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**COUNTY OF HALIBURTON**

**CORPORATE  
CLIMATE CHANGE  
MITIGATION PLAN**

**CHAPTER 1:  
COUNTY OF  
HALIBURTON**

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# MESSAGE FROM THE WARDEN

Global climate change, which is a direct result of greenhouse gas (GHG) emissions created through human activities, is having a variety of serious impacts on both our County and its member municipalities. More and more we are experiencing variable and extreme local weather events, stressed and vulnerable ecosystems, additional costs for local businesses, tourism and increased damage to public infrastructure. As the voices of our residents grow louder, and recognizing the role of our municipalities, the Council of the County of Haliburton has initiated a Climate Change Plan as a method of moving forward to address climate change impacts.

This Corporate Climate Change Mitigation Plan is the first in a series that addresses corporate mitigation measures that the County and its four member municipalities will work towards over the next 10 years. Significant actions will be required by all of us to reach our GHG reduction targets. However, if we act now, we will all see that our work will be worth the effort. Municipalities should be leading by example and within the County, our five governments and their staff will be working collaboratively toward a common goal. County Council has committed to providing staff time and resources towards implementation of the Corporate Climate Change Mitigation Plan and there is little doubt that our combined efforts will be of benefit to all of our residents, our local businesses and most important, to our environment.

As the Warden for the County of Haliburton, I am very proud to be part of the implementation of the County's first Climate Change Plan. Together we will all learn, grow and contribute towards a healthier Haliburton for our children and generations to come.

**WARDEN LIZ DANIELSEN**  
**COUNTY OF HALIBURTON**

# ACKNOWLEDGEMENTS

This plan was created by the Climate Change Coordinator in collaboration with the Planning, Public Works and Paramedic Services departments. Cover page photo credit to Gabe Rivett-Carnac.

## GLOSSARY OF ACRONYMS

BAU Business as usual

CH<sub>4</sub> Methane

CO<sub>2</sub> Carbon dioxide

tCO<sub>2</sub>e Tonnes of carbon dioxide equivalent

FCM Federation of Canadian Municipalities

GHG Greenhouse gas

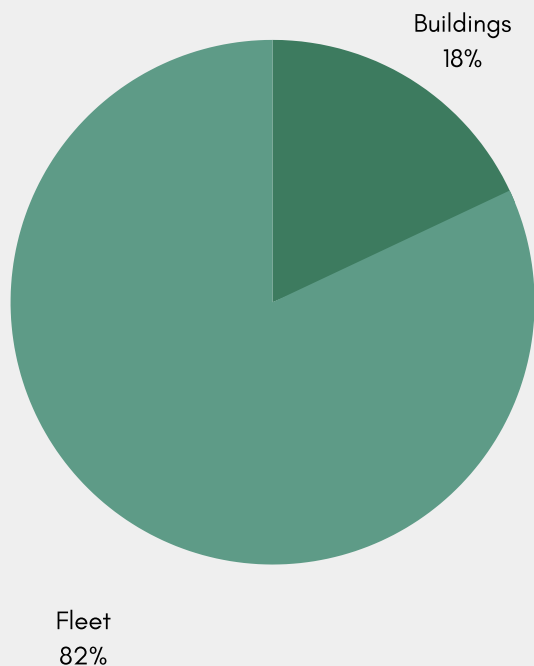
GJ Gigajoule

HVAC Heating, ventilation and air conditioning

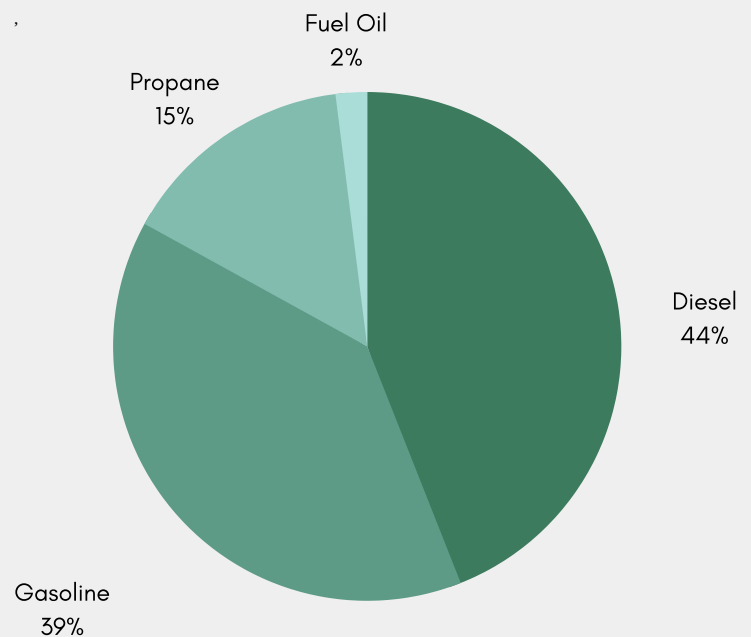
ICLEI Local Governments for Sustainability

