Greater Peterborough Area Climate Change Action Plan

Township of Douro-Dummer
Partners for Climate Protection Milestone 4 & 5 Report
Corporate Sector Implementation, Monitoring and Reporting Results

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Section 1: Introduction

The effects of climate change are projected to intensify over the next decade. Peterborough County's annual average temperature is projected to rise 2.1°C to 4.2°C above current levels (Appendix A). A changing climate will exacerbate extreme weather events as the following risks will become more prevalent:

- Heightened frequency of severe rainfalls and wind storms
- Mean winter temperatures in 2030 to rise from -7°C to -4.9°C
- A 20% rise in 10-year storm rain events projected by 2030
- Days above 30°C to increase to 23 days from 6 days by 2030
- Chance of freezing rain events 40% more probable in winter

In 2018, the United Nation's Intergovernmental Panel on Climate Change (IPCC) released a special report urging mitigation of greenhouse gas (GHG) emissions to limit the global average temperature increase to only 1.5°C from the current 1°C of global warming. The IPCC recommends that a decrease in GHG emissions of 45 percent from 1990 levels by 2030 is necessary to prevent the worst implications of climate change. At present national commitment levels, a 3°C rise in global heating is forecasted by the year 2100.

The good news is that climate change can still be managed that restrains the worst effects, but immediate action is critical. Municipalities have within their authority the ability to influence positive climate stewardship among its operations and the communities they serve. By leading by example, municipalities can demonstrate this positive approach to climate actions by curtailing GHG emissions from all corporate facilities and assets. By ratcheting down, all GHG emissions originating from corporate assets will reduce Douro-Dummer's overall contribution as a source of climate change.

Section 2: Overview

Background

In 2012, the City and County of Peterborough, the eight-member Townships, Curve Lake First Nation, and Hiawatha First Nation adopted the Greater Peterborough Area Integrated Community Sustainability Plan, coined Sustainability Peterborough Plan. Within this Plan, climate change was identified as one of the eleven key theme areas.

In 2014, each of the twelve Greater Peterborough Area (GPA) member communities came together to develop a Climate Change Action Plan (CCAP), designed to reduce local contributions to climate change while preparing the community for future changes. They joined a network of more than 250 other communities across Canada to address climate change through participation in the Federation of Canadian Municipalities' Partners for Climate Protection (PCP) program. The PCP program aims at reducing GHG emissions from both municipal/First Nation operations ("corporate" emissions) and the community at large ("community" emissions). The program uses a five-milestone (Table 1) framework:

Table 1. Partners for Climate Protection Milestone Framework

	Milestone Description	Status
Milestone 1	Create a greenhouse gas emissions inventory & forecast	completed 2015
Milestone 2	Setting an emissions reductions target	completed 2016
Milestone 3	Developing a local action plan/CCAP	completed 2016
Milestone 4	Implementing the local action plan	underway 2019
Milestone 5	Monitoring progress & reporting results	underway 2019

Milestone 1 – Douro-Dummer GHG Emissions Inventory and Forecast

The CCAP established a 2011 GHG emission baseline (Table 2). As outlined in the Milestone 1 report (https://sustainablepeterborough.ca/wp-content/uploads/2015/11/CCAP-Township-of-Douro-DummerPCP-Milestone-1-Report-FINAL.compressed.pdf), the total Corporate Sector emissions for the Township of Douro-Dummer was 433 tonnes of carbon dioxide equivalent (tCO_2 e).

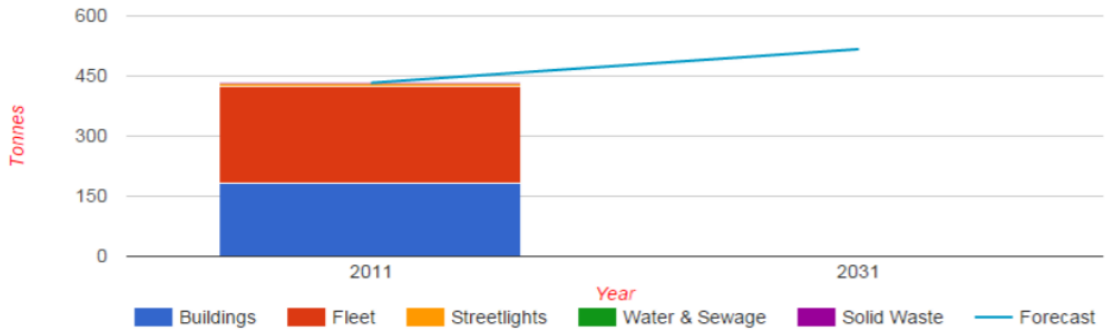
Table 2. Douro-Dummer Milestone 1 GHG Emission Sources

Sector	Emissions (tCO2e)
Buildings	183
Fleet	242
Water & Sewage	0
Streetlighting	7
Solid Waste	1
Total	**433**

