

Town of Gilmanton
Baseline Energy Report
(2017 - 2019)
Gilmanton Energy Committee
September 2020

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Energy Committee Introduction

The Town of Gilmanton Energy Committee serves the town in an advisory capacity and reports to the Board of Selectmen. The mission of the committee is to consider how energy is used in Gilmanton, particularly by municipal services and facilities, and to advise the selectmen and school board about opportunities to achieve a higher level of energy efficiency, education, savings, and renewable energy use to support a more sustainable future for Gilmanton.

The committee's areas of focus include, but are not limited to: options for energy efficiency, exploring feasibility of energy production and identifying potential resources to assist the town in a cost-efficient manner. The Committee is also working with the Gilmanton School's Director of Maintenance to see where energy consumption can be reduced and whether or not a renewable energy source is viable to reduce the school's carbon footprint as well as cost to the taxpayers.

Additionally the committee will educate citizens about energy related topics for their homes, businesses and the town as a whole. These topics consist of but are not limited to electric vehicles, solarization of homes and businesses, energy efficiency within their homes, reduction of certain energy sources such as fossil fuels as well as the overall methods of reducing the carbon footprint for the town and its residents.

Town of Gilmanton Baseline Energy Report

The Gilmanton Energy Committee has prepared this Town of Gilmanton Baseline Energy Report, documenting energy consumption and costs (electricity, oil, natural gas, diesel, propane, other) for the Municipal Buildings and Vehicles for the years 2017, 2018, and 2019.

The objective of this Baseline Energy Report is to establish the current baseline energy consumption and associated costs, in order to identify opportunities for improvement (i.e., reduced consumption and decreased costs).

Scope of Assessment

The following buildings, facilities, and lighting are covered by this report:

- General Government (Academy Building [Corners], Old Town Hall [Iron Works]);
- Police Department (Safety Building [Police Department], vehicles);
- Fire Department (Safety Building [Fire Department], Iron Works Fire Department Station, vehicles);
- Highway Administration (Highway Department Buildings [Stage Road, White Oaks Road, Allens Mills Road, and Church Street], vehicles, and street lighting);
- Transfer Station (Transfer Station and vehicles);
- Parks and Recreation (Crystal Lake Park); and
- Gilmanton Library (Corners Town Library).

Method and Limitations

The energy consumption data presented in this report were compiled in cooperation with the staff at each of the represented departments. This data represents the best information (energy bills, receipts, etc.) available at the date of this writing. Energy consumption and associated costs were not always readily available, particularly for gasoline and diesel. Therefore, the costs and consumption figures underestimate the actual quantities. The information presented herein is preliminary and will be updated as additional information becomes available. Even with these limitations, the information is sufficient to provide a preliminary energy consumption baseline.

Energy Consumption (2017, 2018, 2019)

The following tables present an itemized list of expenditures related to energy consumption within the Town of Gilmanon for the years 2017, 2018, and 2019 by department, building, and energy type and source.

1. 2019 Energy Consumption

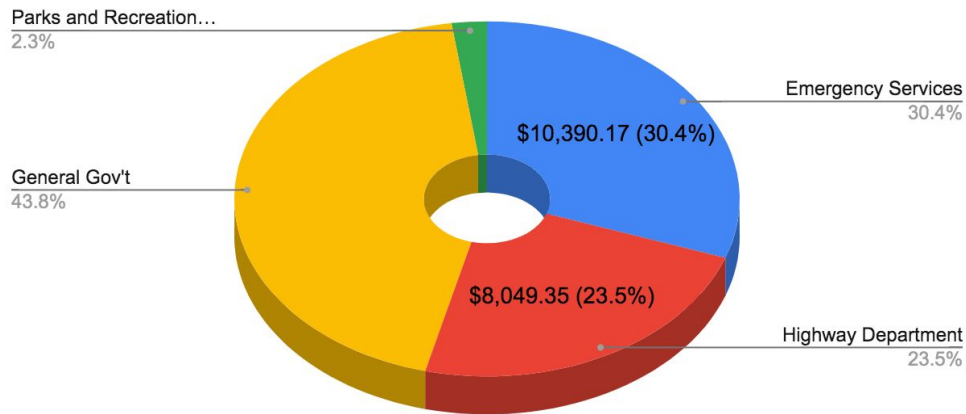
Complete Department and Energy Type Breakdown (2019)

Year	Department	Building	Type	Volume	\$ Amount
2019	Emergency Services	Iron Works Fire Station	Oil (Huckleberry)	3304.8 (Gallons)	\$7,495.09
2019	Library	Corner Library	Oil (Huckleberry)	615 (Gallons)	\$1,067.38
2019	Emergency Services	Gilmanton Safety Building	Oil (Huckleberry)	2029.2 (Gallons)	\$3,572.27
2019	General Gov't	Gilmanton Academy Building	Oil (Huckleberry)	3738.8 (Gallons)	\$8,445.69
2019	Highway Department	Stage Road Facility (300 Gallon Tank)	Oil (Huckleberry)	227 (Gallons)	\$520.72
2019	General Gov't	Gilmanton Academy Building	Propane (Huckleberry)	968.4 (Gallons)	\$1,733.44
2019	Emergency Services	Iron Works Fire Station	Propane (Huckleberry)	148.2 (Gallons)	\$256.41
2019	Highway Department	Stage Road Facility (500 Gallon Tank)	Oil (Huckleberry)	273 (Gallons)	\$626.23
2019	General Gov't	Old Town Hall	Oil (Huckleberry)	1331.3 (Gallons)	\$2,998.68
2019	Highway Department	Stage Road Facility	Electricity (NH Coop)	13,705 kWh	\$2,590.94
2019	Highway Department	White Oaks Road Facility	Electricity (NH Coop)	588 kWh	\$590.05
2019	Highway Department	Allens Mills Road Facility	Electricity (NH Coop)	3,540 kWh	\$1,609.60
2019	Highway Department	Church Street Facility	Electricity (NH Coop)	0 kWh	\$381.16
2019	General Gov't	Gilmanton Academy Building	Electricity (NH Coop)	47,840 kWh	\$9,023.78
2019	General Gov't	805 Province Road (Deeded Property)	Electricity (NH Coop)	0 kWh	\$381.32
2019	General Gov't	Transfer Station	Electricity (NH Coop)	26,735 kWh	\$4,706.54
2019	Highway Department	Church Street Lights	Electricity (NH Coop)	876 kWh	\$340.08
2019	Highway Department	Street Lights	Electricity (NH Coop)	6,900 kWh	\$2,918.68
2019	General Gov't	Old Town Hall	Electricity (NH Coop)	3,173 kWh	\$871.23
2019	Parks and Recreation Department	Crystal Lake Park	Electricity (NH Coop)	570 kWh	\$769.57
2019	Emergency Services	Iron Works Fire Station	Electricity (NH Coop)	37,568 kWh	\$6,299.25
2019	Emergency Services	Gilmanton Safety Building (Police)	Electricity (NH Coop)	10,863 kWh	\$2,045.46
2019	Emergency Services	Gilmanton Safety Building (Police)	Electricity (NH Coop)	10,863 kWh	\$2,045.46
2019	Emergency Services	Gilmanton Police Vehicles	Gasoline	Not Provided	\$7,345.00
2019	Highway Administration	Highway Vehicles	Diesel	Not Provided	\$16,591.00
2019	Highway Administration	Highway Vehicles	Gasoline	Not Provided	\$3,542.00