PCP Partners for Climate Protection

## EMISSIONS BY SECTOR



## EMISSIONS BY SOURCE

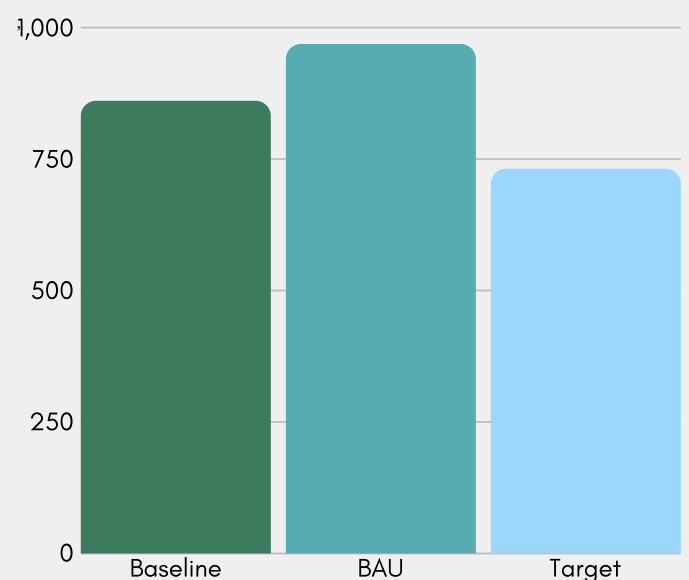


# CORPORATE GHG INVENTORY

The County of Haliburton emitted 859 tCO<sub>2</sub>e in 2018. Corporate GHG emissions primarily come from operating municipal fleet (82%) and heating and powering municipal buildings (18%). The County used 13,900 GJ of energy. GHG emissions resulting from energy consumption come from the use of diesel (44%), gasoline (39%), propane (15%) and fuel oil (2%).

## BUSINESS AS USUAL FORECAST

The population is anticipated to grow 1% annually in the County of Haliburton, according to the Official Plan. Under the assumption that a growth in population is roughly equivalent to a growth in municipal operations and services, and there is no corporate action taken to address climate change, corporate emissions are forecasted to rise 13% by 2030, from 859 tCO<sub>2</sub>e to 967 tCO<sub>2</sub>e.



# GHG REDUCTION TARGET

The County of Haliburton has set a target to reduce corporate GHG emissions by 15% below the 2018 baseline by 2030. If the target is reached, emissions will decrease from 859 tCO<sub>2</sub>e to 730 tCO<sub>2</sub>e.



## LOCAL ACTION PLAN

Proposed actions should be read as a bank of potential opportunities for County Council to consider over the next decade. The recommended actions are best practices that have proven to be successful for reducing emissions in other municipalities but will require greater analysis on local feasibility. The majority of the actions can be a collaborative effort between the County and the four local municipalities. Municipal staff provided input through sharing their knowledge and experience and providing suggestions and critiques. Exact costs of each action will be determined during the budget planning and procurement processes. Many actions will be dependent on external funding and partnership opportunities.

