

Town of Saint Andrews Greenhouse Gas Emissions Inventory Report 2020

Partners for Climate Protection: Milestone 1

Prepared for the Town of Saint Andrews



Prepared by Eastern Charlotte Waterways



Town of Saint Andrews Greenhouse Gas Emissions Inventory Report 2020

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2021

Published by:

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REPORT TO

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December, 2021**

This project has been made possible by the generous financial support of:



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Executive Summary

The Town of Saint Andrews entered into a partnership with Eastern Charlotte Waterways (ECW) in August 2021 to conduct a study under Environmental Trust Fund (ETF) funding. This study used the methodology available through the Federation of Canadian Municipalities (FCM) Partners for Climate Protection (PCP) program. The goal of the study is to follow the first three (3) milestones of the PCP program to:

1. create a baseline inventory of emissions and forecasting from the corporate sector (municipal),
2. set an emissions and energy reduction strategy with the Environmental Advisory Committee, Council & staff, and
3. develop a local action plan to guide the municipality to meet their emission reduction goals.

This study began with a corporate greenhouse gas emissions (GHG) inventory that was developed by gathering various datasets for buildings, streetlights, vehicle fleet, water and sewage, and solid waste. The following inventory reports corporate GHG emissions from the base year 2020.

The first objective of the study was to create a baseline inventory of emissions and forecasting from the corporate sector (municipal) as well as completing Milestone 1 of the PCP Program.

The total GHG Emissions produced in 2020 was 675.22 tCO₂e.

1.0 Introduction

Human activity has dramatically increased emissions of greenhouse gases (GHGs) in the atmosphere. The build-up of GHGs in the atmosphere has led to an enhancement of the natural greenhouse effect and ongoing emissions of GHGs have the potential to warm the planet to levels that have never been experienced in the history of human civilization. Such climate change could have far-reaching and/or unpredictable environmental, social, and economic consequences. These consequences have motivated governments to reduce greenhouse gas emissions and to act on climate change.

The Government of Canada (July 2021) has set a GHG emission reduction target of cutting emissions by 40-45% below 2005 levels by 2030, which is an emissions output limit of 511 Mt CO₂ eq by 2030. They also have an additional goal of having net zero emissions by 2050. The Government of New Brunswick has set an emissions output limit of 10.7 Mt by 2030. This target represents a reduction of 30% below 2005 levels by 2030. New Brunswick has also set a GHG emission target of 5 Mt by 2050. The NB Climate Change Action Plan also includes an action point to be carbon-neutral in government operations, facilities and vehicles by 2030 (Action 13).

Throughout Canada, municipal governments are taking action to reduce their carbon footprint by monitoring and reducing GHG emissions by participating in the Federation of Canadian Municipalities' (FCM) Partners for Climate Protection (PCP) Program. This program gives local governments the tools needed to complete the five-step Milestone Framework, which results in long term environmental sustainability. The PCP program empowers members to adopt a community GHG reduction target of 30 per cent below 2005 levels by 2030. It also empowers members to consider adopting a deeper community and corporate emissions reduction target of 80 per cent by 2050.

Saint Andrews, Canada is one such municipality looking to reduce their GHG emissions. Located on a peninsula jutting out into the Passamaquoddy Bay, the town covers an area of approximately 8.35 km². Saint Andrews was founded by United Empire loyalists in 1783 and is well-preserved with many of the original buildings still standing. The town was incorporated in 1903 and served as a seaport, port of entry, and the terminus of the Canadian Pacific Railway. In 1998, Saint Andrews was designated as a National Historic Site. The town has a thriving tourism industry, with draws such as whale watching, an award-winning golf course, and Kingsbrae gardens; a multi-award-winning public garden, making St-Andrews-by-the-sea popular with domestic and international tourists alike. It has been attracting more than 80,000 travellers annually from all

around the world. The year-round population of Saint Andrews was 1,889 in 2011 and dropped to 1,786 in 2016. An annual population decline of 1.1% (Statistics Canada, 2017).

The Town of Saint Andrews is considered one of the most vulnerable areas to climate change impacts due to its proximity to the coast. The area and community are exposed to rising sea-levels, the increase in intensity and frequency of severe storm surge events, and flooding. Recognizing these vulnerabilities and risks, the Town of Saint Andrews has proactively taken a series of actions to create comprehensive, informed climate adaptation actions.

Saint Andrews for similar reasons has a vested interest in climate mitigation, mitigating and reducing emissions of greenhouse gases into the atmosphere to help mitigate the effects of climate change and make it easier to adapt to the changes we can no longer avoid.

