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COMMUNICATION

CW (WORKING SESSION)

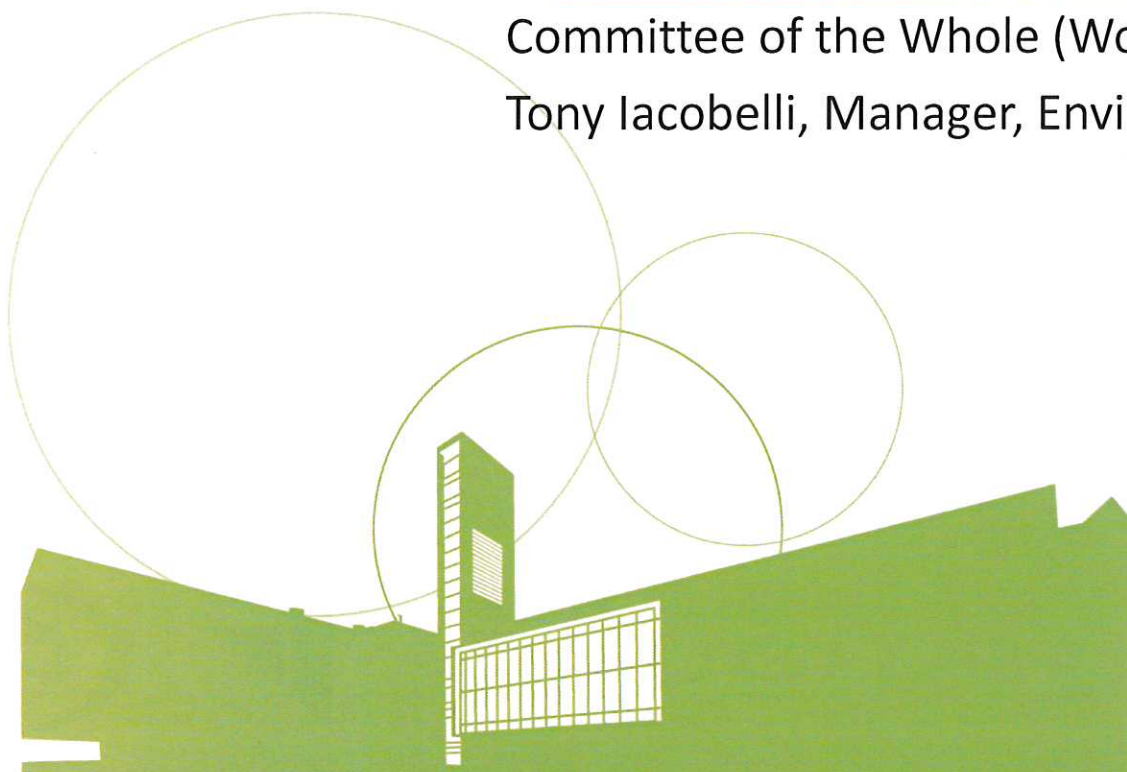
MARCH 7/2016

ITEM - 2

# City of Vaughan's Municipal Energy Plan

Committee of the Whole (Working Session) - March 7, 2016

Tony Iacobelli, Manager, Environmental Sustainability



# Broader Context



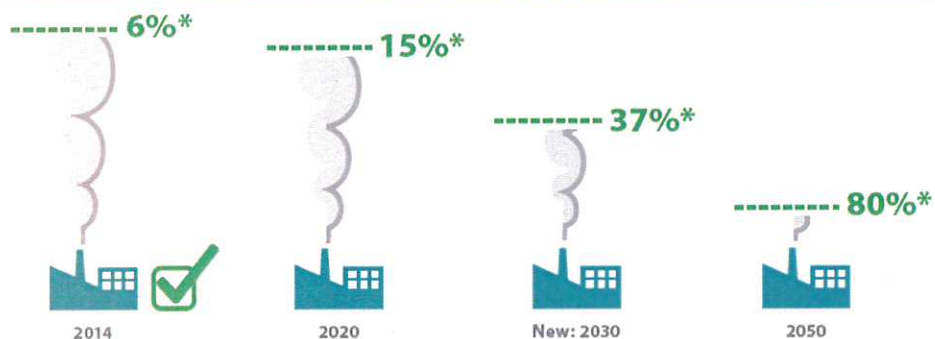
CITIES FOR CLIMATE

## Climate Summit for Local Leaders

DECEMBER 4<sup>TH</sup> 2015 - PARIS



### Ontario's greenhouse gas reduction targets



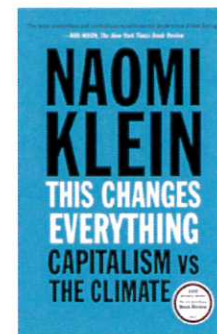
\* below 1990 greenhouse gas emission levels