Source	Emissions (tCO2e)
Natural Gas	2
Electricity	122
Gasoline	38
Diesel	204
Propane	11
Fuel Oil	55
Solid Waste	1
Total	**433**

A business-as-usual (BAU) forecast is an estimate of annual GHG emissions coupled with population growth to project emissions that would have occurred in the absence of regulation in the Township. The BAU forecast for the corporation is based on annual growth rates derived from official population projections (Figure 1). It was assumed that municipal operations would increase with population growth – this aligns with standard PCP methodology for creating BAU. Emissions from corporate operations are projected to increase to 517 tCO_2 e per year by 2031, compared to 433 tCO_2 e per year in 2011. This BAU projection is presented below in Figure 1.

Figure 1. Douro-Dummer Baseline Emissions



Milestone 2 – Setting an Emissions Reduction Target

In 2016, Douro-Dummer completed Milestone 2 that established a GHG emissions reduction target. A corporate sector GHG emissions reduction target of 32 percent was determined using 2011 as the baseline year. This reduction target is equivalent to removing 139 tCO_2e from municipal operations by 2031, compared to their 2011 baseline level of 433 tCO_2e emitted per year.

Milestone 3 – Developing a Local Action Plan/CCAP

One of the key requirements of the completion of Milestone 3 was the adoption of both the Corporate Sector and Community Sector emissions reductions targets and the Action Plan by the respective Council. On October 18, 2016, the Council of the Township of Douro-Dummer passed Resolution No. 446-2016:

"*That the delegation [...] present the draft Greater Peterborough Area Climate Change Action Plan be received, that the draft Greater Peterborough Area Climate Change Action Plan be adopted and further that the Township of Douro-Dummer's Community Sector and Corporate Sector emission reduction targets of 29% and 32% respectively, and associated local action be adopted.*"

The CCAP outlined nine overarching strategies to remove 139 tCO_2e from municipal operations by 2031. Planning, tracking, and evaluating the actions and projects that reduce GHG emissions are required to understand and monitor progress against its GHG emission commitment target. Evaluating corporate mitigation successes ultimately enables policymakers to decide what initiatives or new strategies could be enacted to limit further emissions.

The CCAP was developed to outline the potential actions to assist the Township in achieving its emissions reduction targets. Further details on specific strategies are provided in the Milestone 2 and 3 Report https://sustainablepeterborough.ca/wp-content/uploads/2016/11/Chapter-5-Douro-Dummer-Community-and-Corporate-Climate-Action-Plans-FINAL.pdf.

Section 3: Milestone 4 – Implementation of the CCAP

The implementation of climate change mitigation and adaptation strategies is a continual process in the effort to reduce GHG emissions from corporate assets. Since 2011, Douro-Dummer has striven to incorporate many of the nine strategies outlined in the CCAP. In 2019, the Township submitted its *Energy Conservation and Demand Management Plan Version 2.0* document to the Ontario government compliant with O. Reg. 397/11 (previously known as 397/11), which delineated completed actions as well as recommitting the Township to energy conservation and GHG reduction (Appendix A).

The following (Table 3) presents completed corporate actions that the municipality has achieved to date.

Table 3. Completed and Ongoing Corporate Mitigation and Adaptation Actions

CCAP Corporate Strategy	Action Description	Year	Quantifiable GHG Saved (tCO_2e)
Strategy 5: Utilize renewable energy	Ground-mounted solar PV system installed at the Donwood Fire Hall (No. 1) to generate electricity for the building	2014	
Strategy 1: Institutionalize low carbon thinking	All staff reports to Township Council must be consistent with the sustainability plan	2014	
Strategy 6: Transition to low carbon fleet	New fuel-efficient fire department gas vehicle was purchased	2014	
Strategy 9: Waste reduction initiative	Implemented mattress diversion strategy to redirect items from County-City Landfill	2015	
Strategy 9: Waste reduction initiative	Composters installed at community centre to divert organic waste from landfill	2015	
Strategy 4: Improve building performance	All interior lighting replaced with LED fixtures at Warsaw Road Depot	2015	
Strategy 4: Improve building performance	Recreation Centre saw building operations enhanced from 2011-2016: • Programmable thermostats installed to limit energy use in vacant rooms (2011) • Programmable controls added to exterior lighting to curb use (2016)	2016	0.01 tCO_2e LED saved 297 kWh per year
Strategy 6: Transition to low carbon fleet	New fuel-efficient gas pickup truck acquired for the Parks Department	2016	
Strategy 5: Utilize renewable energy	Solar power generated in 2016: • 16,618 kWh (Donwood Fire Hall) • 11,584 kWh (Douro Fire Hall) • 19,182 kWh (Community Centre)	2016	GHGs avoided • 0.6 tCO_2e • 0.4 tCO_2e • 0.7 tCO_2e
Strategy 8: Improve streetlighting efficiency	All Christmas lights (20 strings of festive lighting) and gazebo lighting have been retrofitted with LEDs	2016	0.02 tCO_2e 524 kWh saved
Strategy 9: Waste reduction initiative	Introduced new clear bag program to reduce residential waste entering the County-City Landfill	2017	
Strategy 9: Waste reduction initiative	Added composting digesters at community centre to reduce the amount of organic waste entering the waste stream and thereby lowering landfill methane emissions	2017	
Strategy 6: Transition to low carbon fleet	New public works gas vehicle purchased with anti-idling technology	2017	
Strategy 4: Improve building performance	HVAC system replaced with an energy-efficient make at White Lake Fire Hall (No 5)	2017	

