

2018



New Glasgow
flourish

 **NEW GLASGOW**
COMMUNITY GREENHOUSE GAS EMISSION INVENTORY



ACKNOWLEDGEMENTS

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The Town of New Glasgow is a proud member of the Federation of Municipalities Partners for Climate Protection Program and the Global Covenant of Mayors for Climate and Energy.





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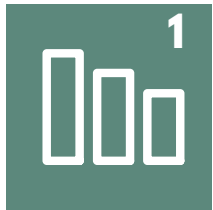
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MILESTONE FRAMEWORK



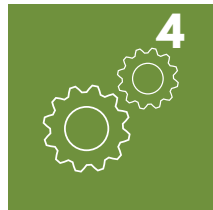
INVENTORY



TARGET



ACTION PLAN



IMPLEMENTATION



MONITOR PROGRESS

CLIMATE ACTION NEW GLASGOW

Climate change is a global scale issue but the impacts are happening and being felt at the local community level. Fortunately many of the solutions we need to address climate change will take place in our communities. When it comes to sources of greenhouse gas emissions (GHGs) in Canada, it is estimated that just over over 50% are generated in towns and cities. Municipal governments have influence or control over these emissions through service provision, infrastructure, bylaws, and development.

The Town of New Glasgow is committed to advancing local climate action through ambitious emission reductions. In 1998, the Town of New Glasgow joined the Partners for Climate Protection (PCP) program, a national network of over 350 municipalities working to reduce local greenhouse gas emissions while creating economic and social benefits for their communities. The program is a joint effort between the Federation of Canadian Municipalities (FCM) and ICLEI Canada— Local Governments for Sustainability. The PCP program is a five-milestone framework advancing a municipality through planning to implementation of local climate action. Milestone 1 builds a foundation with the creation of a baseline emissions inventory and business as usual forecast. Milestone 2 involves setting an emissions reduction target. Milestone 3 is the development of a local action plan to achieve emission reductions. Milestone 4 is the implementation of the local action plan, and lastly Milestone 5 is the ongoing monitoring of progress and results reporting.

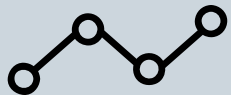
This Community Inventory provides a snapshot of the results generated from the community-scale GHG inventory. Milestone 1 represents the foundation for climate change action. The inventory data reveals how the town uses energy. The results also serve as a baseline against which future progress can be measured to ensure our community is reducing emissions and meeting targets. This inventory captures emissions that occur within the Town of New Glasgow boundaries. There are three sectors for emissions-generating activities; stationary energy, transportation and waste. This report outlines the results for Residential buildings, Commercial, Institutional, and Industry buildings, On-Road Transportation, and Waste.



SUMMARY

128,641 TONNES OF CO2

It is estimated that 128,641 tonnes of CO2 equivalent were generated in 2018 within New Glasgow. These emissions were generated through electricity, natural gas, fuel oil, diesel, gasoline and propane used to heat and cool our homes, power our businesses and buildings, and fuel our vehicles.



CO2 EMISSIONS BY SECTOR



60% of town energy use comes from electricity (kWh).

The Nova Scotia Power grid currently uses coal to generate approximately 58% of the province's electricity.

What produces 1 tonne of Carbon Dioxide?

4 One-way plane trips from Halifax to Toronto



11 Round-trip drives New Glasgow to Halifax



Household Greenhouse Gas Emissions include final consumption of energy, including fuel to drive your car, and energy to heat and power your home.



TONNES OF CO2 PER CAPITA IN NEW GLASGOW



TONNES OF CO2 PER CAPITA IN NOVA SCOTIA



HIGHER CO2 EMISSIONS PER CAPITA IN NEW GLASGOW COMPARED TO THE NOVA SCOTIA AVERAGE

OFFSETTING NEW GLASGOW'S EMISSIONS



617 square kilometers of forest would be needed to sequester the annual output of GHG emissions from within the Town of New Glasgow. That's an area 62 times the size of the Town of New Glasgow boundaries.



\$2,572,820.00 CAD



To offset the CO2 generated in the Town of New Glasgow in 2018, using CSA Standard-Certified Canadian Offsets



RESIDENTIAL

The residential sector represents **32.7% of CO₂ emissions** in our community. The residential sector accounts for greenhouse gas emissions produced directly and indirectly through energy use in households and apartments. The primary energy sources include electricity, fuel oil (heating), propane and natural gas. Usage data from each energy source is calculated and computed into the Partners for Climate Protection online tool to determine the tonnes of CO₂ equivalent. This information was gathered from the local utility (Nova Scotia Power), fuel providers, or estimated using provincial statistics.

