



2018
Green Fleet Annual Report

1. Introduction

Background

Local Law #9 of 2015, establishing a Sustainable Green Fleet Policy, was adopted by the Ulster County Legislature in August of 2015 and approved by the County Executive in September of 2015. The Green Fleet Law recognizes that, while vital to the operation and function of County Government, fleet operations represent a significant environmental and economic cost to Ulster County. The law outlines ways to reduce these costs and impacts and includes requirements to inventory the fleet, monitor fuel use, optimize use of existing vehicles, and purchase green vehicles to meet a defined green fleet goal.

Reporting Requirements

The Green Fleet Law requires an annual report to be filed with the County Executive and the designated Ulster County Legislative Standing Committee(s) on or before March 1st.

The report shall include but not be limited to:

- Information addressing the intent and purpose of the law (Section 1), the fleet inventory (Section 3), and the Green Fleet Policy implementation strategies (Section 5);
- Documentation of fuel use and emissions associated with the fleet;
- Assessment of goals as outlined in policy and whether they have been attained; and
- Recommendations regarding actions to be taken to meet the goals as well as recommendations as to specific changes or modifications to the policy.

Methodology

The monitoring and implementation of the Green Fleet Law is a collaborative effort between various Executive Departments, including the Department of the Environment and the Department of Public Works (Fleet Manager) as well as UCAT, the UC Purchasing Department and others.

The Green Fleet Policy requires extensive monitoring and detailed analysis of fleet composition and fuel consumption. The information in this report was compiled from several data sources to determine the average efficiency of the Ulster County fleet by individual vehicle, vehicle class and Ulster County department. The data contained within is maintained by the Department of the Environment for ongoing trend analysis.

As procedures continue to be refined to track and report fleet activity, the report accuracy and ability to describe operations at any one point in time will continue to improve. This report is intended to provide an overview of fleet size and performance over the course of time as fleet function and size changes. Such changes may occur due to reduction, transfer or merger of departmental functions, such as the planned UCAT expansion of service in the City of Kingston.

Green Vehicle Definitions

Per the Local Law, "Green Vehicle" refers to any vehicle that employs technology that reduces fuel consumption or emissions and shall include, but is not limited to:

- Hybrid vehicles (HEV): HEVs have electric components, but use a combustible fuel source (such as gasoline) to power the vehicle. The battery can only be recharged by operating the vehicle (i.e. no plug).
- Plug-in hybrid vehicles (PHEV): PHEVs have a larger battery that will enable a portion of driving range available as "all-electric" mode. The batteries can be recharged by plugging the vehicle into an electric power source.
- Battery electric vehicles (BEV): BEVs are powered solely by electricity stored in batteries.

2. Fleet Size and Composition

Number of Vehicles

As of December 31st, 2018, the County's inventory included 460 vehicles in 27 departments/divisions. This number includes all vehicles in Ulster County's operational vehicle fleet and transit fleet but does not include non-road vehicles (e.g. trailers) and construction equipment operated by the Department of Public Works. As methodology improves for defining the fleet, the total fleet inventory number will become more precise.

New Vehicles

The UC DPW Fleet Manager continues to work with departments to review the intended use and need for each vehicle request selecting the most efficient vehicle practicable for the application, ensuring "right-sizing" of the fleet as older vehicles are replaced. Using a "right-sizing" approach, the County can improve the average efficiency of the fleet, even if the size of the fleet increases due to increased operational requirements. In addition, each year many additional types and models of BEVs and PHEVs are brought to market. As these vehicles become available, they will be evaluated for deployment in the fleet. To date, the deployment of new green fleet vehicles has been largely limited to passenger sedans.

Retired/Auctioned Vehicles

A total of 38 vehicles were retired in 2018. A portion of these were auctioned. The remainder are located at the Central Auto garage awaiting auction. A detailed list of auctioned vehicles is included as Appendix C.

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TABLE 1: VEHICLES RETIRED AND PUT IN SERVICE (2018)

Type	Retired in 2018	Put In Service in 2018
Passenger Vehicle	11	6 (1) Dodge Charger (4) Toyota Prius Prime Hybrid – Green Fleet (1) Chevrolet Volt Plug-In Hybrid – Green Fleet
Light Duty Truck	4	2 (2) Jeep Cherokee
Medium Duty Vehicle	14	12 (5) Ford Explorer (1) Chevrolet Express (1) Ford F-150 (1) Coachman Freedom (1) Jeep Grand Cherokee (3) Chevrolet Tahoe
Heavy Duty Vehicle	9	11 (3) Chevrolet 4500 (2) Gillig G27E102N2 (2) International HX620 (4) International 7600 SFA
Total	38	31

Green Vehicle Integration

The Green Fleet Policy mandates that 5% of the fleet will be Green vehicles by 2020. As of December 31st, 2018, the County fleet included 28 Green vehicles, per the policy definition, including: (6) hybrid transit buses, (13) hybrid passenger vehicles, (8) plug-in hybrid (PHEV) passenger vehicles, and (1) battery electric (BEV) passenger vehicle. The County exceeded the 2020 Green Fleet goal in 2018.

