

IREC Updates 10.20.2020

Submitted by Geoff Martin, Intermunicipal Regional Energy Coordinator

1. Data Collection

All electricity and heating fuel data for Town buildings are now current in a database (Energy Star Portfolio Manager). See Attachment 1 for initial analysis.

I have also collected Town vehicle fleet info and create a master sheet showing all available information (e.g. vehicle type, mileage, fuel consumption, replacement schedule).

2. Walk throughs

There are many energy-related improvements that can be made throughout Town buildings. Many of the potential larger improvements were identified in the site visits that were completed by Zero by Degrees, LLC in 2017. Because these were site visits and not Investment Grade Energy Audits, however, it is difficult to prioritize and plan for these improvements without further analysis. I recommend pursuing Energy Services Performance Contracting to complete this further analysis and develop an energy savings and management plan (see Section 3 and Attachment 2 for more detail). In the meantime, general notes from the walk throughs as well as notes on immediate opportunities for improvement in each building are included at Attachment 3.

3. Energy Services Performance Contracting (ESPC)

ESPC is a comprehensive approach to making energy improvements in town facilities (including streetlights) that provides guaranteed savings, turn-key services, and is often budget-neutral. Many opportunities remain throughout most Town buildings to lower energy consumption by making improvements such as adding insulation and air sealing, upgrading mechanical systems, or installing controls to optimize the energy performance of existing systems. Energy Services Companies (ESCOs) can help identify these improvements, develop a long-range implementation plan, manage the installation of the improvements, and continuously monitor the buildings'/systems' performance. **I would like to initiate a multi-town Request for Qualifications (RFQ) for an ESCO to assess town facilities.**

- The most qualified ESCO would conduct no-cost energy audits on the facilities of the Town's choosing this Fall and develop a work scope for energy improvements. The ESCO's proposal would include *guaranteed energy savings*.
- The Town would select the improvements it wants to move forward with (if any), and work with the ESCO to secure funding.
- The ESCO would implement the energy improvements in 2021 (and beyond, if desired), and provide ongoing monitoring and verification of the guaranteed energy savings.

4. Future Opportunities

A. Green Mountain Power Charging Station Leasing Program

GMP will be releasing a pilot program for leasing Level 2 electric vehicle charging stations by the end of the month (assuming no delays). Cost is estimated at \$50-\$60/month per charging station. I will provide an update when the pilot program launches.

B. Energy Efficient Purchasing Policy

I am working with Vermont Law School to draft a model energy efficient purchasing policy for Woodstock and other towns to consider adopting. The policy would help ensure that the most efficient, cost-effective purchases are made. A final draft should be completed by mid-December.

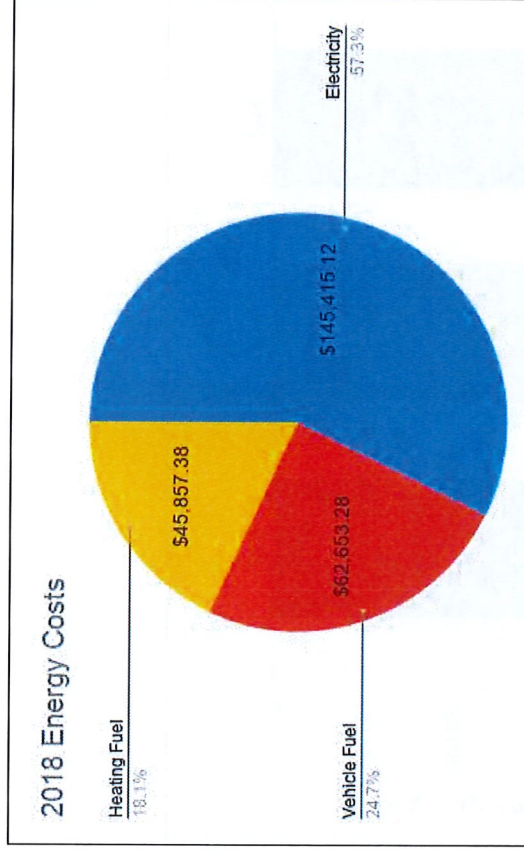
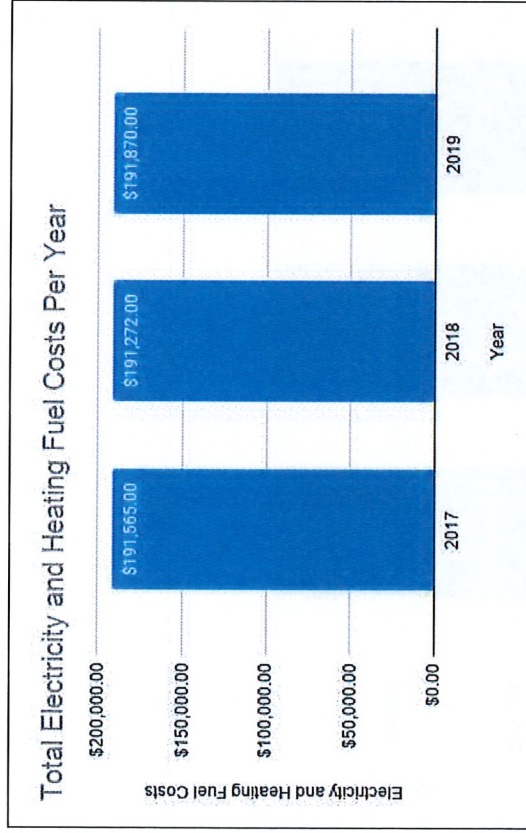
C. Solar

