



**CITY OF HAMILTON**

**PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT  
Strategic Services and Special Projects Division**

<b>TO:</b> Mayor and Members General Issues Committee	<b>WARD(S) AFFECTED:</b> CITY WIDE
<b>COMMITTEE DATE:</b> October 11, 2011	
<b>SUBJECT/REPORT NO:</b> 2010 Climate Change Actions (PED11149) (City Wide)	
<b>SUBMITTED BY:</b> Tim McCabe General Manager Planning and Economic Development Department	<b>PREPARED BY:</b> Brian Montgomery 905-546-2424 Ext. 1275
<b>SIGNATURE:</b>	

**RECOMMENDATION**

- (a) That Report PED11149 respecting 2010 Climate Change progress and actions be received; and,
- (b) That Council endorse the Hamilton Climate Change Action Charter attached as Appendix "A" to PED11149 and authorize the Mayor to sign the Charter on behalf of the City.

**EXECUTIVE SUMMARY**

The purpose of this Report is to update Council on the progress of the City and the community on reducing greenhouse gas emissions contributing to climate change.

Climate change refers to sustained changes in the earth's climate – including temperature, precipitation, wind and weather patterns which can impact locally on economic, environmental and social conditions in a city.

Since 2005, the Corporation has reduced its emissions in municipal operations by 9% and is on track to reducing emissions by the 10% target by 2012. To continue on the success of actions already taken in fleets, buildings, energy conservation, and waste,

City staff should continue to be encouraged to consider the environmental implications of their programs.

Overall, the City of Hamilton appears to have reduced its emissions in the community by 26% and has exceeded its 20% target of 2006 emissions by 2020. These reductions may be a result of the 2008 downturn in the economy, improved energy efficiency and conservation actions in the community, the capturing of methane at the Glanbrook Landfill Site, and the Province's actions towards the phasing out of coal in Ontario's energy mixture by 2014.

The City of Hamilton has engaged with the community on actions to reduce greenhouse gas emissions through the 2010 Taking Stock Discussion Paper and the 2011 Climate Change Town Hall. In response to these actions, the City has been approached by the community to endorse and sign a Hamilton Climate Change Action Charter.

***Alternatives for Consideration – See Page 14***

<b>FINANCIAL / STAFFING / LEGAL IMPLICATIONS</b> (for Recommendation(s) only)
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The recommendations proposed in this Report are in line with actions in the Corporate Strategic Directions and Policies identified on Page 5 of this Report.

**Financial:**

In 2011, the City of Hamilton contributed \$18,600 towards the Hamilton Climate Change Champions Program (PED11114) to host the Climate Change Action Charter and supporting tools, including information on climate change and actions under the Charter, on their website (<http://www.climatechangehamilton.ca/>) for the Hamilton community.

Endorsement of the Hamilton Climate Change Action Charter has no additional costs to the City.

**Staffing:**

The Corporate Air Quality and Climate Change Strategic Plan (PED06336) identified departmental responsibilities for action. The Air Quality and Climate Change Co-ordinator (1 FTE) in the Planning and Economic Development Department currently leads and tracks the emissions reduction work of the City through a Corporate Air Quality and Climate Change Working Group and the Corporate Greenhouse Gas Emissions Inventory (PED09287). The commitments made in the Hamilton Climate Change Action Charter continue the work of these staff.

**Legal:**

Under legislation at both the Federal and Provincial level, the City of Hamilton is required to take action to prevent, mitigate or respond to threats to human health and safety, public property and the environment.

For example, currently, the City's Glanbrook Landfill Site and Woodward Avenue water and wastewater treatment facilities report on greenhouse gas emissions to the Federal and Provincial government through the National Pollutant Release Inventory (NPRI) as required under Section 46 of the Canadian Environmental Protection Act, 1999, and Provincially under Ontario Regulation 452/09 "Greenhouse Gas Emission Reporting" enacted under the Environmental Protection Act. In 2011, the Province proposed new regulations under the Green Energy Act for the submission of annual energy and greenhouse gas emissions by public agencies as part of their energy conservation plans.

As Federal and Provincial laws are subject to change, City operations and plans, including the Air Quality and Climate Change Plan, may have to be updated in the future.

The Hamilton Climate Change Action Charter is a voluntary agreement in the community. Endorsing and participating in the actions outlined in the Charter are voluntary.

**HISTORICAL BACKGROUND** (Chronology of events)

In 2004, the City of Hamilton completed a Climate Change Vulnerability Background Study for the GRIDS Growth Strategy. The results of this Study encouraged the City to develop a Climate Change Action Plan and recognized that an in-depth consideration of the related impacts and response to climate change risks and scenarios had not been developed in detail.

In 2008, the City adopted Corporate emission targets of a 10% reduction of 2005 greenhouse gases levels by 2012 followed by a 20% of 2005 greenhouse gases levels by 2020 under the Corporate Air Quality and Climate Change Strategic Plan (PED06336(a)).

In 2009, the City developed an Air Pollutants and Greenhouse Gas Emissions Inventory (PED09287) to keep track of emissions released by the City.

In June 2010, the City released a discussion paper titled "Taking Stock: Greenhouse Gas Emissions in Hamilton" to inform and engage citizens on climate change in Hamilton (available at: [www.hamilton.ca/climatechange](http://www.hamilton.ca/climatechange)). The paper sought partnerships and input from citizens on taking further action to reduce community emissions.