2.0 Methodology

The energy consumption data was converted into a GHG emissions inventory using the GHG Quantification Spreadsheet (Appendix A) developed by ECW in 2020. This tool includes the ability to input energy and emissions data for multiple inventory years, and track progress over time.

Emissions were categorized in one of the five (5) corporate sectors (Buildings & Facilities, Vehicle Fleet, Street Lights & Traffic Signals, Water & Wastewater, and Solid Waste).

Raw data was provided by the town in the form of a spreadsheet (.csv file) detailing NB Power meter readings in kWh from 2016 to mid 2021, monthly fuel report spreadsheets for the vehicle fleet detailing liters of fuel, fuel cost, and kilometers (kms) driven by each vehicle, as well as an electricity bill for streetlights for the year.

This energy consumption data was then converted to GHG emissions using the GHG Quantification Spreadsheet (Appendix A) developed by ECW in 2020. This spreadsheet was prepared using the PCP Protocol and following ISO Standards. It allows a user to input energy data which is then converted to GHG emissions using an emissions factor. Emission factors for sectors and sources of emissions were taken from the 2019 National Inventory report. Results were then summed to determine emissions by sector and by energy source. The following subsections detail more clearly the inventory protocol, scope, and boundaries; and data sources and quality.

2.1 Inventory Protocol, Boundaries, and Scope

Before a GHG Inventory is conducted it is important to identify the protocols that will be used, the boundaries of the inventory, and the scope of the emissions included. The following table details the protocol, boundaries, and scope of the inventory presented in this report.

Table 1 Summary of Protocols, Boundaries and Scope

Protocol	FCM’s PCP Protocol (CSA) ISO 14064 Standards
Boundaries	Corporate boundaries for this GHG Inventory are determined using the operational control approach; 100% of GHG emissions from operations that Saint Andrews has control of are reported.
Scope	<p>Scope 1 – Direct GHG Emissions. Includes GHG emissions generated directly by sources owned or operated by the municipality. The most common sources of scope 1 emissions are the combustion of natural gas or fuel oil at municipal facilities, use of gasoline or diesel fuel in municipal fleet vehicles, and methane generation at municipally-owned landfill sites.</p> <p>Scope 2 – Indirect Emissions from Electricity or District Energy Purchases. The emissions associated with the purchase of grid electricity or district energy. Emissions associated with the use of grid electricity are produced off-site at a location owned or controlled by another entity.</p>

2.2 Data Sources and Quality

The following guidance and standards documentation were considered when developing the GHG emission inventory:

- PCP Protocol: Canadian Supplement to the International Emissions Analysis Protocol;
- Canadian Standards Association (CSA) ISO 14064 Standards.

Real energy consumption (RC) data was used as the preferred input for GHG emission calculations. A dataset is considered real consumption data when a vendor can provide accounting records that adhere to rigorous, third-party scrutiny in accord with standard accounting principles. Where these data sets were not available, activity data (AD) from authoritative, defensible sources were used to estimate the inputs required for GHG emission calculations. A data set is considered activity data when indicators, averages, survey results, or national, provincial, or regional data is employed to estimate consumption.

The following details where energy and emissions data were collected from and what emissions factors were used for each corporate sector considered in the GHG Inventory