Improving home energy efficiency and encouraging new development to consider on site renewables and high efficiency standards can help our community achieve energy reductions at home!

How you can reduce your energy and save money at home:



Book a home energy assessment: Efficiency Nova Scotia can help identify energy efficient upgrades to lower your heating and cooling costs.



Upgrade insulation in your attic and walls, and apply **weather stripping** around windows and doors to save energy and make your home more comfortable.



Adjust the thermostat: Keep the temperature in your house no cooler than 24 C in the summer, and no higher than 21 C in the winter.



Fuel Switching: Consider installing a heat pump.

42,066 TONNES OF CO₂

Residential energy use to power, heat and cool our homes comes from electricity, fuel oil, natural gas, propane and wood.

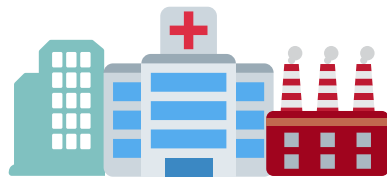


Atlantic Canada has the **highest household expenditures on energy** in the country, with many households **experiencing energy poverty**.

COMMERCIAL & INDUSTRIAL

44,165 TONNES OF CO₂

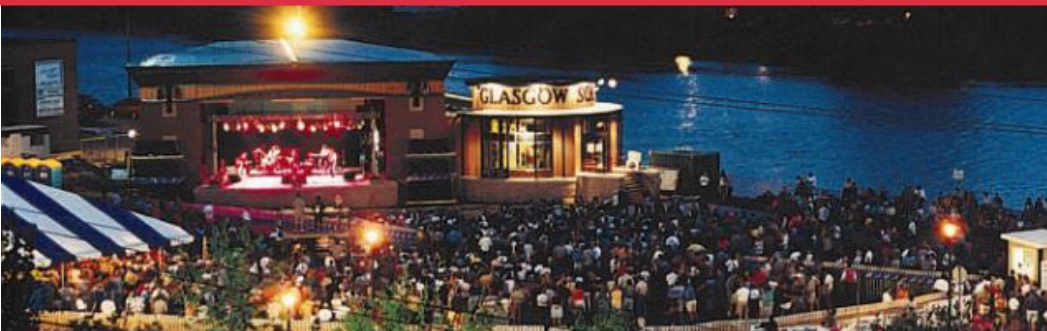
Emissions are generated through energy use to power, heat and cool commercial, institutional and industrial buildings



The Commercial sector includes emissions from office buildings, retail stores, schools, shopping centers, and the hospital, among other commercial, institutional buildings in our community. The emissions are generated from consumption within the buildings, including electricity, natural gas, fuel oil and propane. In addition to commercial buildings, this sector includes emissions generated through industry, including manufacturing and construction.

There are many actions individuals can take in the workplace to promote energy savings, including turning off your computer when not in use, taking the stairs, turning off the lights, lowering the thermostat and encouraging others to adopt sustainable practices.

Businesses can take advantage of incentive programs offered by Efficiency Nova Scotia to upgrade facilities, improve lighting, and increase the energy efficiency of facilities. These upgrades can yield significant cost savings and support a path toward a low-carbon economy in our community. There are many leaders in our community already supporting emission reductions, including Summer Street who are undergoing retrofits that will result in an annual savings of 91,942 kwh, that's the equivalent of 62 tonnes of CO₂ a year.



TRANSPORTATION

The transportation sector includes **all on-road vehicles** including cars, SUVs and trucks. Provincially, transportation represents the highest end-use energy demand sector, accounting for 44% of total demand. **Gasoline and diesel remain the primary fuel sources** to power vehicles in Nova Scotia. Emissions are largely dependent on vehicle fuel efficiency; the more fuel a vehicle burns, the higher the CO₂ emissions. On average, fuel efficiency in Canada tends to rank poorly compared to other nations, with average vehicle efficiency measuring 8.9L/100km.



On average, for every litre of gasoline a vehicle produces

2.3 ^{CO₂} **KG OF CO₂**

Electric vehicle sales continue to increase, with market projections showing wide scale adoption in the coming years. As the Nova Scotia electrical grid transitions to more renewable sources, electrical vehicles are a great choice for a low or zero emission vehicle. The charging infrastructure continues to expand across our region and the province, with more and more chargers available. **It's now possible to drive across all of Canada with an electric vehicle as a result of the increase in charging stations.**



22,734 KILOMETERS

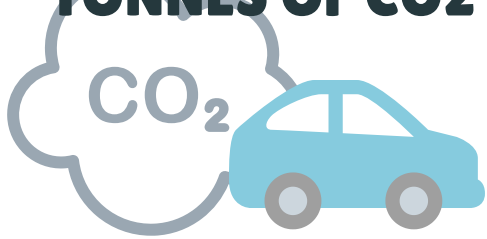
In 2016, the average distance travelled per year (km) by a car in Nova Scotia



Natural Resources Canada finds that **more fuel is used and CO₂ emitted when idling for over 10 seconds**, compared to turning off and restarting your engine.