I am working with staff to determine whether Woodstock could have 3 separate 500 kW net-metering caps (one for the Town, one for the Village, and one for the Wastewater Department). If there are three caps, then there is an opportunity to significantly increase Woodstock's solar portfolio. If there is only one 500 kW cap for all Woodstock entities, then there is still room to contract for an additional 20 kW of solar, which could provide roughly enough electricity to cover the usage at the Town Garage.

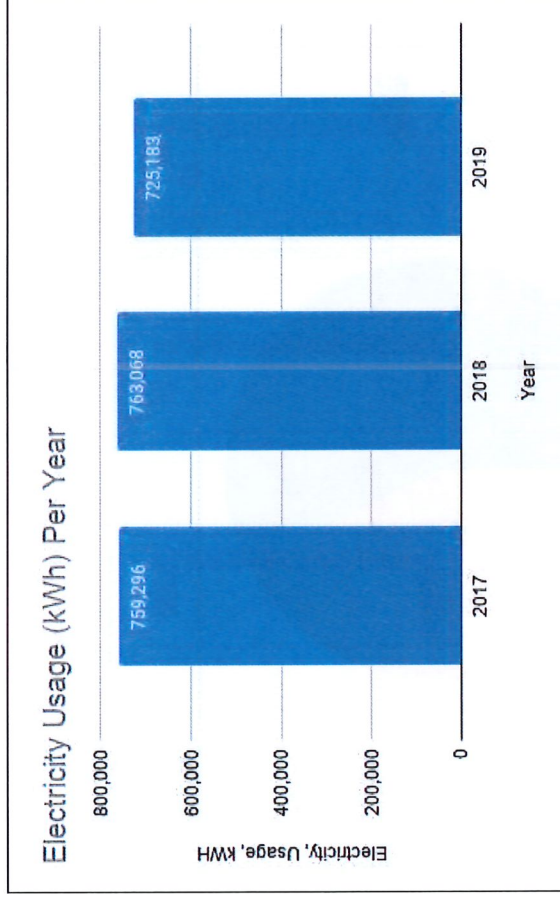
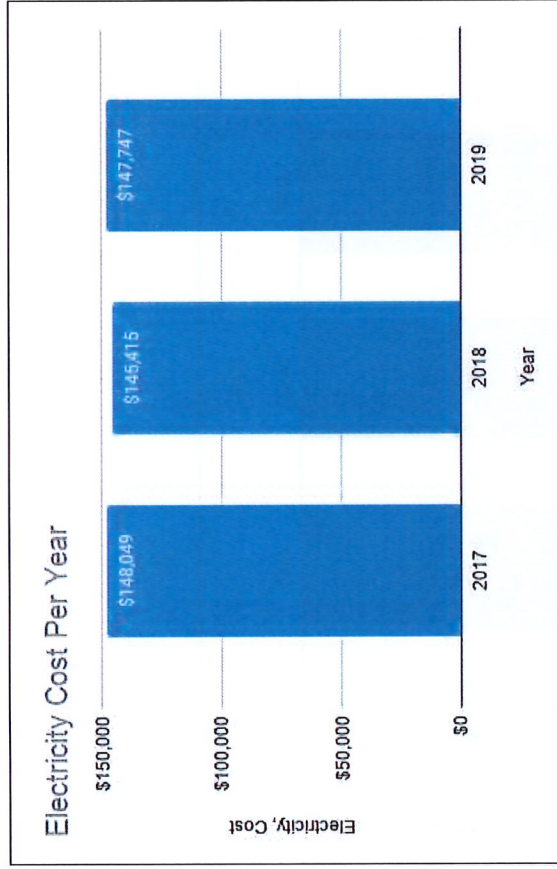
- Other towns may be interested in contracting for more solar, so there is an opportunity to issue a joint Request for Proposal for solar contractors to get better pricing.

