materials and transportation required to provide waste removal at various Waterloo Region Housing and Regional buildings, for a two year term.	Waste Management	\$426,641.90 or \$213,321/year	Waste Management Wasteco BFI Canada Inc. National Waste Services	\$445,477.78 \$455,463.88 \$519,916.20 \$713,983.46	Total Operational Budget of \$401,166	Approved March 15, 2011

TENDER NUMBER & NAME	DESCRIPTION	AWARDED	NET COST OF AWARD (Net of HST Rebate)	LIST OF BIDDERS	BID PRICE (Includes HST)	BUDGET (1)	COMMENTS
T2011-102 Construction of the Doon Village Staff House	The Doon Village Staff House will provide Waterloo Region Museum with a small facility in the village to support program staff and volunteers.	Protrend-Arrow Construction Inc.	\$229,343.00 *Project 42015	Pro-Trend Arrow Greyhound Contracting Dakon Construction Gateman Milloy Silver Birch Const.	\$254,674.88 \$290,184.00 \$303,518.00 \$354,195.00 \$371,000.00	2011 Capital Budget \$283,284	Approved March 28, 2011
T2011-008 Performance Testing of Test Production Well FSTP1-10, Production Well P16 and Rehabilitation of Well P16, Maple Grove Water Supply Environmental Assessment	The work of this contract is for the long term testing of the full size well.	Lotowater Technical	\$413,502.12 *Project #04134	Lotowater Technical Gerrits Drilling Well Initiatives	\$432,338.00 \$527,225.71 \$634,009.10	2011 Water Capital Budget of \$951,000	Approved March 30, 2011



REGION OF WATERLOO

HUMAN RESOURCES DEPARTMENT Employee Relations Division

TO: Chair Tom Galloway and Members of the Administration and Finance Committee

DATE: May 3, 2011 **FILE CODE:** C04-50

SUBJECT: HEALTH & SAFETY POLICY

RECOMMENDATION:

THAT the Regional Municipality of Waterloo approve the attached revised Health and Safety Policy, as required under the Occupational Health and Safety Act.

REPORT:

In November 1994 Council approved the existing Health and Safety Policy. This policy has been reviewed and re-signed annually as required under the Occupational Health and Safety Act.

The Region has undertaken to establish a Safety Management System to improve employee safety within the Region. As a result of work completed on the Safety Management System the Health and Safety Policy has been revised.

The new policy:

- A. Clarifies that staff must work in compliance with the Occupational Health and Safety Act, its Regulations and with the Region's safety policies, programs and procedures.
- B. Expresses the Region's intent to continually improve its Health and Safety performance.
- C. Integrates an effective hazard management program into our work activities that requires employees to identify and work to correct hazards in the workplace.

In 2006 a program review resulted in a recommendation to implement a Safety Management System (SMS) for the Region of Waterloo. A SMS is a systematic process for managing safety risks and provides for planning, goal setting, training, hazard risk assessment, development of policies and procedures, and monitoring and measuring. The SMS is designed to ensure that the organization is working to reduce hazards, and is able to demonstrate due diligence in meeting the requirements of the Occupational Health and Safety Act.

Phase I of the SMS involved working with the consulting firm Deloitte to conduct an analysis of legislative requirements relating to Health & Safety and to develop an implementation plan for the SMS. That work included a Health & Safety gap analysis, a training needs analysis, and the identification of policies required to meet legislative requirements. Phase I of the SMS occurred throughout 2008 to 2010.

Phase II of the SMS will involve an assessment of the Health & Safety hazards associated with the various Regional operations, and the development of mitigation plans to reduce risk or hazards.

The following will outline the plan for Phase II - Implementation of the SMS.

Bill 168 - Workplace Violence Risk Assessments

We will conduct training and risk assessments for areas where there is the potential for violence in the workplace and develop systems to manage the potential for violence in Regional workplaces. Corporate Health and Safety will provide training and coaching to management staff on conducting workplace violence risk assessments and developing mitigation plans.

Due Diligence training for Senior Management

Training will be provided for Senior Management to ensure that they have a thorough understanding of due diligence requirements of the Occupational Health & Safety Act.

Safety Management System Implementation

The SMS will be implemented in stages based on identified risks. Each business unit will be required to identify the Health & Safety legislation that applies to their operation. An inventory will be prepared which lists the procedures currently used to manage Health & Safety in each business unit. Management will be required to conduct hazard risk assessments for the operations in each of their business units, resulting in a hazard registry. Training will enable management in business units to identify, evaluate, and control risks to employee Health and Safety. Action plans will then be created that may include the development of Health & Safety procedures, training and establishing processes to ensure equipment is maintained in a safe condition.

Operating departments will be supported for the implementation of SMS by Corporate Health & Safety. Resources will be available to assist management as they assess Health & Safety legislative requirements for their business units, conduct hazard risk assessments, and develop procedures and processes to minimize the risk of hazards identified.

CORPORATE STRATEGIC PLAN:

The implementation of a formal Safety Management System will support Focus Area 6: to Foster a Culture of Citizen Customer Services that is responsible to the community needs.

FINANCIAL IMPLICATIONS:

Funding for Phase II – Implementation of the SMS has been provided for in the capital budget for 2011-2013.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

NIL

ATTACHMENTS:

Health and Safety Policy

PREPARED BY: *John Leyland, Health and Safety Advisor*

APPROVED BY: *Penny Smiley, Commissioner, Human Resources*



Region of Waterloo

HEALTH & SAFETY POLICY

The Region is committed to promoting and providing a safe and healthy work environment for employees, contractors and visitors. By working safely and reporting health and safety concerns, employees protect themselves and others in the workplace.

The Region is committed to continually improving its health and safety performance and will strive to reduce or eliminate foreseeable risks by integrating an effective hazard management program into our work activities through implementation of the safety management system.

The Region will provide leadership and education creating an environment which enables employees to participate and work collaboratively in identifying and effectively resolving health and safety concerns and risks.

The Region is committed to having all employees and contractors work in compliance with the Occupational Health and Safety Act and Regulations. Employee participation in identifying and effectively resolving health and safety issues is crucial to successfully achieving a safe and healthy workplace.

Management must ensure that equipment, processes and the work environment are safe and that employees work in compliance with the Region's safety policies, programs and procedures. Employees are required to report hazards and work in compliance with the Occupational Health and Safety Act, its regulations and Regional safety policies, programs and procedures.

This policy will be reviewed annually and will be revised in light of any legislative or organizational changes as necessary.

This Health and Safety policy is adopted by Regional Council on this ___ day of ___, 2011.

Regional Chair

Chief Administrative Officer



REGION OF WATERLOO

**CORPORATE RESOURCES
Facilities Management and Fleet Services**

TO: Chair Tom Galloway and Members of the Administration & Finance Committee

DATE: May 3, 2011 **FILE CODE:** L04-20

**SUBJECT: TEMPORARY USE AGREEMENT FOR 60 VICTORIA STREET NORTH,
KITCHENER BY J.M. DRAMA ALUMNI**

RECOMMENDATION:

That the Regional Municipality of Waterloo authorize the Commissioner of Corporate Resources to enter into a one-time temporary facility use agreement with J.M. Drama Alumni, a non-profit registered charitable corporation, to facilitate the use of 60 Victoria Street North – the “Rumpel Building- for the purpose of a charitable art show and sale as described in Report CR-FM-11-010 dated May 3rd, 2011 which such agreement to be to the satisfaction of the Regional Solicitor.

SUMMARY:

NIL

REPORT:

The organizers of the 2011 edition of the BOX Art Show and Sale (“BOX 11”) have approached the Region of Waterloo about the use of the Rumpel Felt building as the site for their annual event. BOX Art is a volunteer group, namely Cathy Farwell, Denise Strong, Fatima Garzan and Michelle Salter. The BOX 11 group has held two previous charitable art shows in 2009 and 2010 both of which were hosted in a similar industrial setting to the proposed use of the Rumpel Felt building. J.M. Drama Alumni, a registered charitable corporation, is the organization that is responsible for the undertakings of the BOX 11 volunteers. J.M. Drama Alumni has been in existence since 1985 and its Board of Directors is headed by Donald Bourgeois.

The BOX 11 event will occur from November 10 to 13, 2011 and comprises private receptions and public activities and private access to the building is proposed in advance of this date for the purpose of preparing for the event. This juried show of artwork provides an opportunity for visual artists living in Waterloo Region to show and sell their work while promoting visual arts education and appreciation, community building, and the establishment of mutually beneficial partnerships. Twenty percent of the proceeds of any sale are given to a charity sponsor, which this year is the Kitchener-Conestoga Rotary Club’s Christmas Food Hamper Drive. The event will be attended by as many as 375 invited guests that can be accommodated within the ground floor of the building.