Table 2 Data Sources and Emissions Factors Used by Asset Sector

Sector	Data Origin	Emissions Factor(s) Used
Buildings & Facilities	<p>Energy data for Buildings and facilities were collected from an NB Power excel sheet provided by the Town of Saint Andrews that detailed monthly meter readings in kWh from 2016-2021</p> <p>Total cost of heating oil for 2020 was provided by the Town Asset Manager</p>	<p>The emission factor used to convert kWh to tCO₂e was a New Brunswick specific Consumption Intensity factor (g GHG / kWh electricity consumed) from National Inventory Report 1990-2019 Part 3. Table A13-3 Electricity Generation and GHG Emission Details for New Brunswick. 270g GHG / kWh. Which was then converted to tonnes</p> <p>Converted to Liters using the average cost of heating oil in the year 2020 from Statistics Canada and then to tCO₂e using an emission factor for heating oil from National Inventory Report 1990-2019 Part 2. Table A6.1-5 Emission Factors for Refined Petroleum Products 2753gCO₂/L</p>
Vehicle Fleet	<p>Vehicle Fleet Fuel reports provided by the town detailed liters of fuel, fuel cost and km driven by each vehicle in a spreadsheet for each month from 2018-2021</p> <p>Total cost of propane used for the Zamboni for 2020 was provided by the Town Asset Manager</p>	<p>A CO₂ emission factor was taken from the National Inventory Report 1990-2019 Part 2. Table A6. 1-14 Emission Factors for Energy Mobile Combustion Sources. Emission factor was gCO₂/L fuel 2307.3 gCO₂/L for gasoline and 2680.5 gCO₂/L for diesel. Results were then converted into tonnes</p> <p>Converted to Liters using the average cost of auto propane in the year 2020 from Statistics Canada and then to tCO₂e using an emission factor for auto propane from the National Inventory Report 1990-2019 Part 2. Table A6. 1-14 Emission Factors for Energy Mobile Combustion Sources. Emission factor was 1515.00 gCO₂/L fuel. Results were then converted into tonnes</p>
Streetlights & Traffic Signals	<p>an electricity bill for streetlights for the year detailed cost for 12 months of energy by streetlight group and number of streetlights per group the town owned</p>	<p>Once billed cost was converted to kWh using a rate of \$0.1434/kWh (as indicated on bill) The emission factor used to convert kWh to tCO₂e was a New Brunswick specific Consumption Intensity factor (g GHG / kWh electricity consumed) from National Inventory Report 1990-2019 Part 3. Table A13-3 Electricity Generation and GHG Emission Details for New Brunswick. 270g GHG / kWh. Which was then converted to ton</p>

Water & Wastewater	Energy data for water and wastewater facilities were collected from an NB Power excel sheet provided by the Town of Saint Andrews that detailed monthly meter readings in kWh from 2016-2021	The emission factor used to convert kWh to tCO ₂ e was a New Brunswick specific Consumption Intensity factor (g GHG / kWh electricity consumed) from National Inventory Report 1990-2019 Part 3. Table A13-3 Electricity Generation and GHG Emission Details for New Brunswick
Solid Waste	insufficient data available	N/A

In the following table data for each energy source was identified as being Low, Fair, or High and categorized as either Real energy consumption (RC) data or activity data (AD).

Table 3 Quality Estimations of Data by Energy Source

Source	Uncertainty	Explanation	
Electricity	Low /Fair	RC	Low uncertainty because the data comes from RC Data and kWh are converted directly to tCO ₂ e with a reliable emissions factor. Electricity for streetlights is considered Fair because AC data was used and assumptions that rates remained constant were used
		AD	
Gasoline	Low	RC	RC Data in the form of Liters of gasoline are converted directly to tCO ₂ e with a reliable emissions factor.
		AD	
Diesel	Low	RC	RC Data in the form of Liters of diesel are converted directly to tCO ₂ e with a reliable emissions factor.
		AD	
Heating Oil	Fair	RC	Designated as fair uncertainty because emissions were calculated from AC Data in the form of total cost of heating oil for 2020 and converted using a regional average cost of heating oil in the year 2020
		AD	
Propane	Fair	RC	Designated as fair uncertainty because emissions were calculated from AC Data in the form of total cost of propane for 2020 and converted using a regional average cost of propane in the year 2020
		AD	

3.0 Corporate GHG Inventory Results

3.1 Energy Consumption, Emissions, and Expenditures by Sector

3.11 Overview

Overall, the Town of Saint Andrews operations consumed **14,299.64 GJ** of energy and produced 675.22 tonnes of CO₂e in 2020 (Table 4). Approximately 89% of the emissions were produced by electricity consumption, and the remainder by diesel, gasoline, propane, and fuel oil consumption. The largest producing sectors were buildings and facilities followed closely by the water and wastewater systems with the remainder belonging to the vehicle fleet and streetlights. A more detailed look into emissions can be found in the following sections.

Table 4 Summary of Energy Consumption, GHG Emissions and Energy Expenditure by Sector 2020

Sector	Total Consumption (GJ)	Emissions (tCO ₂ e)	Expenditure
Buildings & Facilities	8,041.25	327.02	\$175,215.78
Vehicle Fleet	1,050.48	69.10	\$29,034.19
Streetlights & Traffic Signals	1,011.38	75.85	\$40,286.76
Water & Wastewater	2,710.09	203.26	\$103,133.87
Solid Waste	N/A	N/A	N/A
Total	14299.64	675.22	\$347,670.61

GHG Emissions (tCO₂e)

Energy Expenditures (\$)