Attachment 1 – Woodstock Energy Data

Totals

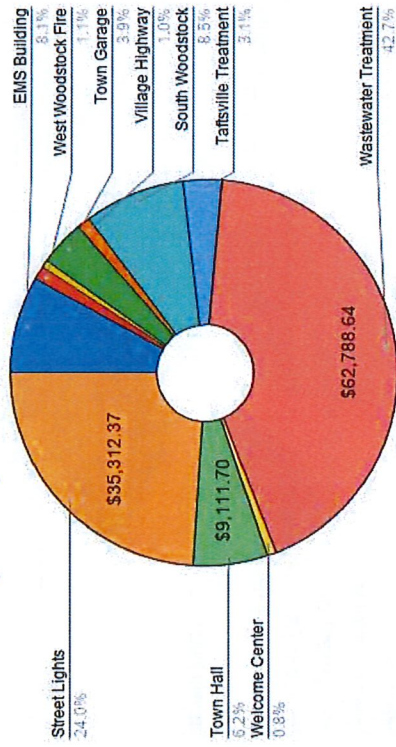


Electricity¹

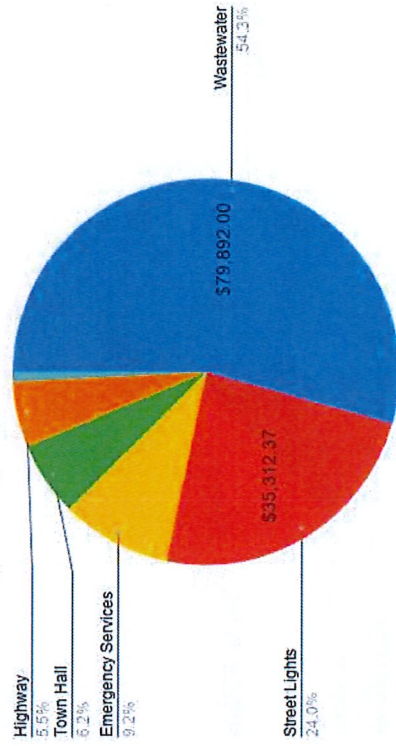


¹ Electricity costs do not include savings from the Town's solar net-metering agreement. All costs shown are before applying net-metering credits. I will provide a calculation of the savings from the solar agreement at a later date.