CCAP Corporate Strategy	Action Description	Year	Quantifiable GHG Saved (tCO_2 e)
Strategy 8: Improve streetlighting efficiency	All Township streetlights converted to LEDs	2017	3 tCO_2 e saved
Strategy 4: Improve building performance	Douro Fire Hall (No. 2) converted exterior lighting to LEDs	2017	0.01 tCO_2 e LED saved 297 kWh per year
Strategy 4: Improve building performance	Douro Public Library has the following upgrades to enhance building performance from 2016-2018: • Replaced heating oil furnace with high-efficiency propane furnace (2016) • Exterior and interior lighting upgraded to LED fixtures (2018) • Installed occupancy-activated lighting system (2018) • Programmable thermostats installed to limit energy use in vacant rooms (2018)	2018	0.05 tCO_2 e LEDs saved 2,673 kWh per year
Strategy 4: Improve building performance	Municipal Office saw the following building improvements designed to limit energy consumption from 2011-2018: • Windows upgraded to energy-efficient models (2011) • Programmable thermostats installed to restrict energy use in vacant rooms (2011) • Installed occupancy-activated lighting system (2012) • Office equipment upgraded to Energy Star products to limit excessive consumption in older models (2012) • HVAC system replaced with an energy-efficient system (2018) • Programmable controls added to exterior lighting to curb use (2018)	2018	0.02 tCO_2 e LEDs saved 1,379 kWh per year
Strategy 4: Improve building performance	Warsaw Fire Hall (No. 4) replaced all of its interior lightings with LEDs	2018	

CCAP Corporate Strategy	Action Description	Year	Quantifiable GHG Saved (tCO_2e)
Strategy 4: Improve building performance Strategy 2: Enhance operational efficiency	Warsaw Community Centre had the following building improvements undertaken from 2011-2018: • Installed occupancy-activated lighting system (2011) • Exterior and interior lighting upgraded to LED fixtures (2014) • Building energy audit conducted (2014) • Variable Frequency Drive mounted to regulate system (2017) • Programmable thermostats installed to limit excessive energy use of unoccupied rooms (2017) • Heat Recovery System added to HVAC to improve performance (2017) • Upgrade to energy-efficient HVAC model (2018) • Reinsulation of storage room (2018) • Exterior doors resealed to improve building envelope performance (2018)	2018	0.02 tCO_2e Interior LED saved 891 kWh per year
Strategy 4: Improve building performance Strategy 2: Enhance operational efficiency Strategy 5: Utilize renewable energy	Douro Community Centre had the following facility upgrades from 2011-2018: • Fitted building with an occupancy-activated lighting system (2011) • Ground-mounted solar PV system installed to generate electricity for the building (2012) • Building energy audit conducted (2013) • Programmable controls added to exterior lighting to curb use (2015) • Reinsulation to improve thermal performance (2016) • Programmable thermostats installed to limit excessive energy use of unoccupied rooms (2018) • Interior lighting converted to LEDs in (2018)	2018	0.03 tCO_2e Interior LED saved 1,634kWh per year
Strategy 1: Institutionalize low carbon thinking	Staff at corporate facilities turn off unneeded appliances and air conditioning when units are not required	On-going	

Section 4: Milestone 5 – Monitoring Progress & Reporting Results

This progress report used 2018 data provided by Douro-Dummer to ascertain how the municipality is achieving its mitigation goals with respect to its CCAP.

Corporate Emission Reduction Progress in 2018

The corporate review revealed that Douro-Dummer declined by 22 percent below the baseline (Table 4) and decreased by 98 tCO_2e from all its emission sources, as illustrated in Figure 2.