Responses from the community indicate support for taking action on addressing climate change in the community. Areas of interest include active and sustainable transportation, energy conservation and alternative energy sources, more green spaces and trees, improved development and re-using existing building stock, higher order transit, less consumption, and more information and communication to make informed decisions. The community also wishes to see stronger support, communication and leadership from the City on climate change actions.

In March 2011, City staff facilitated a Climate Change Community Town Hall to identify actions and needs in the community to address climate change. Stakeholders representing local industry, non-profit, academic and community groups were engaged in discussion on climate change and its linkages to issues of personal transportation and goods movement, energy, consumption, water, food, economy and education, and the built environment. The outcome of the Town Hall identified the following needs in the community for action:

- Increased education on the linkages of climate change to social, economic and environmental drivers in Hamilton;
- The creation of a one-stop resources library with tools and information for organizations and individuals to identify what and how to take action; and,
- The need for collective, collaborative actions locally to reduce emissions.

In 2011, the City of Hamilton was recognized as one of the top ten Canadian cities combating climate change by the World Wildlife Fund (WWF) of Canada. Hamilton tied with the City of Edmonton for sixth place with a score level of 5.5 out of 10.

At the September 12, 2011 General Issues Committee, the City of Hamilton was approached by the Clean Air Hamilton Climate Change Group to endorse a Community Climate Change Action Charter. The Hamilton Climate Change Action Charter is a voluntary agreement that outlines the need for local action and a commitment to take action on climate change from individuals, organizations and businesses of all types and sizes in Hamilton. Endorsing and participating in the actions outlined in the Charter are voluntary.

## **POLICY IMPLICATIONS**

Addressing climate change is recognized in the following Corporate Strategic Directions and Policies:

- Vision 2020 – addresses the goals of improving air quality and personal health and well-being outlined in Vision 2020.
- City's Official Plan Section 3.6.2 Air Quality and Climate Change component of the City's Official Urban Plan recognizes the reduction of

greenhouse gases through several goals and policies. Recognition of adaptation to climate change is through actions or planning to minimize a city's vulnerabilities to the impacts of climate change.

- The City recognizes reducing greenhouse gas emissions as a Desired End Result in the Focus Area (6) of Environmental Stewardship within the 2008-2011 Corporate Strategic Plan. Addressing climate change also address the focus areas of Environmental Stewardship, Social Development, Fiscal Sustainability and Healthy Community in the Corporate Strategic Plan.
- Corporate Air Quality and Climate Change Strategic Plan – addresses the air quality and reduction of air pollutants and protecting health components of the Corporate Strategic Plan.
- Public Works Strategic Plan – addresses the objective of being a leader in 'greening' and stewardship in the City.
- Public Health Services Strategic Plan – addresses the implementation of public health initiatives to support community preparedness for and response to public health emergencies.

Actions on climate change also support the goals and actions of other City policies including the Corporate Energy Policy, the Green Fleet Policy, Corporate Smog Response, the Transportation Master Plan, the Cycling Master Plan, the Pedestrian Master Plan, the Water and Wastewater Master Plan, and the Solid Waste Master Plan.

#### **RELEVANT CONSULTATION**

Through the development of the Corporate Air Quality and Climate Change Plan, consultation with City Departments was undertaken with Public Health, Public Works, Planning and Economic Development, Emergency Services and Corporate Services staff.

The Report was circulated for review and comment to Public Health (Health Protection), Public Works (Transportation, Energy and Facilities, Operations and Waste Management, Environment and Sustainable Infrastructure), Planning and Economic Development (Planning Policy), Emergency Services (Emergency Planning) and Corporate Services (Legal Services, Financial Services – Purchasing), Horizons and Union Gas.

Comments received were incorporated into the Report.