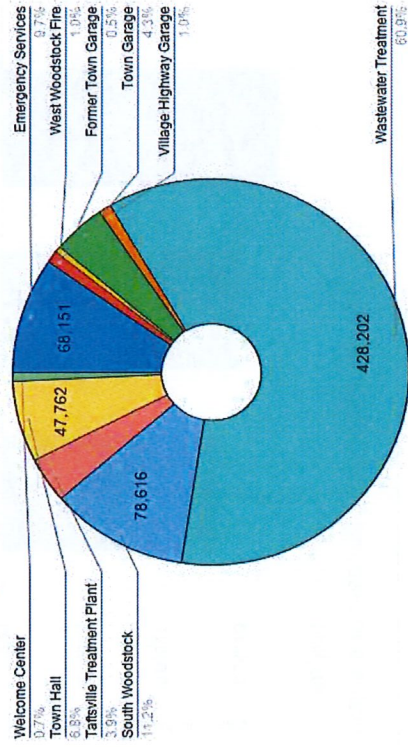
2019 Electricity Cost by Building



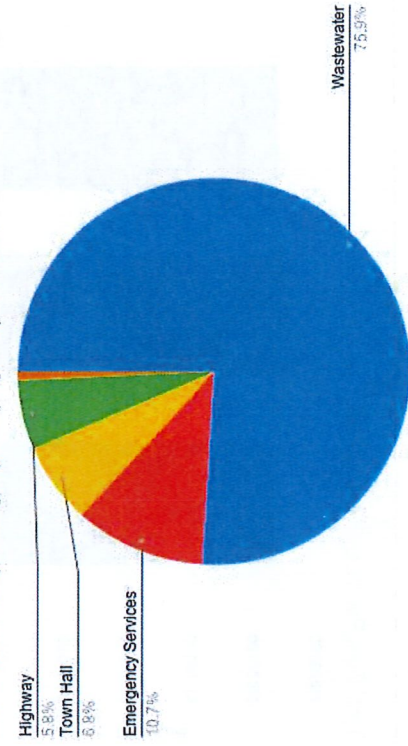
2019 Electricity Cost by Department



2019 Electricity Usage (kWh) by Building

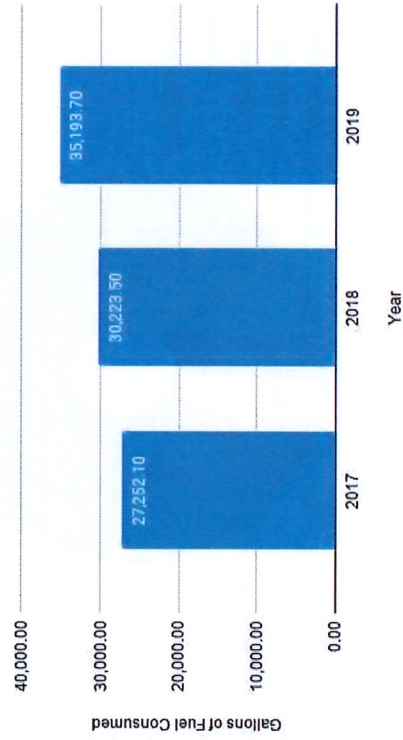


2019 Electricity Usage (kWh) by Department

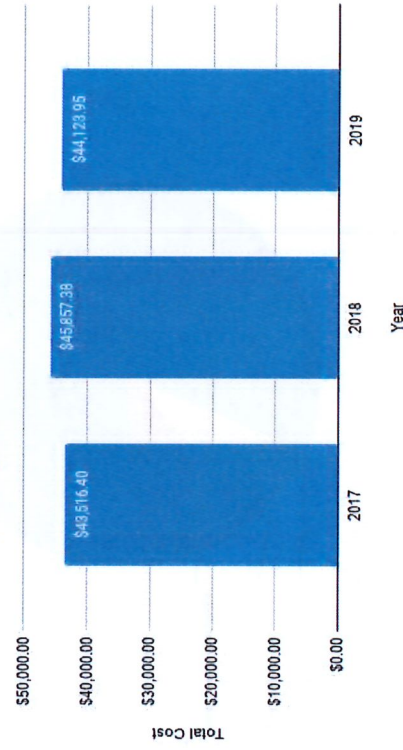


Heating Fuel

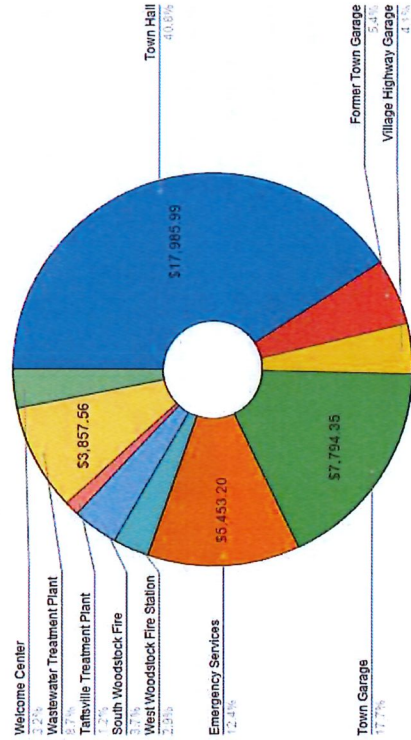
Gallons of Heating Fuel Consumed Per Year



