

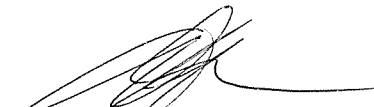


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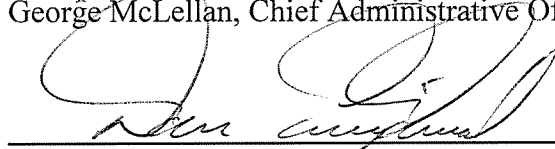
Halifax Regional Council
Committee of the Whole
September 13, 2005

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



George McLellan, Chief Administrative Officer



Dan English, Deputy Chief Administrative Officer

DATE: September 1, 2005

SUBJECT: Corporate Greenhouse Gas Emissions - Local Action Plan

ORIGIN

March 30, 2004, Information Report to Council
March 22, 2005, Information Report to Council

RECOMMENDATION

It is recommended that :

HRM Council amend the time frames in its original (1997) Partners for Climate Protection voluntary commitment to reduce greenhouse gas emissions to a revised voluntary target of reducing corporate HRM greenhouse gas emissions by 20% from 2002 levels by 2012 as detailed in the attached GHG Local Action Plan.

BACKGROUND

In accordance with the “Healthy, Sustainable, Vibrant Communities” theme, and scorecard linkage of a healthy and clean environment, HRM is committed to clean air, land, water and energy use for its residents.

A major component of clean air is greenhouse gas emission reduction, a leading contributor to climate change (Global Warming).

Greenhouse gases are invisible gases that let sunlight in but trap the earth’s heat creating the greenhouse effect and warming.

The most abundant greenhouse gas is carbon dioxide (CO₂). While CO₂ is naturally released into the atmosphere, it is also a primary by-product released when fossil fuels such as oil, gas, and coal are burned.

On March 22, 2005, staff presented an Information Report to Regional Council which provided an update on the corporate greenhouse gas emission plans and climate change strategy. Attached to this Information Report was the HRM Greenhouse Gas Emissions Inventory, Forecast and Target Report.

It provided the data for Milestones 1 and 2 for the Partners for Climate Protection program.

Staff advised that we would return later in the year with the detailed GHG Local Action Plan (Milestone 3) for Council’s review and consideration.

Partners for Climate Protection (What is it?)

As a quick background, in 1997, HRM officially joined the Federation of Canadian Municipalities (FCM) 20% Club, committing to reduce its GHG emissions. The program is now called Partners for Climate Protection and includes completing the following five Milestones:

1. GHG Inventories
2. GHG Targets
3. Local Action Plan
4. Implementation Plan
5. Monitoring

This is a voluntary commitment and a municipality may adjust its targets at any time to reflect new opportunities or challenges. In 1997, HRM Council committed to a 20% GHG emission reduction below 1990 levels by 2007.

DISCUSSION

Greenhouse Gas Emissions Inventory, Forecast and Target Report (ICLEI Report)

The International Council of Local Environmental Initiatives (ICLEI) Report provided a detailed assessment of present greenhouse gas emission inventories, forecasts and proposed targets for both corporate HRM and the community as a whole. The report recommended that HRM take a very aggressive approach (optimistic scenario) and aim to reduce its greenhouse gas emissions by a 20% reduction from 2002 levels by 2012. The original HRM commitment was a 20% reduction below 1990 levels by 2007. However, a more realistic and achievable time frame was needed as growth alone contributed to an additional 20 - 25% increase during this period.

Greenhouse Gas Emissions - Local Action Plan

The **Local Action Plan** (Executive Summary attached) is a component of Climate SMART (Sustainable Mitigation Adaptation Risk Toolkit) and represents completion of Milestone 3 of the Partners for Climate Protection program. As a note of interest, earlier this year, Climate SMART was awarded the FCM 2005 Sustainable Community Award for Sustainable Community Planning. Councillor Jim Smith accepted the award on behalf of HRM.