#ONclimate

## Planning for Health, Prosperity and Growth

in the Greater Golden  
Horsehoe: 2015-2041

Recommendations of the Advisory Panel on the Coordinated Review of the Growth Plan for the Greater Golden Horseshoe, the Greenbelt Plan, the Oak Ridges Moraine Conservation Plan and the Niagara Escarpment Plan



# Purpose – Climate Change Mitigation

The Municipal Energy Plan (MEP) fulfills two priority functions:

- Completing Actions in Green Directions Vaughan relating to the City's commitment to Partners for Climate Protection (Actions 1.2.3, 1.2.4 and 1.2.5)
- Region Official Plan conformity requirements for Community Energy Plans

Partners for Climate Change Protection (PCP)





# Acknowledgements

- Stakeholder Advisory Group
  - 40 members representing a variety of sectors in Vaughan and York region
  - PowerStream and Enbridge
- City staff
- Funders:
  - Ontario Ministry of Energy
  - Federation of Canadian Municipalities

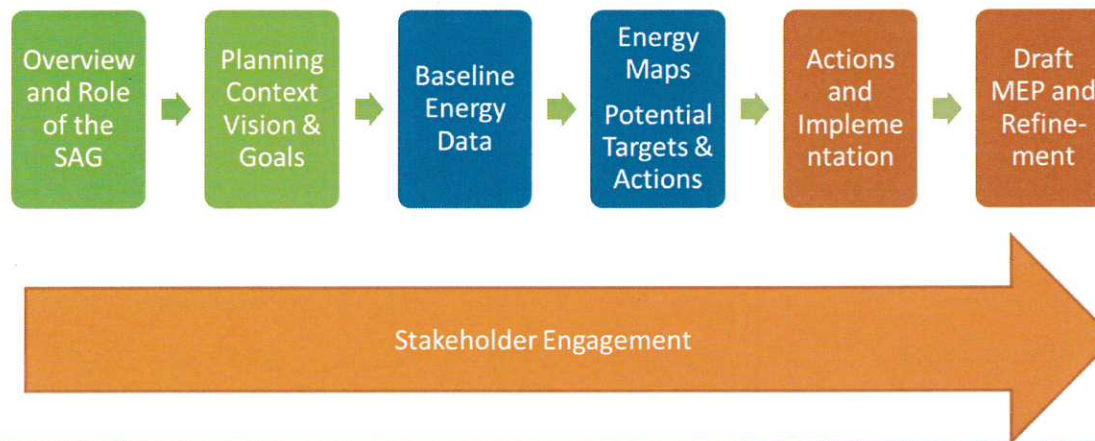
# Creating a Municipal Energy Plan (MEP)

- Community Climate Action Plan (CCAP) approved by Council in 2014
  - Established a mission for climate change mitigation
  - Identified specific actions and additional opportunities for greenhouse gas (GHG) emissions reduction
- MEP was a natural next step following the development of the Community Climate Action Plan (CCAP)
- Vaughan one of the first 8 municipalities to receive funding from the MOE to develop an MEP



# Key Elements of the MEP

- MEP includes:
  - Baseline assessment of energy consumption and spatial analysis
  - Clear goals for climate change mitigation
  - Defined targets for GHG emissions reduction across the City
  - Short and long term actions
  - Reference to ongoing policy initiatives (e.g. TMP) and actions that support the goals of the MEP