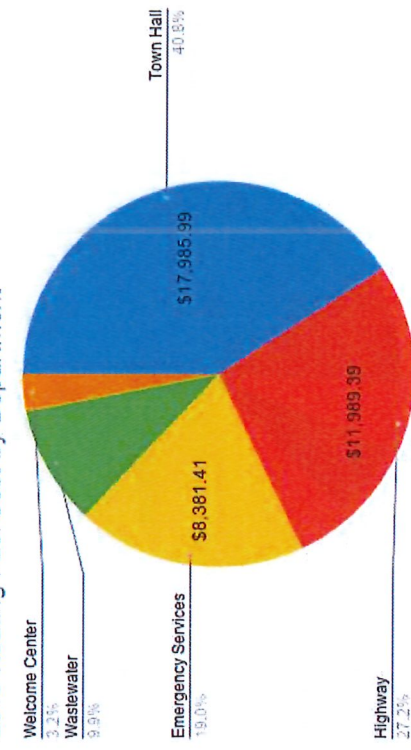
Total Cost Per Year, Heating Fuel

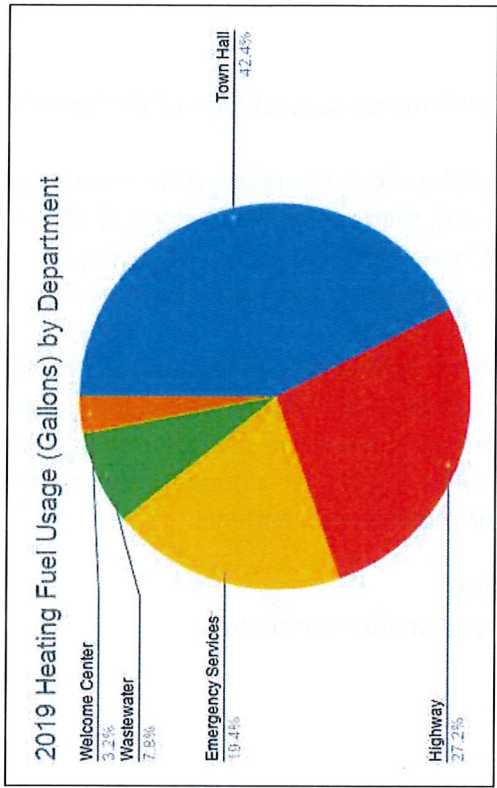
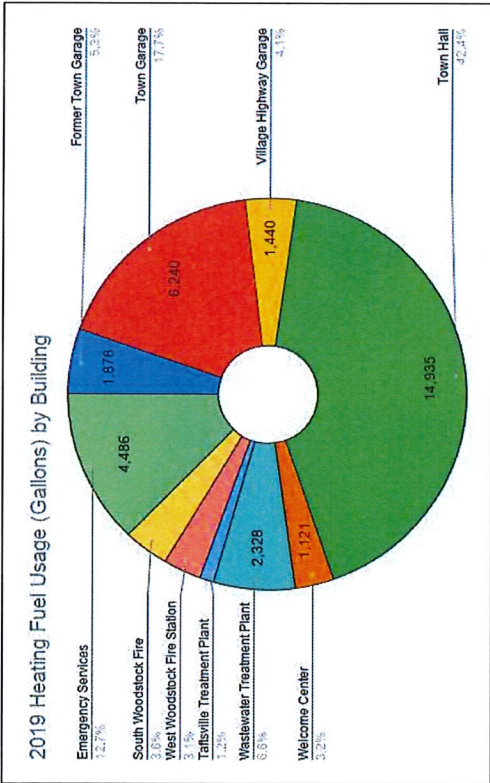