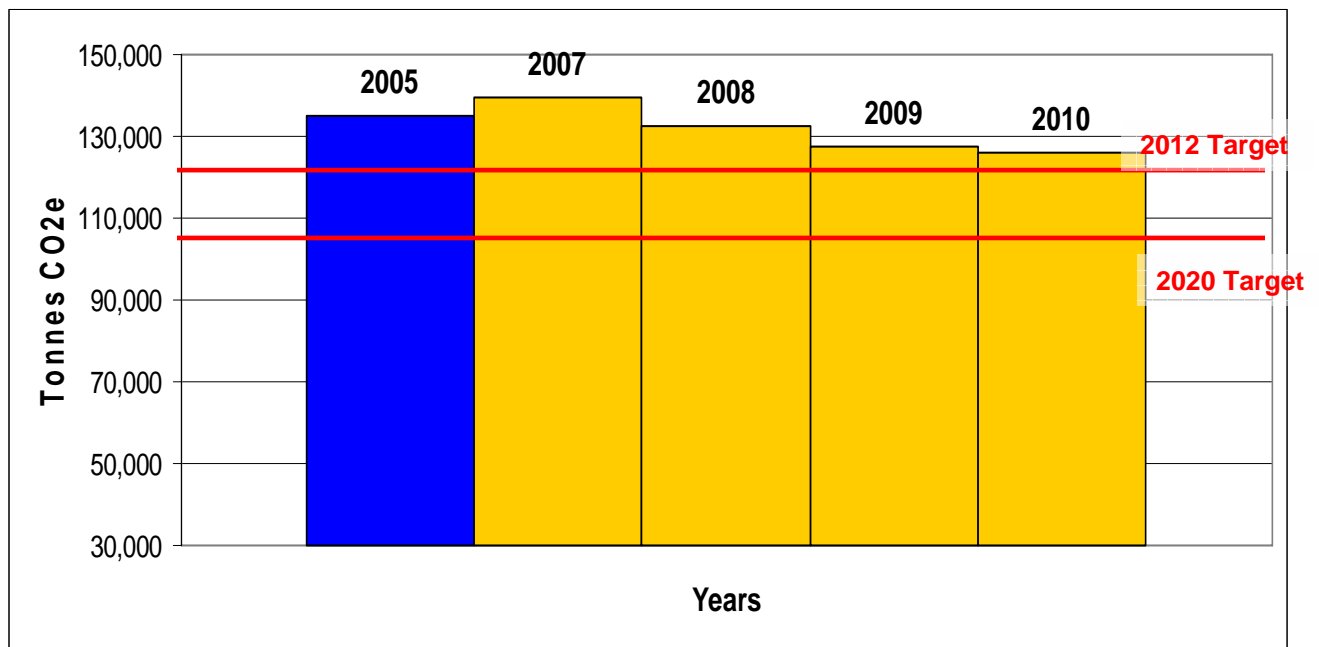
**ANALYSIS / RATIONALE FOR RECOMMENDATION**

(include Performance Measurement/Benchmarking Data, if applicable)

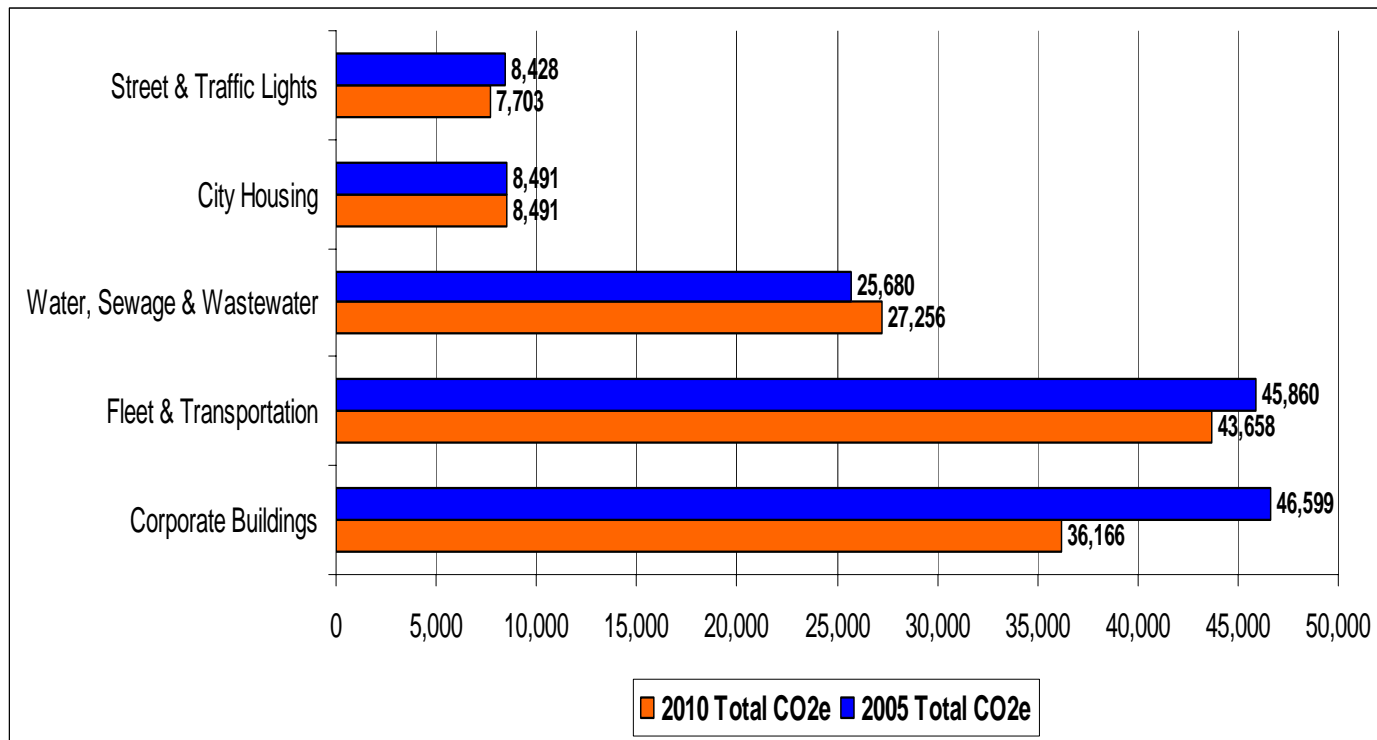
**Corporate Emission Reductions**

The Corporation has reduced its emissions by 9% (125,765 tonnes) in 2010 compared to the 2005 emissions of 135,038 tonnes. The overall trend over the past five years has shown emissions declining as show in **Figure 1**.