TONNES OF CO₂ 39,082

CO₂ emissions result from fuel use (gasoline & diesel) for on-road vehicle travel in New Glasgow



How to green your commute:



Active Transportation: walking and cycling to work or school is a great way to reduce your carbon footprint, achieve your daily exercise goals and save money by not using your car!



Stop Idling: Follow the ten second rule, turn off your car if you are going to be stopped for more than 10 seconds (except when in live traffic). Avoiding idling saves you money and reduces emissions.



Reconsider your car use: If you're in a two car household, consider whether you can transition to one vehicle. If you're planning on buying a new car consider an electric vehicle, and consider the proper size vehicle for your needs. Perhaps you don't need a large SUV or truck, smaller vehicles tend to be more fuel efficient, saving you money!



WASTE

The waste sector accounts for emissions from the disposal of waste generated within the Town of New Glasgow. Emissions are calculated using the total tonnes of garbage and the composition of this waste (% organic material). Waste that is diverted, including organics and recycling is excluded from the emissions calculation. When organic materials such as food and yard waste are properly disposed in your green bin, they are composted. Organic materials in the garbage end up in landfills where conditions aren't suitable to proper breakdown resulting in the release of Methane, a highly potent greenhouse gas. Methane gas has 25 times the warming potential compared to CO₂ when released into the atmosphere. Town of New Glasgow data for residential and commercial waste was provided by Pictou County Solid Waste.



RESIDENTIAL WASTE STATISTICS NEW GLASGOW



ORGANICS

995,000
Kilograms



GARBAGE

669,650
Kilograms



RECYCLING

457,900
Kilograms

844.2
RESIDENTIAL

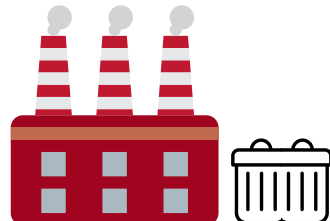
2018-19 greenhouse gas emissions resulting from household garbage disposal



TONNES OF CO2

1,825.2
COMMERCIAL

Estimated greenhouse gas emissions for the industrial, commercial and institutional sector in New Glasgow for 2018-19



For more information on waste sorting guidelines, check out pcwastemgmt.com



Proper sorting is an important part of reducing waste, and making sure items end up in the right place! Sorting is only one piece of the puzzle however, when it comes to waste reduction we need to stop waste before it starts! In 2017-2018 Nova Scotians produced 432 kg of waste per person. While some everyday items like coffee cups and food packaging may be recyclable, we need to avoid over-consumption. Recycling is an energy intensive operation, and an end stage waste management measure. Expand the three Rs of Reduce, Reuse, and Recycle, to include Rethink your purchase, and Refuse single use items to prevent waste!

Waste reductions tips from Pictou County Solid Waste:

There are many actions we can all take at home, school and in the workplace to stop waste before it happens.



Stay informed! - The first step is to knowing the rules of recycling and composting in Pictou County!



Practice mindful shopping – Consider if you really need an item, how you will use it and how you will dispose of it. Shop for items that come in little to no packaging.



Refuse single use plastics - plan ahead & be prepared: pack your bag with your must-have reusable items such as your coffee mug, water bottle, utensils and to-go containers



Donating clothing helps keep textiles out of the landfill. You can also save money and resources by shopping for second hand clothing and household items.



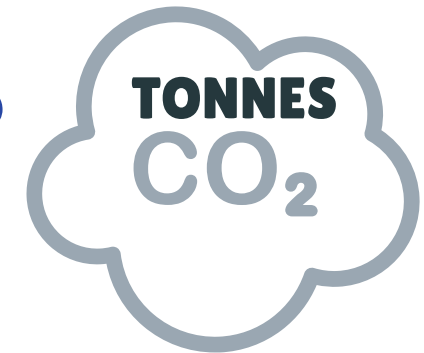
TOWN OF NEW GLASGOW CORPORATE INVENTORY

The Town of New Glasgow completed a greenhouse gas emissions inventory for the fiscal year April 1st, 2018 - March 31st, 2019. This inventory highlights energy intensive buildings and sectors within the Town's direct corporate control. The Town has set a corporate emissions reduction target to reduce our contribution to climate change.