Table 4. Township Greenhouse Gas Emission Source from 2011 to 2018

Emission Source	2011 GHG (tCO_2e)	2018 GHG (tCO_2e)	Percent Difference
Buildings (Electricity, natural gas, propane, heating oil)	183	105	-43%
Streetlights (Electricity)	7	4	-43%
Transportation (Diesel & gasoline)	242	224	-7%
Waste (Organic matter emissions)	1	2	100%
Totals	**433**	**335**	**-22%**

Figure 2. 2018 GHG Emissions Compared with BAU and CCAP Target

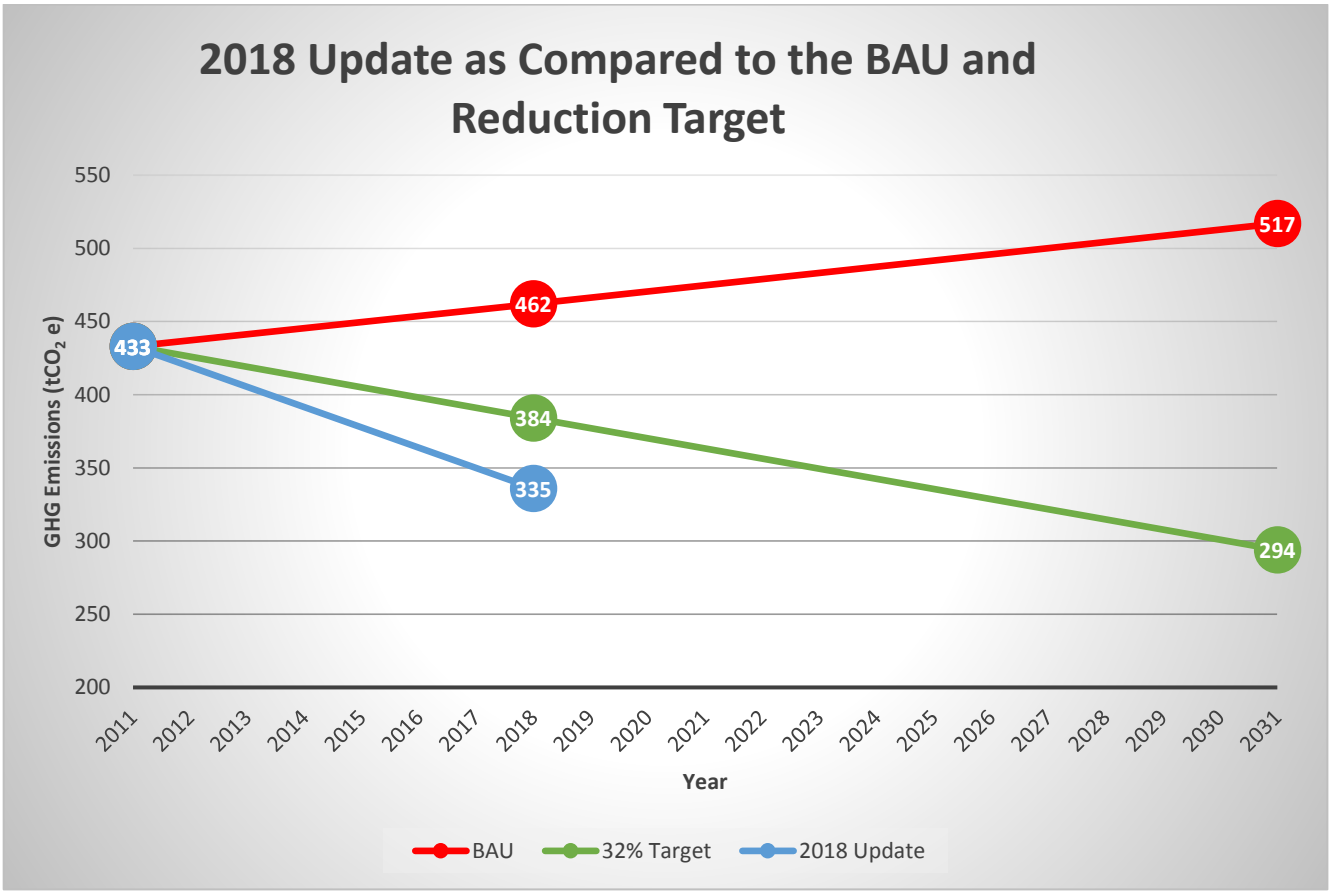


Figure 2. The Business-as-usual (BAU) emission projections as compared to the Reduction Target goal is outlined until 2031. 335 tCO_2e is the current emission attributed to Douro-Dummer in 2018.

Corporate Consumption Analysis and Discussion

Assessing energy and fuel consumption rates for all emission sources in Douro-Dummer may reveal connections outlined within the corporate mitigation strategies found in the CCAP. Table 5 describes the individual contribution from each energy source to its associated sector.