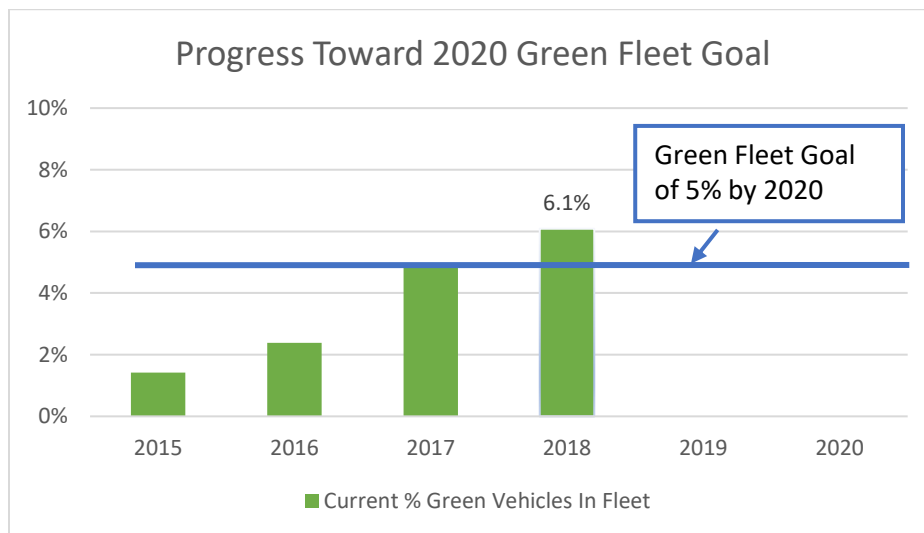


FIGURE 1: PROGRESS TOWARD 2020 GREEN FLEET GOAL

3. Fuel Consumption and Cost

Fleet fuel is purchased and tracked using the following systems:

- **WexOnline:** WexOnline® is a credit card procurement system that allows vehicle drivers to purchase fuel at commercial service stations. This system tracks transaction data including vehicle, mileage, user and department.
- **FuelMaster:** DPW maintains diesel fuel tanks at the Quarry and various Highway Substations for use with Heavy Duty vehicles and equipment. These tanks are filled by the County's diesel fuel vendor or through pickup at a local fuel terminal with a County-owned fuel truck. Fuel dispensed at these tanks is tracked using the FuelMaster system.
- **UCAT Gasoline and Diesel Tanks:** UCAT maintains diesel and gasoline tanks on site for operation of the UCAT bus fleet. UCAT vehicles fuel from these tanks to the maximum extent possible, though occasionally UCAT vehicles use the WexOnline® system for fueling.

TABLE 2: TOTAL FUEL USAGE BY TYPE (2018)

Fuel Type	2015	2016	2017	2018
Diesel (gallons)	286,963	260,584	269,670	276,476
Gasoline (gallons)	220,950	243,530	226,218	239,060
Ethanol (gallons)	24,550	27,059	25,135	26,562
Biodiesel (gallons)	-	3,986	3,226	3,521
Electricity (gallons equivalent)	-	66	172	239
Total	532,463	535,225	524,421	545,858

Notes:

1. UCAT began using biodiesel in 2015 and began reporting usage in 2016.
2. Ulster County put its first electric vehicles into service in 2016.

TABLE 3: FLEET FUEL USAGE (2018)

Fleet	Fuel Type	Consumption (gallons)	Cost (\$)
Vehicle	Gasoline	209420.6	\$463,785.48
	Ethanol	23,269.0	\$51,531.72
	Diesel	148,821.0	\$337,642.04
	Electricity	238.8 (gallons equivalent)	\$909.36
Transit	Gasoline	27,922.4	\$60,033.19
	Ethanol	3,102.5	\$6,670.35
	Diesel	127,655.4	\$301,323.49
	Biodiesel	3,520.8	\$8,309.03
Non-Road	Gasoline	1,716.6	\$4,375.80
	Ethanol	190.7	\$486.20
	Diesel	-	
Total	All Fuels	545,857.7	\$1,235,066.61