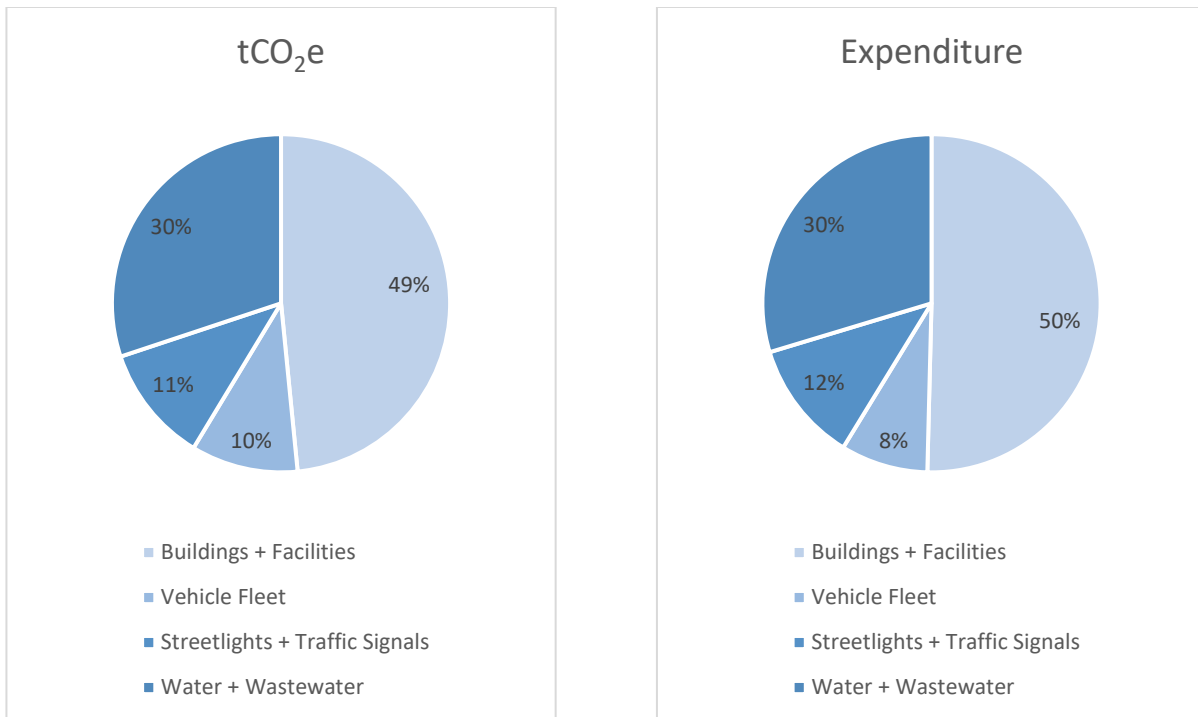


Figure 1 & 2 : Emissions and Energy Expenditure Percentage (%) by Sector

3.12 Buildings & Facilities

The building sector traditionally accounts for a significant proportion of municipal government emissions. Corporate building electricity consumption data was retrieved from monthly NB Power bills provided by the Town. Furnace oil consumption data was retrieved from yearly total cost of fuel.

In total, the GHG emissions associated with operating the Town's buildings were 327.02 tonnes of CO₂e. This represents 49% of all corporate sector emissions.

The W.C O'Neill Arena Complex is by far the largest contributor at 216.30 tCO₂e. The next highest emitter, the Ross Memorial Library, produced significantly less at 21.99 tCO₂e for the year.

Table 5 Energy Consumption and GHG Emissions for Town Buildings in 2020

Building	Electricity (kWh)	Furnace Oil (Liters)	Total Emissions (tCO ₂ e)
Health Center (108 Sophia St)	43,080.00		11.63
Public Works Garage (95 Patrick St)	32,880.00		8.88
		4,115.91	1.11