Climate SMART is a collaborative partnership involving several federal and provincial government departments, the Federation of Canadian Municipalities (FCM), HRM and others. Its focus is an integrated approach to climate change mitigation and adaptation.

The Executive Summary for the GHG Emission Local Action Plan provides the highlights of the proposed actions, cost benefits, time frames and anticipated emission targets. The detailed GHG Emissions Local Action Plan is available electronically.

This part of the Local Action Plan is specific to corporate HRM. Immediately upon Regional Council's review and approval and/ or other recommendations, the Community component will be completed this Fall. Staff believe it is important to lead by example and have our own house in order.

BUDGET IMPLICATIONS

Funding for the GHG Emission Local Action Plan is a component of Climate SMART. Climate SMART has been funded overall through an innovative and collaborative approach.

A 35K in-kind contribution from HRM has leveraged over 500K in cash and in-kind contributions from the Federation of Canadian Municipalities (FCM) Green Municipal Enabling Fund; Natural Resources Canada; Nova Scotia Department of Energy; Environment Canada; and the Nova Scotia Department of Environment and Labour to complete Climate SMART.

The attached Executive Summary highlights by sector, the actions, costs, benefits and time frames to meet the recommended 20% emission reduction from 2002 levels by 2012.

Staff from the appropriate Business Units will be incorporating in proposed business plans and budgets over the next few years, the capital and operational investments required to meet the Local Action Plan.

Staff will also continue to investigate and pursue federal and Kyoto related GHG emission reduction funding and opportunities that can assist HRM in meeting these targets.

Regional Plan

This Local Action Plan for GHG emissions meets the proposed deliverables of Item 2.7 Emission Reduction Functional Plan in the Regional Plan.

Corporate Scorecard

Greenhouse gas emissions and energy efficiency are key environmental indicators in the Corporate Scorecard.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

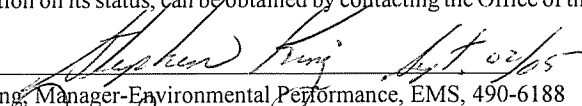
Regional Council could decide to not pursue the voluntary greenhouse gas emission reduction targets of 20% of 2002 levels by 2012. However, major environmental, energy efficiency, social and health benefits would not be achieved, thus this alternative is not recommended.

ATTACHMENTS

Attachment #1: Executive Summary - HRM GHG Emissions Local Action Plan

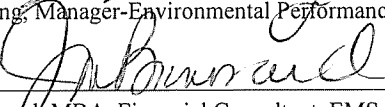
Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by:



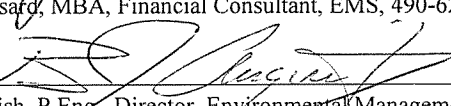
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**Halifax Regional Municipality
Corporate Local Action Plan
To Reduce Greenhouse Gas Emissions:
Executive Summary**

August 2005



Submitted by:
Dillon Consulting Limited



Executive Summary:

Halifax Regional Municipality Corporate Local Action Plan to Reduce GHG Emissions

Background and Objectives

Halifax Regional Municipality (HRM) is committed to maintaining clean air, land, water and energy use within the region, in keeping with the "Healthy, Sustainable, Vibrant Communities" theme and scorecard criteria of a healthy and clean environment. Through the development of a Local Action Plan (LAP) to reduce its greenhouse gas emissions (GHGs), HRM envisions a great opportunity to become a leader in environmental sustainability amongst Canadian Municipalities. By preparing this plan, HRM will also demonstrate to the community at large their leadership and dedication to controlling energy use, operating costs, and GHGs. The LAP is a component of Climate SMART (Sustainable Mitigation and Adaptation Risk Toolkit) and is intended to provide a plan of action and to assist HRM incorporate GHG emission reduction issues into their decision-making processes.