**Figure 1: Municipal Emissions Yearly Trends: 2005 – 2010**



**Figure 2: Corporate Reductions on Greenhouse Gas Emissions: 2005 – 2010**



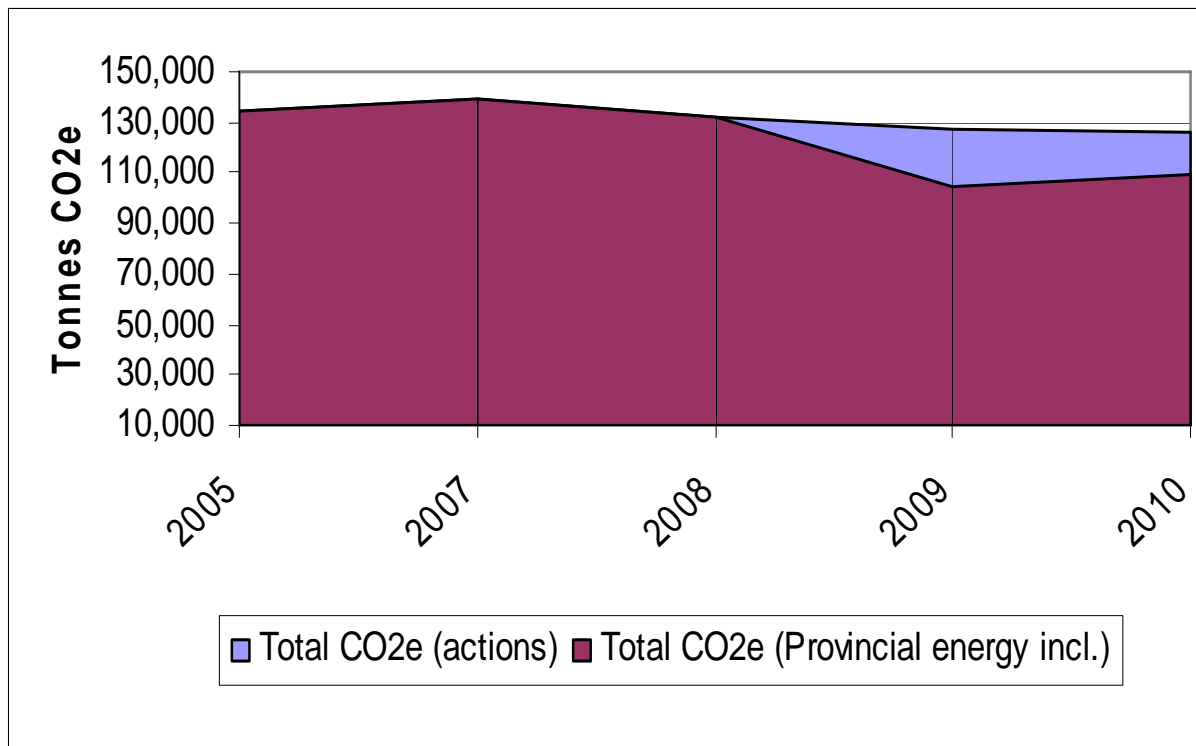
As shown in **Figure 2**, significant reductions have been made through energy conservation and efficiency in Corporate buildings and fleets<sup>1</sup>.

The movement by Ontario away from coal and towards greener energy options enhances the results of combating climate change in City operations and facilities and in the community. A comparison of City actions with and without the changing energy mixture shows the co-benefits of actions and encouraging green energy resulting in the City close to meeting its 2020 reduction targets of 20% by 2012. However, energy mixture and usage fluctuates on a year-by-year basis.<sup>2</sup> **Figure 3** separates Corporate actions from the Provincial energy mixture to identify where the Corporation's actions alone are resulting in emissions reductions. **Figure 3** highlights the co-benefits of the Province's green energy movement which improves emissions across the Corporation and in the community. Although the data illustrates the Corporation has met its targets, additional actions are required to further reduce emissions.

<sup>1</sup> Reductions are also suggestive of encouraging active and sustainable transportation options of employees, but data is unavailable at this time to quantify these reductions.

<sup>2</sup> From 2005 to 2010, the average emission factor associated with the generation of electricity in the Province decreased from 0.00021 to 0.00015 t CO2e/kWh. On an annual basis, these emission factors can change substantially. Therefore, these changes must be considered when interpreting the changes in emissions from year to year for sources consuming electricity.

**Figure 3: Corporate Actions on Greenhouse Gas Emissions (with and without the Provincial Energy mixture)**



The 2009 drop in emissions has been heavily influenced by reduced demand for electrical energy due to the global recession and a cooler summer. Overall in Ontario, total energy demand was -6.1% in 2009 compared to -3.8% in 2006. This resulted in reduced energy consumption and the need for fossil fuel demand through coal fired generated electricity compared to 2008. The 2009 Provincial energy mixture (**Table 1**) showed coal generated energy dropping to 6.6% compared to 14.5% in 2008.

