Town of Queensbury
Queensbury, NY
Greenhouse Gas Inventory for Government Operations
2019-2020 Summary Report

BACKGROUND

The Town of Queensbury Town Board approved Resolution 71, 2019 on April 25, 2019 to become a Climate Smart Community (CSC), with the same Task Force having previously worked with NYSERDA as a Clean Energy Community (CEC). Developing a Climate Action Plan (CAP) has become a priority for the CSC. A CAP is necessary for future planning and goals, therefore a Greenhouse Gas (GHG) Inventory must be completed to establish the baseline of GHG emissions resulting from day-to-day operations within the Town.

This GHG Inventory for Government Operations Report summarizes the GHG emissions from the Town of Queensbury's consumption of energy and materials within town-owned buildings, the Water Treatment Plant, vehicle fleets, outdoor lighting and other facilities. Developing this GHG Inventory is the first step towards tangible climate action, the development of a Climate Action Plan (CAP), and enabling the Town to identify realistic goals and track progress towards reducing operation costs, energy use and GHG emissions.

DATA GATHERING AND METHODOLOGY

The CSC Task Force appointed Kathy Bozony to lead the GHG Inventory data collection effort, with the help of Capital District Regional Planning Commission (CDRPC) Sustainability Planners Tara Donadio and Jill Henck, and Sustainability Intern 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, the Highway Garage, the Crematorium, Parks and Recreation, the Water Treatment Plant and storage facilities.
- **Scope 2**: Indirect GHG emissions from purchased electricity.

The data collected for this inventory represents 2019 and 2020, using the average of the two years as a baseline. Some of the data collected did not include complete years, so data from 2021 was used to collect the 12 months to make these years whole in order to complete the GHG Inventory spreadsheet developed by Climate Action Associates, LLC. National Grid

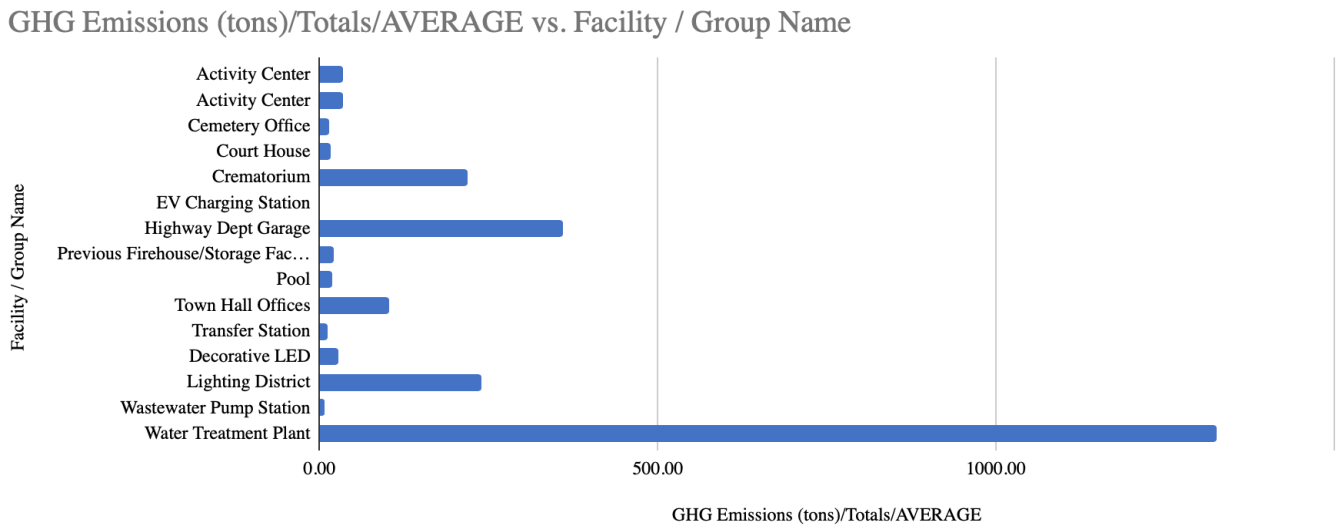
provides two years of data from the date of request, therefore usage for calendar years 2019 and 2020 from January to December was required. Additionally, some administrative facilities were closed or operated at a lower capacity during the 2020 Covid-19 pandemic, therefore using 2020 solely as a baseline would misrepresent the energy used by the Town.