Notes:

1. Gasoline purchased at local filling stations is assumed to be (on average) an E10 blend of 90% conventional fossil-derived gasoline and 10% renewable ethanol.¹
2. Gasoline equivalent was calculated using the EPA conversion estimate of 33.7 kWh per gallon of gasoline. Total electricity use in 2018 for fleet operations was 7,985 kWh.
3. The average blended electricity cost for UC Buildings with EV charging stations installed is \$0.113/kWh. (2017 electricity cost data, UC Department of the Environment)
4. Deliveries to the Department of Public Works diesel tanks totaled 147,917 gallons in 2018 with a cost of \$335,343.
5. The Gasoline delivered to UCAT tanks is an E10 blend of 90% conventional gasoline and 10% ethanol.
6. For part of the year, UCAT uses a B5 Biodiesel blend fuel, containing 95% conventional diesel fuel and 5% biodiesel. In 2018, the UCAT fleet used this biodiesel blend approximately 54% of the time.
7. Non-Road usage consists of fuel used by DPW Buildings & Grounds division for grounds maintenance with small engine equipment. This fuel is purchased through the WexOnline system and transported in gas cans or the equipment. Diesel fuel used by non-road vehicles in the DPW Highways division is included in the Vehicle Fleet totals, as this fuel is used for both Heavy-Duty road vehicles as well as non-road construction equipment; the usage data cannot currently be separated. As the FuelMaster system becomes fully operational, the County will be able to attribute a larger portion of DPW diesel fuel usage to Non-Road applications.

4. Fleet Efficiency

Fuel efficiency was calculated for all fleet vehicles with accurate annual mileage data. This analysis includes vehicles tracked in the WexOnline system and UCAT vehicles, but does not include DPW Highway Division vehicles, or any vehicle without accurate mileage data available. A summary of this information is contained in the following charts. There continues to be a very sizable range in fuel efficiency across departments and vehicle types. However, we are observing substantially improved mileage in green fleet vehicles.

¹ See US Department of Energy Alternative Fuels Data Center website for discussion on ethanol blends, available here: https://www.afdc.energy.gov/fuels/ethanol_blends.html.

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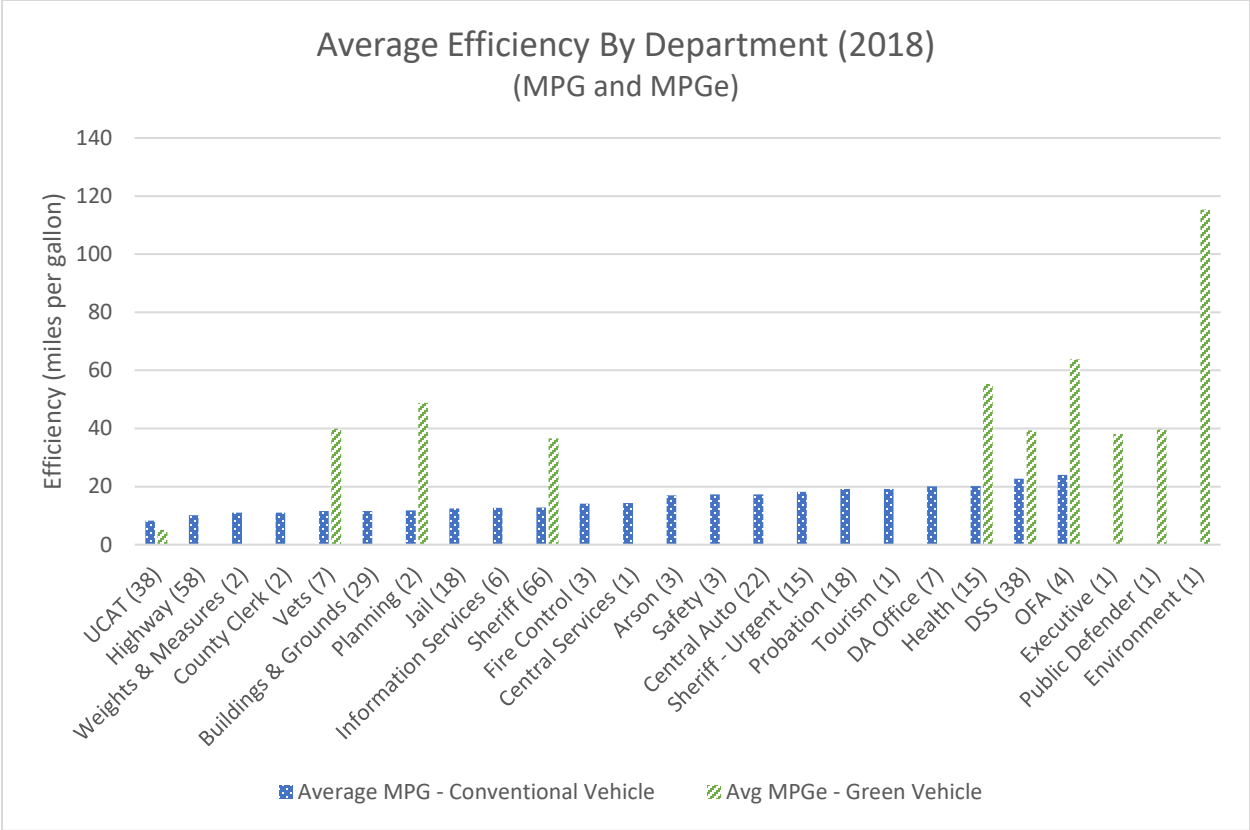


