

## **CEC conducts Town energy use inventory, encourages development of ‘culture of conservation’**

The Town’s Community Enhancement Commission (CEC) has released findings from a Town energy use inventory conducted last year. The 10-member, Council-appointed commission works to promote conservation programs and educate residents about environmental sustainability. The commission hopes that the Town can use the inventory data to improve energy efficiency and reduce energy costs, while also improving air quality and public health.

The inventory provides a baseline of energy use and greenhouse gas emissions for Town operations during calendar year 2016. The CEC chose 2016 as a baseline year for the inventory because it was the most recent year for which comprehensive data was readily accessible. The drawback of a 2016 baseline is the exclusion of energy usage at the Vienna Community Center, which was undergoing renovation at that time.

### *Data collection and calculations*

With the assistance of Town staff, the CEC gathered data on electricity and natural gas consumption for Town operations, including buildings and facilities; streetlights, traffic signals, and park lights; and water and wastewater facilities (i.e., water storage tanks, irrigation systems, and sewer metering stations). The CEC also gathered data on gasoline and diesel fuel consumption as well as vehicle air conditioning refrigerant use for both 2016 and 2017. The Town’s vehicle fleet currently includes more than 124 cars, trucks, motorcycles, and construction and other non-road vehicles and equipment.

Using the gathered data, the CEC calculated the Town’s total consumption of and costs for electricity, natural gas, and vehicle fuel. An outside consultant calculated associated greenhouse gas emissions.

### *Inventory findings*

Electricity usage accounted for the bulk of the Town’s greenhouse gas emissions (987 tons of carbon dioxide equivalent or tCO<sub>2</sub>e) with vehicle fleet emissions close behind (665 tCO<sub>2</sub>e in 2016, rising to 818 tCO<sub>2</sub>e in 2017). Electricity use and vehicle fuel represent sizeable costs to the Town. Vienna spent more than \$160,000 on electricity in 2016. Gasoline and diesel fuel cost more than \$120,000 in 2016 and \$137,000 in 2017.

As a whole, streetlights are the Town’s largest individual consumer of electricity (972,480 kWh), although the cost to Vienna is relatively low. Because of the payment structure agreement between the Town and Fairfax County, the cost to Vienna for streetlights does not accurately reflect the actual electricity cost. To promote better pricing and choice, the Town, along with other Northern Virginia localities, has been working through the Northern Virginia Regional Commission to modify the street lighting contract with Dominion Energy to provide LED streetlights as an option, which will accrue significant savings. The police station, Town Hall, Northside Property Yard, and ballfield/park lights also accounted for significant electricity consumption and cost.

### *Creating a culture of conservation*

The inventory provides the Town of Vienna with a tool to identify opportunities and measure efforts to reduce its energy consumption and costs. The CEC is working to encourage Town Council and staff to set goals and adopt policies that promote energy efficiency. For example, the Town could strive to reduce electricity use by 10%, which could save the Town \$15,000 per year under the current budget. Similarly,

a goal of reducing gasoline and diesel costs by 10% would result in savings of more than \$13,000 per year.

There is plenty of low-hanging fruit to help meet these goals. The CEC hopes that the Town will consider some or all of the following strategies as a start:

- plan and implement an LED retrofit for all Town facilities
- develop a system to ensure that ballfield lights are off when fields and facilities are not in use
- adopt a policy that directs Town employees to avoid, whenever possible, idling Town vehicles
- phase in more fuel-efficient vehicles
- install motion-sensor lights, automatic water shut-offs, and temperature controls
- ensure adequate weatherization at Town facilities, such as insulation of buildings and hot water pipes and use of caulking around windows
- revise Town procurement policies to require purchase of energy-efficient products and equipment (e.g., computers, HVAC systems, refrigerators)
- adopt general office policies to encourage energy, water, and paper conservation
- adopt Town policies to require water-wise and energy-efficient landscaping.

The Town of Vienna has a record of promoting environmental sustainability, most recently as part of its Vienna Community Center renovation. The community center will attain at least silver-level certification under the LEED green building rating system, which recognizes energy efficient and cost-saving buildings. Taking on the opportunities outlined above could further bolster a culture of conservation – both environmental and economic. Efforts to reduce energy consumption and greenhouse gas emissions will have positive impacts on air quality and public health as well as significant economic benefits.