**Table 1: Ontario Energy Mixture 2008 to 2010 by Percentage**

Year	Nuclear	Hydro	Coal	Gas	Other	Wind
<b>2010</b>	55.0 %	20.4 %	8.3 %	13.6 %	0.8 %	1.9 %
<b>2009</b>	55.2 %	25.5 %	6.6 %	10.3 %	0.8 %	1.6 %
<b>2008</b>	53.0 %	24.1 %	14.5 %	6.9 %	0.6 %	0.9 %

Source: [http://www.ieso.ca/imoweb/media/md\\_newsitem.asp?newsID=5529](http://www.ieso.ca/imoweb/media/md_newsitem.asp?newsID=5529)

In 2006, the Provincial energy mixture showed nuclear facilities provided the majority of supply for Ontario at 84.4 terawatt hours (TWh), or 54%. The portion of Ontario's



electricity production from hydroelectric generators was 22%, or 34.8 TWh. Generation from coal-fired facilities accounted for 16% of all Ontario generation or 25 TWh. Other fuels, including oil, gas and alternative sources, supplied the remaining eight per cent, or 11.8 TWh, of the Province's electricity output. Compared to 2006, coal generated energy is decreasing while natural gas sources are increasing resulting in some reductions of harmful air and greenhouse gas pollutants.

Energy demand, conservation and changes in energy sources in 2010 suggest further expected emission reductions to the community.

### **Community Emission Reductions**

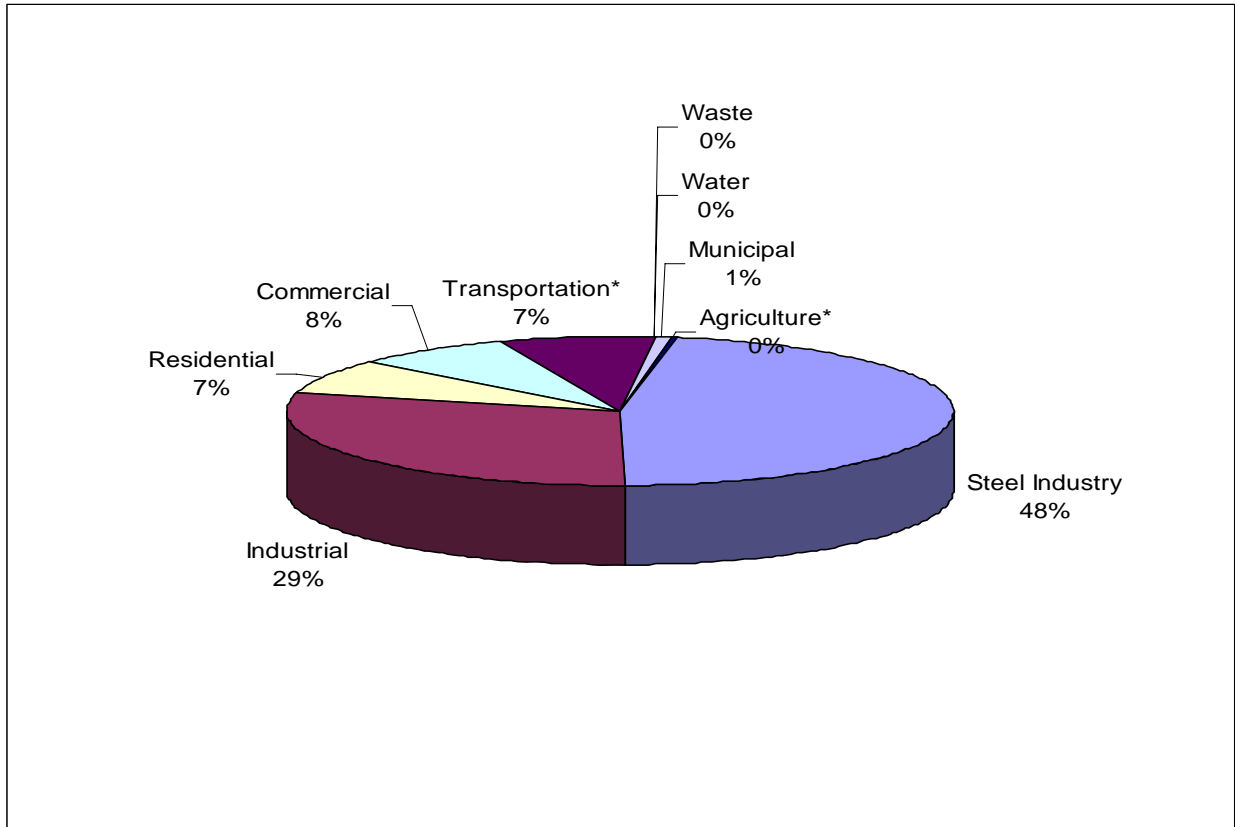
In 2010 community emissions were estimated 12,891,371 tonnes, a reduction of 26% from 2006 emissions levels (estimated at 17,382,000 tonnes)<sup>3</sup>. These changes occurred due to a downturn in the economy, reduced energy demand due to a cooler summer, improved energy efficiency and conservation actions in the community, and the shifting of energy from coal as part of the Province's actions towards the phasing out of coal in Ontario's energy mixture sources by 2014.

**Figure 4** identifies the sources of local greenhouse gas emissions and includes both community and municipal emissions.