SUMMARY

3003

Emissions are generated through town buildings, vehicles, streetlights, water & wastewater, and waste.



The Water Treatment Plant is the most energy intensive building owned and operated by the Town of New Glasgow.

244,723

LITRES

In 2018-19 the Town of New Glasgow Fleet used approximately 244,723 litres total of gasoline, diesel and propane to operate the Town Fleet, including snow plows, fire trucks, and police cars.



XX% TOWN OF NEW GLASGOW
CORPORATE EMISSIONS
REDUCTION TARGET

below 2003
levels by 2050

TOWN OF NEW GLASGOW EMISSIONS TARGET

This emissions inventory provides a snapshot of the Town of New Glasgow's current greenhouse gas emissions. The next step in the Town Climate Change Action Framework is to set an emissions reduction target. Nationally the federal government has committed to reducing emissions by 30% from 2005 levels by 2030. Provincially, the Government of Nova Scotia is working towards a reduction of 53% from 2005 levels by 2030.

The Town of New Glasgow is committed to ambitious climate action to foster a sustainable, low carbon, and resilient future for our community. Over the course of the Winter and Spring 2020, the Town of New Glasgow will be engaging residents, businesses, and stakeholders on what they would like to see as our Emissions Reduction Target for 2030, 2040, and 2050.



The Federal Government has set an emissions reduction target of 30% by 2030 from 2005 levels



As a member of the Global Covenant of Mayors, the Town of New Glasgow is committed to setting ambitious reduction targets, that align with Canada's Nationally Determined Contribution (NDC) for greenhouse gas emissions.

LOCAL ACTION PLAN

To reach our emissions reduction targets, the Town of New Glasgow will be developing and implementing a **Local Action Plan**. This plan will outline initiatives to support community emission reductions for each of the inventory sectors; residential, commercial & industrial, transportation and waste. Achieving ambitious reductions will require action from across the community, we all have a role to play in promoting a climate resilient, low-carbon future in New Glasgow. The Plan will include both short and long term actions in each of the sectors, and an implementation schedule to ensure timely adoption of new initiatives, as well as ongoing monitoring and progress reporting. Many of the actions will focus on reducing energy consumption, improving energy efficiency, fuel switching and the implementation of local renewable energy systems, along with reducing car dependency and promoting a healthy, climate resilient New Glasgow.

HAVE YOUR SAY! SHARE YOUR IDEAS FOR CLIMATE ACTION AND ENERGY REDUCTIONS IN NEW GLASGOW

Over the course winter and spring 2020 the Town of New Glasgow will be seeking input on climate change action in our community. Share your thoughts and ideas on actions the town can take to advance energy reductions, support improved active transportation, reduce waste and promote a climate resilient future.

HOW CAN YOU SHARE YOUR FEEDBACK?



Fill out our community survey



Email:
climateaction
@newglasgow.ca



Attend an information session



Connect
Online





REFERENCES:

Summary (Page 2)

Emission Calculations

GHG emissions were calculated using the Partners for Climate Protection (PCP) Protocol and the PCP Tool

<https://fcm.ca/sites/default/files/documents/resources/report/protocol-canadian-supplement-pcp.pdf>

Household Greenhouse Gas Emissions

Stats Canada (2019) Canadian System of Environmental–Economic Accounts: Provincial and territorial greenhouse gas emissions, 2016 (<https://www150.statcan.gc.ca/n1/daily-quotidien/190123/dq190123d-eng.htm>)

Carbon Dioxide Offsets

Total square KMs of forest was calculated using the EPA GHG Calculator

<https://fcm.ca/sites/default/files/documents/resources/report/protocol-canadian-supplement-pcp.pdf>

Total cost to offset emissions

less.ca

Commercial & Industrial (Page 4)

Photo: <http://www.nshealth.ca/locations-details/Aberdeen%20Hospital>

Photo: <http://architecture49.com/en/portfolio/projects/new-glasgow-academy/>

Transportation (Page 5)

Fuel efficiency

<https://www.cer-rec.gc.ca/nrg/ntgrtd/mrkt/snpst/2019/07-05hwdscndrnk-eng.html>

Co2 per litre of gasoline

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/oeef/pdf/transportation/fuel-efficient-technologies/autosmart_factsheet_6_e.pdf

Average kilometers traveled

(<http://oeef.nrcan.gc.ca/corporate/statistics/neud/dpa/showTable.cfm?type=CP§or=tran&juris=ns&rn=21&page=0>)

Idling

<https://www.nrcan.gc.ca/energy/efficiency/communities-infrastructure/transportation/cars-light-trucks/idling/4415>



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