Table 5. Douro-Dummer Consumption Data per Sector

2011 Consumption	Natural Gas (m^3)	Electricity (kWh)	Propane (L)	Heating Oil (L)	Gasoline (L)	Diesel (L)
Buildings	823	1,047,676	7,202	20,130		
Streetlights		64,445				
Vehicles					12,901	72,912
Totals	**823**	**1,112,121**	**7,202**	**20,130**	**12,901**	**72,912**
2018 Consumption	Natural Gas (m^3)	Electricity (kWh)	Propane (L)	Heating Oil (L)	Gasoline (L)	Diesel (L)
Buildings	108	957,395	17,891	23,530		
Streetlights		247,893				
Vehicles					25,497	60,576
Totals	**108**	**1,205,378**	**17,891**	**23,530**	**25,497**	**60,576**

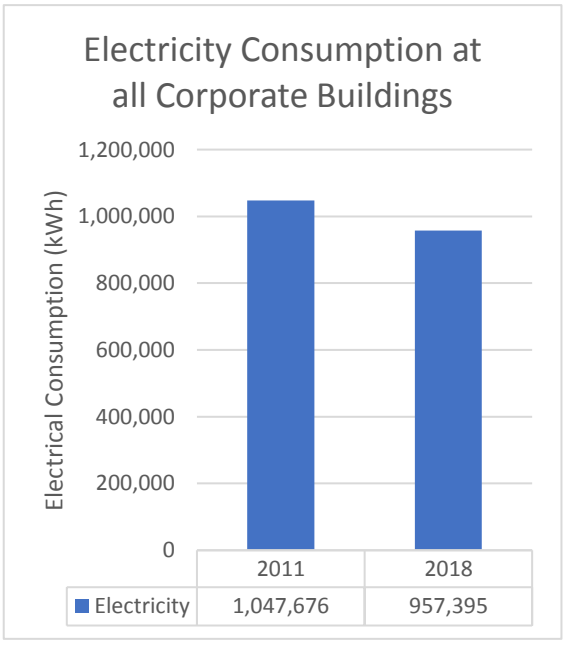
Sector: Corporate Facilities

Electricity

Analyzing electricity consumption (Figure 3) from all corporate buildings revealed a 9 percent decrease in electricity usage. The decline in consumption is a result of the plethora of electricity lowering initiatives at corporate facilities between 2011 and 2018. Replacing building interior and exterior lighting systems, incorporating programmable thermostats and lighting timers, and upgrading the HVAC and variable drive systems are key actions that contributed to conserving energy.

In addition to the improvement of building performance, the Township closed the Donwood Community Centre and Fire Hall No. 3 during this review period.

Figure 3. Electricity Consumption



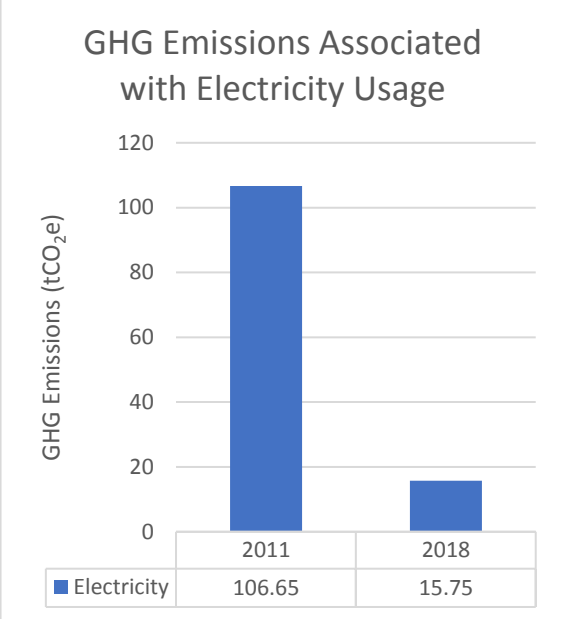
The GHG emissions linked to electricity usage decreased by 85 percent, which is directly the result of the closure of all of Ontario's coal powerplants starting in 2013 that decarbonized the electrical grid (Figure 4). This resulted in a fivefold decrease in associated GHGs linked to Ontario electricity production since 2011, as illustrated in Table 6.

The shuttering of coal powerplants has made the entire electrical grid throughout the province a much greener option today than the one found in the baseline year. However, it should be noted that the Ontario grid still maintains natural gas-fired powerplants in its energy mix that are significant contributors to GHG emissions (IESO, 2019). More natural gas powerplants are scheduled to come online over the coming years to offset refurbishments of Ontario's nuclear powerplants. This will result in the emission factors outlined in Table 6 to rebound and thereby negatively affect the gains found in electricity's decarbonization. Ultimately, corporate electricity emissions will increase in the following years until the restoration of Ontario's nuclear capacity is reinstated.