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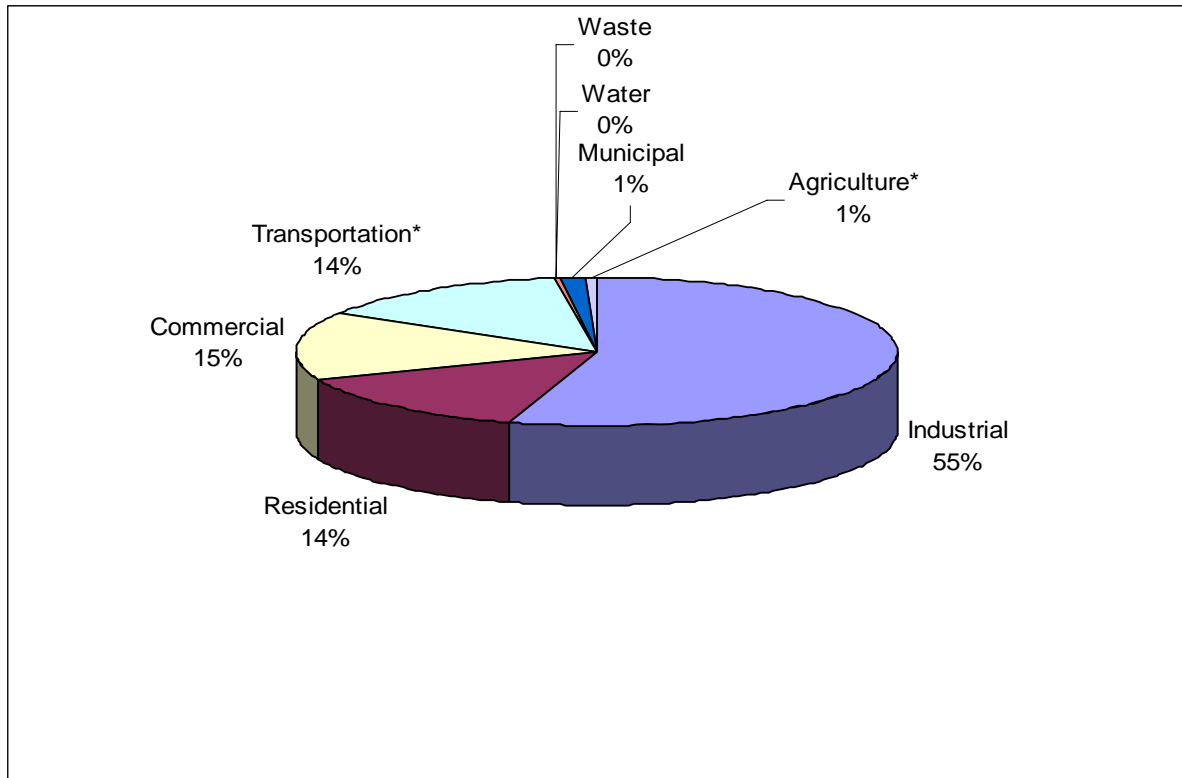
<sup>3</sup> Evaluation of the community emissions inventory in 2011 discovered baseline emissions to be higher than previously reported due to a discrepancy in the reported energy data and calculations.