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

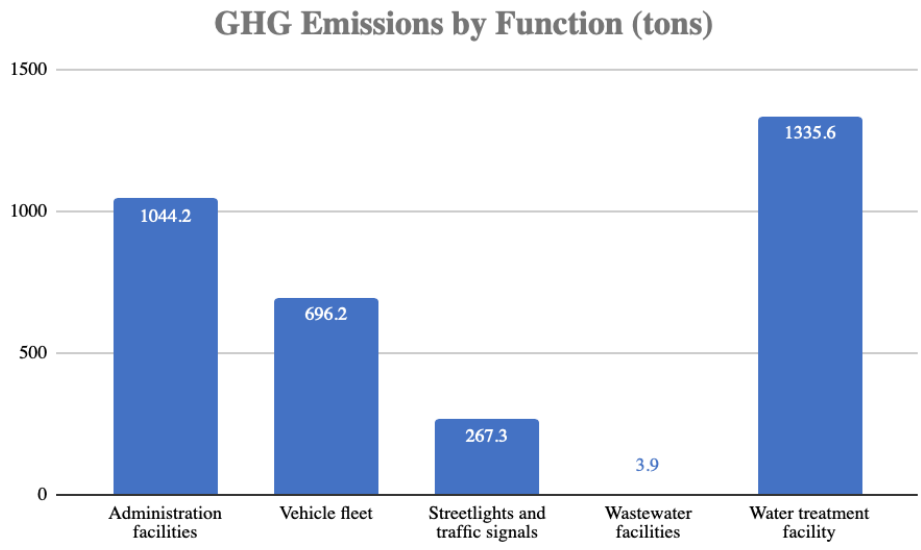
Town Building	Energy Providers
Activity Center	National Grid, Main-Care Energy, Rooftop solar array
Athletic Field	National Grid, Main-Care Energy
Cemetery Office	National Grid
Court House	National Grid, Rooftop solar array
Crematorium	National Grid
EV Charging Station	National Grid
Previous Firehouse/Storage Facility	National Grid, Main-Care Energy
Highway Dept Garage	National Grid, Rooftop solar array
Town Hall Offices	National Grid, Main-Care Energy, Rooftop solar array
Transfer Station	National Grid, Main-Care Energy
Decorative LED	National Grid
Lighting District	National Grid
Water Treatment Plant	National Grid
Wastewater Pump Stations	National Grid

KEY FINDINGS

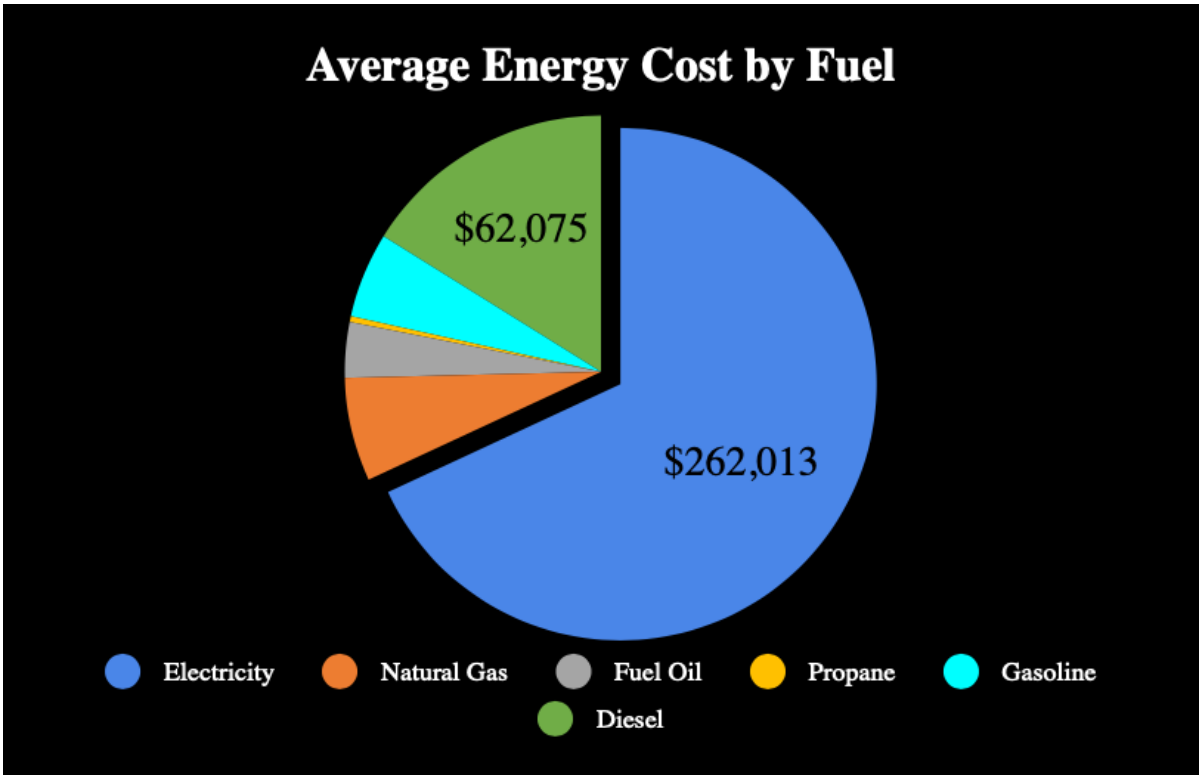
The average GHG emissions produced by the Town of Queensbury's municipal operations in 2019 and 2020 was 3,122.90 tons. The largest energy user and source of GHG emissions Water Treatment Plant in Queensbury, which produces an average of 1,326 tons of GHG emissions annually and contributes to 42% of the Town's total GHG emissions. GHG emissions from all other Town facilities fall below 500 tons.