The Box 11 organizers have benefit of the services of a professional architect, on a personal volunteer capacity, to provide assistance in assessing the suitability of the facility for the intended purpose and assist in ensuring the appropriate safety and fire plans are in place for the event. Regional staff has reviewed the plans for the BOX 11 event and are satisfied that all safety, insurance and security risks have been identified and are proposed to be properly addressed by the event organizers. The BOX 11 group shall obtain liability insurance for the event with limits of \$5 million which insurance shall name the Region of Waterloo as an additional insured. The event organizers plan to serve alcohol at a private reception on the first evening of the event and the

insurance to be procured by the event organizers will include an endorsement in connection with this aspect of the event. The event organizers will be responsible for all costs of making the building ready for the event including the procurement of a special event permit, cleaning, garbage removal, temporary lighting, security and temporary washrooms. This event has been held at similar types of venues in previous years and the organizers have dealt with many of the same issues previously in a successful manner. Regional staff is not proposing to charge rent for the use of the premises, since the building requires significant preparation by the event organizers who are paying all related costs.

Details of the proposed use have been shared with staff at the City of Kitchener and a site meeting will be convened in advance of the event to ensure any requirements of the City's Building and Fire departments are satisfied.

The Rumpel Felt Building was purchased by the Region as part of a land assembly for the intermodal hub (Hub) to serve various public transit services that will ultimately converge near Victoria and King Streets in Kitchener. The development plans for the Hub are ongoing, with demolition of the former food store at the corner of Victoria and King slated to begin in the next several weeks. Regional staff is in the process of preparing a detailed work plan relating to future development on the site and expect to report back to Regional Council with updates on a regular basis. There are no plans for use of the site for the remainder of the year that would in anyway conflict with the use of the Rumpel Building for the proposed BOX 11 event.

In association with the BOX 11 event, Regional staff will have the opportunity to install information boards regarding the progress and future plans associated with the Hub project to help inform the public of our work to date.

CORPORATE STRATEGIC PLAN:

Support for the BOX 11 is consistent with the objectives of Focus Area 2, specifically the objective of promoting and enhancing arts, culture and heritage.

FINANCIAL IMPLICATIONS:

NIL

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

Legal and Planning, Housing and Community Services staff have reviewed and provided input to this report.

ATTACHMENTS

NIL

PREPARED BY: *Rick Ellig*, Acting Director, Facilities and Fleet Services

APPROVED BY: *Gary Sosnoski*, Commissioner, Corporate Resources



REGION OF WATERLOO

**CORPORATE RESOURCES
Facilities Management and Fleet Services**

TO: Chair Tom Galloway and Members of the Administration and Finance Committee

DATE: May 3, 2011 **FILE CODE:** D06-80

SUBJECT: **REGION OF WATERLOO'S CORPORATE GREENHOUSE GAS ACTION PLAN**

RECOMMENDATION:

1. THAT Regional Council receive and endorse the summary report entitled: *Corporate Greenhouse Gas (GHG) Inventory and Action Plan for Region of Waterloo Operations* dated May 3rd, 2011 as attached to report CR-FM-11-011, and that staff forward the full detailed technical report to the Federation of Canadian Municipalities and Sustainable Waterloo.
2. THAT the Regional Municipality of Waterloo adopt the following GHG reduction targets for Region of Waterloo operations and these be communicated to the appropriate agencies:
 - a. FCM Partners for Climate Protection – to stabilize the Region's total corporate GHG emission at 2009 levels through to the year 2019.
 - b. Sustainable Waterloo Regional Carbon Initiative –to reduce the intensity of GHG emissions by 14% per capita by the year 2019 based on population forecasts (as a result of stabilizing the Region's corporate emissions at 2009 levels).
3. That staff report back to Council by 2014 with a complete assessment of the actions to make-up the gap between the current action plan and the recommended target and identify any associated costs and potential sources of funding.
4. THAT Regional staff measure progress achieved and re-evaluate these targets every three years recommending any appropriate revisions for Council's consideration.

SUMMARY:

Regional Council passed a resolution on April 6, 2010 (CR-FM-10-007) to join the Federation of Canadian Municipalities Partners for Climate Protection program (FCM-PCP) and Sustainable Waterloo's Regional Carbon Initiative. Both voluntary programs require participating organizations to prepare GHG emissions inventories for their operations and commit to reduction targets. Regional staff have prepared a comprehensive emissions inventory, forecast and action plan which potentially could help offset the projected growth in the Region's emissions over the next 10 years.

The recommended target for the FCM-PCP program will require a reduction of approximately 41,000 tonnes of GHGs from Regional operations in the next ten years. This targeted amount of GHG reductions reflects the estimated increase in emissions from expanded facilities, fleet (e.g. transit, police, EMS, water services) and greater community demand for other Regional programs and services as Waterloo Region's population is expected to grow by 90,000 people between 2009 and 2019. The recommended target for Sustainable Waterloo's Regional Carbon Initiative is based on reduced GHG emissions per capita given that the Region's operations are so closely linked to its community oriented programs and services. This report also provides an update on the topic of carbon offsets/credits as previously requested by Regional Council (CR-FM-10-003).

REPORT:

Emissions Inventory

The Region of Waterloo has been implementing various initiatives over the past decade which have reduced GHG and other air emissions from its operations. However, until now, there has not been a consistent approach to measure GHG emissions from all of the Region's operations, nor has there been monitoring of progress from reductions achieved towards an established target. Some recent projects achieving annual GHG reductions include:

- Traffic signal and pedestrian light LED retrofit (1271 Tonnes CO₂e)*
- LEED Gold Police Annex Building (165 T CO₂e)
- Lighting and energy retrofits in various Regional Facilities (96 T CO₂e)
- Purchase of six hybrid-electric diesel transit buses (74 T CO₂e)

*CO₂e = equivalent units of Carbon Dioxide, a common aggregated measurement of several greenhouse gases based on their internationally recognized global warming potential.

In January 2010, Regional staff began preparing an inventory of GHG emissions from its corporate operations. Regional Council passed a resolution on April 6, 2010 (CR-FM-10-007) to join the Federation of Canadian Municipalities Partners for Climate Protection program (FCM-PCP) and Sustainable Waterloo's Regional Carbon Initiative. Both voluntary programs require participating organizations to prepare GHG emissions inventories for their operations, develop action plans and commit to reduction targets. The FCM-PCP program also requires the preparation of a community inventory and action plan which was the subject of a recent report to Regional Council (CR-FM-11-006, dated March 8, 2011). A proposal to address the community scope is included in a companion report currently submitted to Council for their consideration (CR-FM-11-012, dated May 3, 2011).

To satisfy the FCM-PCP protocol, the Region's corporate GHG inventory includes emission sources that the Region has operational control over and not just based on its ownership of assets. For example, this means that contracted transport for collection of waste and recyclables is included. The Region's emissions inventory was verified by a third party to ensure accuracy and validity to international standards. A database and inventory management plan was also developed for inventory replication in the future and quality control.

The table below summarizes the scope of Region of Waterloo operations captured within the GHG inventory (by seven major emissions sources along with emissions values calculated for the 2009 base year:

Landfill gas emissions + organic waste processing (green bin, leaves/yard waste)	70,736	47.8%
Fuel use in Fleet and Contracted Transport	36,244	24.5%
Energy use in Buildings (electricity, natural gas, generators)	22,636	15.3%
Water Facilities, Wastewater Treatment and Biosolids Management	16,157	10.9%
Street lighting and Traffic Signals	1,606	1.1%
Staff commute and business travel	565	0.4%
Refrigerants in chillers and air conditioning units	194	0.1%
Total GHG emissions (Tonnes CO₂e)	148,138	100.00%

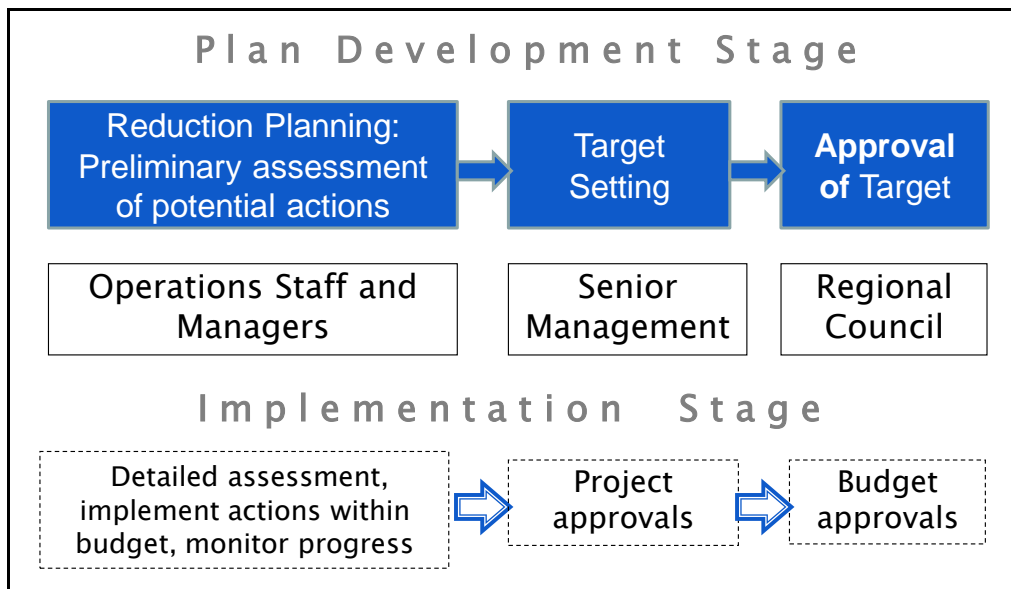
The Region's GHG emissions from operations in 2009 are estimated at 148,138 tonnes CO₂e (carbon dioxide equivalents) and are expected to grow 28% to 189,306 tonnes by the year 2019 due to population growth and the associated greater community demand for Regional programs and services (e.g. police, transit, ambulance, water/wastewater treatment etc.). Fugitive landfill gas (i.e. methane not captured) dominates the inventory accounting for nearly half the Region's GHG footprint. More details of the inventory are included in Appendix A along with emissions forecasts (the attached documentation further breaks down emission sources into 10 categories).

