Corporate Greenhouse Gas Emissions Update 2025:

Highlights Years 2020-2023

Township of Selwyn

Table of Contents

Introduction 03

Greenhouse Gas Reports 04

Corporate Greenhouse Gas Emissions from 2011 Baseline 05

Corporate Sectors 07

Annual GHG Reductions: Buildings 08

Annual GHG Reductions: Vehicles 09

Annual GHG Reductions: Waste 10

Annual GHG Reductions: Streetlights 11

Annual GHG Reductions: Water and Sewer 12

Highlights from 2020-2023 Greenhouse Gas Reduction Efforts 13

Future Recommendations 17

Introduction

The Province of Ontario's Green Energy Act requires all municipalities to do the following:

1. Report annually to the Ministry of Energy, Northern Development and Mines on their energy use and greenhouse gas emissions and publish the report on their website.
2. Develop a five-year conservation plan (as of July 2014) and update it every five-years. Plans must be published on their website.

Objective

The intent of this report is to highlight the Township's efforts to reduce Greenhouse Gas (GHG) emissions across the Township's **corporate sectors** and demonstrate its progress in reaching the GHG emission reduction targets outlined in Selwyn's 2016 Climate Change Action Plan (CCAP). **In 2016, Selwyn Township set a goal to reduce its corporate GHG emissions by 40% from the 2011 baseline by the year 2031.**

Corporate Greenhouse Gas Emissions

Corporate Greenhouse Gas (GHG) emissions refer to those generated by municipal operations. These emissions arise from the daily activities involved in providing services to the community. Selwyn Township has control over its corporate sector GHG emissions and can reduce emission sources through strategic municipal decision-making and planning.

The corporate sector is comprised of municipal fleet vehicles, solid waste management, municipal facilities, water and sewage treatment, and streetlighting. Corporate GHG emissions are represented as metric tons of carbon dioxide equivalent (tCO2e).

This report **excludes Community Sector** GHG emissions derived from buildings, vehicles, and industrial processes owned and operated by residents and businesses in the community for which the municipality does not have direct control over mitigation.

Remember! Corporate GHG emissions are represented as metric tons of carbon dioxide equivalent (tCO2e).

GHG Reports

2016: <u>Climate Change Action Plan</u>

- As part of a regional effort, the Greater Peterborough Area's (GPA) member communities joined more than 250 other communities across Canada to address climate change through participation in the Partners for Climate Protection (PCP) program. The 2016 Climate Change Action Plan outlines a goal to reduce corporate GHG emissions by 40% from the 2011 baseline by the year 2031.

2019: Township of Selwyn Corporate GHG Emission Reduction Efforts for 2012-2019

- A report was prepared in 2019 to outline the Township's GHG emission reduction efforts. This report highlighted that corporate emissions were reduced by 35%, illustrating that the Township was well on its way to its 40% reduction goal. The report outlined the projects that had contributed to these reductions.