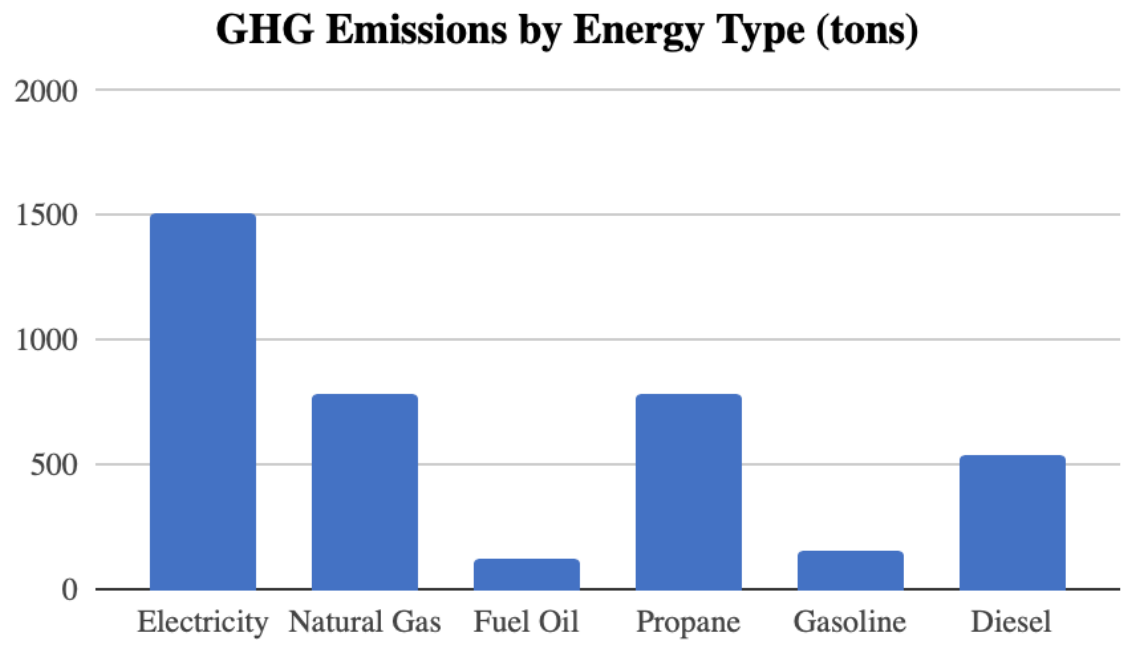
Energy used by vehicle fleets averaged 698.2 tons of GHG emissions – 158.9 tons for gasoline and 539.2 tons for diesel. The chart below illustrates how vehicle fleet emissions compare to other facilities by function.



When assessing cost of energy, electricity contributes to 68% of the Town's energy cost - far outweighing natural gas, fuel oil, propane, gasoline and diesel combined. The average annual costs for each are broken down in the charts below.