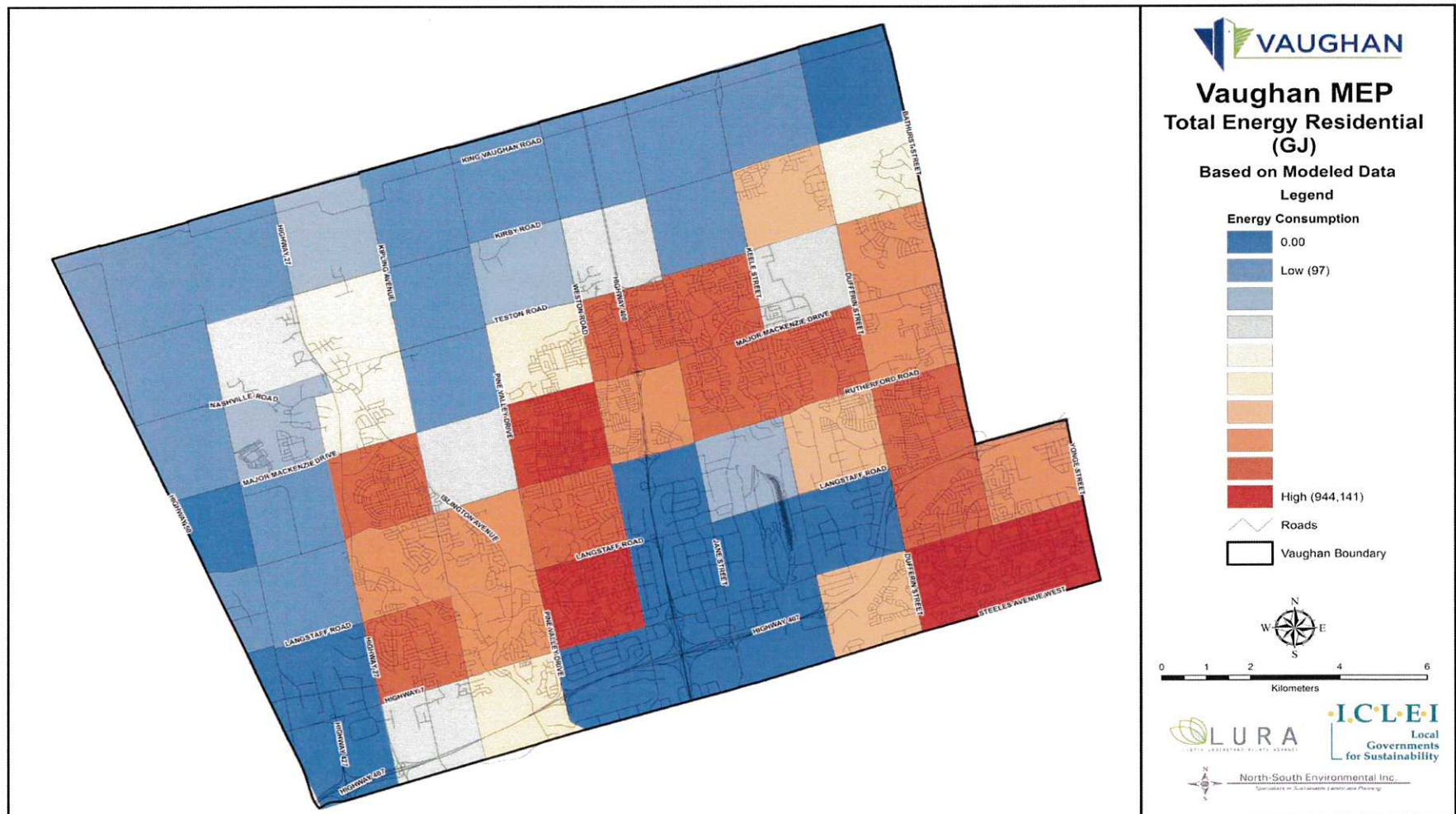
# Aligning the CCAP & the MEP

- The MEP builds on the CCAP model and will effectively replace the CCAP as a living document for climate change mitigation and energy conservation in Vaughan

## What's new in the MEP?

- Residential energy maps to spatially illustrate energy consumption
- Reprioritizes 'Actions' & 'Opportunities' from CCAP
- Quantifies energy inventories in approximate dollars spent
- MEP identifies additional areas of focus:
  - *For the Economy* (stimulate the green economy)
  - *In Conversation* (culture of conservation through education)

# Example of Spatial Analysis



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Based on natural gas and electricity consumption data for residential dwellings





# Baselines and Forecasts

	2006	2013	2031 BAU Forecast	2031 with Actions
Energy Consumption (Millions of GJ)	30.8	36	48	
Per Capita Energy Consumption (GJ)	124	115		
GHG Emissions (Millions of tonnes)	1.7	1.58*	2.1	1.64
GHG Emissions Reduction Estimate (Tonnes)				459,900
Per Capita CO2 Emissions (Tonnes)	6.8	5.04*		3.9
Population	249,345	312,882	416,600	416,600

\* Not including GHG emissions from waste.