2025: Corporate GHG Emissions Update

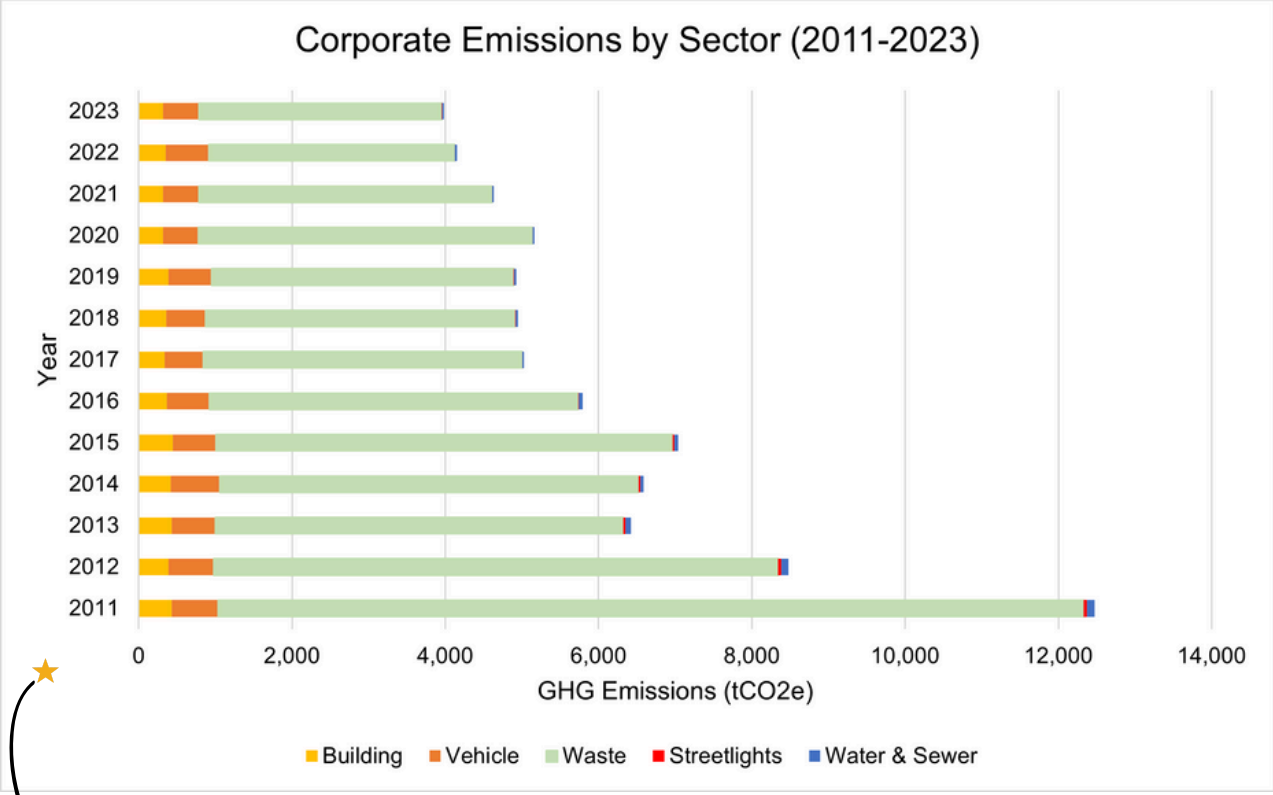
- Solid waste emissions were found to be previously underestimated impacting the 2011 baseline year and onward. The composition of methane producing waste was too low. The 2016 and 2019 reports noted above used 2011 emissions baseline using the lower methane producing waste percentage.
- In 2024, waste data was re-inventoried from 2011 to 2023 using an updated national average for methane producing waste (higher percentage of methane producing waste relative to overall waste type). **This re-inventory resulted in an updated 2011 corporate baseline of 12,460 tCO2e.**

This report has been completed using the re-inventoried 2011 baseline emissions.

GHG Emissions reduced by 68% as of 2023

2023 Corporate Emissions = 3,985 tCO2e

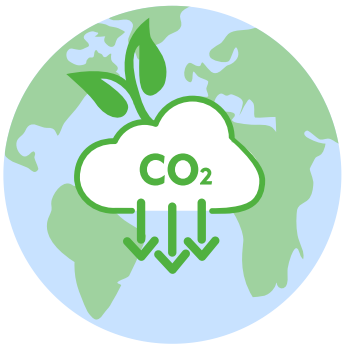
Corporate Greenhouse Gas Emissions from 2011 Baseline



Re-inventoried 2011 Baseline used.