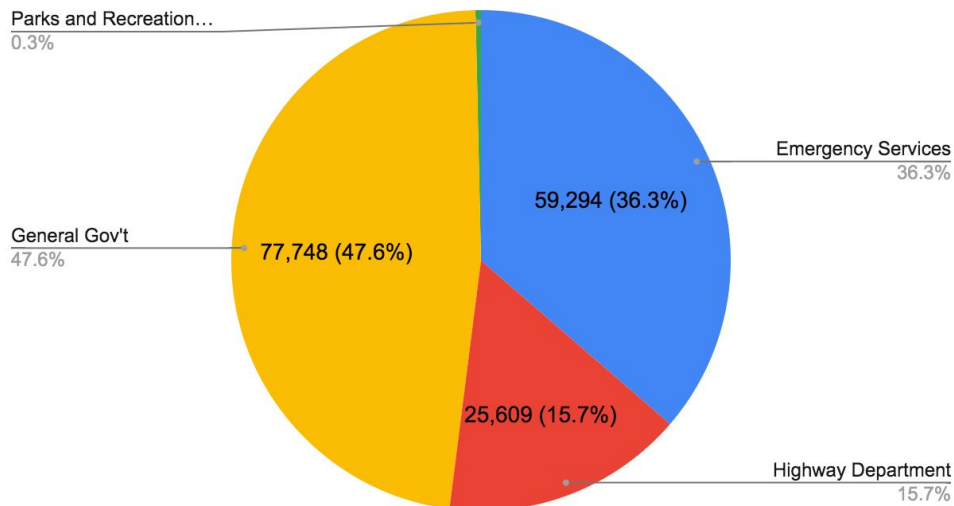
Total Electricity (2019)

Year	Department	Type	Volume (kWh)	Dollar Amount
2019	Emergency Services	Electricity	59,294	\$10,390.17
2019	Highway Department	Electricity	25,609	\$8,049.35
2019	General Gov't	Electricity	77,748	\$14,982.87
2019	Parks and Recreation Department	Electricity	570	\$769.57
2019	Library	Electricity		
		TOTAL:	163,221	\$34,191.96

Dollar Amount vs. Department

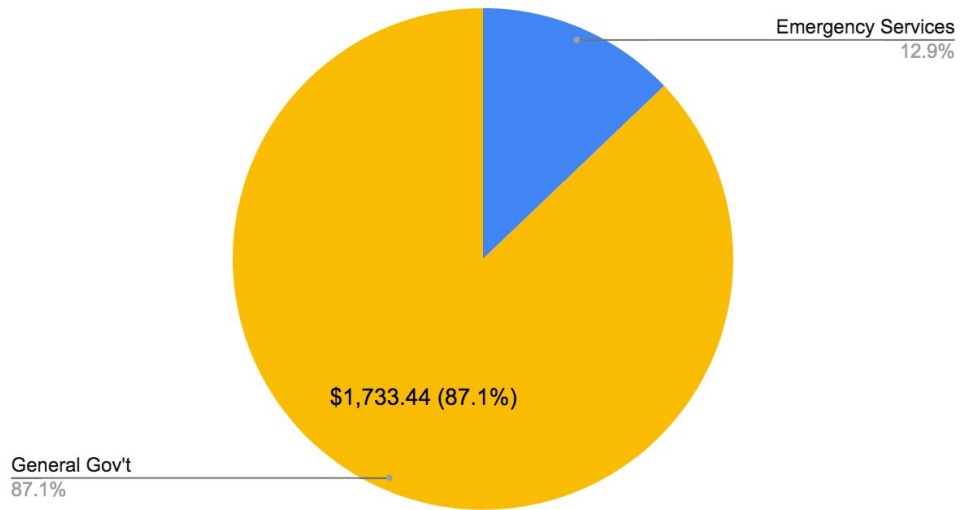


Volume (kWh)

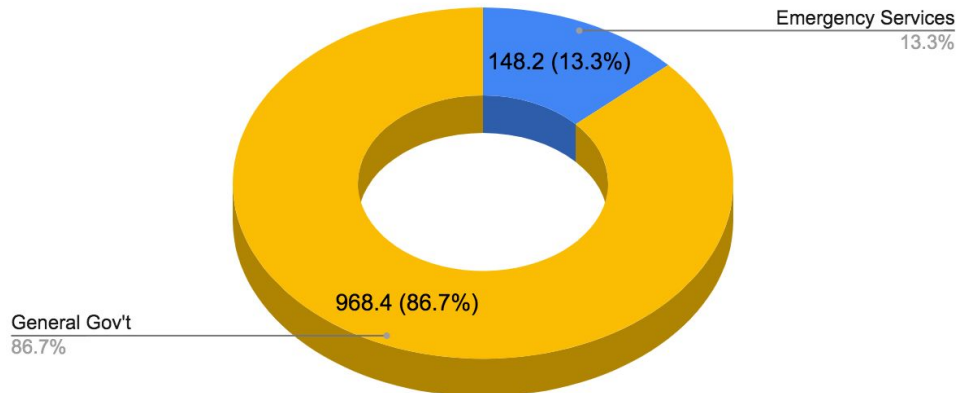


Total Propane (2019)				
Year	Department	Type	Volume (Gallons)	Dollar Amount
2019	Emergency Services	Propane	148.2	\$256.41
2019	Highway Department	Propane	0	0
2019	General Gov't	Propane	968.4	\$1,733.44
2019	Parks and Recreation Department	Propane	0	0
2019	Library	Propane		
TOTAL:			1116.6	\$1,989.85