Ross Museum (188 Montague St)	9,020.00		2.44
		3,443.57	0.93
Centennial Park (26 Joes Point Rd)	1,301.00		0.35
Youth Center (56 Reed Ave)	22,323.00		6.03
Old Health Centre (276 Montague St) *	1,984.00		0.54
Sports Field Building (36 Cemetery Rd)	26.00		0.01
W.C O'Neill Arena Complex (24 Reed Ave)	801,120.00		216.30
R.C.M.P (76 Reed Ave)	29,817.00		8.05
Historic Courthouse & Jail (123 Frederick St)	1,940.00		0.52
		3,676.65	0.99
Old Telephone Bldg. (161 Water St)	1,821.00		0.49
Block House (23 Joes Point Rd) **	0.00		0.00
Market Square (207 Water St)	2,730.00		0.74
Wharf (2 King St)	7,735.00		2.09
Wharf (2 King St)	9,169.00		2.48
Town Hall (212 Water Street)	60,812.00		16.42
Library (110 King St)	81,440.00		21.99
Fire Station (80 Reed Ave)	53,200.00		14.36
Sheriff Andrews House (63 King St)	39,541.00		10.68
Total	1,199,939	11,236.13	327.02
*Sold after 2020			
** Seems to be an outlier, all years before 2020 have 4 months of meter readings and 2021 has 2 months			

3.13 Vehicle Fleet

The vehicle fleet includes all motorized vehicles owned and operated by the Town of Saint Andrews. Vehicle fleet fuel consumption data was retrieved from monthly fuel reports provided by the Town.

In total the GHG emissions associated with fuel consumption to power the Town's vehicle fleet was 69.10 tCO₂e. This represents 10% of all corporate sector emissions.

Table 6 Volume of Fuel Consumed and GHG Emissions for Town Owned Vehicles in 2020

Vehicle	Gasoline	Diesel	Propane	Total Emissions (tCO ₂ e)
2014 International 3 ton		2,644.85		7.090
2016 Freightliner		2,257.40		6.051
2011 International *		1,367.99		3.667
2011 Chevy 3/4 ton	2,015.08			4.649
2017 Chevy 3/4 ton	1,489.30			3.436
2013 Chevy 1/2 ton	2,343.98			5.408
2018 JCB Backhoe		2,820.94		7.562
Super M Backhoe		2,026.42		5.432
Trackless 2006		293.94		0.788
2015 Holder		713.02		1.911
Sweeper truck		761.09		2.040
2019 Ford 1/2 ton - Water Truck	1,149.03			2.651
Gas Card Mow Crew	2,089.27			4.821
2012 Chevy Colorado 1/4 ton	1,927.25			4.447
2019 Ford 3/4 Ton	2,603.54			6.007
Zamboni			2,070.80	3.137
Total	13617.45	12885.65	2,070.80	69.10
*Sold after 2020, Replaced with 2020 Freightliner				

3.14 Streetlights & Traffic Signals

This sector includes all outdoor lighting, such as streetlights. Overall, the Town’s streetlights consumed an estimated 280,939.75 kWh of electricity. Light groups were billed at yearly rates. Which were used to determine kWh, by using a conversion factor of \$0.1434/kWh as indicated on the bill.

In total, the GHG emissions associated with operating the Town’s streetlights were 75.85 tonnes of CO₂e. This represents 11% of all corporate sector emissions.

Table 7 Energy Consumption and GHG Emissions of Town Streetlights

Streetlight Group Name	Total Use (kWh)	# of Streetlights	Total Emissions (tCO ₂ e)
100W/LED Light only	225,731.94	193	60.95
100W/LED Light with wood pole	12,483.12	8	3.37
150W/LED Light only	28,409.21	17	7.67
150W/LED Light with wood pole	10,309.62	5	2.78
200W/LED Light only	4,005.86	2	1.08
Total	280,939.75	225	75.85

3.15 Water & Wastewater

The emissions associated with water and wastewater management systems can be highly variable in local government operations inventories. A number of factors influence this variability, including any sanitary sewer and potable water treatment plants in the system, and the local topography which affects the pumping and movement of water. Water and wastewater system real consumption data sets were retrieved from monthly NB Power bills provided by the Town. Monthly records for each facility were provided, which were compiled into yearly consumption totals.

In total, the GHG emissions associated with operating the Town's Water and Wastewater Systems were 203.26 tonnes of CO₂e. This represents 30% of all corporate sector emissions. The Town of Saint Andrews has both a wastewater treatment facility and a potable water treatment facility, which are the two highest emitters and contribute to the water system being the second highest emitting corporate sector.