**Figure 4: Total Greenhouse Gas Emissions Corporate and Community, 2009**

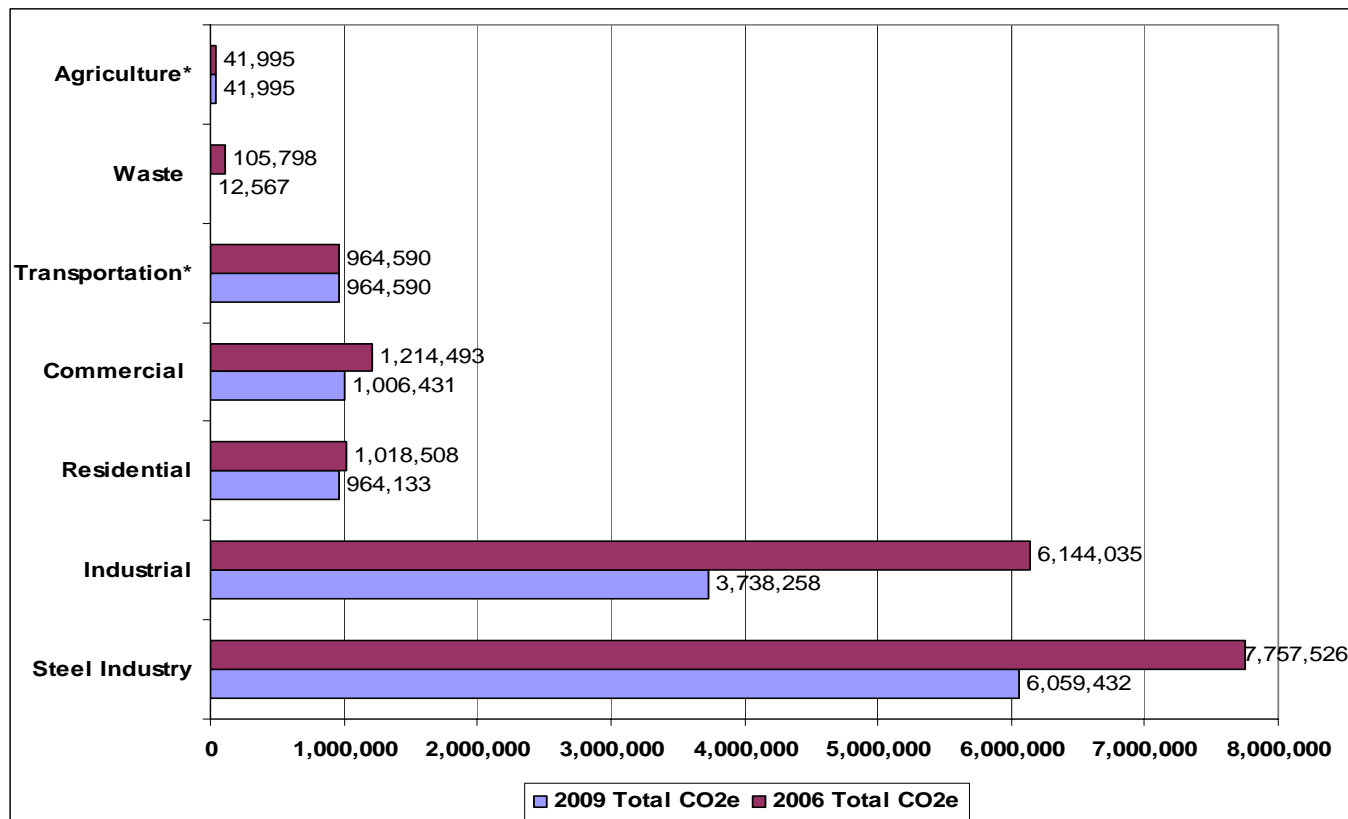


Municipal operations represent only 1% of the total emissions in the community (**Figure 4**). However, municipal policies influence greenhouse gas emissions from waste, transportation, residential, commercial and industrial buildings. The Steel Sector (48% of **Figure 4**) is regulated by the Federal government to address greenhouse gas and energy emissions. **Figure 5** removes the Steel Sector to highlight the areas that Hamilton can influence through local and Provincial policies, programs and partnerships in the community including transportation (14% of **Figure 5**), industrial, commercial and residential energy usage (totalling 84% of **Figure 5**).

**Figure 5: Total Greenhouse Gas Emissions Corporate and Community (Minus Steel), 2009**



**Figure 6: Changes in Community Emissions from 2006 to 2009.**



As seen in **Figure 6**, greenhouse gas emissions have dropped since 2006 in the residential (5%), commercial (17%), industrial (39%) and the steel industry (22%).

Significant emission reduction in community emissions was achieved in waste management through the capturing of landfill gases to convert to energy at the City owned and operated Glanbrook landfill site.<sup>4</sup> 2009 data shows a 90% reduction in emissions from 120,414 tonnes in 2005 to 12,567 tonnes in 2009 from capturing of methane emissions.

Transportation and agriculture numbers have not been updated from the 2006 inventory and thus show no change. Data on transportation and agriculture comes from Statistics Canada and Transportation for Tomorrow Surveys which are undertaken every three to five years.

Energy demand, conservation and changes in energy sources in 2010 suggest further expected emission reductions to the community.

<sup>4</sup> Although the operation of the Glanbrook Landfill is owned and operated by the City and is considered a Corporate operation, International Greenhouse Gas Standard Protocols require that Municipal and privately owned and operated landfills be considered in the community inventory.

## **Hamilton Climate Change Charter and Community Engagement**

Engagement of the public, stakeholders, and partners is an important step towards the development of a City-wide Community Climate Change Plan.

The City began engaging with the community through the 2010 “Taking Stock: Greenhouse Gas Emissions in Hamilton” in June 2010 and a 2011 Climate Change Town Hall.

The following needs have been identified for the community action:

- Increased education on the linkages of climate change to social, economic and environmental drivers in Hamilton;
- The creation of a one-stop resources library with tools and information for organizations and individuals to identify what and how to take action; and,
- The need for collective, collaborative actions locally to reduce emissions.

Following the 2011 Town Hall, a volunteer working group of individuals has been formed under Clean Air Hamilton to identify education, research and partnership needs and actions to address climate change in the community. The first outcome of their work is the Hamilton Climate Change Action Charter (PED11150).

The Hamilton Climate Change Action Charter is a voluntary agreement that outlines the need for local action and a commitment to take action on climate change from individuals, organizations and businesses of all types and sizes in Hamilton. Endorsing and participating in the actions outlined in the Charter are voluntary. However, endorsing the Charter signals to the community that the City is committed to local action by everyone on climate change.

The Charter is meant to increase citizens’ awareness on climate change, seeks leadership and commitment to act from key organizations in the City, and provides a starting point for community action and measurements of progress on combating climate change in Hamilton.

In 2011, the City of Hamilton contributed \$18,600 towards the Hamilton Climate Change Champions Program (PED11114) to host the Charter and supporting tools, including information on climate change and actions under the Charter, on their website (<http://www.climatechangehamilton.ca/>) for the Hamilton community. The Hamilton Climate Change Champions is a Program that engages and supports local organizations in reducing greenhouse gas emissions. The Hamilton Climate Change Champions began in 2009 with funding from the Provincial government. The Program engaged 24 businesses, faith buildings, and community groups to assist them in recognizing their greenhouse gas emissions and actions they could undertake to reduce these emissions.