Dollar Amount vs. Department



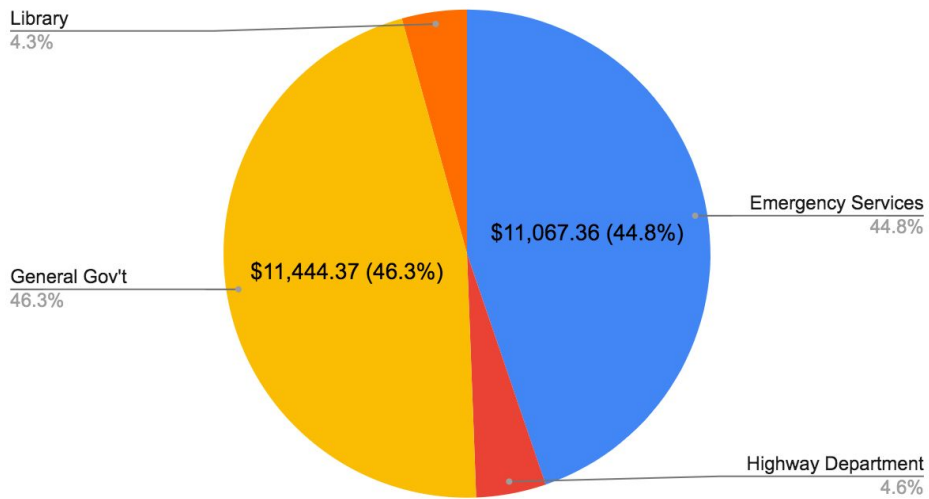
Volume (Gallons) vs. Department



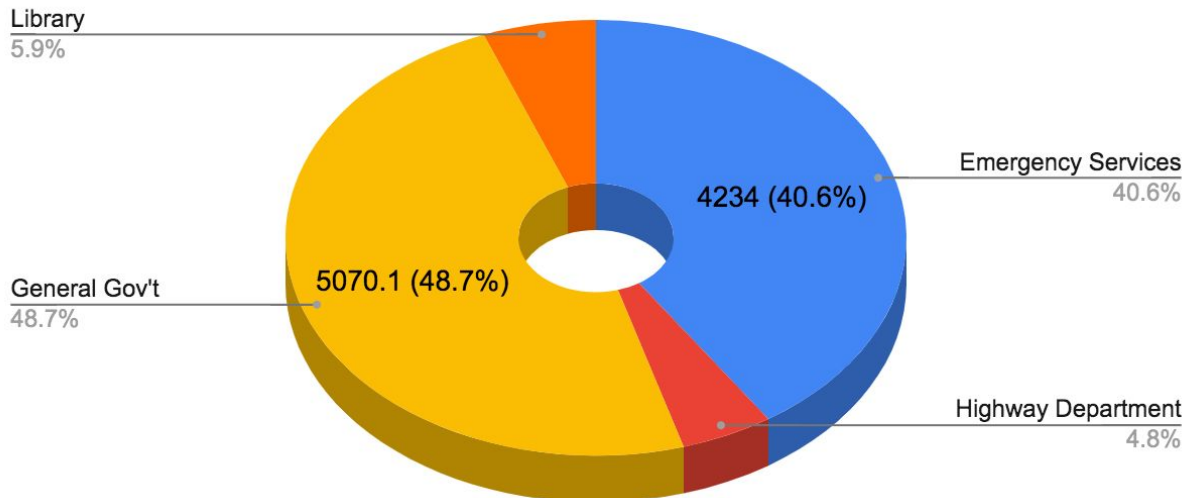
Total Oil (2019)

Year	Department	Type	Volume (Gallons)	Dollar Amount
2019	Emergency Services	Oil	4234	\$11,067.36
2019	Highway Department	Oil	500	\$1,146.95
2019	General Gov't	Oil	5070.1	\$11,444.37
2019	Parks and Recreation Department	Oil	0	0
2019	Library	Oil	615	\$1,067.38
TOTAL:			10419.1	\$24,726.06

Dollar Amount (Oil)



Volume (Gallons) vs. Department



Total Gasoline/Diesel (2019)

Year	Department	Type	Volume (Gallons)	Dollar Amount
2019	Emergency Services	Gasoline	Not Provided	\$7,345.00
2019	Highway Department	Gasoline/Diesel	Not Provided	\$20,133.00
2019	General Gov't	Gasoline/Diesel	Not Provided	\$20,458
2019	Parks and Recreation Department	Gasoline/Diesel	Not Provided	n/a
2019	Library	Gasoline/Diesel	Not Provided	n/a
		TOTAL:		\$47,936

2. 2018 Energy Consumption

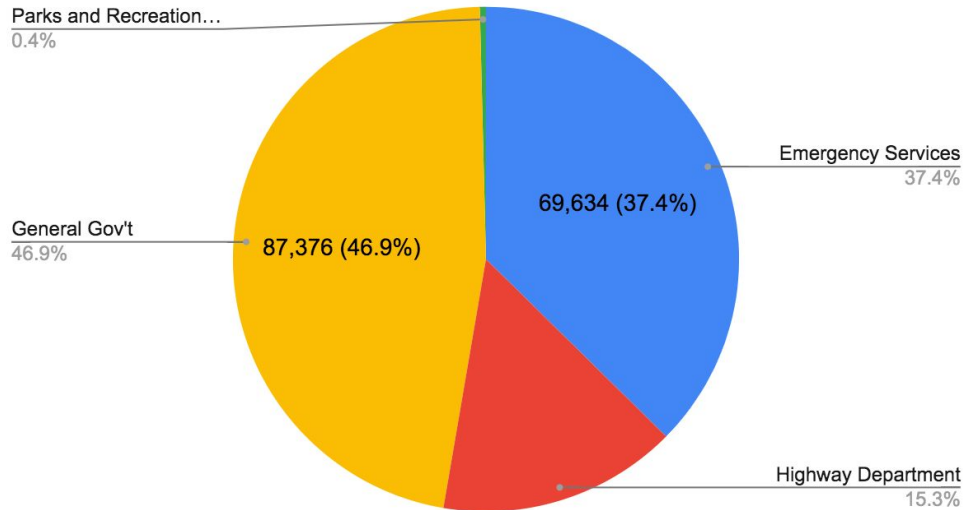
Complete Department and Type Breakdown (2018)