This document comprises HRM's LAP and represents the completion of Milestone Three (Develop a LAP) in the Partners for Climate Protection (PCP) program framework. PCP is made up of upwards of 123 Canadian Municipal Governments that have committed to reducing the emissions of GHGs in their corporate operations and within the broader community. The PCP comprises a five-milestone framework to guide municipalities in their efforts to reduce GHG emissions. HRM officially became part of the Federation of Canadian Municipalities (FCM) 20% club, now referred to as the PCP program, in 1997 and was one of the first four cities to sign on and make the commitment to reduce its GHG emissions. Regional council committed to reducing GHG emissions 20% below 1997 levels by 2012 as part of the PCP program. The LAP provides these necessary details for Council's consideration in approving the direction of initiatives, which will then be incorporated into the Fiscal 2006/07 business planning process. The LAP sets out how HRM will reduce emissions and energy use through municipal operations. This corporate LAP was developed prior to the Community LAP because HRM is committed to leading by example and providing direction for the broader community.

Corporate Inventories

In 1997, HRM used 625,582 GJ of energy in its corporate operations, resulting in 85,840 tonnes of GHG emissions. Approximately 58% of emissions were generated through building operations, followed by 26% from water and sewage, 10% from streetlights, and 6% from the corporate fleet. In 2002, a total of 730,138 GJ of energy was used for municipal operations, resulting in 101,493 tonnes of GHG emissions. Energy use within HRM's buildings accounted for 56% of all emissions, followed by 26% from water and sewage, 10% from streetlights, and 8% from the corporate fleet. The increase in GHG emissions in HRM's corporate sector between the years 1997 and 2002 can be accounted for, in part, by the growing infrastructure needs and municipal services of an increased population.

GHG Reduction Measures

HRM has been making strides towards GHG reductions since their commitment in 1997 and this report provides a pathway of additional measures for HRM's implementation towards the 20% GHG reduction target over the next 7 years. Measures such as building audits and retrofits, district energy systems, natural gas conversions, LED traffic light retrofits, fleet downsizing, anti-idling campaigns, pumping station retrofits and water conservation measures are just some examples of the initiatives that will guide HRM towards becoming an environmentally sustainable community. Long-term actions recommended in this plan include green procurement policies, wind energy planning, new building design and long range

planning, solar LED street lighting and green energy purchases. Although all waste measures are allocated to the Community LAP, the Highway 101 Landfill Gas to Energy Project and Otter Lake Methane Flaring projects were summarized in the LAP to further highlight HRM's corporate commitment to reducing GHGs.

The LAP encompasses the implementation costs, annual cost savings, annual energy savings and annual GHG savings for individual measures within each corporate sector (i.e. buildings, vehicle fleet, street lighting and water & sewage). These parameters are presented in Table E1. The implementation costs do not include the costing for all measures outlined, due to the implementation timing and extent of certain measures not being well defined at this local action planning stage.

Table E1 Corporate Sectors Measures Summaries

Sector	Implementation Costs (\$)	Annual Cost Savings (\$)	Annual Energy Savings (GJ)	eCO2 Savings (tonnes)
Buildings	10,588,000	1,418,000	73,677	12,792
Vehicle Fleet	110,040	300,000	15,007	2,474
Street Lights	1,697,000	253,015	11,524	2,442
Water & Sewage	Not Available ¹	173,590	6,475	1176

Reduction Target

Dillon recommends that HRM change its reference baseline year to 2002 and report the **target as 20% below 2002 levels**, which is acceptable within the PCP program. Using 2002 as a baseline year, the combined efforts of all measures within each of the corporate sectors are 18,884 tonnes from 2002 through to 2012. However, using absolute numbers based on corporate growth, these reductions leave HRM 6% above 2002 GHG levels. Significant growth projected within HRM's corporate service requirements will result in continued growth in energy consumption and GHG emissions. This will make it very challenging for HRM to achieve absolute reductions in GHG emissions below 2002 levels. The overall challenge with reducing GHG emissions is that HRM is a growing community and, consequently, this 20% goal becomes a moving target. The emissions level is increasing at a steady pace with growth of the community and milestone targets need to be established that factor in growth. Expressing the GHG target in relative terms, as opposed to absolute terms, helps factor in the effect of population growth on the target and presents a more relevant target for growing communities such as HRM. In relative, per capita terms, the LAP measures reduce the buildings and vehicle fleet sectors GHG emissions 18% and 47% below 2002 levels, respectively, and increase the street lighting and water & sewage sectors GHG emissions 13% and 24% above 2002 levels. Overall, this would provide a reduction of 6% below 2002 levels.