Table 6. Ontario Grid Associated GHG Emissions

Year	Emission Factor ($kgCO_2e$)
2011	0.098040
2014	0.040011
2016	0.035548
2017	0.017298

Figure 4. Electricity GHG Emissions

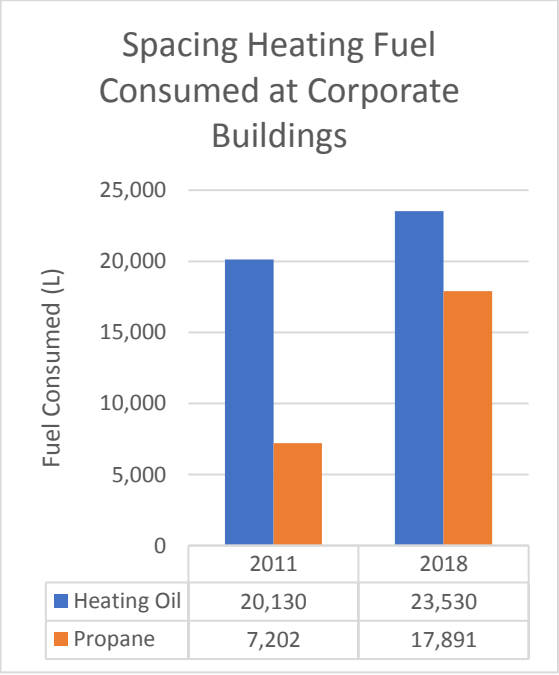


Propane and Heating Oil

Evaluating propane found a 148 percent increase in fuel consumption while heating oil had a 17 percent increase in usage during this review period (Figure 5). The increase in propane is due to fuel switching away from heating oil at the Warsaw Fire Hall and Douro Community Centre. Heating oil rose marginally as a result of higher use at the Warsaw Community Centre; however, upgrades to a new oil tank limited excessive consumption.

GHGs linked to space heating enlarged with propane, adding 8 tCO_2e and heating oil 12 tCO_2e since 2011 (Figure 6).

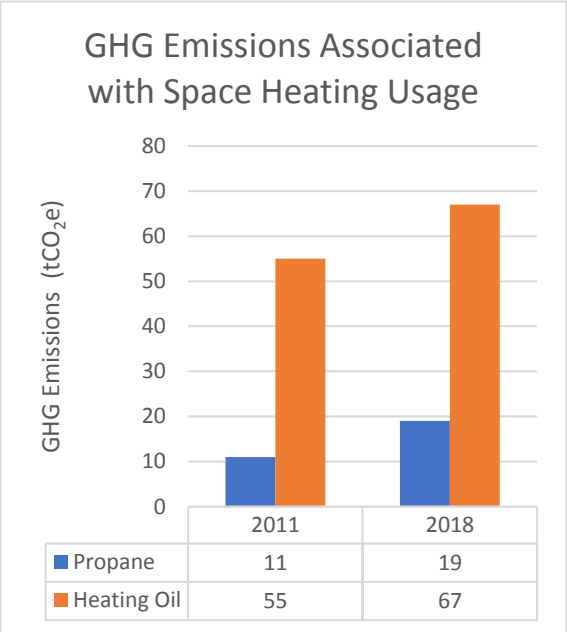
Figure 5. Propane and Heating Oil Usage



Natural Gas

Natural gas was found to have reduced by 715 m^3 or 87 percent. However, this fuel is used only at the Donwood Firehall and no other corporate facility within the Township.

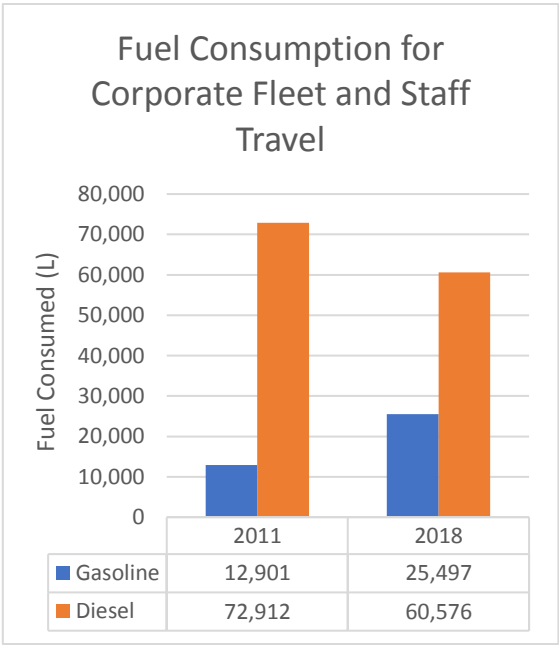
Figure 6. Space Heating GHG Emissions



Sector: Corporate Fleet and Staff Travel

Figure 7. Vehicle Fuel Consumption

The corporate fleet and staff travel (Figure 7) were found to have a 17 percent decrease in diesel usage as opposed to a 98 percent increase in gasoline consumption. Gasoline consumption was affected by the purchasing of three new vehicles; however, each vehicle was chosen with high fuel efficiency standards and anti-idling technology, which restricted excessive fuel usage during operations. Diesel also saw a decline because some road services were contracted out, thereby lowering fuel use.



