

Greenhouse Gas Emissions Inventory: Town of Kirkland – 2017-2020

Methodology

This Government Operations Greenhouse Gas Emissions Inventory for the Town of Kirkland documents emissions from the Town over the four-year period from the beginning of 2017 to the end of 2020. This inventory analyzes and reports **Scope 1 Emissions** (on-site emissions from building heating and transportation fuels, but not including fugitive refrigerants or fertilizer-associated emissions) and **Scope 2 Emissions** (emissions from purchased electricity) from government operations for the Town. All data are reported in metric tons of carbon dioxide equivalent (CO₂e).

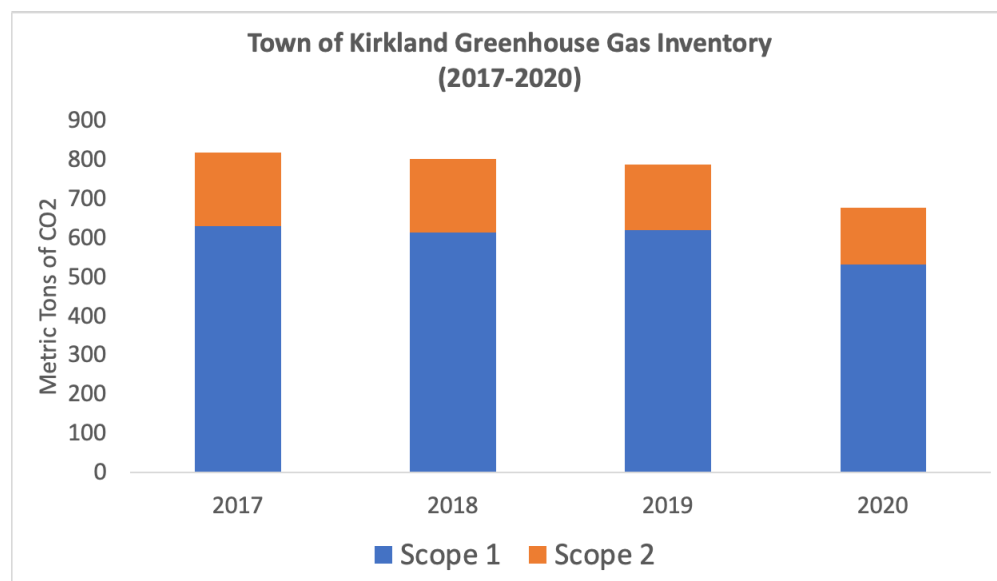
There are two main government buildings included in this inventory: the Town of Kirkland Highway Department and the Town of Kirkland Town Hall Building. To estimate Scope 1 emissions from building heating, records for natural gas usage for each of these buildings were obtained from National Grid monthly bills. Therms of natural gas were converted to units of CO₂e using EPA's greenhouse gas conversion factors (EPA 2019). For Scope 1 emissions associated with transportation, records of fuel purchases of diesel and gasoline by Town of Kirkland for fifteen vehicles (Public Works and Police Vehicles) were obtained from the Town for 2017 through 2020a. Gasoline and diesel usage was converted to units of CO₂e using EPA emissions factors (EPA 2019).

Scope 2 emissions come from the purchased electricity used by the Town in the government buildings. Emissions for each year were calculated using New York State eGRID data for emissions factors for each year (EPA 2020).

Key Findings

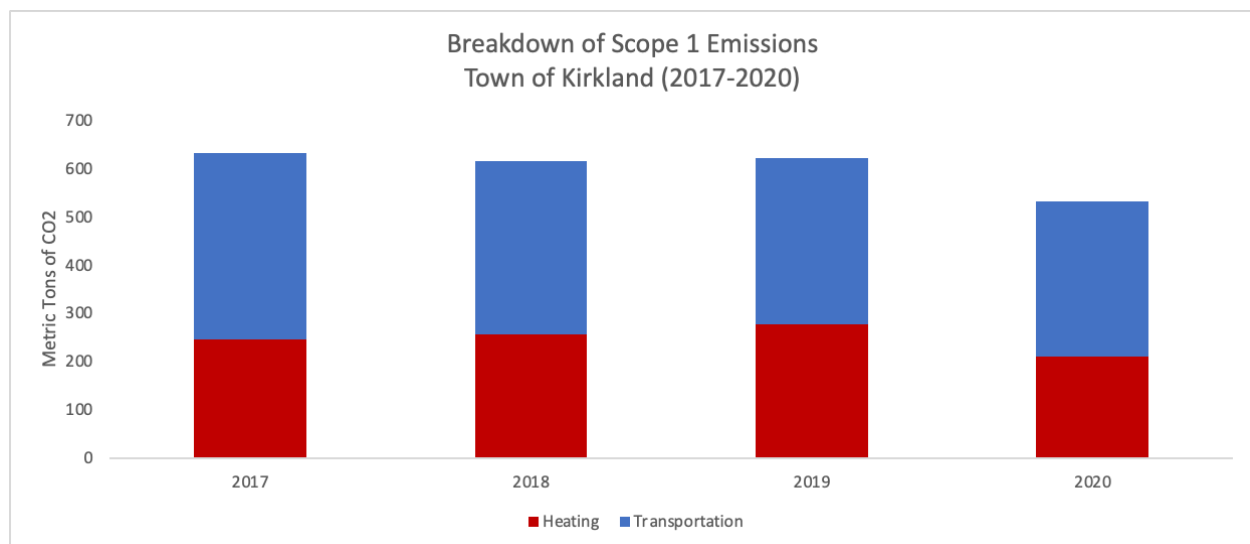
Over the four year baseline period, total emissions from government operations ranged from a low of 677.3 tons CO₂e (2020) to a high of 818.9 tons CO₂e in 2017. Scope 1 emissions are significantly larger than Scope 2 emissions for all years, with transportation emissions from Town of Kirkland vehicles as the largest source of emissions. Overall, total emissions have remained relatively constant over this four year period, with no increasing or decreasing trends. **Figure 1** shows total Scope 1 and Scope 2 emissions over the 2017-2020 period.

Figure 1. Total Scope 1 and Scope 2 Emissions from 2017 to 2021 for the Town of Kirkland Government Operations.



Scope 1 emissions come from two sources: building heating and fossil fuel (gasoline and diesel) combustion for transportation. Scope 1 emissions from all of these sources were summed up per year from 2017-2020 and are shown in **Figure 2** below.

Figure 2. Scope 1 Emissions for the Town of Kirkland, broken down between building heating (natural gas) and transportation emissions.



Sources

EPA, 2019. Greenhouse Gas Equivalencies Calculations and References. Accessed at:

<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>

EPA, 2020. Emissions & Generation Resource Integrated Database (eGRID) Emissions Factors Data.

<https://www.epa.gov/egrid>