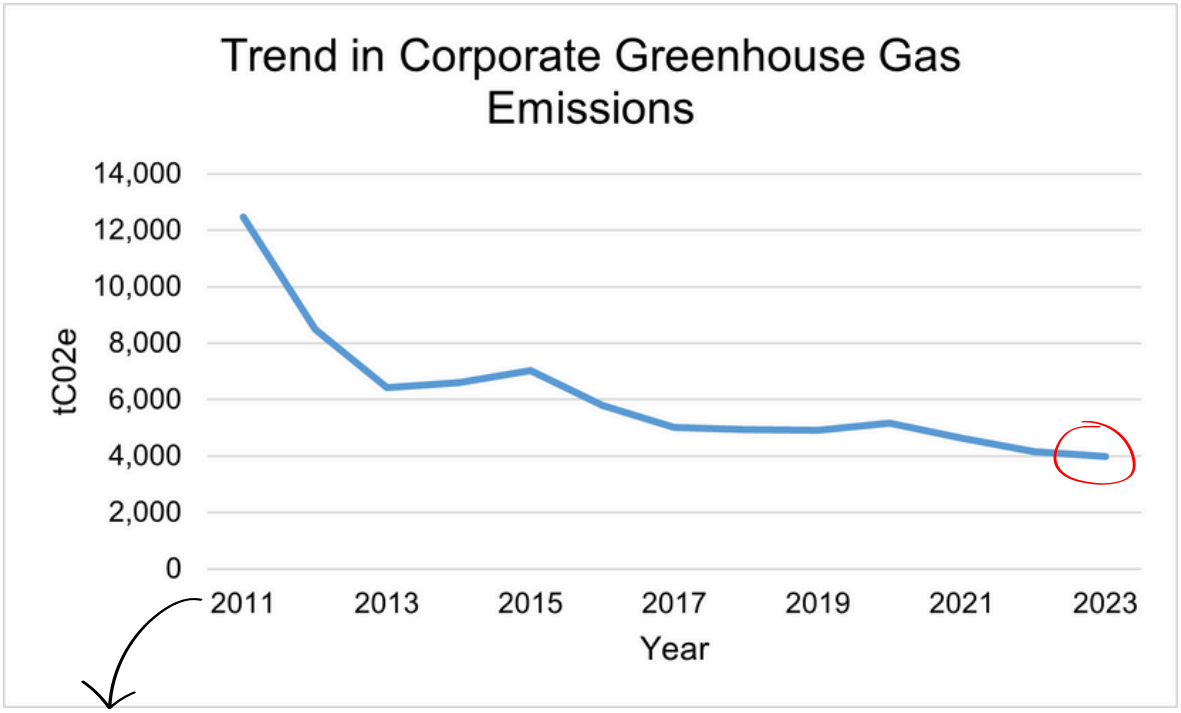
The figure above illustrates the changes in GHG emissions across all corporate sectors starting from the baseline year, 2011. The re-inventoried baseline emissions of 12,469 tCO2e have been used.

Selwyn Township has achieved the corporate reduction target of 40% before the year 2031.



Between 2011 and 2023 there has been a 68% reduction in corporate emissions, equal to approximately 8,484 tCO2e.

Corporate Greenhouse Gas Emissions from 2011 Baseline



The above figure represents the downward trend of all corporate greenhouse gas emissions in Selwyn Township from 2011 to 2023. Based on current data, Selwyn Township is emitting the lowest amount of greenhouse gas from all corporate sectors since 2011.

Below are the greenhouse gas emissions organized by sector, for the year 2023.

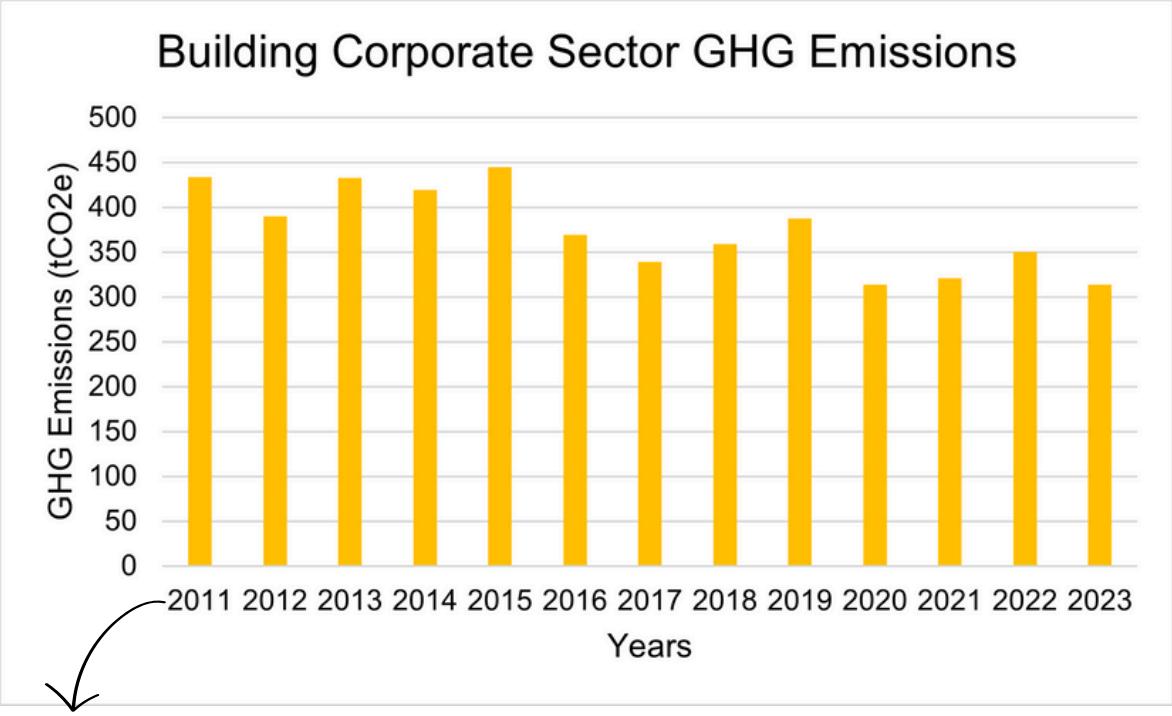
Sector	Buildings	Vehicles	Waste	Streetlights	Water/Sewer
Total GHG (tCO_2e) in 2023	314 tCO_2e	472 tCO_2e	3,170 tCO_2e	5 tCO_2e	25 tCO_2e