# A New Reduction Target

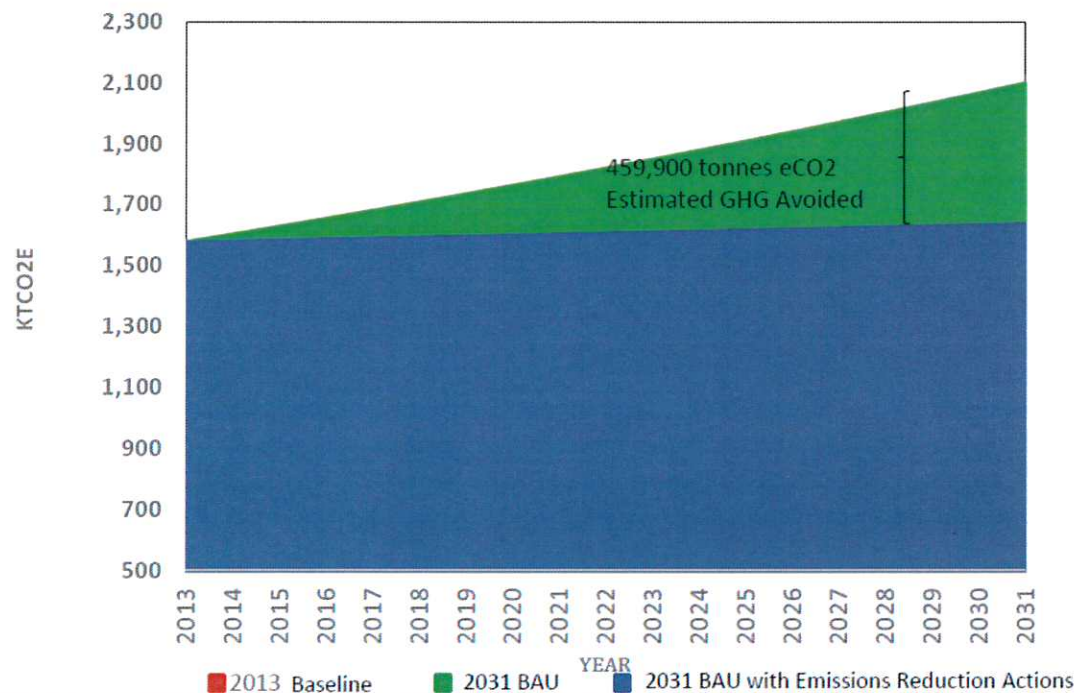
## CCAP Target

20% greenhouse gas reduction per capita below 2006 baseline by 2026.



## MEP Target

**22% greenhouse gas reduction per capita below the 2013 baseline by 2031.**





# Actions to meet our target

*At Home, At Work, and On the Move*

ACTION	GHG AVOIDANCE POTENTIAL (2031)
New Construction Requirements (Residential)	66, 800 eCO <sub>2</sub> /year
Residential Energy Conservation & Efficiency Retrofit Program	13,700 eCO <sub>2</sub> /year
Residential Waste Diversion	32, 000 eCO <sub>2</sub> /year
New Construction Requirements for Commercial Buildings	121, 400 eCO <sub>2</sub> /year
IC&I Energy Conservation and Efficiency Retrofit Program	64, 000 eCO <sub>2</sub> /year
Environmental Leaders Network	-
Land Use Planning Policy	7,200 eCO <sub>2</sub> /year
Active Transportation and TDM	66,000 eCO <sub>2</sub> /year
Public Transit Enhancements	88,000 eCO <sub>2</sub> /year



# MEP Sets the Stage for Community Action

**Power  
Stream**

**@ENBRIDGE**

## Ontario offers \$100M for upgrading gas heaters

Financial incentives for energy efficiency to go to 37,000 of the province's 4 million households

The Canadian Press · Posted: Feb 04, 2016 6:06 PM ET · Last Updated: Feb 04, 2016 6:08 PM ET



Environment Minister Glen Murray and Deputy Premier Deb Matthews tour a Home Depot as part of an announcement about a new program for improving energy efficiency. (Grant Linton/CBC)

501 shares

Ontario announced a \$100-million program Thursday to help homeowners upgrade their furnaces, water heaters and insulation, but did not provide a



# City of Vaughan Corporate Conservation Demand Management Plan

- CDMP was approved by Council in June 2014
- CDMP identifies a target for a 10% overall reduction in energy consumption for facilities on per person served basis below 2011 baseline by year 2020
- Progress monitored by annual reporting in accordance with the Ontario Energy Conservation Leadership Act
- Initiatives led by Embedded Energy Manager position



# Ongoing Improvements: A Living Document

## City of Vaughan Role

- Work with utility partners to improve annual energy data collection
- Improve uptake of energy efficiency projects by PowerStream and Enbridge (and improve forecast of GHG emissions reductions from utility programs)
- Identify options for residential retrofitting (and be ready to take advantage of Provincial or Federal funding opportunities)
- Respond to any regulatory changes that may emerge as a result of the Provincial Plan Reviews



# Ongoing Improvements: A Living Document

## City of Vaughan Role

- Feasibility and GHG emissions reduction estimates for community hubs, including in Intensification areas (i.e. through combined heat and power or district energy)
- Better understanding of energy efficiency targets for new residential development (e.g. net zero energy buildings)
- Encourage energy efficiency of buildings above OBC
- Continue to plan compact communities and work with the Region to implement TDM measures to reduce GHG emissions from travel
- Conduct feasibility studies for district energy and WTE with the private sector (e.g. Keele Valley and Maple Industrial lands)

# Next Steps

- Incorporate feedback from Council and SAG into final draft MEP document
- Circulate final draft MEP to SAG for final review
- Present MEP to Council – May 31, 2016 meeting of the Committee of the Whole for approval
- Meet the City's obligation under the funding agreement with the Province (July 2016 deadline)