Year	Department	Building	Type	Volume	\$ Amount
2018	Emergency Services	Iron Works Fire Station	Oil (Huckleberry)	3141 Gallons	\$6,596.10
2018	Library	Corner Library	Oil (Huckleberry)	Not Provided	Not Provided
2018	Emergency Services	Gilmanton Safety Building	Oil (Huckleberry)	Not Provided	\$9,357.00
2018	General Gov't	Gilmanton Academy Building	Oil (Huckleberry)	3005 Gallons	\$6,310.50
2018	Highway Department	Stage Road Facility (300 Gallon Tank)	Oil (Huckleberry)	Not Provided	Not Provided
2018	General Gov't	Gilmanton Safety Building	Propane (Huckleberry)	2896 Gallons	\$5,010.08
2018	Emergency Services	Iron Works Fire Station	Propane (Huckleberry)	316 Gallons	\$546.68
2018	Highway Department	Stage Road Facility (500 Gallon Tank)	Oil (Huckleberry)	2,896 Gallons	\$5,010.08
2018	General Gov't	Old Town Hall	Oil (Huckleberry)	1136 Gallons	\$2,385.60
2018	Highway Department	Stage Road Facility	Electricity (NH Coop)	15,462 kWh	\$2,731.45
2018	Highway Department	White Oaks Road Facility	Electricity (NH Coop)	588 kWh	\$537.91
2018	Highway Department	Allens Mills Road Facility	Electricity (NH Coop)	4672 kWh	\$1,643.72
2018	Highway Department	Church Street Facility	Electricity (NH Coop)	0 kWh	\$380.77
2018	General Gov't	Gilmanton Academy Building	Electricity (NH Coop)	48,560 kWh	\$9,241.91
2018	General Gov't	805 Province Road (Deeded Property)	Electricity (NH Coop)	243 kWh	\$266.86
2018	General Gov't	Transfer Station	Electricity (NH Coop)	35,499 kWh	\$6,174.40
2018	Highway Department	Church Street Lights	Electricity (NH Coop)	876 kWh	\$363.82
2018	Highway Department	Street Lights	Electricity (NH Coop)	6,900 kWh	\$3,111.00
2018	General Gov't	Old Town Hall	Electricity (NH Coop)	3,074 kWh	\$835.06
2018	Parks and Rec Department	Crystal Lake Park	Electricity (NH Coop)	728 kWh	\$788.91
2018	Emergency Services	Iron Works Fire Station	Electricity (NH Coop)	39,903 kWh	\$6,595.09
2018	Emergency Services	Gilmanton Safety Building (Police)	Electricity (NH Coop)	14,865.5 kWh	\$2,526.84
2018	Emergency Services	Gilmanton Safety Building (Police)	Electricity (NH Coop)	14,865.5 kWh	\$2,526.84
2018	Emergency Services	Gilmanton Police Vehicles	Gasoline	Not Provided	\$10,330.00
2018	Emergency Services	Gilmanton Fire Vehicles	Gasoline	Not Provided	\$3,251.00
2018	Emergency Services	Gilmanton Fire Vehicles	Diesel	Not Provided	\$11,795.00
2018	Highway Department	Highway Vehicles	Gasoline	Not Provided	\$4,505.00
2018	Highway Department	Highway Vehicles	Diesel	Not Provided	\$26,537.00
2018	General Gov't	Transfer Station	Diesel	Not Provided	\$2,330.00

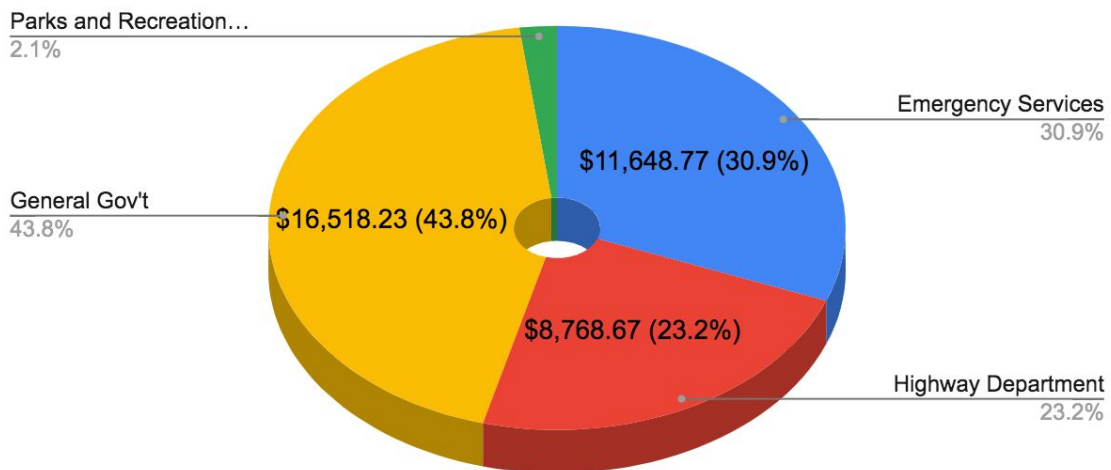
Total Electricity (2018)

Year	Department	Type	Volume (kWh)	Dollar Amount
2018	Emergency Services	Electricity	69,634	\$11,648.77
2018	Highway Department	Electricity	28,498	\$8,768.67
2018	General Gov't	Electricity	87,376	\$16,518.23
2018	Parks and Recreation Department	Electricity	728	\$788.91
		TOTAL:	186,236	\$37,724.58