Corporate Sectors

- Buildings
- Vehicles
- Waste
- Streetlights
- Water & Sewer

Annual GHG Reductions: Buildings

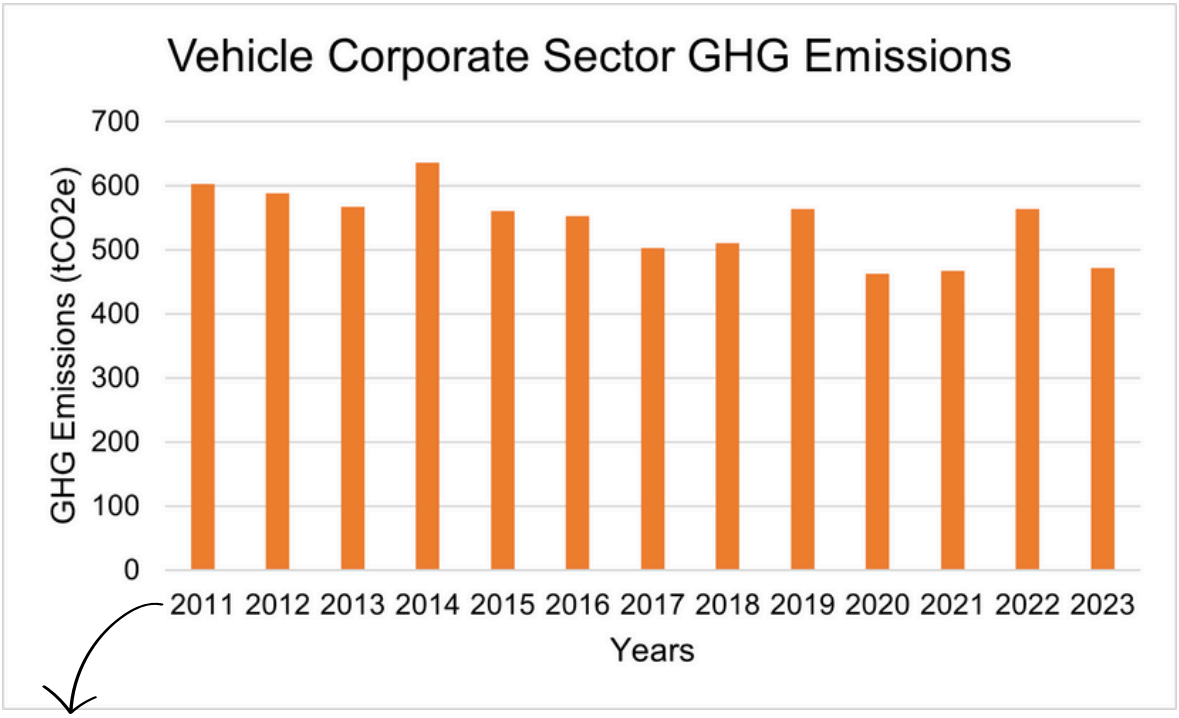
The Township has reduced GHG emissions associated with building operations by **120 tCO2e tonnes**, or **28%** since 2011. This has been achieved through a range of energy efficiency upgrades and fuel switching.



Re-inventoried 2011 Baseline used.