Recent revisions to the FCM PCP protocol required inclusion of transit emissions in the corporate inventory whereas they were previously accounted for in the community inventory. This created a challenge for staff in formulating a reduction target as planned improvements to transit services will include increased emissions in the future from GRT vehicles as the fleet is expanded to accommodate population growth (this includes some form of rapid transit as approved in the Region’s Official Plan and reflected in the Region’s Transportation Master Plan and GRT capital plans). However, this expansion will result in lower community emissions over the long-term.

Action Planning and Implementation Strategy

Action plans and targets are an important component of both the FCM-PCP program and Sustainable Waterloo’s Regional Carbon Initiative. These plans act as the bridge from the accounting of current emissions to the implementation of specific projects that reduce GHG in the future to demonstrate progress towards a reduction target. For municipalities that have an increasing population from year-to-year, the challenge is to reduce emissions while at the same time expanding operations to meet growing demand for community programs and services.

Operational staff were engaged from across the organization to participate in the action planning process. The current action plan quantifies the reduction potential of various initiatives proposed by staff and was developed while aiming to achieve the optimal beneficial balance between environmental, financial and community needs. It was also recognized that the actions had to be pragmatic, feasible and measurable in terms of demonstrating progress towards reducing emissions. A summary of the action planning process and proposed implementation strategy is illustrated below:



The actions calculated within the plan primarily focus on the Region’s highest emission sources. This included a review of approved initiatives that are in progress as well as identification of new initiatives. New initiatives were evaluated based on available information such as estimated costs, technical feasibility and emission reduction potential. Following Council’s consideration of the recommended target, staff will further assess the feasibility and timing of implementing specific initiatives on an ongoing basis and report back periodically on projects already completed with existing resources as well as those ready for implementation and requiring budget approval (see section in Appendix entitled: Implementation, Monitoring and Reporting).

The following table summarizes the impact of initiatives in progress and newly proposed actions by

major emissions source. More details of initiatives that were quantified within the current action plan are included in the Appendix.

	Estimated Potential GHG Reductions in Tonnes (CO ₂ e)			(rounded)
Emission source	Short-term Initiatives 2011-2014	Mid-Term Initiatives 2015-2019	Totals	Percentage of Current Action Plan
Waste/Landfill	12,150	2,040	14,190	61%
Fleet	890	1,400	2,290	10%
Facilities/Streetlights	3,050	910	3,960	17%
WWTP/Biosolids	-	2,560	2,560	11%
Other	330	-	330	1%
TOTALS	16,420	6,910	23,330	100%

Many of the actions which are already occurring or planned for the 2010 - 2014 timeframe will be supported from existing budgets (e.g. new LEED buildings) whereas other initiatives will require further feasibility studies, financial support and approvals in the future. Staff are proposing to provide Regional Council with implementation updates periodically which would include identification of any projects that require additional financial resources beyond existing budgets or external sources of funding available through various grant programs as further addressed below.

GHG Reduction Targets

In the short-term, the current action plan would partially offset the projected growth in the Region's emissions over the next several years. However, staff are recommending that the Region aim to stabilize the Region's corporate GHG emissions at 2009 levels through to the year 2019 which requires a total reduction of 41,000 Tonnes of CO₂e. This will be challenging as increased waste deposition in the landfill (causing more fugitive methane release), approximately 80,000 m² of new Regional facilities and expansion of fleet are expected to impact the Region's carbon footprint the most over the next ten years.

Several Canadian municipalities have established more aggressive GHG reduction targets for their corporate operations. However, discussions with FCM staff and review of other municipalities' progress reports indicate that many jurisdictions are not meeting their corporate targets. Although it is desirable to do as much as possible to mitigate climate change, unrealistic targets are often beyond the practical reach of local government organizations due to a wide variety of constraints. Stabilizing the Region's emissions to 2009 levels is a reasonable yet ambitious stretch as it will require a substantial investment of time and financial resources.

Actions that could potentially reduce over 23,000 tonnes of GHG by 2019 have been identified in the current action plan. The gap between actions quantified to date and the recommended target is proposed to be addressed over the next 2-3 years through an ongoing continuous improvement effort by staff within current asset management, operations and master plan review processes and evaluation of opportunities to use more innovative and alternative energy sources. To this end, staff recommend that an inter-departmental GHG Task Force be established to monitor the implementation of the current action plan, to complete the assessment of additional emission reduction opportunities as well as identify long-term sources of funding to support new projects and report back to Council by the year 2014 with the actions that will meet the 2019 target.

Although the FCM-PCP program requires a target based on total emissions, Sustainable Waterloo allows intensity based targets (e.g. emissions per capita) which enables efficiency improvements to

be monitored over time as the population increases. A reduction of 41,000 Tonnes of GHG would offset the forecasted growth in the Region of Waterloo's emissions over the next 10 years and represent a 14% reduction per capita based on population projections within the Regional Official Plan. It is recommended that the proposed emission reduction targets be reviewed by staff every three years for Council's consideration of any appropriate revisions with regard to progress achieved from the incremental implementation of the action plan.

Carbon Offsets and Renewable Energy Credits

When the Region's corporate GHG Inventory project commenced early in 2010, the issue of carbon offsets and reduction credits were identified within the scope of the study (ref: January 26, 2010, CR-FM 10-003). The consultant retained to assist with this project researched current global carbon market conditions, reviewed relevant Canadian legislation and related regulatory mechanisms and reviewed the Region's inventory and action plan.

Internationally, the global carbon market is volatile and has associated risks and costs for those organizations participating in the buying and selling of carbon credits on a voluntary basis. As a municipal organization, the Region is not obligated to participate in a cap and trade carbon market, nor is there currently any formal federal structure that provides a Canadian carbon marketplace. A recent FCM study prepared for FCM members had similar findings commenting on the low and unpredictable carbon prices anticipated for the next five to ten years associated with the current pre-compliance stage.

The Region does not have any marketable projects eligible for carbon trading due to its commitments to existing third party landfill gas contracts and transference of GHG reductions from its solar photovoltaic projects to the Province through the Feed-in Tariff program. Other projects that reduce GHG from Regional operations would not generate significant enough volume that would meet demand nor justify the administrative costs of verification and administration. The FCM study mentioned above also indicated that, given current carbon prices, the threshold of 100,000 Tonnes of GHG is required to attract market interest and justify the incremental costs associated with generating carbon credits for a project. Other than the landfill, there are no reduction opportunities within Regional operations at that scale.

However, at a small scale and relatively low cost, the Region can augment its GHG action plan with small scale Renewable Energy Credits (REC's) and tree planting projects. Many municipalities have purchased REC's from organizations such as Bullfrog Power who aggregate demand for energy production from provincial sources such as wind, solar, biomass and small scale hydro. These energy credits are audited by a third party to ensure the validity that enables the purchaser to claim a GHG reduction for a set period of time. The Region recently had 21 tonnes of GHG in REC's purchased on their behalf for two years as part of one of its new LEED building construction projects to ensure it met the Silver certification standard. This is a short-term opportunity as GHG reduction claims from REC's will greatly diminish as the Ontario government removes coal from energy production in the next four years thereby making electricity from the provincial grid less GHG intensive.

Tree planting projects, such as the annual re-vegetation of the closed portions of the Waterloo landfill, can also be registered through the GHG Clean Projects Registry (for a relatively small fee) in accordance with international standards and protocols for accounting carbon sequestration provided during the lifetime of a tree. Therefore, consideration of small scale purchase of REC's and formal accounting of the Region's tree planting projects, already included in the proposed action plan, are the only recommended levels of involvement with carbon offset credits at this point in time. Staff will continue to monitor this area in terms of opportunities and risks in the Region's interest.

CORPORATE STRATEGIC PLAN:

The Region of Waterloo's *Corporate GHG Inventory and Action Plan* supports several components of Focus Area 1: Environmental Sustainability as well as the Strategic Vision for a "...sustainable community for current and future generations."