Electricity Volume (kWh)



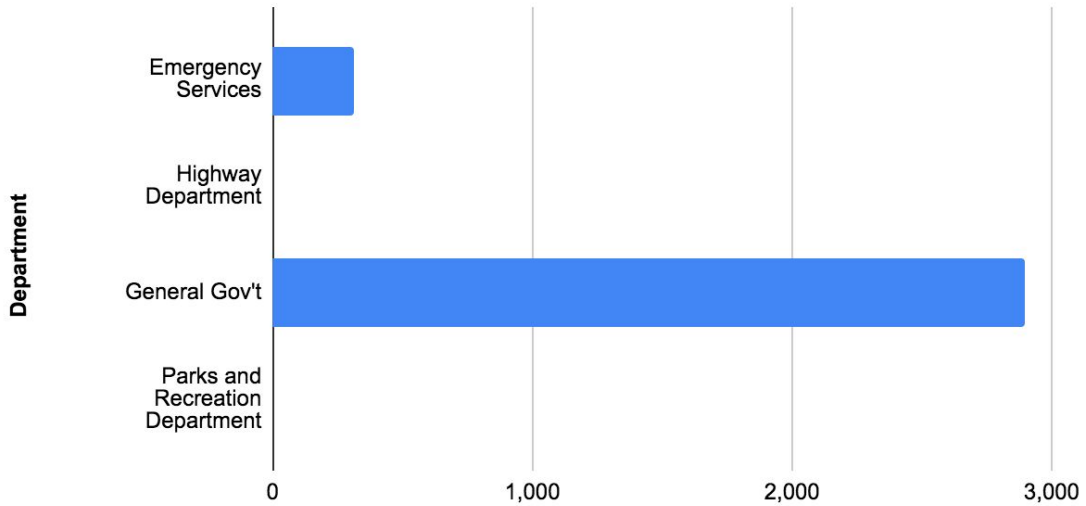
Electricity Dollar Amount vs. Department



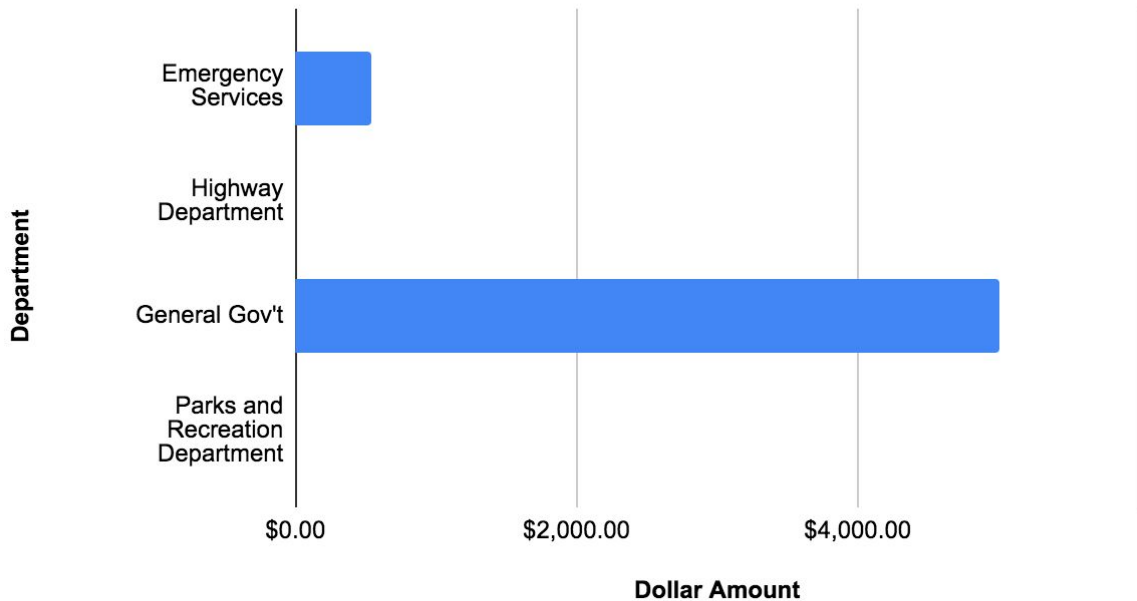
Total Propane (2018)

Year	Department	Type	Volume (Gallons)	Dollar Amount
2018	Emergency Services	Propane	312	\$546.68
2018	Highway Department	Propane	0	0
2018	General Gov't	Propane	2896	\$5,010.08
2018	Parks and Recreation Department	Propane	0	0
		TOTAL:	3,208	\$5,556.76