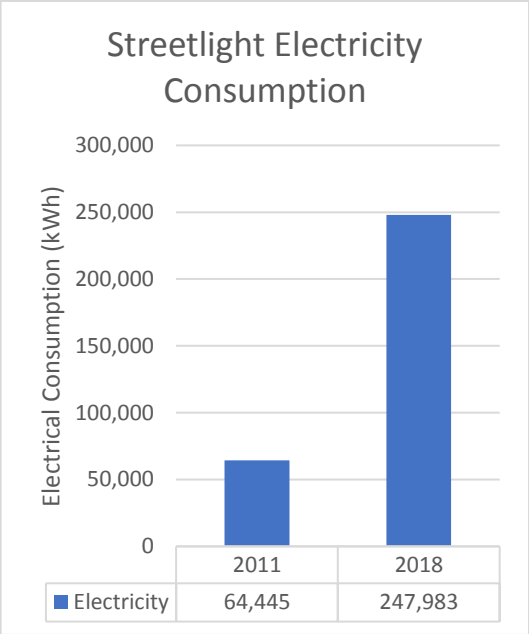
Staff travel also impacted gasoline usage due to more staff being hired and travelling on township business as compared to 2011. It was found that the baseline did not collect staff travel fuel use in 2011, so the addition in this report provides a complete snapshot for Township's vehicle emissions.

Sector: Streetlights

Streetlights had a significant increase in electricity usage of 285 percent since 2011 (Figure 8). This rise is not immediately explainable because the entire Township retrofitted its streetlighting to LEDs in 2017. There was a period during the upgrading to LEDs that lightbulbs were being blown out with regular frequency without staff noticing for some time, which may have led to higher recorded electrical usage. There is also a possibility that an accounting error occurred which may have skewed the consumption data higher. Fortunately, electricity emissions decreased by 3 tCO_2 e as a result of the aforementioned grid decarbonization.

Sector: Corporate Waste

Figure 8. Electricity Consumption



Waste sent to the landfill in 2018 was estimated to have decreased by 2 tonnes to a total of 6 tonnes. This reduction in internal waste can be attributed to strategies created to divert organic materials away from the County-City Landfill through the addition of two digesters at municipal facilities. Tabletop composters were also added to staff kitchens to assist in capturing and redirecting more waste to the digesters as well.

GHG emissions rose by 1 tCO_2 e due to the recalibration of a waste composition ratio for items entering the landfill (Table 7). This change in ratios aligns with data collected through a waste audit conducted by the County Waste Management Department with the most significant change attributed to the percentage of food scraps. Even though the Township has excelled at diverting organics away from the County-City Landfill, organic material will still enter the system via soiled food containers and meat products. This new ratio is the best available local model to determine greenhouse gas emissions generated by waste for the organics that were not composted directly at corporate facilities.

Lastly, this report could not ascertain the exact fugitive methane gas leakage from the landfill, so an assumption of 75 percent of methane collection was used.

Table 7. Waste Composition

Waste Composition (%)		
Type	2011	2018
Food scraps	16	35
Garden/plant	3	2
Paper/cardboard	10	11
Wood products	3	5
Textiles	5	6

Future Corporate Actions

The following is a renewed timeline for Milestone 3 corporate actions as of this report. The timeframe has been adjusted to omit long-term steps due to that range nearing the 2031 target.

Table 8. Projected Timeline for Corporate Mitigation Actions

Township of Douro-Dummer Corporate Action Plan	Timeframe			
	Completed	Ongoing	Short (1-5 years)	Medium (6-10 years)
Buildings				
Strategy 1: Institutionalize energy efficiency and low carbon thinking into the organization				
Implement employee training for energy efficiency		x		
Continue to reinforce staff culture of conservation and behaviour change programs to reduce the usage of electricity and heating in day-to-day activities		x		

Continue to implement policy/asset management plan to consider the highest energy efficiency as part of procurement requirements and evaluation		x		
Monitor incentive programs offered through electricity providers and other sources to be leveraged for implementing energy efficiency improvements		x		
Strategy 2: Enhance Operational efficiency of existing buildings				
Develop and deliver an equipment preventative maintenance program on an ongoing basis		x		
Conduct regular energy audits of Township facilities on a rotational basis to identify opportunities for improved efficiency		x		
Continue to conduct building re-commissioning to optimize building operations where applicable		x		
Work with utilities to install sub-metering capacity at each Township facility where feasible to better monitor energy usage		x		
Continue to implement the utility bill validation process to identify and correct any billing issues and variations in energy usage		x		
Strategy 3: Build municipal facilities to ensure high environmental performance				
Establish a Green New Building Policy to require new municipal buildings and major renovations be built to high environmental standards			x	
Install geothermal heating and cooling systems for new buildings and major renovations if feasible				x
Strategy 4: Improve the environmental performance of existing municipal facilities				
Decommission Donwood Community Centre	x			
Implement an interior and exterior LED lighting retrofit program at the Warsaw Community Centre and Douro Community Centre		x		
Explore installation of heat air recovery systems at Warsaw Community Centre and Douro Community Centre		x		
Explore upgrading of fans at Warsaw Community Centre and Douro Community Centre		x		
Continue implementation of interior and exterior LED lighting retrofit program in facilities where feasible		x		
Replace appliances with Energy STAR-rated appliances as needed		x		
Upgrade insulation/building envelope while conducting other essential building work (where feasible)		x		
Continue to replace windows and doors with high efficiency according to replacement schedule/need		x		
Replace mechanical equipment with high efficiency according to replacement schedule/need		x		
Strategy 5: Utilize renewable energy sources				
Explore converting electric hot water heaters to solar X Heat roads facility with biofuel (roadside brushing and waste wood)		x		

