Town of Austerlitz
Greenhouse Gas Inventory for Municipal Operations
2019-2022 Summary Report

Background

In August of 2017, The Town of Austerlitz unanimously voted to adopt the Climate Smart Communities pledge, and in April 2020, the Town established the Austerlitz Climate Committee, which focuses on the DEC Climate Smart Communities programs and NYSERDA Clean Energy Communities program.

An important step in the CSC process is PE2: Greenhouse Gas (GHG) Inventory for Government Operations. This GHG Inventory Report summarizes the GHG emissions from the Town's consumption of energy, direct and indirect, from its own operations : its facilities, fleet of vehicles, and streetlights. It is an accounting, analysis, and report of the GHG emissions resulting from the day-to-day operations of the town. In June of 2021, the Town adopted a GHG inventory establishing 2019 as a baseline. In the years that followed, data continued to be collected from all sources of energy used in town operations and in February of 2024, an update of the Town's GHG inventory was produced by Haley Balcanoff of CDRPC and Kathryn Beilke, Climate Committee Coordinator using an average of 2019-2022 as a newly established baseline.

In 2023, the Town of Austerlitz adopted a Climate Action Plan (CAP) for Government Operations which outlines a path towards reducing GHG emissions in all sectors in alignment with NYS CLCPA targets. A CAP is necessary for future planning and goals. The Town's CAP established that the GHG inventory and CAP will be re-evaluated at least every 3 years. The GHG Inventory informs that planning and is one of the priority actions necessary not only to establish a baseline of GHG emissions but also as a way to evaluate goals outlined in the Town's CAP.

This inventory is an important step toward tangible climate action and further achieving the benchmarks outlined in the Town's Climate Action Plan, an ongoing process reported periodically to the Town Board as opportunities are identified and the town's capabilities to take action mature.

Data gathering and methodology

The CSC Task Force appointed Kathryn Beilke to lead the GHG Inventory data collection effort, with the help of Capital District Regional Planning Commission (CDRPC) Sustainability Planner Haley Balcanoff.

The inventory includes Scope 1 and Scope 2 GHG emissions from government operations, as defined below:

- **Scope 1**: Direct GHG emissions from government-owned vehicles and onsite fuel combustion (natural gas, propane and fuel oil) for Administration buildings, and the Highway Garage.
- **Scope 2**: Indirect GHG emissions from purchased electricity.

Baseline Year

The inventory process requires the selection of a baseline year. Local governments examine the range of data they have over time and select a year that has the most accurate and complete data for all key emission sources. It is also preferable to establish a base year several years in the past to be able to account for the emissions benefits of recent actions. A local government's emissions inventory should comprise all greenhouse gas emissions occurring during the selected baseline year(s). The data collected for this inventory represents years 2019-2022 as a baseline. Because it is likely that facilities operated at a reduced capacity during 2020 and 2021 due to the Covid-19 pandemic, therefore using those years solely as a baseline would misrepresent the energy used by the Town.

Quantification Methods

The metrics used in this GHG Inventory were calculated using the GHG Inventory spreadsheet developed by Climate Action Associates, LLC (CAA), which is compliant with the Local Government Operations Protocol (LGOP), a standardized set of guidelines for quantifying and reporting the GHG emissions association with government operations. Greenhouse gas emissions in this inventory are quantified using calculation-based methodologies. Calculation-based methodologies calculate emissions using activity data and emissions factors. To calculate emissions accordingly, the basic equation is used:

Activity Data x Emissions Factor(Fuel, GHG) = GHG Emissions(Fuel, GHG)

Activity data refer to the relevant measurement of energy use or other greenhouse has-generating processes such as fuel consumption by fuel type, metered annual electricity consumption, and annual vehicle miles traveled. To obtain this data, the town gathered and reviewed all electricity, propane, and fuel oil bills for the town's accounts, as well as fuel records for gasoline and diesel used to power the town's vehicle fleet.

Data was first measured in kWh for grid electricity and gallons for gasoline, fuel oil, diesel, and propane. Using the CAA tool, this data was multiplied by emission factors published by the EPA and EIA to convert the energy usage, or other activity data in quantified emissions.

Emissions Factors

The electricity emission factor is based on the EPA eGRID subregion, which in this case is NYUP (Upstate). Each GHG has an emission factor unique to each fuel. The propane, heating oil/diesel, and gasoline emissions factors are taken from the EIA database on carbon dioxide

emissions coefficients. The GHG emissions in this inventory are measured in metric tons of CO2 equivalents (CO2e).