Propane Volume (Gallons) vs. Department



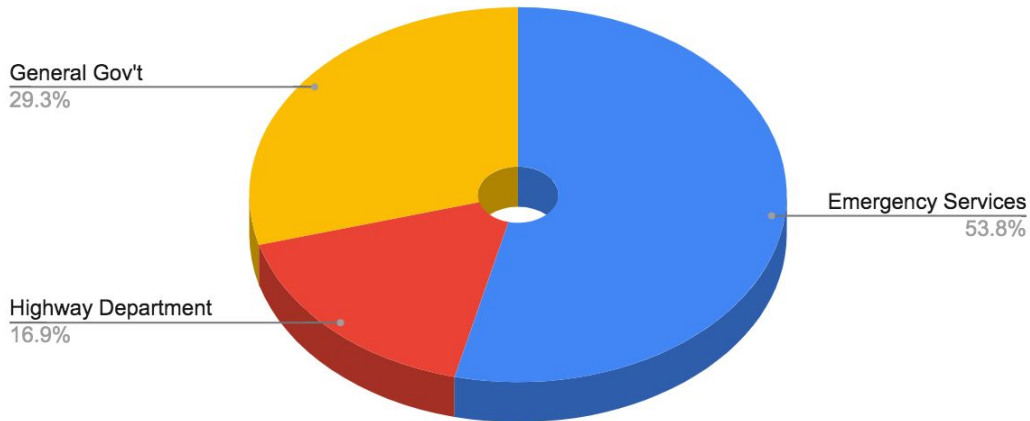
Propane Dollar Amount vs. Department



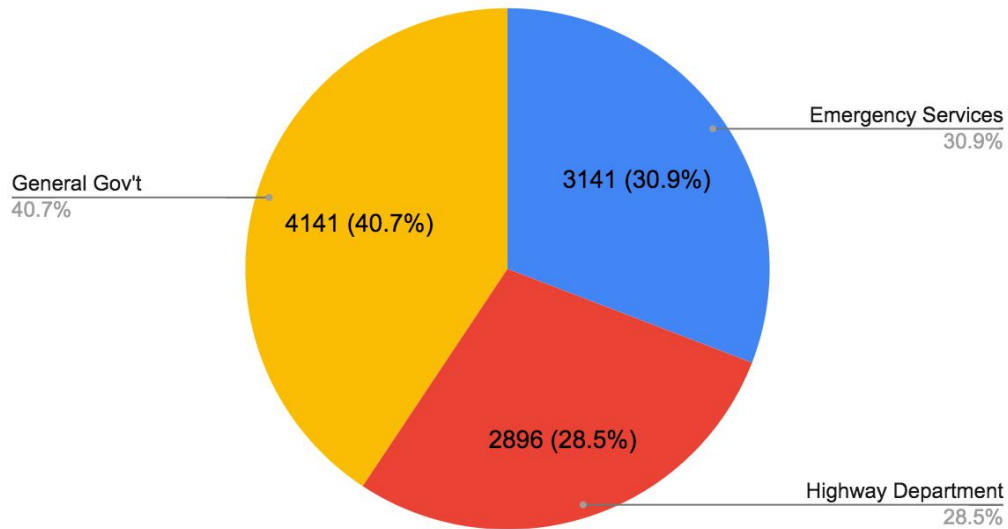
Total Oil (2018)

Year	Department	Type	Volume (Gallons)	Dollar Amount
2018	Emergency Services	Oil	3141	\$15,953.10
2018	Highway Department	Oil	2896	\$5,010.08
2018	General Gov't	Oil	4141	\$8,696.10
2018	Parks and Recreation Department	Oil	N/A	0
TOTAL:			10178	\$29,659.28

Oil Dollar Amount



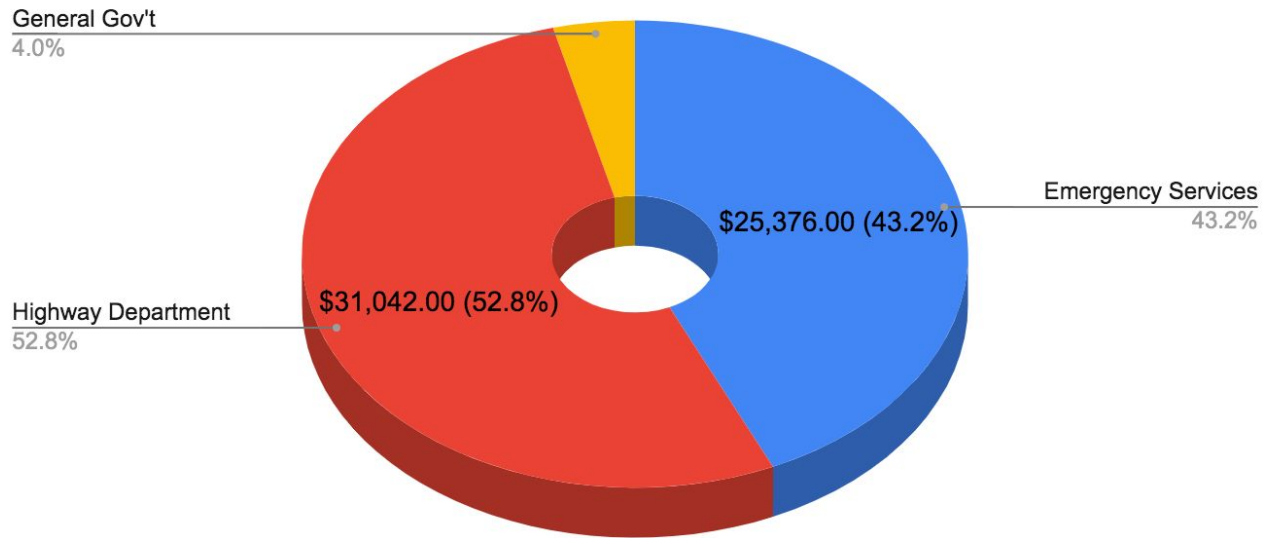
Oil Volume (Gallons)



Total Gasoline/Diesel (2018)

Year	Department	Type	Volume (kWh)	Dollar Amount
2018	Emergency Services	Gasoline/Diesel	Not Provided	\$25,376.00
2018	Highway Department	Gasoline	Not Provided	\$31,042.00
2018	General Gov't	Diesel	Not Provided	\$2,330.00
2018	Parks and Recreation Department	Not Provided	Not Provided	\$0.00
		TOTAL:	Not Provided	\$58,748.00

Gasoline/Diesel Dollar Amount (Gallons)



3. 2017 Energy Consumption

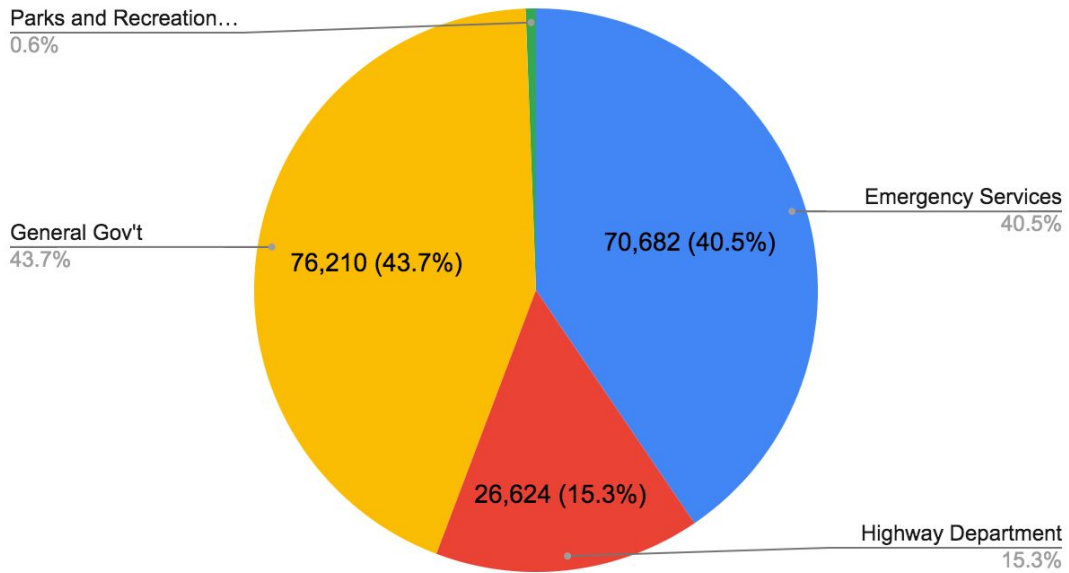
Complete Department and Type Breakdown (2017)