FINANCIAL IMPLICATIONS:

Projects within the action plan that are already in progress with approved budgets are estimated at a value of \$8 million, largely related to several new LEED buildings in design or construction phases. Costs associated with implementing the GHG Action Plan in 2011 are also for the most part expected to be supported by existing budgets. Initiatives requiring additional financial resources beyond existing departmental budgets will either seek external funding sources (i.e. from grant programs) and/or be addressed within the annual budget process. Preliminary estimates of new resources required to implement the action plan are predominantly capital costs in the range of \$6 million - \$8.5 million spread out over the years 2012 - 2019. In turn, implementation of the overall action plan is expected to generate significant savings in energy and fuel costs resulting in a simple payback of approximately 10-12 years. Preliminary estimates also indicate that the few actions requiring a nominal increase in operating expenses amount to approximately \$200,000 per year.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

This report and accompanying recommendations have been reviewed by the interdepartmental Environmental Leadership Committee. Legal Services also provided feedback on the Carbon Offsets and Renewable Energy Credits section of the report.

ATTACHMENTS:

Appendix A: Corporate Greenhouse Gas Inventory and Action Plan for Region of Waterloo Operations.

PREPARED BY: *David Roewade*, Sustainability Planner, Corporate Resources

APPROVED BY: *Gary Sosnoski*, Commissioner, Corporate Resources

APPENDIX A
(CR-FM-11-011)



Region of Waterloo

CORPORATE GREENHOUSE GAS INVENTORY AND ACTION PLAN
FOR REGION OF WATERLOO OPERATIONS

Summary Report

May 3rd, 2011

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BACKGROUND

Concern over the increasing trend in climate change and the degradation of air quality in urban areas has resulted in an international focus on the reduction of anthropogenic greenhouse gases (GHG) emissions worldwide (those caused by human activities). The concern is that growing atmospheric concentrations of GHG have been gradually increasing the global temperature beyond historic levels which, if this trend were to continue, could significantly disrupt climate and ecological systems and consequently our quality of life. There is a growing body of evidence to suggest these disruptions are already beginning to occur in different parts of the world.

As many sources of GHG emissions are energy based, efforts to reduce emissions from the consumption of electricity, natural gas and other fuels have the additional benefit of managing energy resources more sustainably. Energy conservation, using energy more efficiently and exploiting renewable sources of energy all can help achieve greater energy security in the future and often can achieve substantial operational savings. Combustion of non-renewable energy resources also emit air pollutants contributing to smog formation and threatening human health. Therefore reducing GHGs from human activities has a number of potential benefits for environmental, economical, as well as social sustainability.

The Region of Waterloo's *Corporate GHG Inventory and Action Plan* supports several components of the Environmental Sustainability Strategy approved by Regional Council in 2009. The Vision of the Environmental Strategic Framework describes Waterloo Region as a "...sustainable community for current and future generations." The Environmental Policy Statement commits the organization to "...embrace environmental considerations in all of its decisions...". By design, the GHG Inventory Action Plan also incorporates several of the Sustainability Strategy's Guiding Principles:

- *Think Globally and Act Locally - through local decisions and actions, efforts are needed to reduce potential negative environmental impacts to other geographic areas around the planet as well as within our own community.*
- *Balance - requires all plans and operations to strive to achieve the optimal beneficial balance between the environment, community needs and the fiscal capacity of the Region to reduce or mitigate the environmental impact.*
- *Leadership - the need "to walk the talk" by demonstrating environmental leadership within our Regional operations, planning and daily activities.*
- *Accountability, within the context of the Region's commitment to Sustainability, means developing and reporting on environmental progress indicators, setting targets, and striving to continuously improve our environmental track record.*

Additionally, the Environmental Sustainability Strategy includes goal statements such as "*effectively use and manage energy resources and reduce greenhouse gases and other air emissions from ROW activities.*" Therefore the Region's Corporate GHG Inventory and Action Plan represents a significant step in enabling the Region to incorporate Sustainability within its operations.

INTRODUCTION

In the spring of 2010, Regional Council passed a resolution to participate in the national Federation of Canadian Municipalities Partners for Climate Protection program (FCM-PCP) as well as the local Sustainable Waterloo Regional Carbon Initiative. The PCP program, supported by over 200 municipalities across Canada, is comprised of five milestones that each participant commits to achieving for both their organizational scope as well as on a community scale. The five milestones are as follows:

1. Creating a greenhouse gas emissions (GHG) inventory and 10 year forecast;
2. Setting emissions reductions target 10 years from the base year;
3. Developing a local action plan;
4. Implementing the local action plan or a set of activities; and
5. Monitoring progress and reporting results.

The Regional Carbon Initiative was launched in 2009 to encourage and enable local organizations to develop an action plan to reduce their organization's GHG emissions. Sustainable Waterloo currently has 37 local members participating in the initiative from industrial, commercial and institutional sectors as well as support from local government. This initiative has created a local network of organizations engaged in mitigating the negative impact on Climate Change by reducing GHG emissions from activities within Waterloo Region.

The strategic partnerships with FCP-PCP and Sustainable Waterloo are inter-related as they will help the Region of Waterloo become a part of the action oriented environmental leadership being demonstrated in communities across Canada.

The Region has often reported on the environmental benefits of individual projects including GHG reductions on a case by case basis. Over the past decade or so, numerous Regional initiatives have resulted in thousands of GHG emission reductions. However, these achievements have not been measured consistently or tracked towards a reduction target in a consolidated manner to monitor progress on an ongoing basis.

In 2002, Public Health led an interdepartmental team of Regional staff that conducted an air emissions inventory of Regional operations and prepared an action plan however GHG were not within the scope of the project at that time. Therefore this is the first comprehensive account of the Region of Waterloo's organizational GHG footprint.

This document outlines the work carried out over the past year to complete PCP milestones 1-3 for the Region of Waterloo corporate scope. Specifically, a summary of the emissions inventory and forecast is provided along with an overview of the action plan and recommended reduction targets for both the PCP program and the Regional Carbon Initiative.¹

¹ The community scope of the PCP program is proposed to commence later in 2011.

GHG EMISSIONS INVENTORY

The emissions inventory was developed in accordance with the International Local Government GHG Emission Analysis Protocol – Version 1.0 (October 2009) required by the FCM-PCP program. The following is the scope of Region of Waterloo operations included in the inventory based on the operational approach defined within the protocol:

- Buildings and facilities fuel and electricity usage (includes refrigerants in chillers)
- Fleet fuel use and contracted transport (e.g. waste collection/diversion)
- Staff business travel and commute
- Landfill gas emissions (flared and fugitive)
- Wastewater treatment and biosolids management
- Street lighting and traffic signals

The inventory was populated by collecting activity data from Regional operations and applying the most recent emission factors for the six leading contributors to climate change that include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆). For the purpose of reporting, these six chemicals are converted to equivalents of carbon dioxide (CO₂e) based on their recognized global warming potential. For example, methane has a global warming potential 21 times more potent than CO₂ and therefore one tonne of methane equals 21 tonnes of CO₂e.

Activity data refers to the quantified information that is the input to calculating GHG emissions. This data was obtained from a number of existing Regional databases, such as energy and fuel consumption, and was estimated for other sources based on available information such as purchase records, equipment capacity and staff mileage claims. Established engineering models were utilized to estimate emissions for more complex sources such as fugitive emissions from the Region's landfill and air conditioning equipment.²

Emission factors convert inputs such as megawatt hours (MWh) of electricity consumed in a year to CO₂e. For example, the figure of 0.170 tonnes CO₂e per MWh was the emission factor applied to the Region's electricity consumption referenced from Environment Canada's GHG inventory for the year 2008 (published in the spring of 2010).³ More detailed calculations for all Regional emission sources are currently housed within an Excel based inventory management database.