For more data about Town energy and fuel costs, see the link on the left of the Government/Boards and Commissions/Community Enhancement Commission page at [viennava.gov](http://viennava.gov).

**SUMMARY OF ENERGY USE, EMISSIONS, AND COSTS**

<b>ELECTRICITY (2016)</b>	
<b>Total Municipal Electricity Usage (kWh)</b>	<b>2,520,970</b>
<b>Total Emissions in CO2e (tCO2e)</b>	<b>987</b>
<b>Total Cost to Town</b>	<b>\$160,807.94</b>
<b>NATURAL GAS (2016)</b>	
<b>Total Municipal Natural Gas Usage (scf)</b>	<b>33,012</b>
<b>Total Emissions in CO2e (tCO2e)</b>	<b>3.73</b>
<b>Total Cost to Town</b>	<b>\$21,352.91</b>
<b>VEHICLE FLEET FUEL (2016)</b>	
<b>Total Gasoline Usage (gallons)</b>	<b>35,761</b>
<b>Total Diesel Usage (gallons)</b>	<b>36,171</b>
<b>Total Emissions in CO2e (tCO2e)</b>	<b>665</b>
<b>Total Cost to Town</b>	<b>\$120,840</b>
<b>VEHICLE FLEET FUEL (2017)</b>	
<b>Total Gasoline Usage (gallons)</b>	<b>45,201</b>
<b>Total Diesel Usage (gallons)</b>	<b>43,500</b>
<b>Total Emissions in CO2e (tCO2e)</b>	<b>818</b>
<b>Total Cost to Town</b>	<b>\$137,000</b>

\* Energy usage figures do not include the Vienna Community Center, which was closed in 2016 for renovation

**ENERGY USE AND COST TO TOWN BY SOURCE\***

<b>SOURCE</b>	<b>ELECTRICITY USE (kWh)</b>	<b>COST TO TOWN</b>	<b>NATURAL GAS USE (scf)</b>	<b>COST TO TOWN</b>
Streetlights	872,480	\$14,692.36**		
Police Station	386,540	\$28,257.45	4,820	\$3,130.41
Town Hall	369,680	\$33,270.71	6,532	\$4,229.72
Northside Prop. Yard	303,120	\$26,198.88	14,315	\$8,521.96
Park Lights	227,237	\$22,521.11		
Wall Street Water Storage Tank	179,900	\$15,119.75		
Traffic Signals	77,364	\$7,591.01		
Southside Prop. Yard	34,485	\$3,501.74	4,969	\$3,464.07
Bowman House	30,123	\$2,999.78	1,183	\$957.97
Freeman House	29,642	\$3,020.99	1,193	1048.78
Nutley Street Water Storage Tank	4,620	\$536.98		
Frederick Street Water Storage Tank	3,366	\$403.68		
120 Cherry Street	1,760	\$319.76		
Sewer Meter Stations	655	\$2,373.74		
<b>TOTAL</b>	<b>2,520,972</b>	<b>\$160,807.94</b>	<b>33,012</b>	<b>\$21,352.91</b>

\* Vienna Community Center is not included. Facility was under renovation from 9/2015 to 9/2017.

\*\* Electricity cost is higher in actuality. Fairfax Cty pays bills for street lights (266 acorn + 923 pole-mounted). Vienna pays portion of costs for acorn lights, which are considered an upgrade to standard lights.

**VEHICLE FLEET FUEL USE AND COST TO TOWN**

	<b>GASOLINE (gallons)</b>	<b>COST TO TOWN</b>	<b>DIESEL (gallons)</b>	<b>COST TO TOWN</b>	<b>TOTAL COST</b>
<b>FY16 TOTAL</b>	<b>35,761</b>	<b>\$64,018</b>	<b>36,171</b>	<b>\$56,822</b>	<b>\$120,840</b>
<b>FY16 Total Emissions in CO2e (tCO2e): 665</b>					
<b>FY17 TOTAL</b>	<b>45,201</b>	<b>\$69,000</b>	<b>43,500</b>	<b>\$68,000</b>	<b>\$137,000</b>
<b>FY17 Total Emissions in CO2e (tCO2e): 818</b>					