Annual GHG Reductions: Vehicles

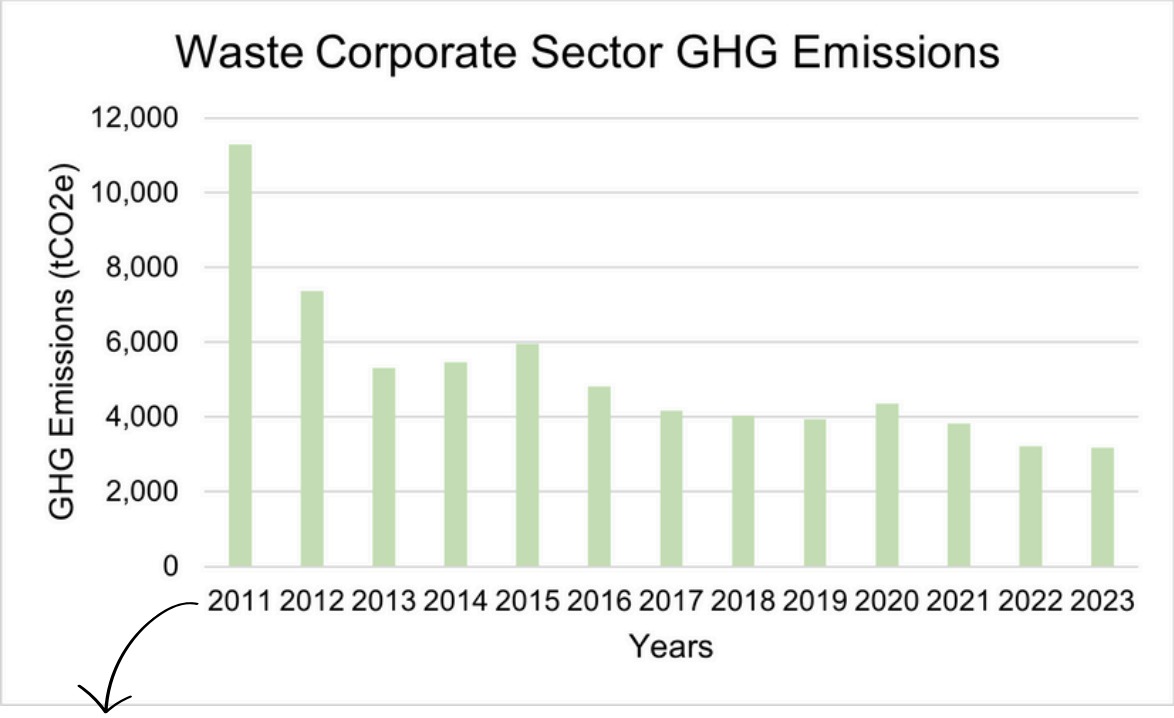
The Township has reduced GHG emissions associated with the fleet by **131 tCO2e tonnes**, or **22%** since 2011. This has been achieved by upgrading vehicles to meet the highest emissions standards which increase efficiency and reduce air pollution, and opting for battery-powered equipment as opposed to gas or diesel.



Re-inventoried 2011 Baseline used.