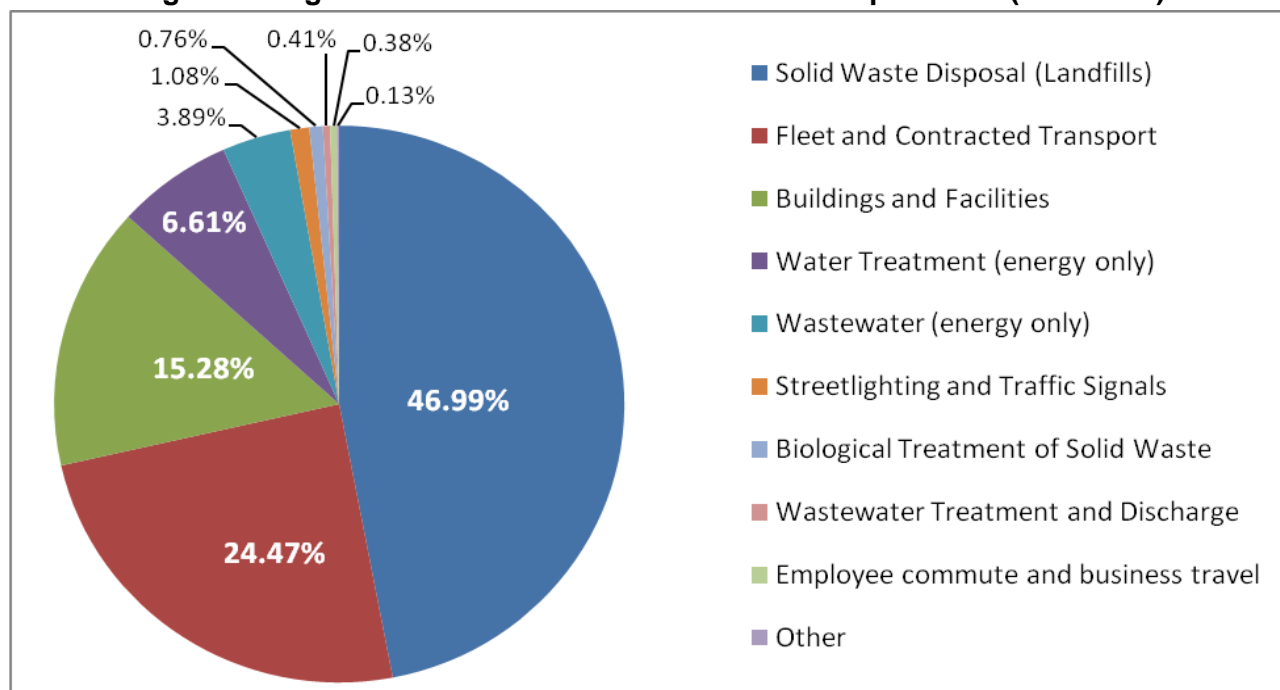
In order to develop a GHG inventory, emissions forecasts and reduction targets, a base year needs to be established. A base year of 2009 was chosen out of four options due to the availability of the most accurate and complete datasets.

² The complete inventory methodology is recorded in an Inventory Management Plan which is essentially a manual for ongoing database management, inventory replication in future years and quality control.

³ Ontario power mix emission factor.

The inventory has been verified by a third party in order to receive a limited level of assurance that it was prepared in accordance with the appropriate international standards in terms of its accuracy and methodology.⁴ Figure 1 provides a snapshot of the proportionate emissions by the major source categories within the scope of the inventory.

Figure 1. Region of Waterloo GHG Emissions from Operations (Year 2009)



Solid Waste Disposal (fugitive methane)	69,521	46.99%
Fleet and Contracted Transport	36,244	24.47%
Buildings and Facilities	22,636	15.28%
Water Treatment (energy only)	9,785	6.61%
Wastewater (energy only)	5,763	3.89%
Street Lighting and Traffic Signals	1,606	1.08%
Biological Treatment of Solid Waste*	1,122	0.76%
Wastewater Treatment and Discharge	609	0.41%
Employee commute and business travel	565	0.38%
Other (e.g. refrigerants in chillers, air conditioning units)	194	0.13%
TOTAL t CO2e	148,138	100%

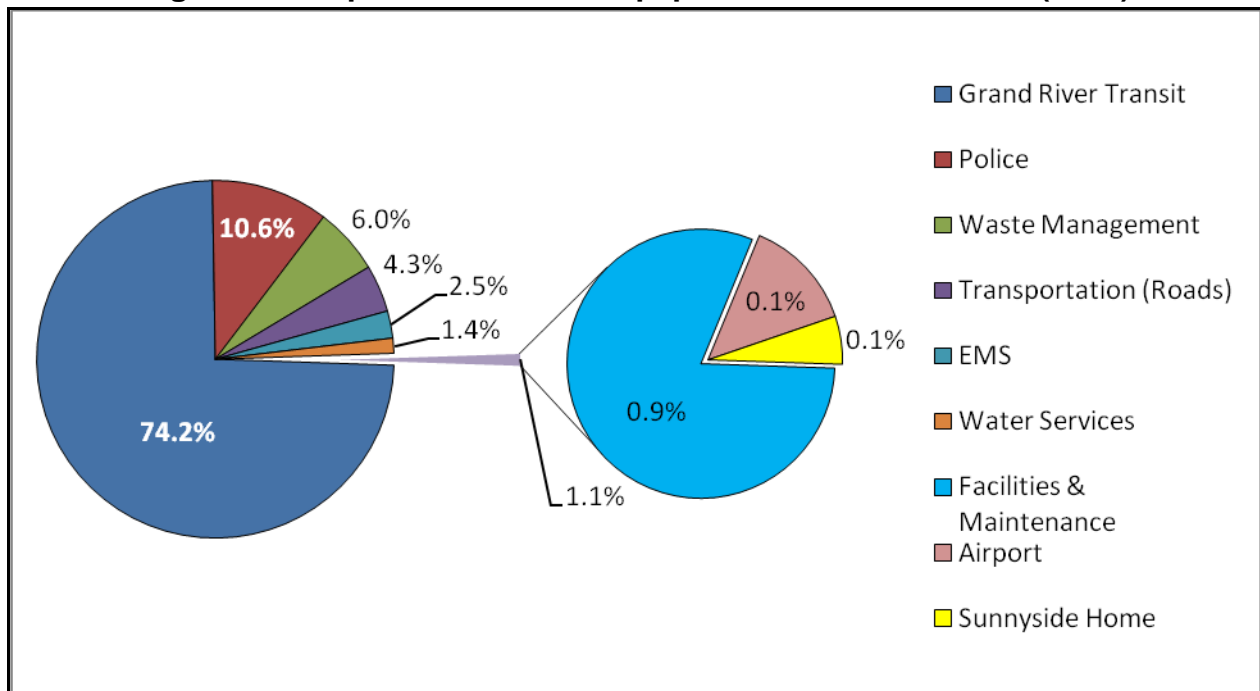
* Green bin materials, leaf and yard waste

⁴ ISO 14064 – 3: *Specification with Guidance for the Validation and Verification of Greenhouse Gas Assertions*, 2005.

The top three sources of GHG emissions from Regional operations are fugitive landfill gas then transport (fleet) and buildings. There are significant amounts of landfill gas captured for use as energy at both the Waterloo and Cambridge landfills. However, a model used for the Region’s compliance reporting to the National Pollutants Release Inventory indicates that 25% of the potential methane in landfills escapes as fugitive emissions before they are captured by gas collection systems. Due to the global warming potential of methane, this source dominates the inventory by accounting for almost half of the Region’s GHG footprint.

The government transport emission source is comprised of 80% Regionally owned fleet vehicles and equipment with approximately 20% attributed to contracted transport of waste/recyclables and water treatment chemicals. Out of the Regionally owned fleet, three quarters of emissions are associated with operation of transit vehicles as illustrated in figure 2. This poses a significant challenge in planning emission reductions and setting targets as expansion of transit service is a core part of the Region’s Transportation Master Plan and the Regional Official Plan. Up to 2009, FCM-PCP participants could include transit in the scope of their *community* inventories. However, the most recent protocol for the PCP program requires this emission source to be included in *corporate* inventories for those Municipalities responsible for providing transit service.

Figure 2. Corporate Fleet and Equipment CO₂e Emissions (2009)



Buildings and facilities include all Regional owned housing units, day cares, operations buildings, museums, transit and airport terminals, library headquarters, Sunnyside, Police and EMS facilities and administrative offices (owned and leased). Emissions from water and waste water operations account for approximately 11% of the Region’s total GHG emissions (including treatment and discharge). These figures were derived from parallel studies conducted as part of the Water Supply and Biosolids Master Plan review process.

EMISSIONS FORECASTS

The FCM-PCP program requires that a status quo forecasted emissions value be calculated for 10 years forward from the base year used in the emissions inventory. Influential variables considered in calculating the Region’s emission forecasts include factors such as:

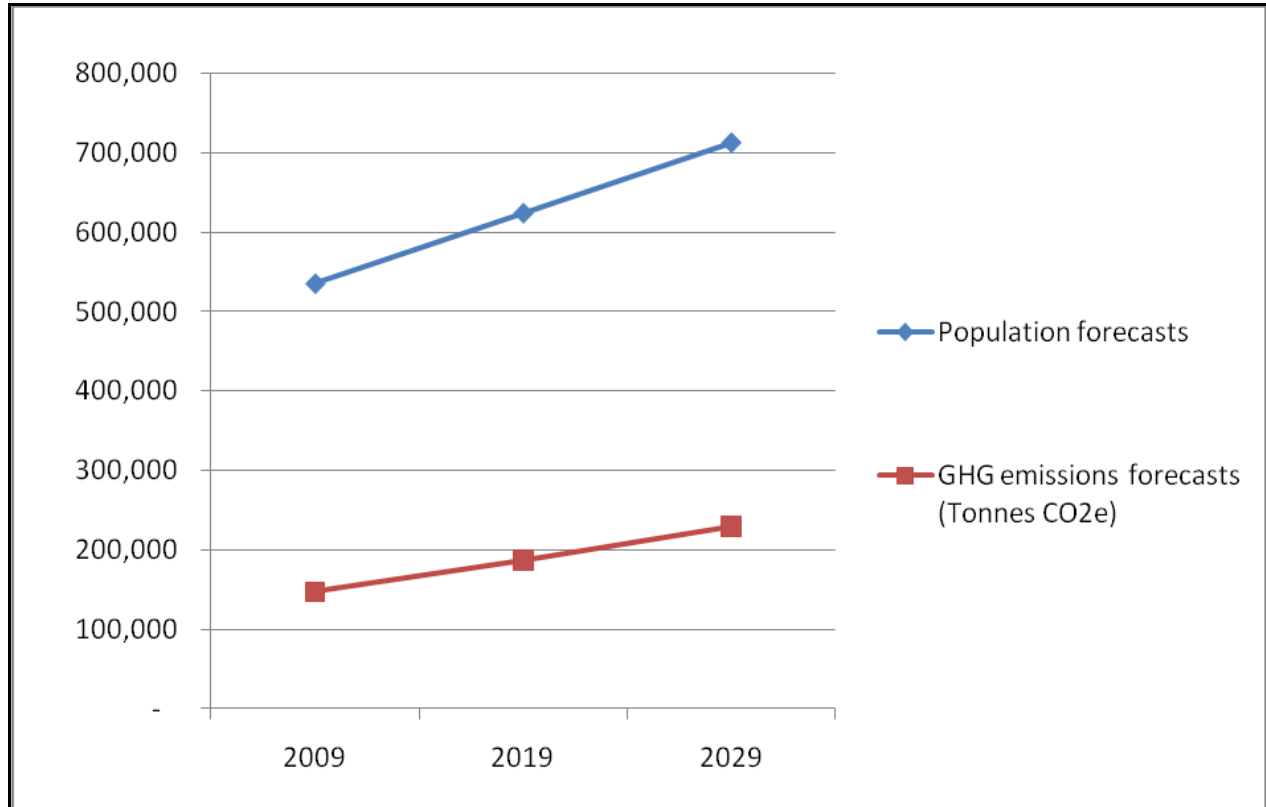
- planned expansion of Regional facilities and fleet (including transit);
- projected population growth and associated increased demand on services such as water and wastewater treatment, waste management;
- changes in the provincial energy mix (e.g. elimination of coal fired power plants), and;
- improvement in vehicle fuel efficiency and air conditioning (use of non-GHG refrigerants).

In addition to calculating projected emissions for the year 2019, forecasts were also calculated for 2014 and 2029 as indicated below in tonnes of CO₂e to provide short-term and long-term values:

2009	2014	2019	2029
148,138	168,722	189,306	227,257

The trend line from the base year to 2029 is similar to the projected population growth during this period as can be seen in figure 3. These forecasts will need to be recalculated in the future as the inventory is updated periodically.

Figure 3. Regional Corporate GHG Emissions and Population Forecasts



ACTION PLAN

Action plans and targets are an integral part of the PCP program and Regional Carbon Initiative and act as the bridge from the accounting of emissions in the base year to the implementation of specific projects that reduce GHG in the years to follow. For any municipality that has an increasing population, the challenge is to reduce emissions while at the same time expanding operations to meet growing demand for community programs and services. Furthermore, as the Region of Waterloo has been implementing many emission reduction initiatives over the past decade or so, there is less “low-hanging fruit” that can be implemented quickly, easily and inexpensively.

The approach used by staff was to develop an action plan that is pragmatic in its focus and detail yet still ambitious enough to demonstrate progress from the status quo. Given the challenges and constraints identified within the Inventory and Forecast section of this document, ***the overall goal of the Region’s Corporate Climate Action Plan is to reduce the GHG intensity of operations while continuing to provide high quality community programs and services to a growing population.***

The strategy incorporated into the development of the action plan is as follows:

- 1) Review existing or recently approved initiatives that are in progress of being implemented and quantify their expected impact on emissions;
- 2) a) Identify new initiatives, prioritizing the Region’s three highest emission categories, and estimate their GHG reduction potential and cost of implementation;
b) Include consideration of standard asset replacement schedules for incremental upgrades and improvements over a ten-year period;
- 3) Propose a reduction target based on numbers 1 and 2 above and obtain approval from Regional Council, and;
- 4) Follow-up with individual departments to further assess the feasibility and timing of implementing specific initiatives on an ongoing basis and report back periodically on projects already completed as well as those ready for implementation while highlighting any budget implications (see section entitled: Implementation, Monitoring and Reporting).

Initially, three different timeframes were identified within the action planning process:

- short-term including the years 2010 to 2014;
- mid-term: 2015 to 2019 and;
- long-term; 2020 – 2029.

However the focus was placed on the short and mid-term timeframes as there are too many uncertainties to assess specific emission reduction initiatives with a reasonable level of validity and accuracy in the long-term at this point in time.

Regional operational staff were engaged via surveys, interviews, workshops and site audits to provide input into the plan’s development. This included a brief review of reduction initiatives that had been implemented over the past few years, compilation of relevant approved initiatives that are currently being implemented or being planned for implementation in the short-term as well as identification of

new initiatives that could be implemented in the next 10 years. Options were evaluated based on available information such as estimated cost, technical feasibility and emission reduction potential. Initiatives that were fully implemented before or during 2009 cannot be included in the emission reduction plan as they will already be accounted for in the base year inventory. In addition other large projects such as the methane gas capture at the Region's landfills and installation of solar panels on Regional buildings are also ineligible as the emission reduction technically belongs to other organizations.⁵

Over 100 actions were identified initially with approximately 50 remaining in the current proposed action plan. Those that were not included either lacked the necessary information for evaluation or were insignificant in reduction potential. Initiatives that are already approved and are in progress can be included as part of the targeted emission reduction if they were not accounted for within the 2009 inventory database. These 'committed' projects are incorporated within the action plan and were estimated to reduce approximately 16,000 tonnes of GHG when completed as listed below:

- Expansion of green bin program which reduces landfill methane gas production = reduction of 9600 Tonnes annually by the year 2019
- Solar flaring of methane at landfill for odour reduction (reduces fugitive methane emissions from landfill) = 4600 T/yr.
- Construction of six new LEED buildings (energy reductions compared with construction to model national building energy code) = 1600 T/yr.
- Purchase of 6 new hybrid diesel-electric transit buses (compared to conventional standard diesel GRT buses) = 80 T/yr.
- 100 Furnace upgrades in Regional Housing = 50 T/yr.
- Lighting and equipment retrofits in Regional administration buildings = 50 T/yr.
- Green energy purchase (LEED building) = 20 tonnes (years 2010 and 2011 only)

Including the impact of committed actions is important to acknowledge the effect of current environmental programs as well as more resource efficient buildings, equipment and vehicles being built or purchased as they will improve the sustainability of operations in the years to come. The following table summarizes the impact of both committed/approved actions as well as suggested new initiatives quantified within the action plan:

Emission source	Estimated Potential GHG Reductions in Tonnes (CO ₂ e)			(rounded)
	Short-term Initiatives 2011-2014	Mid-Term Initiatives 2015-2019	Totals	% of Current Action Plan
Waste/Landfill	12,150	2,040	14,190	61%
Fleet	890	1,400	2,290	10%
Facilities/Streetlights	3,050	910	3,960	17%
WWTP/Biosolids	-	2,560	2,560	11%
Other	330	-	330	1%
TOTALS	16,420	6,910	23,330	100%

⁵ The Region receives revenue for these initiatives instead of being credited with achieving the emission reduction.

As previously indicated within the committed projects list, two existing actions related to landfill emissions address the Region's largest single source of GHG emissions and represent the majority of potential reductions in tonnes. However, many of the new individual actions are in the Facilities and Fleet area and may require pilot projects for evaluation before full implementation is considered within the targeted operations. There are some projects which are also of a large scale and will require implementation to be phased-in over multiple years. The emission reduction potential of the initiatives quantified within the action plan are summarized in the following table and include estimated implementation costs and potential savings (several initiatives are bundled together here for brevity):

Suggested GHG Emission Reduction Initiatives: 2011 – 2019

Initiative	Estimated Annual* GHG Reduction (T CO ₂ e)	Year(s) of Implementation	Estimated capital cost (annual = operational cost)	Estimated payback period
Water and Wastewater Systems				
Energy efficiency (process design) initiatives as part of Biosolids Master Plan (BMP)/ WW treatment review	2560	2014 – 2019	(Incl. in BMP implementation budget)	Not Applicable (NA)
Fleet Initiatives				
Use of B5 Biodiesel added to current GRT diesel fuel	1065	Pilot 2012 All Buses: 2014	\$137,000/year	NA
Green Fleet Procurement (hybrids, after market technology)	525	2011 - 2019	\$2.8 million	7-8 years
Vehicle data management ⁶ , centralized fleet pool, training (e.g. idling reduction)	440	Pilot: 2011 Expanded: 2012 - 2019	\$1.15 million	10 years
Use of B5 Biodiesel in corporate fleet	150	2012	\$10,000 (capital) + \$19,000/year	NA
Facilities and Streetlight Initiatives				
Retrofit streetlights on Regional roads	680	2014 – 2019	\$3.4 million	10 years
Six different HVAC retrofit projects in various Regional buildings	480	2011 - 2019	\$1,272,000	10 years
650 Furnace upgrades in Regional Housing units (within annual replacement schedule)	230	2011 - 2019	\$260,000	10 – 12 years
Green Energy Purchase for a high profile public Regional building	670* (total for 3 yrs.)	2012 - 2014	\$37,200	NA
Interior/Exterior lighting retrofits and upgrades at various Regional buildings	100	2011 - 2014	\$1,164,000	10 – 15 years
Other Initiatives				
Accounting of Regional tree planting (e.g. in closed cells of landfill)	330* (total for 4 yrs.)	2011 - 2014	\$10,000	NA
Other staff education related projects to reduce energy use and business travel	100	2011 - 2019	<i>unavailable</i>	<i>unavailable</i>
Total: 7330 Tonnes				

⁶ Vehicle data management is a pre-requisite to effective monitoring of most Green Fleet initiatives.