The emissions factors in this 2024 GHG Inventory update include the most current available (2021) US EIA Emissions Factors, and are allocated by subregion Upstate NY. The town's 2021 inventory which used 2019 as a baseline used emissions factors from 2014. This update is therefore more accurate than the town's previously adopted inventory.

Facilities Master List

A key step in creating the GHG inventory is to compile a facility master list that includes the town's buildings (including streetlights) that use at least one form of energy. Each was assigned to a category to indicate the type of infrastructure and then similar facilities along with their energy use. The sectors included in this GHG Inventory are: facility energy use, fleet fuels, and streetlights.

This table shows the Town buildings and energy providers included in the Austerlitz GHG Inventory:

Town Building/Municipal Vehicles	Energy Providers
Highway Garage	NYSEG (Gas & Electric), Main Care (fuel oil) → Long Energy (2023)
Town Hall	NYSEG (Electric)
Town History Center*	Paraco (Propane)
Streetlights	NYSEG (Electric)
Town Park	NYSEG (Electric)
Municipal Fleet	Main Care (diesel, gasoline) → Long Energy (2023)

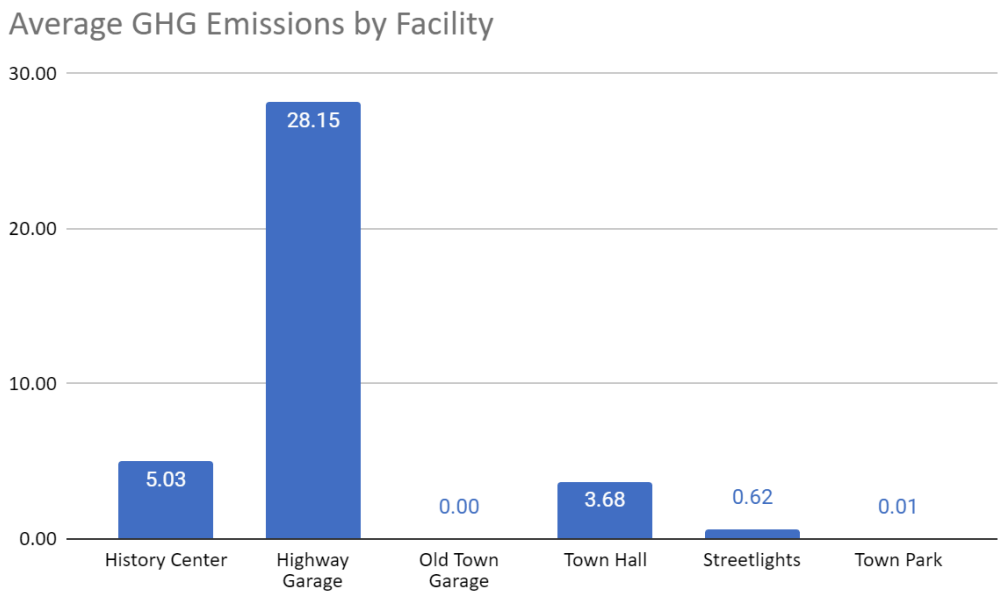
*Note that Town History Center and Town Hall are on same electric meter

KEY FINDINGS

The total GHG emissions produced by the Town of Austerlitz' municipal operations in 2019-2022 was 187.9 tons. The largest energy user and source of GHG emissions in Austerlitz is the vehicle fleet, which produces an average of 150.3 tons of GHG emissions annually and contributes to 80% of the Town's total GHG emissions.