Year	Department	Building	Type	Volume	\$ Amount
2017	Emergency Services	Iron Works Fire Station	Oil (Huckleberry)	2,474 Gallons	\$4,898.52
2017	Library	Corner Library	Oil (Huckleberry)	Not Provided	Not Provided
2017	Emergency Services	Gilmanton Safety Building	Oil (Huckleberry)	Not Provided	\$6,947.00
2017	General Gov't	Gilmanton Academy Building	Oil (Huckleberry)	2,968 Gallons	\$5,876.64
2017	Highway Department	Stage Road Facility (300 Gallon Tank)	Oil (Huckleberry)	Not Provided	Not Provided
2017	Emergency Services	Gilmanton Safety Building	Propane (Huckleberry)	1313 Gallons	\$2,061.41
2017	Emergency Services	Iron Works Fire Station	Propane (Huckleberry)	311 Gallons	\$488.27
2017	Highway Department	Stage Road Facility (500 Gallon Tank)	Oil (Huckleberry)	Not Provided	Not Provided
2017	General Gov't	Old Town Hall	Oil (Huckleberry)	1,041 Gallons	\$2,061.18
2017	Highway Department	Stage Road Facility	Electricity (NH Coop)	15,593 kWh	\$2,788.44
2017	Highway Department	White Oaks Road Facility	Electricity (NH Coop)	42 kWh	\$441.40
2017	Highway Department	Allens Mills Road Facility	Electricity (NH Coop)	3,213 kWh	\$1,196.85
2017	Highway Department	Church Street Facility	Electricity (NH Coop)	0 kWh	\$347.16
2017	General Gov't	Gilmanton Academy Building	Electricity (NH Coop)	45,680 kWh	\$8,261.67
2017	General Gov't	805 Province Road (Deeded Property)	Electricity (NH Coop)	0 kWh	\$0.00
2017	General Gov't	Transfer Station	Electricity (NH Coop)	27,834 kWh	\$4,084.42
2017	Highway Department	Church Street Lights	Electricity (NH Coop)	876 kWh	\$385.30
2017	Highway Department	Street Lights	Electricity (NH Coop)	6,900 kWh	\$3,247.09
2017	General Gov't	Old Town Hall	Electricity (NH Coop)	2,696 kWh	\$742.64
2017	Parks and Rec Department	Crystal Lake Park	Electricity (NH Coop)	1,028 kWh	\$816.93
2017	Emergency Services	Iron Works Fire Station	Electricity (NH Coop)	38,617 kWh	\$6,092.58
2017	Emergency Services	Gilmanton Safety Building (Police)	Electricity (NH Coop)	16,032.5 kWh	\$2,668.05
2017	Emergency Services	Gilmanton Safety Building (Police)	Electricity (NH Coop)	16,032.5 kWh	\$2,668.05
2017	Emergency Services	Gilmanton Police Vehicles	Gasoline	Not Provided	\$11,484.00
2017	Emergency Services	Gilmanton Fire Vehicles	Diesel	Not Provided	\$7,356.00
2017	Emergency Services	Gilmanton Fire Vehicles	Gasoline	Not Provided	\$1,883.00
2017	Highway Department	Highway Vehicles	Diesel	Not Provided	\$17,540.00
2017	General Gov't	Transfer Station	Diesel	Not Provided	\$1,901.00

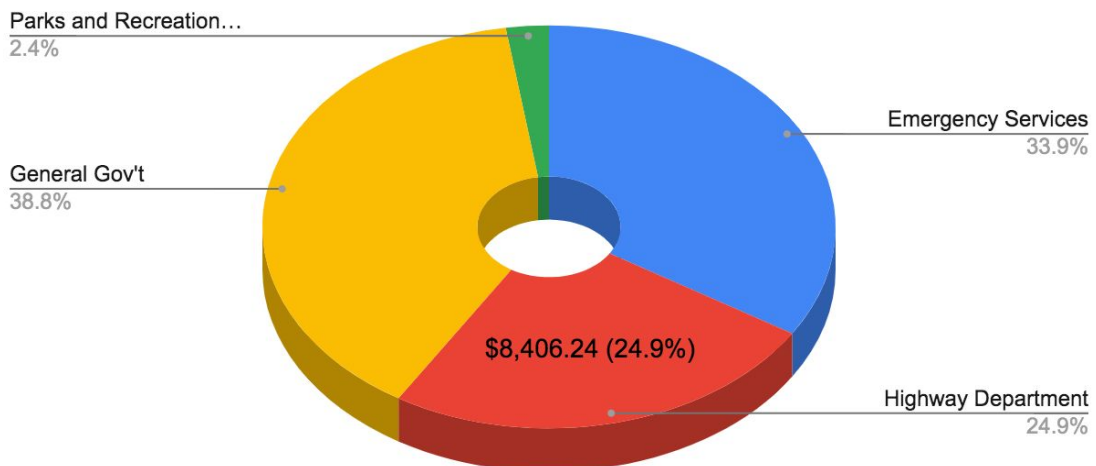
Total Electricity (2017)

Year	Department	Type	Volume (kWh)	Dollar Amount
2017	Emergency Services	Electricity	70,682	\$11,428.68
2017	Highway Department	Electricity	26,624	\$8,406.24
2017	General Gov't	Electricity	76,210	\$13,088.73
2017	Parks and Recreation Department	Electricity	1028	\$816.93
		TOTAL:	174,544	\$33,740.58

