Strategic Areas of Interest

• Climate Action Plan/Municipal Energy Plan
  – Integrated Regional Resource Plan

• Conservation Demand Management
  – Embedded Energy Manager

• Site Specific
  – Vaughan Metropolitan Centre
  – Hospital Precinct
  – New Community Areas (Community Energy Plan)
  – FIT renewable energy projects
Context

Ontario’s greenhouse gas reduction targets

--- 6%*  
2014

--- 15%*  
2020

--- 37%*  
New: 2030

--- 80%*  
2050

* below 1990 greenhouse gas emission levels

The Holy See

ENCYCLICAL LETTER
LAUDATO SI’
OF THE HOLY FATHER
FRANCIS
ON CARE FOR OUR COMMON HOME
Creating a Municipal Energy Plan

• Vaughan one of the first 8 municipalities to receive funding from the MOE to develop the MEP

• Target energy security, local economic development, culture of sustainability, and reduce energy consumption and GHG emissions

• Municipal Energy Plan (MEP) natural next step following the development of the Community Climate Action Plan (CAP)
Creating a Municipal Energy Plan

Vision and Environmental Ethic

VAUGHAN CAP
Community Action Plan

Mission

Sectors

Goals and Targets

At Home
At Work
On The Move

9 Actions

9 Opportunities

CCAP GHG Emission Reduction Target:
20% per capita by 2026 from 2006 baseline

MEP Draft GHG Emission Reduction Target:
10% absolute GHG emissions reduction by 2031 (46% per capita)
Creating a Municipal Energy Plan

• Develop a comprehensive energy plan
  – Baseline energy study/maps
  – Clear goals
  – Define targets
  – Short and long term actions
  – Ongoing policy initiatives

STAKEHOLDER ADVISORY GROUP

Assess community energy needs and GHG emissions

MEP

Identify opportunities to conserve, improve energy efficiency, and reduce GHG emissions

Consider impact of future growth and options for local clean energy generation

Support local economic development.
Aligning MEP & CAP

• CAP & MEP supportive of mission and actions outlined in Green Directions Vaughan

• Utilize CAP partnerships and processes to advance a comprehensive approach to community energy planning

• CAP identified 16 goals *At Home, At Work, and On the Move*

• Additional 2 goals under the MEP:
  – *For the Economy* – stimulate economic development in Vaughan
  – *In Conversation* – raise awareness on a smart energy future
Energy Inventories to Energy Dollars

• Work with utility providers / Ontario Energy Board to determine historical prices for energy

• Analyze community consumption of natural gas, electricity, and fuel consumption and assign total dollar value

• Allocate dollar cost by:
  – Federal government
  – Provincial government
  – External resource acquisition
  – Local economy
Total Energy Costs (2013): $834 Million
Benefits of Economic Analysis

- Measure conservation efforts and consumption data in dollars
- Communicate energy consumption in a meaningful way
- Engage new audiences and stakeholders
- Create an understanding of “where the money goes”
- Annual analysis could identify trends and cost savings to inspire conservation efforts
- Encourage other municipalities to conduct analysis to provide opportunities for benchmarking
Implementation Framework

- Embedded in community and corporate culture
  - Align with Integrated Regional Resource Plan
- Implementation appointed to members of the community (new construction; retrofits/redevelopment; land use planning; business engagement and leadership, …)
- Build resource and knowledge sharing opportunities
- Support funding solutions for actions and opportunities
  - Eg. $20M for EV charging infrastructure
- Monitor and report

Partner with key stakeholders for program delivery.
Continue the MEP Stakeholder Advisory Group.
Facilitate collaboration through the City of Vaughan.
Next Steps - Process

• Review MEP draft with Stakeholder Advisory Group
  – Q1 2016

• Provide MEP draft to Council for feedback
  – Q1 2016

• Council Endorsement – Q2 2016
  – Complete Ministry of Energy funding agreement

• Launch MEP
  – Q3 2016
Next Steps - Action

• Capital budget projects ("walk the talk") related to EEM role and the Conservation Demand Management Plan

• Automate energy use tracking, model baseline energy use and track cost savings for future re-investment (financial tool)

• Implement aspects of CEP for New Community Areas

• Implement tracking tool for 20 actions and 6 priorities of the MEP
# Conservation Demand Mgt Plan

## Table 3 Corporate energy consumption and costs

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
<th>Rate per Unit</th>
<th>Rate per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity (kWh)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street Lights*</td>
<td>12,962,214</td>
<td>kWh</td>
<td>$1,327,383</td>
<td>0.10</td>
<td>$/kWh</td>
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<tr>
<td>Traffic Lights*</td>
<td>718,491</td>
<td>kWh</td>
<td>$77,934</td>
<td>0.11</td>
<td>$/kWh</td>
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<tr>
<td>Facilities*</td>
<td>33,352,607</td>
<td>kWh</td>
<td>$3,335,260</td>
<td>0.10</td>
<td>$/kWh</td>
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<tr>
<td>Natural Gas (m³)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>5,139,397</td>
<td>m³</td>
<td>$1,541,819</td>
<td>0.30</td>
<td>$/m³</td>
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<tr>
<td>Total Cost</td>
<td></td>
<td></td>
<td>$6,282,396</td>
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<td></td>
</tr>
</tbody>
</table>

*Note: Street Light and Traffic Light data from 2008. Facilities and Natural Gas data from 2011 including estimated cost
Opportunities

Land stewardship in vicinity of approved transformer station
Follow-up Contact Info

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City of Vaughan
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or
environment@vaughan.ca
We — the undersigned mayors, governors, premiers, and other local government leaders — commit collectively to:

• Advance and exceed the expected goals of the 2015 Paris Agreement to be reached at COP 21 to the full extent of our authorities;
• Produce and implement participatory resilience strategies and action plans to adapt to the rising incidence of climate-related hazards by 2020;
• Deliver up to 3.7 gigatons of urban greenhouse gas emissions reductions annually by 2030 — the equivalent of up to 30% of the difference between current national commitments and the 2 degree emissions reduction pathway identified by the scientific community;
• Support ambitious long-term climate goals such as a transition to 100% renewable energy in our communities, or a 80% greenhouse gas emissions reduction by 2050;
• Engage in partnerships among ourselves and with global organizations, national governments, the private sector, and civil society to enhance cooperation and capacity-building programs, scale-up climate change solutions, develop metrics and promote innovative finance mechanisms and investments in low-emission projects across the world.