## LEGEND

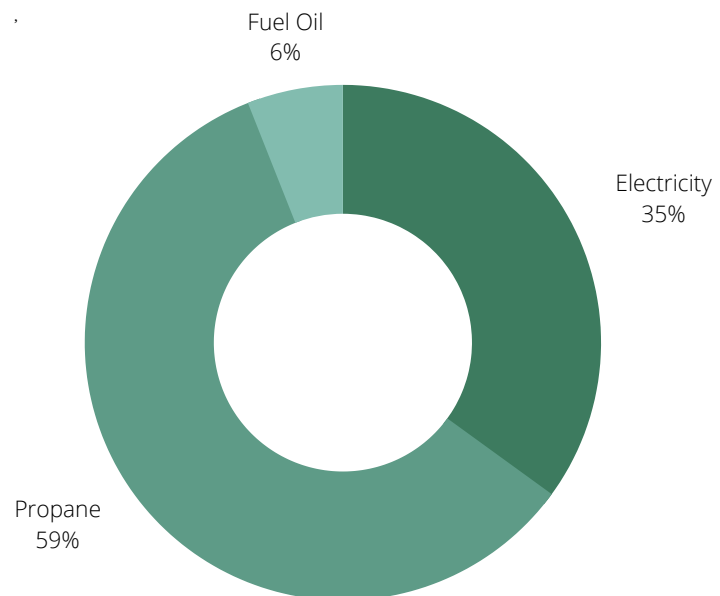
<b>TIMEFRAME</b>	Short: 2020-2023 Medium: 2024-2026 Long: 2027-2030
<b>GHG REDUCTION POTENTIAL</b>	Indirect: Acts as a precursor for another action Low: Under 5% reduction for the sector Medium: 5-10% reduction for the sector High: Over 10% reduction for the sector
<b>COSTS</b>	Nominal: Little outside of staff time Low: Below \$10,000 Moderate: \$10,000-\$50,000 Medium: \$50,000-\$100,000 High: Over \$100,000

# BUILDINGS

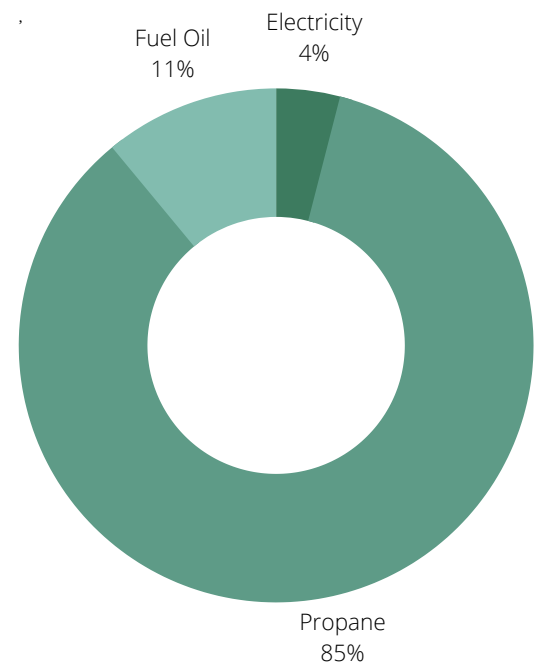
County buildings include those used for administration, patrol yards and paramedic service bases. The County's buildings produced 156 tCO<sub>2</sub>e or 18% of corporate emissions in 2018. To reach an overall target of a 15% reduction, building emissions will need to be less than 132 tCO<sub>2</sub>e in 2030. GHG emissions from corporate buildings comes from the use of propane (85%), fuel oil (11%), and electricity (4%).

The County consumed 3,700 GJ of energy in 2018 to heat and power corporate buildings and facilities. Propane is both the largest energy consumer and GHG source. While electricity consumes a significant amount of energy, the associated GHG emissions are minimal due to the low carbon electricity grid in Ontario.

Reduce-Improve-Switch [1] is an approach used for energy and emissions planning for buildings. Reducing GHG emissions from municipal buildings will involve both reducing the demand for energy and switching to low or zero carbon sources of energy. In most cases, the focus should first be on reducing energy demand before investing in alternative forms of energy.



**FUEL SOURCE BY CONSUMPTION**



**FUEL SOURCE BY GHG EMISSIONS**

# BUILDINGS



## REDUCE

Avoid the consumption of energy in the first place

## IMPROVE

Perform energy retrofits

## SWITCH

Shift to low carbon and renewable sources of energy

Reducing the demand for energy will involve creating a culture of energy conservation among municipal staff and implementing higher construction standards for new municipal buildings. Improving our municipal buildings and switching to low carbon and renewable energy options will first involve performing energy audits to determine cost-effective opportunities, and subsequently implementing the recommendations. Recommendations will be focused around improving building envelopes, lighting retrofits, HVAC replacements, building automation and the introduction of renewable energy. The County has progressed toward energy efficiency through upgrading interior and exterior lighting to LED and switching from the use of fuel oil to propane in many buildings. The recommended actions outlined in this section will be led by the Climate Change Coordinator with support from the Public Works and Paramedic Services departments.