Table 8 Energy Consumption and Emissions for Operation of the Town's Water and Wastewater System in 2020

Water & Wastewater Facility	Electricity (kWh)	Total Emissions (tCO ₂ e)
Water Reservoir (661 Mowat Dr)	365	0.10
Water Reservoir (632 Mowat Dr)	7,200	1.94
Wastewater Treatment Facility (495 Prince of Wales St)	257,520	69.53
Lift Station (20 Edward St)	951	0.26
Lift Station (61 Water St)	1,995	0.54
Lift Station (55 Joes Point Rd)	1,560	0.42

Lift Station (8 Douglas St)	300	0.08
Water Treatment Facility (# Harkness Rd, Chamcook)	479,880	129.57
Chlorine Injection Station (# Mowat Dr)	3,031	0.82
Total	752,802	203.26

3.16 Solid Waste

Emissions from solid waste, mostly in the form of methane, enter the air directly as waste decomposes. The corporate solid waste sector is often a small portion (> 3%) of total corporate sector emissions. Nonetheless, cost-savings and emission reduction opportunities are present within this sector. The data for this sector was deemed inconclusive, or not statistically significant.

3.2 Energy Consumption, Emissions, and Expenditures by Source

The following section breaks down consumption and emissions by energy source. Approximately 89% of the emissions were produced by electricity consumption, the remainder by diesel, gasoline, and a much smaller proportion by propane and heating fuel oil consumption. Expenditures on these different energy sources reflect the same trends as emissions.

Table 9 Summary of Energy Consumption, GHG Emissions and Energy Expenditure by Energy Source 2020

	Source	Consumption (GJ)	tCO ₂ e	Expenditure
	Electricity	8,041.25	603.09	\$307,812.28
	Natural Gas	0	0	0
	Gasoline	476.61	31.42	\$13,317.56
	Diesel	493.52	34.54	\$14,163.53
	Heating Oil	435.96	3.03	\$10,824.14
	Propane	80.36	3.14	\$1,553.10
	Total	9527.69	675.22	\$347,670.61

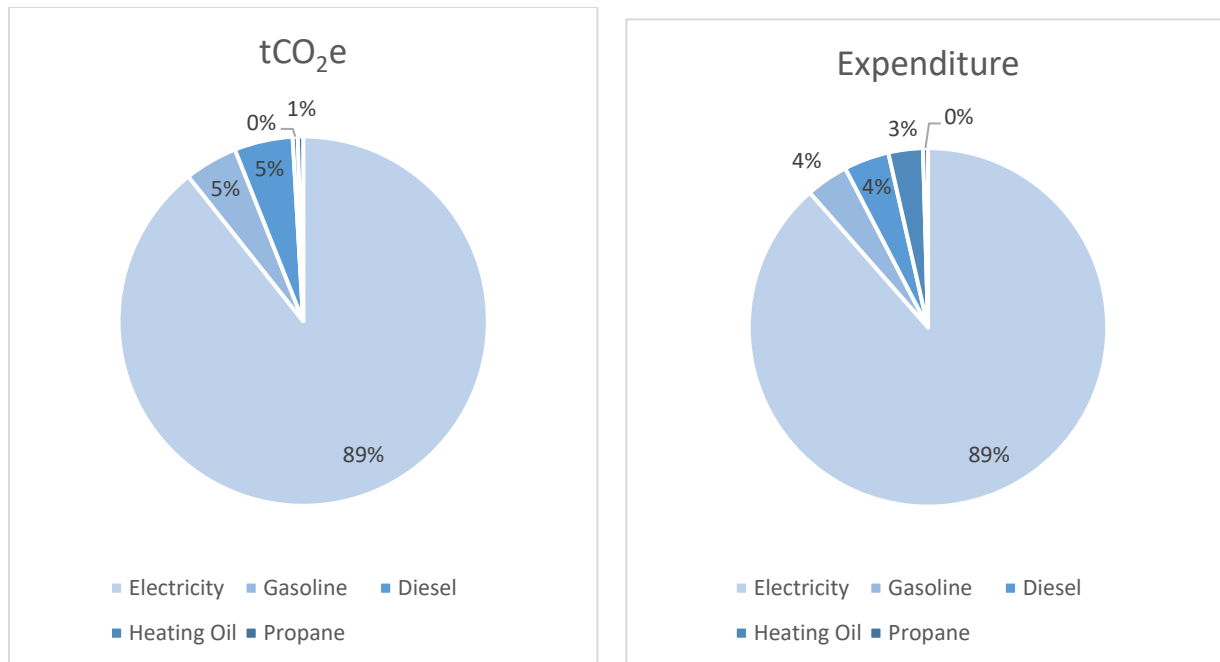


Figure 3 & 4: Emissions Percentage and Energy Expenditures by Sector

4.0 Summary and Conclusions

4.1 Assumptions and Exclusions

Often in the creation of municipal GHG inventories it is necessary to make assumptions and exclusions for a variety of reasons such as the unavailability of real consumption data, the lack of specific service, unreliable data or unavailability of any data for a specific sector. This section details the assumptions and exclusions that were made in the inventory and why.