**ALTERNATIVES FOR CONSIDERATION**

(include Financial, Staffing, Legal and Policy Implications and pros and cons for each alternative)

This Report provides updated information on Corporate and community results to meet greenhouse gas emissions targets under the Corporate Air Quality and Climate Change Plan and the Corporate Strategic Plan.

- a) **Continue actions under the Corporate Air Quality and Climate Change Strategic Plan to reduce greenhouse gas emissions and not sign the Climate Change Action Charter.** This will continue to support actions to reduce emissions and meet the Corporate targets set out under the Corporate Air Quality and Climate Change Strategic Plan and Corporate Strategic Plan. However, it will not support the education and actions that need to be undertaken within the community. The community would not support this.
- b) **Continue Corporate actions to reduce greenhouse gas emissions and not support actions or engage the community on climate change.** This would not help address the larger community emissions in Hamilton. The City has begun to engage and seek partnerships with stakeholders to address the community emissions. The community would not support this.
- c) **Discontinue the Corporate Air Quality and Climate Change Strategic Plan and actions to reduce greenhouse gas emissions.** This would not support meeting the Corporate targets set out under the Corporate Air Quality and Climate Change Strategic Plan and Corporate Strategic Plan. The community would not support this.

**CORPORATE STRATEGIC PLAN (Linkage to Desired End Results)**

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

***Skilled, Innovative and Respectful Organization***

- ◆ More innovation, greater teamwork, better client focus

***Financial Sustainability***

- ◆ Delivery of municipal services and management capital assets/liabilities in a sustainable, innovative and cost effective manner

***Intergovernmental Relationships***

- ◆ Influence Federal and Provincial policy development to benefit Hamilton
- ◆ Maintain effective relationships with other public agencies

***Social Development***

- ◆ Residents in need have access to adequate support services

***Environmental Stewardship***

- ◆ Natural resources are protected and enhanced
- ◆ Reduced impact of City activities on the environment
- ◆ Reduce the impact of Hamilton's industrial, commercial Private and Public operations on the environment
- ◆ Aspiring to the highest environmental standards

***Healthy Community***

- ◆ Plan and manage the built environment
- ◆ An engaged Citizenry

**APPENDICES / SCHEDULES**

Appendix "A" to Report PED11149 – Hamilton Climate Change Action Charter

## **HAMILTON CLIMATE CHANGE ACTION CHARTER**

We .....the undersigned agree that:

- a) Scientific evidence shows climate change is happening now. There is consensus that greenhouse gas emissions caused by human activity are seriously affecting Earth's climate.
- b) Climate change is having increasingly negative impacts on all of Hamilton's residents, environments, and economy.
- c) We need to take responsibility and act to reduce greenhouse gas emissions and prepare for climate change impacts in ways that promote economic prosperity, health and environmental benefits for all.
- d) It is important for individuals and organizations to share ideas and best practices and coordinate efforts to accomplish these goals as effectively as possible.

We..... commit to:

- 1) Keep informed of new information on climate change and its impacts in order to understand risks and effects on us as individuals and organizations.
- 2) Establish a baseline measurement of our current contribution to climate change through our activities.
- 3) Set significant specific targets for reducing our greenhouse gas emissions, identifying where we will focus our efforts to achieve those targets.
- 4) Take personal responsibility for these climate change commitments, and, in the case of businesses or organizations, assign responsibility to a senior individual. Collaborate with other groups, individuals, organizations, and businesses to address causes and consequences of climate change.
- 5) Report annually to the community and celebrate successes in reducing emissions and/or creating resiliency in response to climate change impacts during Hamilton's Climate Change Action Month in October.
- 6) Engage, educate, and involve individuals, families, groups, businesses, organizations, and other entities to also commit to this Charter and work collectively to address climate change.

.....  
(Name & Signature)

.....  
(Organization)



***EXPLANATORY NOTES:***

Signing the Hamilton Climate Change Action Charter is a way to show commitment to tackle the causes and consequences of climate change. It represents a broad public statement that any Hamilton individual or organization can make. There are no pre-signing requirements, however signing the Charter indicates a commitment to take action.

1. **Keep informed:** Information about climate change is continually emerging. Signatories need to stay informed of the impacts of climate change to be aware of opportunities and risks.
2. **Establish a baseline:** Activities that cause greenhouse gas emissions include energy use, transportation, water use, and waste generation. Measuring our current carbon footprint provides a baseline against which to measure improvements. It also helps identify areas where we can create the greatest possible benefit, which makes it easier to set realistic plans and targets.
3. **Set targets:** The Charter enables signatories to set their own targets. Ambitious goals are encouraged.
4. **Take personal responsibility and collaborate:** By signing the Charter, individuals and organizations join a common effort to address climate change in Hamilton. Senior leadership encourages cultural change and commitment to action within an organization.
5. **Report and celebrate annually:** Signatories should show their progress in meeting their Charter commitments. October is Hamilton’s Climate Change Action Month, providing an opportunity for signatories to showcase their achievements and learn from each other.
6. **Engage, educate, and involve:** Education about climate change and its impacts promotes public understanding, and encourages us to reduce our greenhouse gas emissions and become more resilient.