FIGURE 2: AVERAGE EFFICIENCY BY DEPARTMENT (2018)

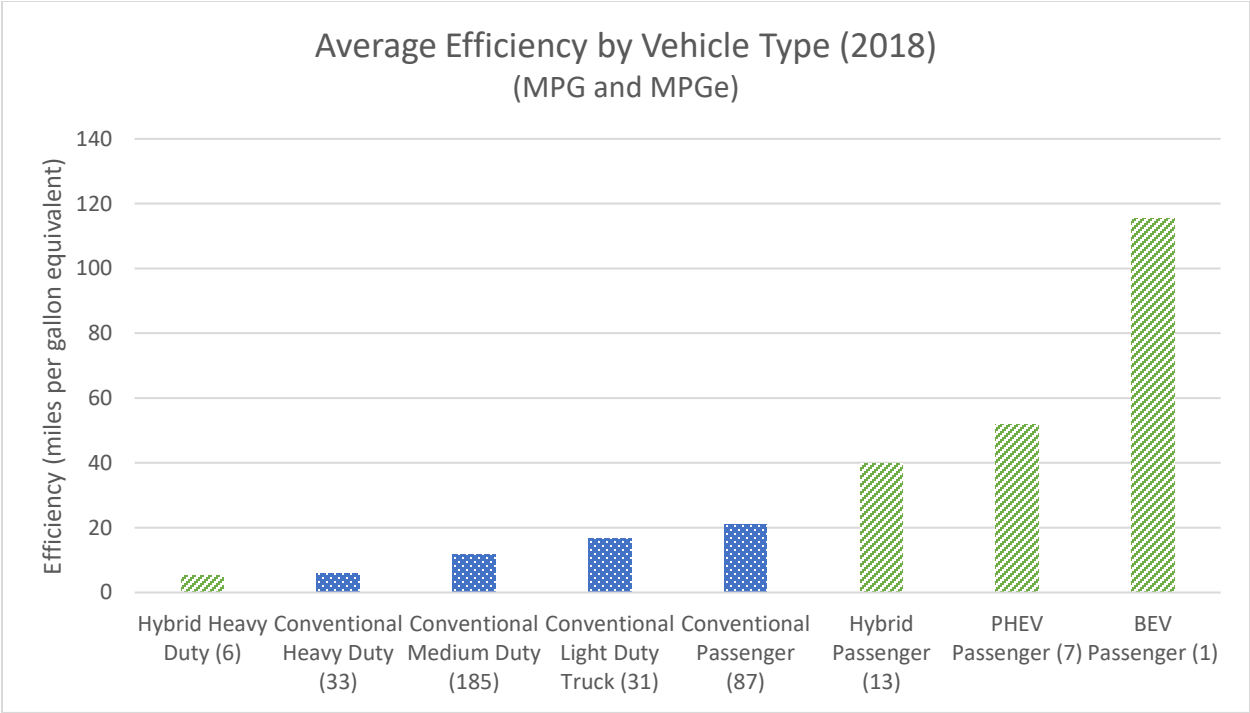


FIGURE 3: AVERAGE EFFICIENCY BY VEHICLE CLASS (2018)

Notes:

1. The number listed in parentheses beside each department name indicates the number of vehicles with valid mileage data reported in the Wex system.
2. Plug-in electric vehicles in the fleet charge primarily using Ulster County's Chargepoint network. The BEV used by the UC Department of the Environment also charges on other networks and as such 20% has been added to the electric usage to account for this out of network charging.