- Methane or nitrous oxide from cars emissions were excluded because more detailed technical information about the vehicles would be needed to identify relevant emission factors.
- Streetlights charged at a yearly rate through equalized billing, it was therefore assumed that there was no change in the yearly rate. It was also assumed that the \$/kWh rate identified on the bill did not change as this was used to determine the total kWh use for 2020 from the yearly charge. This was done because no record for kWh use was available.
- Real consumption data in the form of liters was not available for both propane and heating oil, instead a yearly cost for both was used. It was assumed that using an average yearly cost (\$/Liter) of both for the Saint John region would capture the general trends in what the municipality paid for these fuels and could be used to convert the year total cost to liters.

- Solid waste was excluded from the inventory because of unavailable data. The Town of Saint Andrews does not own or operate its own solid waste facility, and the regional facility does not keep track of or distinguish how much waste comes from each municipality. If a local government does not own or operate its own solid waste facility, there are ways to estimate GHG emissions based on the amount of solid waste collected from corporate waste bins during the inventory year that is landfilled or incinerated. But this requires local governments to estimate the quantity of solid waste generated at corporate buildings and facilities based on the size of garbage bins used, their average fullness, and the frequency of their pickup. This information is also not currently available, but tracking this information for future inventories can be explored.

4.2 Modifications from Past Inventories

There is no fully comprehensive past inventory for the municipality of Saint Andrews. Though the Town did have a building energy audit conducted in 2008 for 9 town owned buildings. This current inventory differs greatly from this energy audit by including all town owned assets, and by being focused on GHG emissions. However, the data collected in the 2008 audit can still be used as a reference for changes in energy consumption and an emissions analysis was performed on the 2008 data and compared to the 9 relevant buildings in the current inventory. This comparison can be found in the next section.

4.3 Comparisons to Previous Inventories (The Base Year)

Though this is considered the base year inventory, the Town of Saint Andrews previously had a building energy audit conducted for 9 town-owned buildings by Jacques Whitford Limited under the Energy Conservation and Climate Protection Project in 2008. This report detailed energy audits for each building, identified potential projects for reduction in energy use, estimated project costs and potential cost savings and payback period from implementation.

Based on the energy use identified for each building emissions were calculated using the same methods as the current inventory and are detailed below.

Table 10 *Building Emissions Derived from 2008 Energy Audit vs Building Emissions from 2020 Base Year Inventory for Buildings included in 2008 Audit*

Buildings & Facilities	Consumption Data 2008	Emissions (tCO ₂ e) 2008	Consumption Data 2020	Emissions (tCO ₂ e) 2020
Public Works Garage (95 Patrick St)	17465 kWh	4.716	32,880.00 kWh	8.88
	8341 L Heating Oil	22.963	4,115.91 L Heating Oil	1.11

Ross Museum (188 Montague St)	No Data – Visual Review Only		9,020.00 kWh	2.44
	No Data – Visual Review Only		3,443.57 L Heating Oil	0.93
Youth Center (56 Reed Ave)	28555 kWh	7.710	22,323.00 kWh	6.03
W.C O'Neill Arena (24 Reed Ave)	999000 kWh	269.73	801,120.00 kWh	216.30
Town Hall (212 Water Street)	100560 kWh	27.151	60,812.00 kWh	16.42
Library (110 King St)	68480 kWh	18.490	81,440.00 kWh	21.99
Fire Station (80 Reed Ave)	74960 kWh	20.239	53,200.00 kWh	14.36
White house (46 reed Ave)	No Data – Visual Review Only		No Data – No longer Town owned	
Total		370.99		288.46