Annual GHG Reductions: Waste

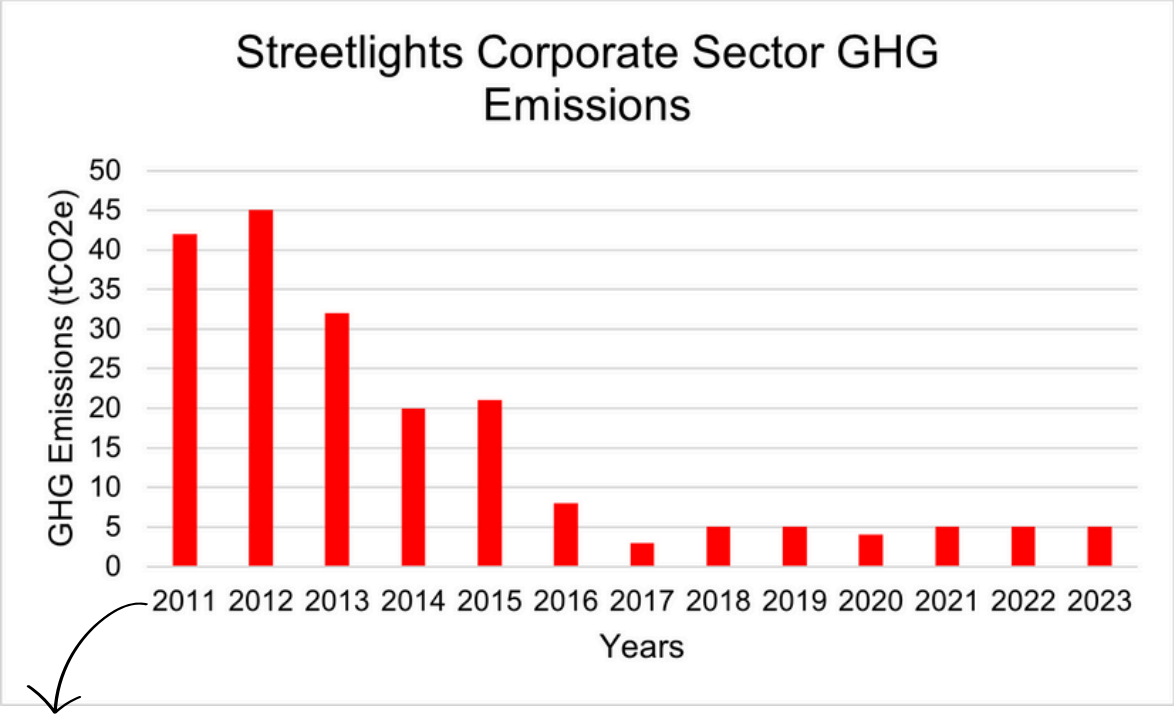
The Township has reduced GHG emissions associated with solid waste by **8,124 tCO2e tonnes**, or **72%** since 2011. Solid waste is the Township's highest emitting sector, not uncommon for a municipality with its own landfill. Reductions have been achieved through waste diversion efforts for Construction & Demolition materials, the Hazardous Waste Depot, and Leaf & Yard Waste collection. As well as implementation of the clear bag policy, and composting programs.



Re-inventoried 2011 Baseline used.

Annual GHG Reductions: Streetlights

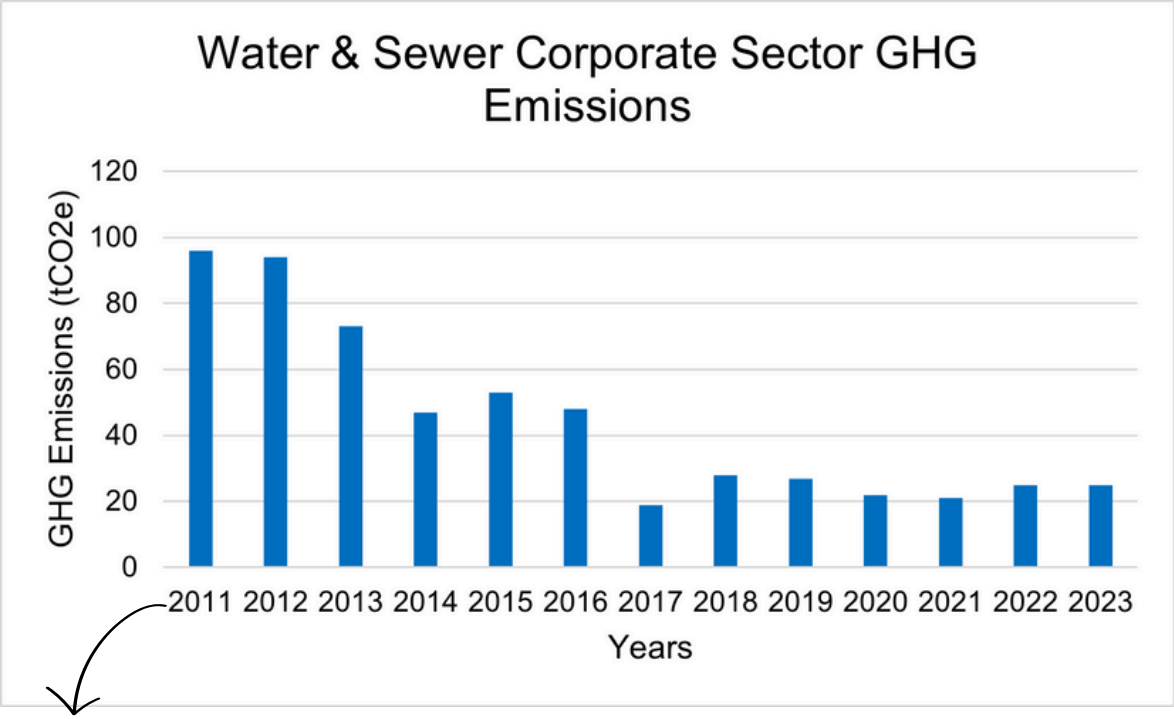
The Township has reduced GHG emissions associated with streetlights by **37 tCO2e tonnes**, or **88%** since 2011. Streetlights are also the lowest emitter of GHG out of all corporate sectors. This has been achieved by converting streetlights to LED, significantly reducing electricity consumption.