The County spent \$111,000 in 2018 to heat and power municipal buildings. The federal carbon tax has the potential to gradually increase and reach \$210/tCO<sub>2</sub>e in 2030 [2]. The County could spend up to \$156,000 to heat and power buildings by 2030 [3], giving increased incentive to reduce energy consumption sooner rather than later.

## GOALS

- Improve energy efficiency
- Transition to low carbon and renewable sources of energy



# RECOMMENDED ACTIONS FOR BUILDINGS



Conduct energy audits on municipal facilities to identify retrofit opportunities, prioritizing those with the highest energy intensity or consumption. Ensure that energy audits consider renewable energy opportunities.

Timeline: Short

GHG Reduction Potential: Indirect

Cost: Low (\$9,000) [4]

Potential Funding: Natural Resources Canada Energy Manager Program; Energy Performance Contracts

Create a schedule and implement the recommendations from energy audits for actions that are deemed to have a reasonable payback period. Each building will have its own recommendations, including improving building envelopes, lighting retrofits, HVAC replacement, automation, renewables, etc.

Timeline: Ongoing

GHG Reduction Potential: High

Cost: High

Potential Funding: Save on Energy; Green Municipal Fund; Energy Performance Contracts

# RECOMMENDED ACTIONS FOR BUILDINGS



Develop and implement a green building policy requiring higher construction standards for new municipal buildings. New builds should go beyond building code and consider lifecycle carbon emissions.

Timeline: Medium

GHG Reduction Potential: Avoids future growth in emissions

Cost: Premium of 2-7% [5]

Potential Funding: Green Municipal Fund

Continue staff education on reducing energy consumption and consider implementing an employee energy usage policy.

Timeline: Medium

GHG Reduction Potential: Low

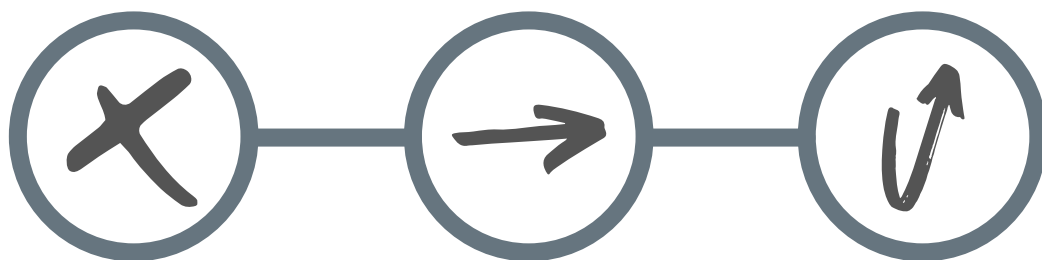
Cost: Nominal

# FLEET

County fleet includes equipment, light-duty and heavy-duty vehicles used for roads and paramedic services. The County's fleet produced 703 tCO<sub>2</sub>e or 82% of corporate emissions in 2018. GHG emissions from County fleet result from the use of diesel (53%) and gasoline (47%). To reach an overall target of a 15% reduction, fleet emissions will need to be less than 597 tCO<sub>2</sub>e in 2030.

The Avoid-Shift-Improve approach can be utilized to reduce emissions from fleet. Avoidance seeks to reduce the need for trips, which can be achieved through carpooling or route optimization. Switching refers to the shift to lower carbon options of transportation, such as replacing a gas-powered vehicle with an electric option. Improvement focuses on vehicle and fuel efficiency, which can be achieved through selecting the smallest size vehicle that meets the requirements.

Avoiding fuel consumption through reducing unnecessary idling time and optimizing driver behavior are able to reduce fuel consumption by 5-10% [6]. Vehicle tracking systems can be used to monitor progress in this area.



## **AVOID**

Reduce the need for trips

## **SHIFT**

Switch to lower carbon options

## **IMPROVE**

Focus on vehicle and fuel efficiency



# FLEET

The shift to lower carbon options for fleet will involve evaluating the needs of each vehicle upon replacement to determine if a vehicle can be right sized and replaced with a lower carbon option. The most promising action to reduce GHG emissions from fleet is electrification. Hybrid and electric options are available for a range of light-duty vehicles, with more options becoming available every year. While low emission vehicles will come at a cost premium, considering the entire lifecycle cost of a vehicle can demonstrate greater cost effectiveness. Heavy-duty fleet such as one-tons, tandems, backhoes, graders, loaders and trailers will be limited as to what is available on the market, and will be a challenging area for reducing GHG emissions. The recommended actions outlined in this section will be led by the Climate Change Coordinator with support from the Public Works and Paramedic Services departments.

