Hamilton

2014 Green Energy Act 397/11
Energy Conservation and Demand Plan

Public Works Department
Office of Energy Initiatives

June 27, 2014
TO:                    Mayor R. Bratina and Members of Council

DATE:                 June 27, 2014

SUBJECT/REPORT NO:  City of Hamilton's Green Energy Act (397/11) Submission
                      (City Wide) - (CASP1411)

WARD(S) AFFECTED:   City Wide

SUBMITTED BY:        John Mater, C.E.T
                      Director of Corporate Services and Strategic Planning
                      Public Works

SIGNATURE:           [Signature]

The purpose of this Information Update is to advise Council that staff have completed
the City's first annual submission requirements as mandated by the Green Energy Act
(GEA) for the City's 2012 energy usage and greenhouse gas (GHG) emissions and

As required by the Province of Ontario's Green Energy Act (GEA) all municipalities,
municipal service boards, post-secondary educational institutions, hospitals and school
boards are required to submit annual reports on their energy usage and GHG emission
data for each owned facility. This includes all utility account information for energy (e.g.
electricity, natural gas, district energy) and water by facility or site. Information is only
required for facilities that have conditioned space (e.g. heating or cooling). Hamilton
Water facilities and operations are included in the reporting. City Housing Hamilton and
City leased space (e.g. City Centre) are excluded from the reporting requirements.

This reported data represents over 2,200 utility accounts and building square footage by
facility. This information is used to calculate and report on the City's GHG emissions
and energy intensity equivalent kilowatt hours per square foot (eKWh/sqft) and
equivalent kilowatt hours per mega litre (eKWh/Mega Litre) for each location. The data
reported will be posted to the Ministry of Energy's website and the City's website at
www.hamilton.ca/energy.

The City began submitting reported data in 2012 and continues to submit annually
following the GEA's guidelines. Reported data is for the last year for which full data is
available. Reporting of 2012 energy consumption and GHG data will be required by
July 1, 2014.

The GEA also requires all municipalities to develop and implement energy Conservation
and Demand Management (CDM) plans starting in 2014 and every five years thereafter.

Each energy plan requires the following elements:

- Information on the public agency's annual energy consumption during the last
  year for which complete information is available for a full year (2012)
- The public agency's goals and objectives for conserving and otherwise reducing energy consumption and managing its demand for energy
- The public agency's proposed measures under its CDM plan, the cost and saving estimates for these proposed measures and the estimated length of time these measures will be in place
- A description of any renewable energy generation facility operated by the public agency and the amount of energy produced on an annual basis by the facility.

The City's Corporate Energy and GHG Emission Reduction Targets can be found in Table 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Consumption Reduction Target</th>
<th>GHG Emission Reduction Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>Initial 20% 2005 Base Year</td>
<td>20%</td>
</tr>
<tr>
<td>2030</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>2050</td>
<td>60%</td>
<td>80%</td>
</tr>
</tbody>
</table>

The City's energy plan to meet the above targets is found in the Corporate Energy Policy, 2012 Annual Energy Report posted on the City's website www.hamilton.ca/energy and the City's proposed future energy initiatives for 2015 as shown below.

**Proposed 2015 City of Hamilton Energy Initiatives**

<table>
<thead>
<tr>
<th>Type of Project</th>
<th># of Projects</th>
<th>Electricity Savings kWh</th>
<th>Gas Savings m³</th>
<th>Total Annual Savings</th>
<th>Total Costs</th>
<th>Simple Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>4</td>
<td>2,426,333</td>
<td></td>
<td>$266,897</td>
<td>$600,000</td>
<td>2.2</td>
</tr>
<tr>
<td>Building Automation Systems</td>
<td>5</td>
<td>169,300</td>
<td>9,300</td>
<td>$20,483</td>
<td>$100,000</td>
<td>4.9</td>
</tr>
<tr>
<td>Arena Refrigeration Optimization</td>
<td>18</td>
<td>2,750,000</td>
<td></td>
<td>$302,500</td>
<td>$450,000</td>
<td>1.5</td>
</tr>
<tr>
<td>Building Recommissioning</td>
<td>3</td>
<td>1,500,000</td>
<td>25,000</td>
<td>$170,000</td>
<td>$350,000</td>
<td>2.1</td>
</tr>
<tr>
<td>Combined Heat and Power</td>
<td>1</td>
<td>1,100,000</td>
<td>60,000</td>
<td>$133,000</td>
<td>$850,000</td>
<td>6.4</td>
</tr>
<tr>
<td>Street lighting</td>
<td>3</td>
<td>900,900</td>
<td></td>
<td>$108,108</td>
<td>$360,000</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,846,533</strong></td>
<td><strong>94,300</strong></td>
<td></td>
<td><strong>$1,000,988</strong></td>
<td><strong>$2,710,000</strong></td>
<td>2.7</td>
</tr>
</tbody>
</table>

OUR Vision: To be the best place in Canada to raise a child, promote innovation, engage citizens and provide diverse economic opportunities.

OUR Mission: WE provide quality public service that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Values: Accountability, Cost Consciousness, Equity, Excellence, Honesty, Innovation, Leadership, Respect and Teamwork
For further information, please contact Tom Chessman, Manager, Office of Energy Initiatives at extension 2494.

Copy to:
Chris Murray, City Manager
Gerry Davis, General Manager, Public Works
Mike Zegarac, General Manager, Finance & Corporate Services
Michael Kirkopoulos, Corporate Communications Manager
Rose Caterini, City Clerk
Lauri Leduc, Legislative Coordinator
Anna Aplarian, Manager of Finance & Administration, Public Works
Kelly Anderson, Public Affairs Coordinator, Public Works
Rick Male, Director of Financial Services & Corporate Controller, Corporate Services
Dan McKinnon, Director, Water and Wastewater Operations, Public Works
Al Dare, Acting Director of Operations, Public Works
Gary Moore, Director of Engineering Services, Public Works
Brian McMullan, Director, Financial Planning & Policy, Corporate Services
Craig Murdoch, Director of Environmental Services, Public Works
Beth Goodger, Director of Corporate Initiatives, City Manager's Office
Don Hull, Director of Transportation, Public Works
Dave Cunliffe, Director of Fire Operations/Deputy Fire Chief, Community & Emergency Services
Geoff Lupton, Director, Energy, Fleet & Traffic, Public Works
Rom D'Angelo, Director Facilities Management & Capital Programs, Public Works
Chris Herstek, Director of District Recreation Operations, Community and Emergency Services
Anna Bradford, Director of Tourism & Culture, Planning and Economic Development
Robin Hewitt, Director, Finance and Facilities, Hamilton Public Library
Rob Norman, Director of Strategic Planning, Public Works
Dan Bowman, Manager of Fleet, Facilities and Supply Services, Hamilton Police Services
Lyle Stedman, Manager, Central Fleet, Public Works
Tom Chessman, Manager, Office of Energy Initiatives, Public Works

OUR Vision: To be the best place in Canada to raise a child, promote innovation, engage citizens and provide diverse economic opportunities.

OUR Mission: We provide quality public service that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Values: Accountability, Cost Consciousness, Equity, Excellence, Honesty, Innovation, Leadership, Respect and Teamwork