Re-inventoried 2011 Baseline used.

Annual GHG Reductions: Water & Sewer

The Township has reduced GHG emissions associated with water & sewer operations by **71 tCO2e tonnes,** or **74%** since 2011. It can be assumed that one of the largest contributors to reductions in GHG has been upgrading the air blowers at the Wastewater Lagoon as they can be a major consumer of electricity.

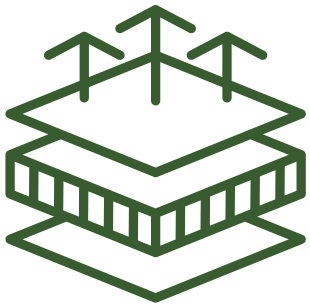


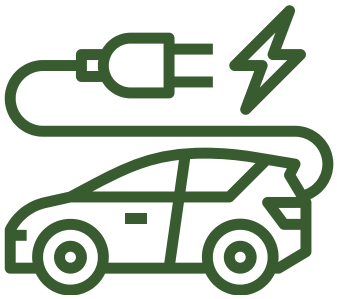
Re-inventoried 2011 Baseline used.

2020 Highlights: GHG Reductions

Ennismore Seniors' Space

A new insulated roof membrane was installed to replace the flat roof. This has reduced heat loss and associated heating costs.



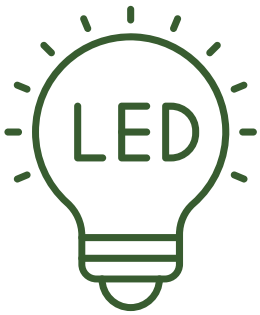


Electric Vehicle Lease

The Township received federal funding through FCM's Green Municipal Fund to lease a plug-in hybrid electric vehicle (PHEV) for the Building & Planning Department and install a Level 2, 240-volt charging station at the Municipal Office.

Lakefield Marina Lighting

Boardwalk light fixtures were upgraded to energy efficient LED heads. LED lighting reduces electrical consumption, operational costs and GHG emissions.



Tree Planting Initiatives

Selwyn Township partnered with the Otonabee Region Conservation Authority (ORCA) to plant **more than 1,800 trees** to restore the Ennismore and Preston Pits!

2021 Highlights: GHG Reductions

Clear Bag Policy Implemented

Selwyn Township implemented the Clear Garbage Bag Program to help divert recyclables away from the Smith Landfill.

Lakefield Firehall HVAC Updates

Replacement of the 30-year-old air conditioning and heating unit in the central area of the building, which serves the locker rooms, break room, kitchen, and training room, to improve comfort and energy efficiency.

Purchase of Electric Vehicle (EV)

Purchasing an all-electric vehicle took action for **Strategy 6** of the Selwyn Township Climate Action Plan to establish a green fleet for the building department. An all-electric vehicle can reduce daily CO2 emissions by approximately 35,300g/km which is equivalent to **saving 15L of fuel daily**!

Waste Diversion Statistics

880 tonnes of Construction & Demolition debris
92 tonnes of Fibre (paper and cardboard products)
23 tonnes of Containers
55 tonnes of Scrap Metal
1,557 Used Tires

2022 Highlights: GHG Reductions

Upgrades to 12 Queen Street

Improvements made to the building, including the installation of an enhanced HVAC system, energy-efficient lighting, and upgraded insulation. These changes aim to optimize comfort, reduce energy consumption, and improve overall building performance.

Lakefield-Smith Community Centre Updates

Lakefield-Smith Community Centre updated 20 Year old Roof-top Air Conditioning Units. The updates allowed for increased energy efficiency and overall cost savings.