Continue to seek and implement opportunities for solar voltaic panels and other renewable energy options at all municipal facilities		x		
Fleet				
Strategy 6: Transition the municipal fleet to be more efficient and less carbon-emitting				
Ensure that the Procurement Policy consists of a replacement schedule that considers the following: a) right-sizing vehicle/ appropriate vehicle class through replacement schedule b) transitioning to low emission and alternative fuel vehicles c) use of anti-idling technology d) fuel and vehicle performance monitoring		x		
Implement an operator training and education program		x		
Formalize and continue with a preventative maintenance program for vehicles and equipment		x		
Explore fleet energy benchmarking to compare overall fleet performance with other municipal fleets		x		
Streetlighting				
Strategy 8: Improve the energy efficiency of the streetlighting system				
Retrofit all street lighting and parking lot lighting to LED	x			
Establish a policy for all new lighting and replacements to be LED	x			
Solid Waste				
Strategy 9: Reduce the amount of organic waste generated through municipal operations				
Continue to participate in office waste reduction and diversion initiatives		x		
Continue to collect organic waste from Township offices and manage in backyard composters	x			
Conduct a corporate waste audit to understand the waste composition and identify opportunities for improvement		x		
Develop/formalize a corporate waste diversion target and strategy		x		
Continue to monitor and track corporate waste generation and diversion		x		
Develop and implement a corporate green procurement policy		x		
Develop and implement a green event program		x		

Decision-making Process

Developing and implementing climate actions is well entrenched in Douro-Dummer because of the Township Council Resolution No. 446-2016. This resolution has led to the operationalization by senior management and staff in carrying out actions. Township staff plan and implement specific measures that are dependent on the municipal budgetary cycle, external incentives and grants, regional leadership and best practices, and end-of-life replacement schedule. All these factors dictate the level of climate action realization within the township.

Asset Management

In 2017, the province passed Ontario Regulation 588/17, requiring municipalities to develop and adopt a Strategic Asset Management Plan (AMP) by July 1, 2019. The AMPs require climate change to be considered for all assets. The inclusion of energy-related factors in the AMP would promote energy conservation as a priority in the municipal budget and longer-term financial planning.

Conclusion

With the adoption of the Climate Change Action Plan on October 2016, the Township of Douro-Dummer committed to reducing its corporate sector GHG emissions by 32 percent below 2011 baseline levels by 2031. As of this report, the Township has achieved a 22 percent reduction and is on track to meet its target by 2031 if the continued determination is made to incorporate more climate actions into municipal operations.

The Township of Douro-Dummer has demonstrated climate leadership and is a beacon for other municipalities to emulate in the effort to reduce corporate energy use on multiple fronts. The completion of several energy-efficiency projects, fuel switching vehicles from diesel to gasoline engines, and diverting organic waste were all successful strategies that facilitated the rapid reduction in emissions. The support for renewable energy projects is also deep-rooted in the Township. Three solar energy systems built on municipal properties generate over 47,384 kWh per year, thereby offsetting 5 percent of the municipality's entire electrical demand. By creating its own electricity and pursuing energy retrofits, Douro-Dummer is demonstrating to residents of the township that change is doable and possibly galvanize homeowners and businesses to take action to lower their emissions as well.

Many more opportunities remain to conserve energy and lower GHG emissions within the Township. The proactive approach Douro-Dummer is presently taking to implement its CCAP climate actions will ensure that corporate emissions will continue to be abated. With 2031 fast approaching, the Township of Douro-Dummer is well-positioned to achieve and surpass its GHG emissions target.

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Appendix A

Future Climate Projections

*Refer to for more information: **https://www.peterborough.ca/en/city-hall/resources/Documents Climate-Science-Report_Peterborough_Sep17-2018.pdf**

Energy Conservation and Demand Management Plan 2.0

*Refer to for more information: https://www.dourodummer.on.ca/wp-content/uploads/2019/07/Twp-Douro-Dummer-Energy-CDM-Plan-2019.pdf