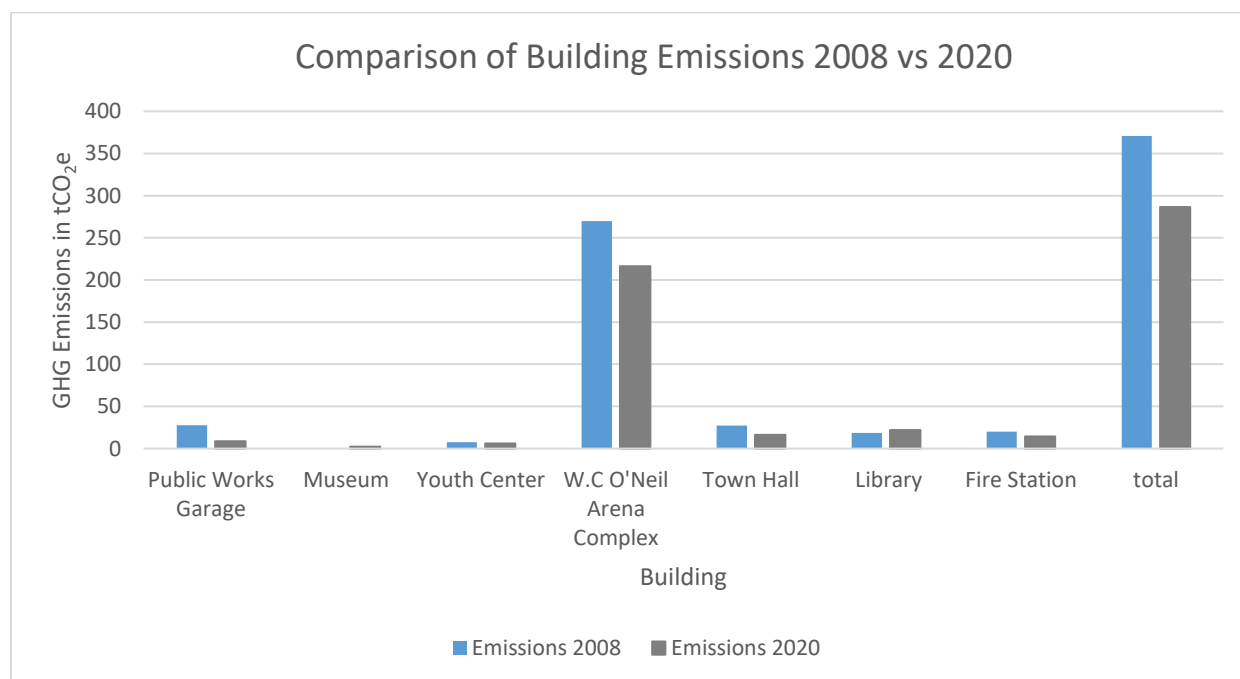


Figure 5 Comparison of Building Emissions 2008 vs. 2020

Comparison of these 9 buildings from the 2008 energy audit to the current inventory shows a positive trend in reduction of energy consumptions and therefore GHG emissions. The 2008 emissions were 370.99 tCO₂e while the 2020 emissions were 288.46 tCO₂e. Overall, the GHG

reduction for these 9 buildings from 2008 to 2020 was 22%. Noting the Ross Museum was not included in the 2008 audit, this reduction is perhaps even greater. More qualitative research would be required to determine exactly how these reductions were achieved and how much is a result of implementation of projects for reduction in energy use recommended by the Jacques Whitford Report. But these positive results show promise for continuing to implement projects identified in the report in other buildings.

4.4 Business-as-Usual Forecast

The PCP Program requires municipalities to develop a simple forecast reflecting a business-as-usual scenario 10 years into the future. Generally, forecasts for municipal operations for most sectors will mirror the population projections for a community. For the Town of Saint Andrews, this is challenging, as the permanent resident population has been in decline over recent years as it is a small, rural community. The population of Saint Andrews was 1,889 in 2011 and dropped to 1,786 in 2016. An annual population decline of 1.1% (Statistics Canada, 2017) which would indicate a potential for limited or no increase in emissions over the next 10 years.

4.5 Reduction Targets

Despite the Business-as-Usual Forecast indicating limited or no increase in emissions over the next 10 years, the PCP program commits members to adopt a corporate GHG reduction target of 30 per cent below 2005 levels by 2030. In the past, the PCP program committed members to adopt a corporate GHG reduction target of 20 per cent below 2000 levels within 10 years of joining the PCP program.

It is recommended that the Town of Saint Andrews sets a reduction target of 30 % below 2020 levels by 2030. This is a reduction of 202.56 tonnes of CO₂e.

Once this reduction goal is set by council, Milestones 3 of the PCP program will be to set an emissions and energy reduction strategy with the Environmental Advisory Committee, Council & staff, and develop a local action plan to guide the municipality to meet their emission reduction goals.

The 22% reduction in emissions from 8 town owned buildings occurring since the 2008 energy audit show promise. The projects implemented should therefore be identified and implementation in other buildings should be considered.

Appendices

A: GHG Quantification Spreadsheet

[GHG Inventory SaintAndrews2020.xlsx](#)