Volume (kWh)



Dollar Amount vs. Department



Total Propane (2017)

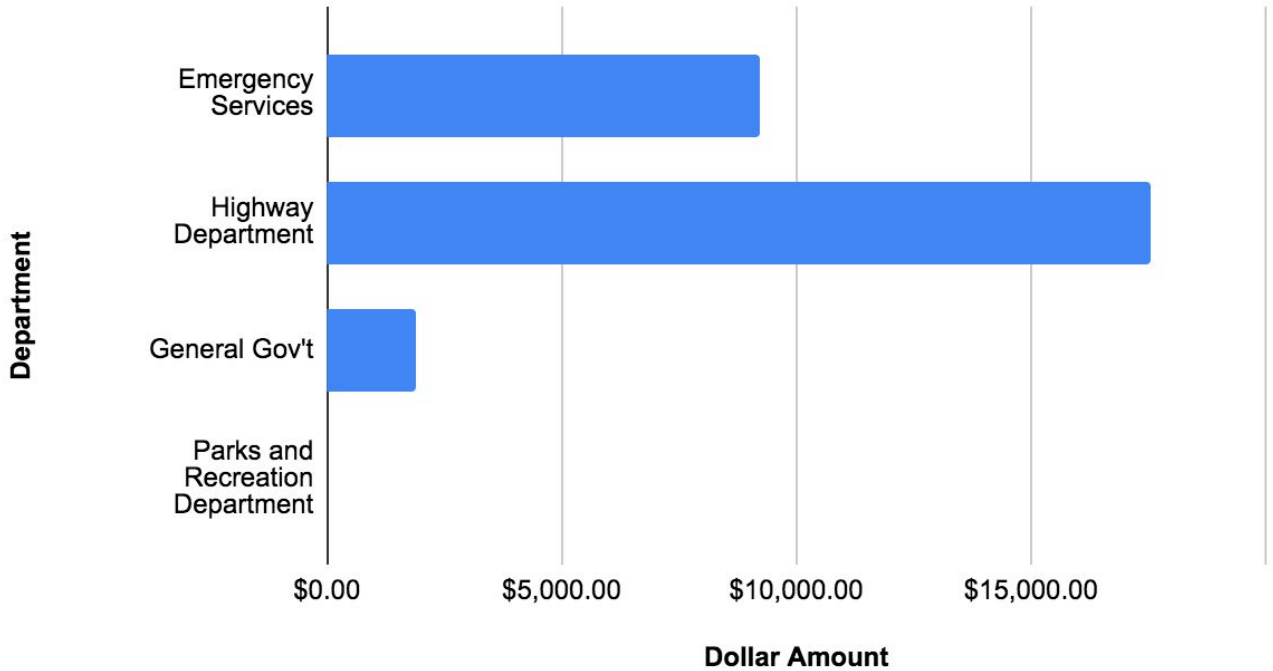
Year	Department	Type	Volume (Gallons)	Dollar Amount
2017	Emergency Services	Propane	1,624	\$2,549.68
2017	Highway Department	Propane	0	\$0.00
2017	General Gov't	Propane	0	\$0.00
2017	Parks and Recreation Department	Propane	0	\$0.00
TOTAL:			1,624	\$2,549.68

Total Oil (2017)

Year	Department	Type	Volume (Gallons) (+/-)	Dollar Amount
2017	Emergency Services	Oil	2474	\$11,845.52
2017	Highway Department	Oil	Not Provided	
2017	General Gov't	Oil	4009	\$7,937.82
2017	Parks and Recreation Department	Oil	Not Provided	
TOTAL:			6483	\$19,783.34

Total Gasoline/Diesel (2017)				
Year	Department	Type	Volume (Gallons)	Dollar Amount
2017	Emergency Services	Gasoline/Diesel	Not Provided	\$9,239.00
2017	Highway Department	Diesel	Not Provided	\$17,540.00
2017	General Gov't	Diesel	Not Provided	\$1,901.00
2017	Parks and Recreation Department	Not Provided	Not Provided	n/a
		TOTAL:	0	\$28,680.00

Gasoline/ Diesel Dollar Amount vs. Department



Yearly Energy by Type

The total reported town energy expenditure for 2019 was \$108,843.87. This represents 2.98% of the town operating budget. The total reported town energy expenditure for 2018 was \$131,688.62. This represents 3.60% of the town operating budget. The total reported town energy expenditure for 2017 was \$84,753.60. This represents 2.26% of the town operating budget.

2019 Energy Use and Costs, Town of Gilmanton

Energy Type	Expenditure
Electricity	\$34,191.96
Gas/Diesel	\$47,936
Heating Oil	\$24,726.06
Propane	\$1,989.85
TOTAL	\$108,843.87

2018 Energy Use and Costs, Town of Gilmanton

Energy Type	Expenditure
Electricity	\$37,724.58
Gas/Diesel	\$58,748.0
Heating Oil	\$29,659.28
Propane	\$5,556.76
TOTAL	\$131,688.62

2017 Energy Use and Costs, Town of Gilmanton

Energy Type	Expenditure
Electricity	\$33,740.58
Gas/Diesel	\$28,680.00
Heating Oil	\$19,783.34
Propane	\$2,549.68
TOTAL	\$84,753.60

Discussion

The town spends more on electricity than any other energy source. Investigating opportunities for electricity savings is a high priority. Nearly all of the town's energy sources are fossil-fuel based. Many of the town's other energy sources could be replaced with renewably generated electricity.

Recommendations

Based on this evaluation, the Gilmanton Energy Committee recommends the following actions:

- Conduct a comprehensive energy audit of all municipal buildings and facilities to identify options for improving energy efficiency and potential savings. Identify opportunities for transitioning heating and vehicle fuels to electric power.
- Investigate grants/rebates available for those suggested upgrades. The Committee will assist in that process.
- Institute a system to monitor the town's annual energy usage and costs.
- Explore the options for installing solar photovoltaic panels to serve some or all municipal buildings, vehicle, and street lighting needs.
- Assess options for electric vehicle transition for daily driver vehicles where possible.