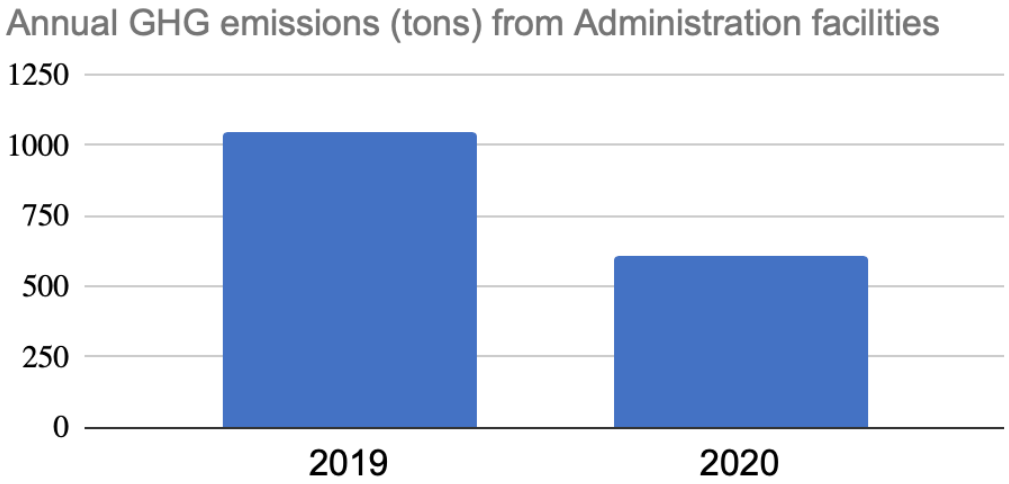


Energy	Average Annual Cost	Percentage of Total Energy used Annually
Electricity	$262,013	68.1%
Natural Gas	$25,151	6.5%
Fuel Oil	$13,463	3.5%
Propane	$1,404	0.4%
Gasoline	$20,731	5.4%
Diesel	$62,075	16.1%



The Town spends an average of $384,836 annually on energy for facilities and operations. Annual energy costs have been reduced by the installation of rooftop solar arrays on the Town Hall, Activity Center, Highway Garage and Court House.

The 2020 Covid-19 pandemic affected energy use in administrative facilities, as illustrated by the chart below:



GHG emissions were 1,044.2 tons in 2019 and 609.9 tons in 2020 – a difference of 434.3 tons. This comparison for all municipal operations during 2019 and 2020 was 3,347.2 tons and 2,898.6, respectively, which indicates that other municipal operations did not see a big difference in energy use and emissions reduction due to the Covid-19 pandemic.

OPPORTUNITIES TO REDUCE GREENHOUSE GASES

Developing a GHG emissions baseline enables the Town to set goals and targets for future reduction of GHG emissions.

The Town has been proactive to reduce GHG emissions and energy costs. Lighting in all interior buildings has been retrofitted with LED lighting. The Town Hall and Activity Center's HVAC system was recently replaced with a more energy efficient system that no longer uses fuel oil. The Town Hall, Activity Center, Highway Garage and Court House have rooftop solar arrays. The new Highway Garage (adjacent to the old Highway Garage) was built in 2020/2021 and will have solar panels installed in the near future. The Town's 118 decorative streetlights (Main Street and Lake George Rd) were retrofitted with LED bulbs in July 2019.

The Town will continue to update the vehicle fleet with electric vehicles (EV) or Plug-in-Hybrid Electric Vehicles (PHEV). Per NYSERDA's Guidance on Clean Fleets, "Compared to gasoline-powered cars, Electric Vehicles (EVs) are more energy efficient and cost about 50 to 70% less to operate per mile."[1] The Town currently owns six EV and PHEVs and will continue reducing GHG emissions as vehicles are retired and replaced by EV and PHEV, preempted as technology continues to expand the available EV market. Fuel usage will drop considerably as the Town retires its diesel and gasoline vehicles, with an estimated GHG emissions reduction of approximately 20% of the Town's total annual usage. Once these vehicles are all switched to EVs, the Town will reduce about 700 tons of GHG emissions.

Additional opportunities to reduce GHG emissions are in the process of being proposed by the Town. Cobra streetlight ownership is being researched (between National Grid and the Town) in order to request a revised proposal from New York Power Authority (NYPA) to convert the cobra streetlights to LED. A proposal to the Town was originally forwarded on June 26, 2018 for LED streetlight conversion, but that proposal will need to be updated. This type of street lighting retrofit can reduce energy use by as much as 65%, per NYSERDA's LED Street Light High-Impact Action[2] guidance.

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[1] Clean Fleets: A High-Impact Action for the Clean Energy Community Program. NYSERDA. https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Communities/Clean-Fleets/CEC_CleanFleets_PPT.pdf. Page 3.

[2] LED Street Lights: A High-Impact Action for the Clean Energy Communities Program. NYSERDA. https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Communities/LED-Street-Lights/CEC-LED-Street-Lights-Step-by-Step-Guidance.pdf. Page 3.

The Town is in the process of assessing brownfield opportunity areas and planning for redevelopment, including the addition of solar arrays. The CSC Task Force has been invited to be involved in the continued planning for the brownfield redevelopment within the Town of Queensbury.

After implementing these proposed projects and identifying other CAP priorities / actions, total GHG emissions will inevitably be reduced.