2019 Heating Fuel Cost by Building



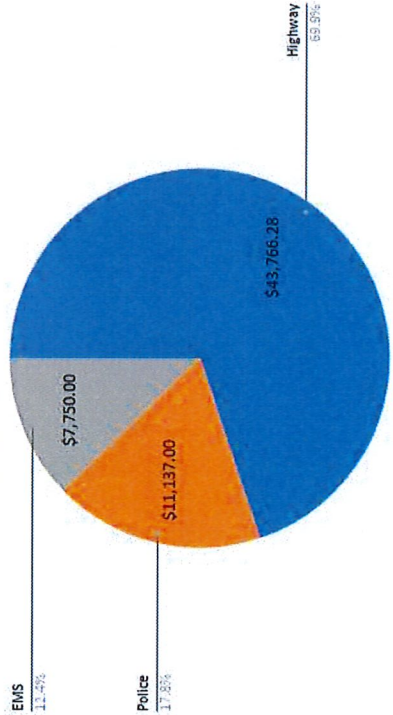
2019 Heating Fuel Cost by Department





Vehicle Fleet²

2018 Vehicle Fuel Costs by Department



² EMS value is an estimate. Police value is for FY 18.

Attachment 2 – ESPC Additional Information

An Energy Service Company, or ESCO, would:

- Complete energy audits at no upfront cost on the municipal buildings of the Town's choice.
- If the Town chose to move forward with any of the recommendations that come out of the energy audits (there is no obligation to do so), the ESCO would work with the Town to develop the work scope, secure grants and incentives, and secure financing.
- The ESCO would do the work in house or hire contractors, and would oversee the implementation of the projects.
- Savings estimates from the audits are guaranteed - the ESCO would monitor savings after the project is completed and if the estimated savings are not realized, they would pay the difference or make adjustments in order to achieve the savings in the future.
- Projects are typically, although not always, done in a way that is budget neutral - the energy savings are equal to or exceed bond (or other loan) payments.

For more info, see the Department of Energy's website:

<https://www.energy.gov/eere/slsc/energy-savings-performance-contracting>

Attachment 3 – Town Building Walk Through Notes

General Notes

- Have an HVAC contractor service each building's heating system before the winter, if this has not already been done. Efficiency Vermont can provide an incentive to complete this cleaning. **Ensure that the HVAC contractor performs an efficiency test of the heating system before and after the cleaning** (typically only a post-cleaning test is performed).
- Ask the HVAC contractor that performs the cleaning to provide an estimate for insulating hot water pipes. Most are not insulated. Efficiency Vermont can again provide an incentive for this cost-effective improvement.
- Ensure that thermostats are programmed to set the temperature back each night and on weekends. The setback can be for as much as eight degrees (e.g. 70 degrees during the day, 62 degrees at night).
 - If a building has a separate thermostat for the cooling system, set it to "off" for the winter.
 - If a building does not have a programmable thermostat (e.g. the Village Garage), install one.

Town Hall

Most improvements here should be examined within the context of the planned renovations. There are, however, some small steps that can be taken now to lower energy bills this winter:

- Remove window air conditioning units
- Theater
 - Keep temperature in this side of the building around 50 degrees.
 - There is a projection booth exhaust fan that is running (24/7)? Investigate whether this is needed while the theater is not in use. Shut it off if it is not needed. Investigate controls for this exhaust fan when the theater is in use.
- Main offices
 - Ensure that thermostat in the finance/administrative office is set to 50 degrees and the heat pumps are used as the primary heat source. If the thermostat is not set low enough, the hot water (propane) heat could come on at the same time that the heat pumps are running.

Town Garage

- **Ventilation**
 - The ventilation unit is running more than necessary. Previous energy audit recommended reducing the run time to a half hour in the morning and a half hour in the afternoon. May be a need to run more often because of COVID – I will check with Efficiency Vermont on current ASHRAE guidelines.

- Hot water heater
 - 15-year-old indirect hot water heater is oversized for the hot water demand in the building. Replace with a heat pump hot water heater.

Old Town Garage

- Lighting
 - Interior lighting is still fluorescent. This could be replaced with LED (and should as the tubes fail), but an inexpensive, immediate improvement would be to install motion sensors so that the lights shut off automatically when the garage is not in use.
 - Exterior: Some lights have been replaced with LEDs, some have not. Replace those that have not when electrician installs motion sensors.
- Roof
 - The roof is scheduled to be replaced next year. Include insulation in the scope of work.
- Windows
 - Consider installing [Window Dressers](#) window inserts, which are low-cost, high return inserts that can easily be installed for winter and removed for summer. It may be possible to collaborate with the IREC towns to recruit volunteers to build these inserts for municipal buildings post-COVID.