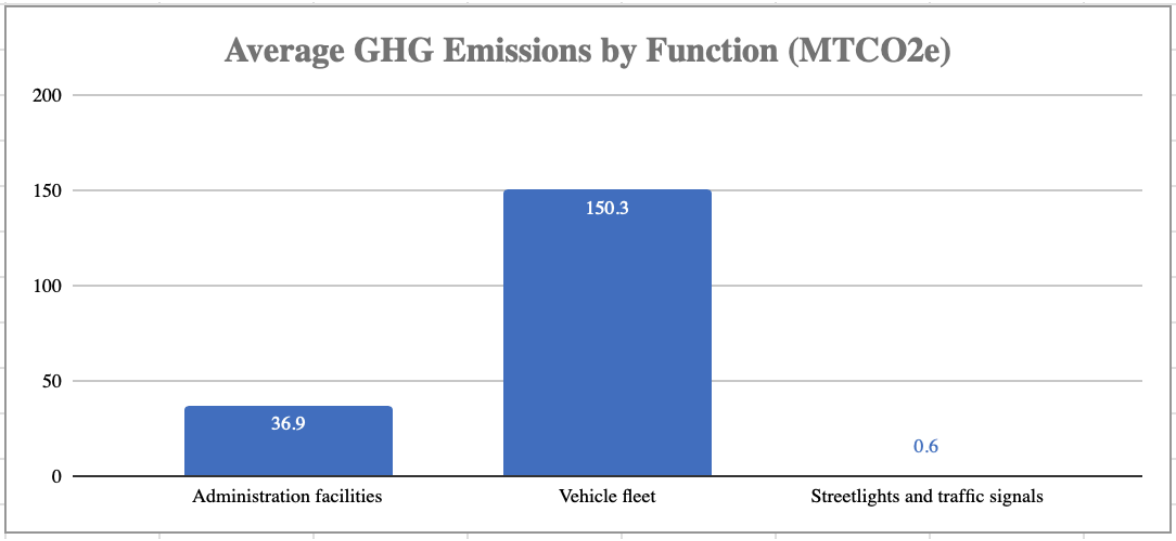
Facilities

The average total GHG emissions produced by the Town of Austerlitz's municipal facilities from 2019-2022 was 37.49 metric tons of CO2. The highest administrative facility use is by the Highway Garage with 28.15 metric tons of CO2.



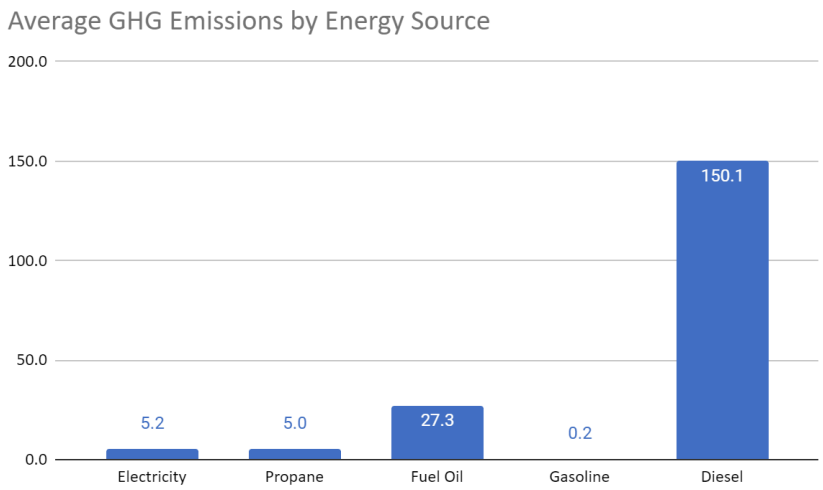
Emissions by Administrative Function

As noted above, energy used by vehicle fleets averaged 150.3 tons of GHG emissions. The chart below illustrates how vehicle fleet emissions compare to other facilities by function.



Emissions by Type

Diesel also outweighs all other energy types as far as GHG emissions tons are concerned, at about 80% of the town's overall GHG emissions. The chart below shows the breakdown of emissions by energy type.



OPPORTUNITIES TO REDUCE GREENHOUSE GASSES

This update to the Town of Austerlitz' GHG emissions baseline enables Austerlitz to evaluate targets and progress for future reduction of GHG emissions.

The Town has made strides in reducing GHG emissions and energy costs. The construction of the new town hall included 2 air source heat pumps; lighting in all interior buildings has been retrofitted with LED lighting as well as all 19 street lights within the jurisdiction. A 22.1kw solar array on the town highway garage became operational in May of 2020. These improvements would account for the gradual reduction in GHG emissions over the 5 years studied; total emissions for all operations have gone from 202.42 in 2019, to 181.65 in 2020, to 183.95 in 2021, to 183.12 in 2022. Comparing 2022 to 2019, there has been a reduction by 19.3 MTCO2 or 9.5%.

Since the majority of Town GHG emissions come from diesel and gasoline, converting the fleet to EV could accomplish a large emissions reduction. Further conversion to electrified sources of energy or moving emissions to "Scope 2" will allow the Town to offset GHGs with renewable energy, such as on-site solar arrays. One such solution is air-to-water heat pumps for the town highway garage for which the Town is currently pursuing funding.

Pursuing recommended actions within the Town's Climate Action Plan is a next step for the Town to progress towards its reduction targets and pursue strategies and funding to implement actions that will result in said reductions. Austerlitz has made significant progress to date and has a great deal to look forward to.

Submitted by Kathryn Beilke, CSC Task Force Coordinator