Many action plan items will have payback periods in the 7-12 year range based on cost savings for reduced fuel or energy consumption whereas only a few initiatives are expected to influence a relatively small increase in annual operating costs. Preliminary capital costs calculations for new projects are based on pre-feasibility estimates and may not include more detailed studies required prior to implementation (see section Implementation, Monitoring and Reporting).

More complex, innovative or longer-term initiatives have yet to be assessed and incorporated within the current action plan. For example, staff plan to investigate:

- Greening the Region's information technology centre
- Cogeneration – combined heat and power, waste heat recovery
- Further renewable and alternative energy production opportunities
- Use of electric vehicles with renewable energy charging stations
- Alternatives to managing waste when the current landfill is full

Ongoing assessment of these and other initiatives will need to be a part of the continuous improvement process adopted by staff to keep the plan up to date, relevant and effective.

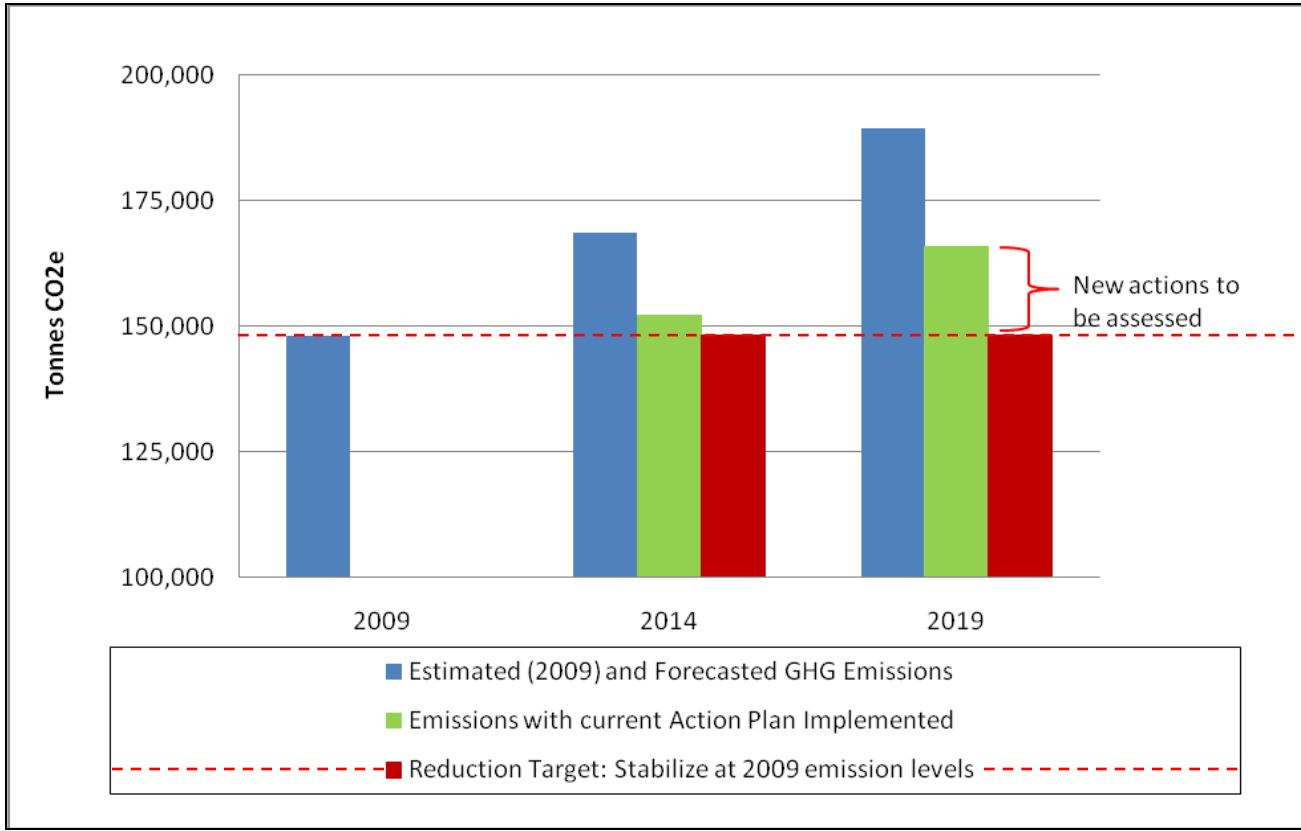
REDUCTION TARGETS

Several municipalities have considered different target reduction scenarios in establishing their commitment to the FCM-PCP. Status quo (i.e. no change in current operations) is the base scenario used in the forecasts which is not practical to maintain as there is a clear business case for many projects that have both financial and environmental benefits. Another option is to set a target based on an international protocol or established national/provincial GHG reduction targets which usually use 1990 as the base year. As the Region's base year is 2009, reduction target percentages established within senior government GHG plans are not suitable to adopt as the 1990 emissions levels for Regional operations are unknown.

FCM-PCP suggests a 20 per cent reduction below the baseline year GHG emissions for municipal operations within 10 years. As this would require a reduction of over 70,000 Tonnes of CO₂e, this is not seen as practical due to the forecasted growth in the Region of Waterloo's emissions. Furthermore, discussions with FCM staff and review of other municipalities' progress reports indicate that many jurisdictions are not meeting their corporate targets. Although it is desirable to be aggressive on mitigating climate change, unrealistic targets are often beyond the practical reach of local government organizations given a variety of constraints (e.g. growing communities, budgets).

Another option is to offset the projected growth in emissions by stabilizing emissions at the base year level. This would yield an improvement in the GHG intensity of Regional operations (e.g. per square metre, per capita). Stabilizing the Region's emissions to 2009 levels is a reasonable yet ambitious stretch as it will require a substantial investment of time and financial resources. This target requires reductions of 41,000 tonnes of GHGs in the next 10 years to offset the projected 28% growth in emissions from Regional operations. **Therefore the recommended mid-term target for the FCM-PCP program is to maintain 2009 emission levels through to 2019.** Figure 4 illustrates this target in relation to emission projections and quantified actions within the proposed plan.

Figure 4. Forecasted GHG Emissions and Targeted Reductions



In the short-to-mid-term (2011-2019), the recommended target may not reduce the Region’s total or absolute emissions but will improve them on a per capita basis as illustrated in the table below. ***A per capita GHG reduction of 14% by year 2019 is the recommended target for Sustainable Waterloo’s Regional Carbon Initiative given that the Region’s operations are so closely tied to providing programs and services to an increasing population.*** In the long-term (2020 – 2029) absolute reductions are more likely achievable with advances in technology, cleaner energy sources and ongoing integration of environmental considerations in Regional decision-making.

<i>(Per capita figures rounded)</i>		Status Quo	Reduction to 2009 levels	% Reduction per Capita (compared to 2009)
Year	Population	T CO2e Per Capita	T CO2e Per Capita	
2009	534,900	0.28	0.28	
2019	623,450	0.30	0.24	14%
2029	712,000	0.32	0.21	25%

It is recommended that the targets established for both the FCM-PCP program and Sustainable Waterloo be re-evaluated by Regional staff periodically to assess if more stringent targets are achievable as progress on implementing the action plan is made over time (see next section: Implementation, Monitoring And Reporting).

IMPLEMENTATION, MONITORING AND REPORTING

Actions that could potentially reduce over 23,000 tonnes of GHG by 2019 have been identified in the current action plan. However, several of these initiatives will still require feasibility assessments, pilot studies, various approvals as well as sources of funding to be identified. The balance of the 2019 target is proposed to be made-up of further best management practices review and more in-depth analysis of emission reduction opportunities within current asset management, operations and master plan review processes over the next 2-3 years. This will be accomplished by establishing an inter-departmental GHG Task Force similar to the one used from 2002 – 2005 for the Region's Clean Air Plan and more recently with the staff GHG workshops.

It is recommended that this new Task Force be established to:

- a) monitor the progress of assessing and implementing GHG reduction initiatives;
- b) complete assessment of additional actions to further reduce emissions in order to meet the 2019 target;
- c) recommend long-term sources of funding to support implementation of new GHG actions.