The County currently reduces emissions from fleet through regular maintenance of vehicles, daily planning for carpooling to job sites to reduce the number of trips, and reducing the age of plow trucks. The County spent \$326,000 in 2018 to fuel the vehicle fleet. The federal carbon tax has the potential to gradually increase and reach \$210/tCO<sub>2</sub>e in 2030. The County could spend up to \$505,000 by 2030, giving increased incentive to reduce fuel consumption sooner rather than later.

## GOALS

- Reduce fuel consumption
- Transition to low carbon vehicles and fuels

# RECOMMENDED ACTIONS FOR FLEET



Install electric vehicle charging stations in municipal parking lots with prioritized use for municipal fleet

Timeline: Short

GHG Reduction Potential: Indirect

Cost: Low (\$5,000-\$8,000) [7]

Potential Funding: Natural Resources Canada Zero Emission Vehicle Infrastructure Program

Develop and implement a green fleet policy (purchase the lowest emission vehicle where cost effective, right-sizing, anti-idling, carpooling, etc.)

Timeline: Short

GHG Reduction Potential: High

Cost: Medium (Premium of \$3,000-\$15,000 per vehicle for light duty fleet) [8]

Potential Funding: Municipalities for Climate Innovation Program

# RECOMMENDED ACTIONS FOR FLEET



Implement fleet operator training for reducing fuel consumption (anti-idling, optimal driving behavior, etc.)

Timeline: Short

GHG Reduction Potential: Medium

Cost: Nominal

Resources: Natural Resources Canada Smart Driver Training

Monitor the feasibility of alternative fuels (ex. biodiesel and hydrogen)

Timeline: Medium-Long

GHG Reduction Potential: High

Cost: High

Potential Funding: Green Municipal Fund



# LEADERSHIP

To ensure the County is considering the potential climate impacts when decisions are made, policies and processes will need to be re-focused to promote climate change mitigation. This can be achieved through highlighting GHG considerations in existing plans and policies or through the creation of new policies and tools. The Climate Change Coordinator will work with Department Heads to implement the recommended actions outlined in this section. The County has incorporated climate mitigation considerations into existing plans, including:

**Official Plan:** Supports development and management practices which address climate change mitigation

**Energy Conservation and Demand Management Plan:** Commits to operate in an environmentally responsible manner through planning for green building systems and materials and reducing GHG emissions from corporate buildings

## GOAL

- Integrate climate change considerations across municipal programs, policies and plans

# RECOMMENDED ACTIONS FOR LEADERSHIP



Integrate comprehensive GHG and climate change considerations into municipal plans and policies (asset management plan, energy conservation and demand management plan, official plan, procurement policy)

Timeline: Short

GHG Reduction Potential: Indirect

Cost: Nominal

Incorporate a climate change lens into municipal decision-making (staff reports, RFPs, RFTs)

Timeline: Short

GHG Reduction Potential: Indirect

Cost: Nominal

# RECOMMENDED ACTIONS FOR LEADERSHIP



Support and encourage telecommuting and video conferencing where possible

Timeline: Short

GHG Reduction Potential: Indirect

Cost: None

Demonstrate corporate leadership through coordinating collaborative municipal climate action and integrating climate action into the corporate culture