It is also useful to view this target through a comparison of 2012 forecast inventories and the direct effect of LAP measures on the 2012 forecasts. If no measures were implemented, the "Business-as-Usual" 2012 inventory is 128,801 eCO2 tonnes. If the measures within the LAP are incorporated before 2012, the 2012 inventory will be reduced to 109,875 eCO2 tonnes. This method shows HRM potentially reducing GHG emissions 15% below the "Business-as-Usual" 2012 GHG Forecast.

¹ An implementation cost range for the water and sewage sector cannot be determined at this time, due to the effectiveness of such measures being very site specific and requiring evaluation on an individual basis throughout the implementation phase

Although these reduction summaries and 2012 forecasts do not show HRM reducing GHGs 20% below 2002 levels by 2012, it does not mean that this target cannot be reached. It is clear, at this time, that GHG emissions still need to go beyond the reductions outlined in the LAP measures described in this plan, namely in the street lighting and water & sewage sectors. There are several programs and projects not included within this target that have the potential to be carried out by HRM in the next seven years such as wind energy projects, sewage treatment plant methane gas to energy projects, solar LED street lighting, and green energy purchases and it is recommended HRM pursue these measures to move closer to the target reductions level. Such measures were not included in the target since their implementation is not certain at this time. Green procurement programs and long-term policies outlined in this LAP will also reduce the impact of growth on this target. As new measures are implemented and policies and programs are put into place, this LAP will have to be revised and updated annually to monitor HRM's GHG reduction performance. It will also necessitate an on-going effort by staff to identify and implement new technologies and approaches as they become commercialized.

Implementation Plan

Implementation of the LAP represents Milestone 4 in the PCP 5-milestone program. The series of projects and programs required to reduce GHGs will be tracked in a Local Action Plan Summary Matrix that also provides an overview of project costs. The intent of this matrix is that it will lead to the preparation of implementation plans for specific projects and programs. Project Description Sheets are one-page documents that describe the key elements of each project and feed into the LAP Summary Matrix. As specific projects arise, new project descriptions will be prepared and the summary matrix will be updated. Project costs and timing will be refined as the implementation plan proceeds.

There are several multi-disciplinary groups that are viewed as drivers in the implementation of the LAP including Environmental Management Services (EMS), the Halifax Community Energy Group, and the HRM Climate SMART Team. Funding sources for this plan include grant funding, energy performance contracts, internal reserves and general operating funds. Outlined within this LAP, are a number of funding programs and incentives that are offered to partially fund new GHG and energy reduction projects such as Green Municipal Funds, the Canada Strategic Infrastructure Fund and the Municipal Rural Infrastructure Program.

Measures Monitoring

The monitoring recommendations of the PCP may not be rigorous enough for subsequent carbon trading systems should a municipality elect to trade its credits. It is expected that HRM will want to obtain tradable carbon credits for the savings it produces through the implementation of the LAP in order to offset some of the implementation costs. As part of Project Green, Environment Canada has released *Offset System for Greenhouse Gases* a "Papers for Consultation" that describes a domestic offset system developed by Environment Canada. This offset system will rely on an approved quantification protocol and verification process. At this time, the protocols and the 3rd party verification protocols are still in development but they are expected to follow closely the requirements of ISO 14064-1, -2, -3 and will be phased in starting in 2006. This timing fits well with the proposed implementation of this LAP. Should HRM elect to pursue carbon credits for the reductions gained in the implementation of this LAP, it is anticipated that a 1.0 FTE position will be required to prepare applications for credits, coordination of monitoring, reporting and liaison with 3rd party verifiers and Environment Canada.