It is further recommended that the Task Force be chaired by the Region's Sustainability Planner and report to the Environmental Leadership Committee periodically and the Corporate Leadership Team as appropriate. Each department will be responsible for leading the implementation of its initiatives within the action plan. The GHG Task Force will compile additional data as initiatives are assessed and/or implemented to aid in monitoring progress towards the Region's reduction targets. The GHG database will be managed by the Sustainability Planner.

As part of the public reporting required by the FCM-PCP program and Sustainable Waterloo's Regional Carbon Initiative, Regional Council will receive progress updates as the action plan is implemented. The inventory and forecasts should be recalculated every three years to ensure accurate monitoring of progress by using the most current actual input data and up to date forecast variables in relation to established targets. At that time, reduction targets can also be reviewed based on the performance achieved, and consideration given to revisions that would make the Region's reduction target more aggressive.



REGION OF WATERLOO

**CORPORATE RESOURCES
Facilities Management and Fleet Services**

TO: Chair Tom Galloway and Members of the Administration and Finance Committee

DATE: May 3, 2011 **FILE CODE:** D06-80

SUBJECT: THE CLIMATE COLLABORATIVE: A COMMUNITY-WIDE GHG ACTION PLAN

RECOMMENDATION:

THAT the Regional Municipality of Waterloo authorize the Commissioner of Corporate Resources to enter into a Collaborative Agreement with both Sustainable Waterloo and Waterloo Region Green Solutions (REEP) for the purposes of developing a *community scale GHG emissions inventory and action plan in Waterloo Region* further described in report CR-FM-11-012 dated May 3rd, 2011 with such agreement and documentation to be to the satisfaction of the Regional Solicitor.

SUMMARY:

Regional Council passed a resolution on April 6, 2010 (CR-FM-10-007) to join the Federation of Canadian Municipalities Partners for Climate Protection program (FCM-PCP). The PCP program requires participating organizations to prepare greenhouse gas (GHG) emissions inventories and action plans for their operations and at a community scale. Regional staff have prepared a comprehensive emissions inventory, forecasts and reduction plan for the Region's *corporate operations* (CR-FM-11-011, dated May 3rd, 2011). As the commitment to the FCM-PCP program also requires municipalities to prepare a *community-scale GHG Action Plan*, staff are recommending formalizing a collaborative partnership with two local non-profit organizations to assist in its development. There will be opportunities for other stakeholders to participate in this endeavour as the project develops.

REPORT:

Many municipalities across Canada have made a commitment to the FCM-PCP program by adopting its structured framework to establish and implement a community-wide GHG inventory and action plan. A strategic commitment to both the FCM-PCP program and the local Sustainable Waterloo Regional Carbon Initiative was made by Regional Council in the spring of 2010 (CR-FM-10-007). Both of these programs require participating organizations to prepare a corporate scale GHG inventory, action plan and commit to a reduction target for their operations whereas the FCM-PCP also requires the same at a community scale (e.g. Waterloo Region).

Participation in these programs is enabling the Region of Waterloo to build on collaborative efforts of local organizations and strengthen partnerships with other stakeholders such as area municipalities and local utilities, among others. Staff recently provided Regional Council with an update on the efforts of two local non-profit organizations that are leading this collaborative approach to environmental stewardship (CR-FM-11-006, dated March 8, 2011).

Sustainable Waterloo and REEP Green Solutions have demonstrated a strong willingness to partner with the Region of Waterloo to assist in developing a GHG action plan for the local community by gaining support of their Board of Directors, submitting funding applications to grant agencies and facilitating discussions with other potential stakeholders. Regional staff has worked

closely with Sustainable Waterloo and REEP to develop a proposed project which is entitled - *The Climate Collaborative: a Community-Wide GHG Action Plan in Waterloo Region*. A Collaborative Agreement has been prepared which outlines how the three organizations could work together to develop a community scale GHG action plan which staff are recommending be formally supported by Regional Council (The Agreement documentation has met the satisfaction of the Legal Services division and is available to Council upon request).

The overall purpose of *The Climate Collaborative* project is to demonstrate environmental leadership within the community to ensure a thriving and sustainable Waterloo Region for current and future generations. There are multiple related environmental issues associated with developing a GHG action plan for a community such as the sustainable management of energy, water and land resources as well as waste management and optimizing transportation infrastructure. *The Climate Collaborative* represents a strategic opportunity to leverage social capital, commitment and talent of local environmentally conscientious organizations and residents in a manner that is in alignment with the Region's Vision, Environmental Sustainability Strategy and Regional Official Plan.

There will be a variety of opportunities for other organizational stakeholders to participate (within their capacity) during the different phases of the project which involves the development of:

- A baseline inventory and ten-year forecast of GHG emissions caused by activities originating within Waterloo Region (Fall 2011 – Spring 2012);
- A local GHG action plan including public consultation (Spring 2012 to calendar year-end);
- Reduction targets endorsed by those organizations participating in the collaborative who have the collective authority to implement the individual actions (by Spring 2013);
- A monitoring process to publicly report progress made over time towards the approved target (included in the timing of developing the reduction targets), and;
- Consistent community-wide communication strategies/messages when actions are implemented to ensure optimal buy-in and participation of target audiences such as residents, employees and employers.

A draft Partnership Terms of Reference addressing potential roles and responsibilities of interested stakeholders has been developed for discussion purposes and is being circulated to other organizations as the Region, Sustainable Waterloo and REEP approach additional potential partners to consider participation in *The Climate Collaborative*. Preliminary discussions have occurred between staff of the Region, Sustainable Waterloo and REEP and staff from the Cities of Cambridge, Kitchener and Waterloo to discuss plans for this community-scale endeavour.

The three local cities are at different stages of considering greenhouse gases within their respective community sustainability or environmental strategic planning and implementation processes. However, there is enough collective interest on different phases of the project to continue the dialogue. The City of Waterloo recently received endorsement from its Citizen's Environmental Advisory Committee in March 2011 as well as an approval in principle from their City Council to participate in *The Climate Collaborative* on April 18, 2011. The Executive Director of Sustainable Waterloo has also been recently making initial contact with Township Council's on a high level with the intention to follow-up with staff to explore their interest in the *Climate Collaborative* and appropriate level of involvement.

Preliminary efforts have also begun to engage the local utility companies. REEP and Sustainable Waterloo have already secured most of the regional energy data from local utilities in order to estimate GHG emissions from buildings and exterior lights within the community. Regional staff have submitted a proposal to Union Gas to formally support and participate in the project as part of their Centennial Community Signature Grant initiative celebrating 100 years of operation. It is the intention of the *Collaborative* to approach all the local utilities to invite their participation in the

projects phases in a way that fits with their organizational mandate and focus (e.g. regarding energy conservation).

Decisions on funding submissions to grant agencies made by Sustainable Waterloo and REEP are expected early in the summer, including applications to the Ontario Trillium Foundation and the Kitchener and Waterloo Community Foundation. Regional staff are also planning a grant application to the FCM Green Municipal Fund later in 2011 when a call for proposals is anticipated. Periodic updates will be provided to Regional Council on this collaborative, should they approve the Region's participation, as the project develops.

CORPORATE STRATEGIC PLAN:

Focus Area 1 - Protect and Enhance the Environment:

- Objective 1 - Develop an integrated approach to environmental sustainability

Focus Area 6 - Service Excellence

- Objective 6 - Strengthen and enhance partnerships

FINANCIAL IMPLICATIONS:

The Region of Waterloo's financial contribution toward *The Climate Collaborative* was approved within the 2011 budget process as part of the resources requested to implement the Region's Environmental Sustainability Strategy. Specifically, a portion of the funds approved for technical consultation is intended for use to obtain consultant expertise which will assist staff in the development of the community GHG inventory and action plan. These funds are being leveraged with grant requests to other funding agencies (as described above) as well as potential contributions from other stakeholders. The Region is also planning to contribute in-kind staff time to this project. Any additional financial contributions to this project on the Region's behalf will be subject to Council approval.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

Development of this report included interdepartmental feedback via the Environmental Leadership Committee.

ATTACHMENTS:

PREPARED BY: *David Roewade*, Sustainability Planner, Corporate Resources

APPROVED BY: *Gary Sosnoski*, Commissioner, Corporate Resources

COUNCIL ENQUIRIES AND REQUESTS FOR INFORMATION**ADMINISTRATION AND FINANCE COMMITTEE**

Meeting date	Requestor	Request	Assigned Department	Anticipated Response Date
04-Mar-08	P&W	Best Value Bidding	Finance/Purchasing	Jan-2011
09-Dec-09	Budget Committee	Comparison of reserves, expenditures and debt-per-capita between Region and comparator municipalities	Finance	May-2011
26-Jan-10	Committee	Report on a policy related to development charge grants, exemptions and deferral requests, to include past history/practice, implications, and options.	Finance	May 2011
08-Jun-10	A&F	Review current funding for the tax increment grant program, with full range of funding options.	Finance	Spring 2011
23-Nov-10	A&F	Assess the application of the prequalification guidelines (both generals and sub contractors) and report back to A & F after one years experience	Finance	Nov-2011