Timeline: Ongoing

GHG Reduction Potential: Indirect

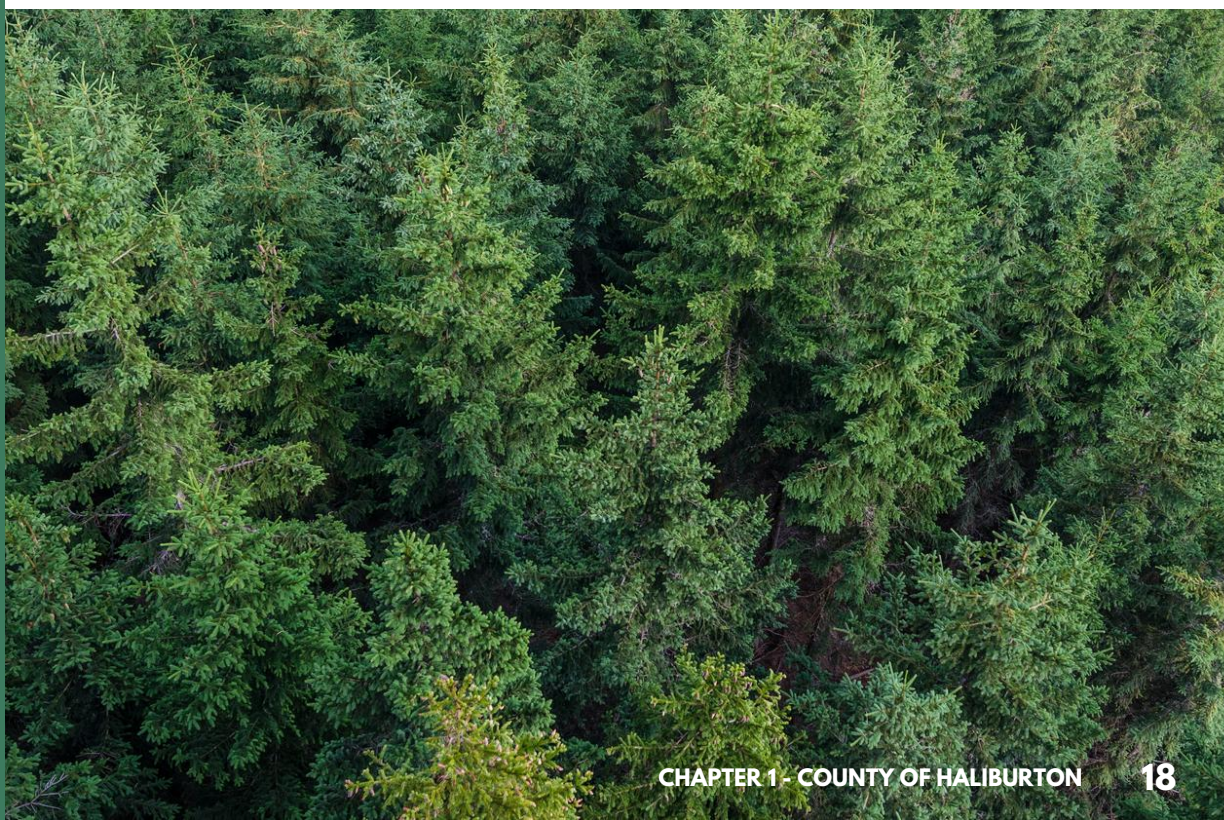
Cost: None



# CARBON OFFSETS

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The 15% reduction target can and should be achieved through directly reducing our corporate GHG emissions. Looking ahead to carbon neutrality, there are some municipal operations that are currently not technically or financially possible to entirely eliminate emissions from. Carbon offsets involve governments and companies funding projects that reduce GHG emissions outside of their own operations to counterbalance their direct emissions. Carbon offsets are not a perfect solution: they are often used as an excuse for inaction, have the potential to fund projects that would have otherwise existed, and there is difficulty with ensuring that emission reductions are not double counted by both the investor and the recipient. However, they can be a cost effective solution to accelerate climate action on a broader scale. For areas in which it is difficult to reduce our corporate emissions, it may be less expensive and easier to invest in projects that reduce emissions from the community or elsewhere.



# FOOTNOTES

[1] Government of Ontario, Community Emissions Reduction Planning: A Guide for Ontario Municipalities, 2017.

[2] Canada's Ecofiscal Commission, Bridging the Gap: Real Options for Meeting Canada's 2030 GHG Target, 2019.

[3] Assumptions consider cost increases due to the carbon tax and estimated increases in energy consumption following the business-as-usual forecast. Does not consider changes to commodity prices.

[4] Assumes \$0.20 per ft<sup>2</sup> for 44,000ft<sup>2</sup> of County buildings. Estimated from City of Prince George Energy and GHG Management Plan and U.S. Department of Energy Guide to Energy Audits.

[5] Environmental Protection Agency, State and Local Climate and Energy Program Rules of Thumb, 2016.

[6] Federation of Canadian Municipalities, Enviro-Fleets: Reducing Municipal Heavy-Duty Vehicle Emissions, 2010.

[7] For purchase and installation of a Level 2 (240V) station. Estimated from Plug In BC, Frequently Asked Questions and Partners in Project Green, Charge Up Ontario: A Guide for Businesses to Invest in Electric Vehicle Charging Stations.

[8] Assumes five fleet vehicles can be replaced with a low carbon option. Cost estimate from City of Waterloo Energy Conservation and Demand Management Plan and research on what is currently available on the market. Estimate does not account for cost savings from reduced fuel use.