Waste Audit at Smith Landfill

A comprehensive waste audit was conducted at the Smith Landfill, resulting in several key recommendations for improving waste management practices. These suggestions were incorporated into the **2022 Waste Plan** and **2024 Waste Marketing Campaign.**

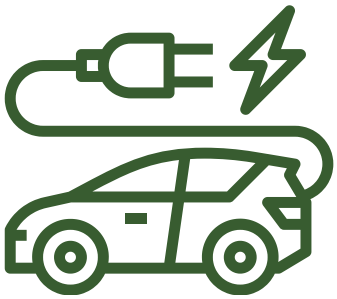
Waste Diversion at Landfill

Curbside garbage collection saw a notable **4% decrease**, highlighting the success of diversion initiatives.
885 tonnes of Construction & Demolition debris
47 tonnes of Scrap Metal
2,169 Used Tires

2023 Highlights: GHG Reductions

FoodCycler Pilot Program

In partnership with FoodCycler Science, the Township was able to offer subsidies to Selwyn residents for the purchase of a kitchen composter. There were **250 households** which participated in the Pilot Program, which means it has the potential to **divert 500 tonnes of food waste over 7 years.**



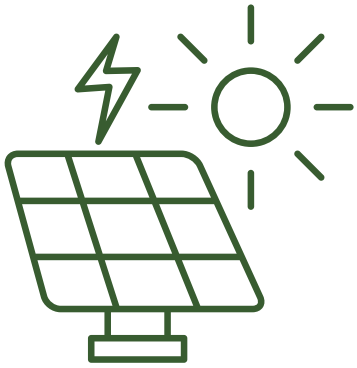
Electric Vehicle Chargers

6 New Level 2 Electric Vehicle chargers were installed at 4 locations in Selwyn Township, including the Municipal office, Ennismore Community Centre, Bridgenorth Library and The River Den. Helping to encourage EV's and lower fuel consumption at corporate buildings.

Solar Energy

The Township manages solar panel systems across six locations in Selwyn. As of 2023, the **total energy generation from these solar panels was 3,129,374.77 kWh**.

FIT installations: Energy generation of **2,714,174.93 kWh.**
MircoFIT Installations: Energy generation of **415,199.84 kWh.**



Waste Diversion at Landfill

3,859 pounds of household batteries, **700 tonnes** of Construction & Demolition debris, **3.3 tonnes** of textiles through the Diabetes Bin, **2,637 used tires** and **over 42,000 vehicles** visited.

Future Recommendations

Maintain and Further Reduce Emissions

While reaching the corporate GHG 40% reduction target is a significant milestone, it's essential to maintain and build on that success. Selwyn's approach to reducing corporate GHG emissions is founded on implementing practical, community-based programs that reduce costs and GHG emissions. This has been achieved through operational efficiencies; accessing grants to make investments in fleet, technology and buildings; retrofitting lighting and other systems; waste diversion etc.

Continue to Focus on Unaddressed Aspects of the Climate Change Action Plan (CCAP) - Corporate Emissions

Review all aspects of the existing CCAP and identify any components that have not yet been implemented, such as:

- Installation of building automations systems to optimize building operations
- Implement the Climate Lens Tool (Pilot Program)
- Explore FCM funding for energy audits for corporate facilities
- Explore utilization of renewable energy sources e.g. solar powered signage, lighting and hot water heaters
- Using the Township's Asset Management and Facility Assessment reports to upgrade or replace insulation, windows, lighting, HVAC systems, building envelopes, and more, with the aim of enhancing efficiency and reducing costs
- Continue to install electric charging facilities at new/existing Township facilities
- Right size fleet (fit-for purpose) and explore low emission/alternative fuel vehicles
- Retrofit parking lot lighting to LED
- Investigate corporate green procurement policies

Future Recommendations

Additional Recommendations

Outside of the Township's Climate Change Action Plan (CCAP) there are many initiatives that can contribute to reduced corporate GHG emissions and a more sustainable future. Some of these may include:

- Preservation and expansion of green spaces – including tree planting and reforestation, creating pollinator gardens, and naturalizing park areas to reduce mowing.
- Employee engagement and awareness – promoting food waste reduction, eliminating single-use items, and increasing recycling and composting efforts.
- Tree planting at Township facilities – to provide shade and enhance cooling.
- Exploring a reuse centre at the Smith landfill, with a possible 3rd party partnership.

Thank You!

Township of Selwyn