

## Attachment-5 Summary of the Energy and Other Utilities Summary

The Energy and Other Utilities Study (EOU) reports (Initial and Final Phase) aim to analyze, recommend and create policies that will establish a carbon-neutral community. The EOU considered the following:

- Energy efficiency and energy management of the built environment and associated infrastructure;
- Alternative energy sources to provide clean energy;
- Energy aspects that contribute to green transportation; and
- Water conservation and efficiency.

The initial report studied the City of Guelph Official Plan, the City of Guelph Community Energy Plan, Ontario's Cap & Trade Program, Ontario's Climate Change Action Plan, City of Guelph District Energy Strategic Plan, transportation policies, building codes, standards and rating systems, Ontario's Green Button initiative, water use policies, and GHG emissions policies. It also discussed City of Guelph specific water use, GHG, and energy source trends.

The final report includes an assessment of a "Business as Usual" baseline energy and water consumption versus higher efficiency scenarios and provides an assessment of impacts of selecting low-carbon measures such as air-source heat pumps, air-source heat pump water heaters, roof-mounted solar PV, and electric vehicles.

The assessment results are as follows:

	<b>Built Environment</b>	
	Energy Use (GJ)	GHG Emissions (kt CO <sub>2</sub> e)
BAU Scenario	455,764	18.15
Higher Energy Efficiency Scenario - I	386,929	15.39
Higher Energy Efficiency Scenario - II	290,921	11.55
	<b>Transportation</b>	
	GHG Emissions (kt CO <sub>2</sub> e)	
BAU Scenario	22.35	
Low Carbon Scenario	21.80	

### Note(s)

1. Emission factors applied are 0.000029 tonnes CO<sub>2</sub>e for electricity and 0.001888 tonnes CO<sub>2</sub>e for natural gas.
2. An energy use dispersion of 75% natural gas & 25% electricity, and 65% natural gas & 35% electricity, is assumed for residential and non-residential buildings respectively.

As cited in the Community Energy Initiative update report, sustainable development practices adopted for buildings in the new community will have direct implications on the City's 2050 net zero carbon goal. A combination of demand side and supply side measures will both be key towards achieving a low carbon and water use footprint for the new community.

The consultant also prepared a framework document that aims to provide guidance to future Clair-Maltby developers on potential sustainability aspects that can be included in various submissions as part of the City's development approval process, both at a building and neighbourhood scale.

This guidance framework for development in Clair-Maltby is based on the principles of:

- Supporting sustainable site and building design;
- Reducing the community's energy and water use footprint; and
- Meeting the City's Net Zero Carbon community goal.