5. Greenhouse Gas Emissions

Ulster County offsets 100% of its emissions through the purchase of carbon credits and renewable energy credits (RECs), including all Scope 1 and 2 emissions associated with fleet operations. However, the practice of purchasing offsets to reduce greenhouse gas emissions does not contribute toward the achievement of other Ulster County Green Fleet Policy goals such as increased efficiency, reduced costs and improved local air quality. To measure source emissions reductions over time, this report includes fleet emissions quantities (below) that do not include the application of carbon offsets or renewable energy credits.

Emissions Factors Disclosure:

Ulster County accounts for GHG emissions in accordance with the Local Government Operations Protocol² developed by Local Governments for Sustainability (ICLEI).

Ulster County uses emissions factors published by the EPA in the document *Emissions Factors for Greenhouse Gas Inventories*³ (last modified 3/9/3018).

100-year global warming potential (GWP) multipliers were applied as published in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report.⁴

Ulster County does collect and maintain data on vehicle miles traveled (VMT) for vehicle fleet and transit fleet vehicles. However, to simplify the accounting process for mobile combustion, Methane (CH₄) and Nitrous Oxide (N₂O) emissions were estimated on a per-gallon basis as described in the New York Community and Regional GHG Inventory Guidance (Version 1.0, September 2015).⁵ To do so, CO₂ emissions factors were multiplied by 0.1% for CH₄ and 1.8% for N₂O to obtain an emission factors for these greenhouse gases.

TABLE 4: FLEET GREENHOUSE GAS EMISSIONS, SCOPE 1 & 2

Year	Total Scope 1 - Direct Combustion Emissions (metric tons CO ₂ e)	Total Scope 2 Emissions (metric tons CO ₂ e)
2015	5,076.5	N/A
2016	4,883.1	0.37
2017	4,761.2	0.97
2018	5,015.3	1.08

² Local Governments for Sustainability (ICLEI), Local Government Operations Protocol Version 1.1, 2010

³ Available here: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf

⁴ Available here: https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

⁵ Available here: https://www.dec.ny.gov/docs/administration_pdf/ghgguide.pdf

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Emissions from purchased electricity are considered Scope 2 - Indirect Combustion emissions. However, as discussed above, these emissions are also offset 100% through the County's purchase of renewable energy credits.

In 2018, 96.4% of fleet emissions resulted from the combustion of fossil fuels, with the bulk of the remaining portion of emissions resulting from combustion of biomass-based, or biogenic, fuels. In accordance with the ICLEI protocol, this type of carbon is not included in Scope 1 emissions as the carbon concerned is of biogenic origin and would have been emitted to the atmosphere through the natural process of decay. In 2018, biogenic emissions associated with biofuel combustion was 189.5 (metric tons of CO₂e).

Per the EPA's carbon equivalencies calculator, Ulster County's 2018 fleet emissions quantity (without offsets) is equivalent to that released by burning 27.4 railcars worth of coal or 11,614 barrels of oil. Alternatively, this amount of carbon could be offset through the annual carbon sequestration of 5,904 acres of U.S. forest land.⁶ However, as discussed, 100% of these emissions are offset through the purchase of carbon credits.

6. Electric Vehicle Implementation

Fleet Electric Vehicle Performance

For plug-in hybrids and battery electric vehicles, an efficiency value of MPGe (miles per gallon equivalent) can be calculated using both gasoline and electricity consumption data, using the EPA's assumption that 33.7 kWh is equivalent to 1 gallon of conventional gasoline⁷. The MPGe efficiency value is a standardized way to quantify the total amount of energy required to operate the vehicle and compare its efficiency to vehicles that use only conventional fuel.

In 2018, UC Fleet usage of electricity increased 38% above the 2017 value. Based on total usage, green passenger vehicles in the Ulster County vehicle fleet achieved an average efficiency of 40.9 MPGe over 180,799 miles traveled in 2018. In general, the PHEV and BEV passenger vehicles in the fleet attained higher efficiency performance than hybrid vehicles.

⁶ Calculator available here: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

⁷ More information here: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revisions-and-additions-motor-vehicle-fuel>

TABLE 5: AVERAGE EFFICIENCY OF SELECT GREEN FLEET VEHICLES (2018)

Vehicle Type	2018 Sample Size	Average Efficiency (MPGe)
Hybrid Passenger	13	37.5
Plug-In Hybrid (PHEV) Passenger	7	50.8
Battery-Electric (BEV) Passenger	1	115.3

The chart below shows the relative proportions of gasoline and electricity usage for each green vehicle model in 2018:

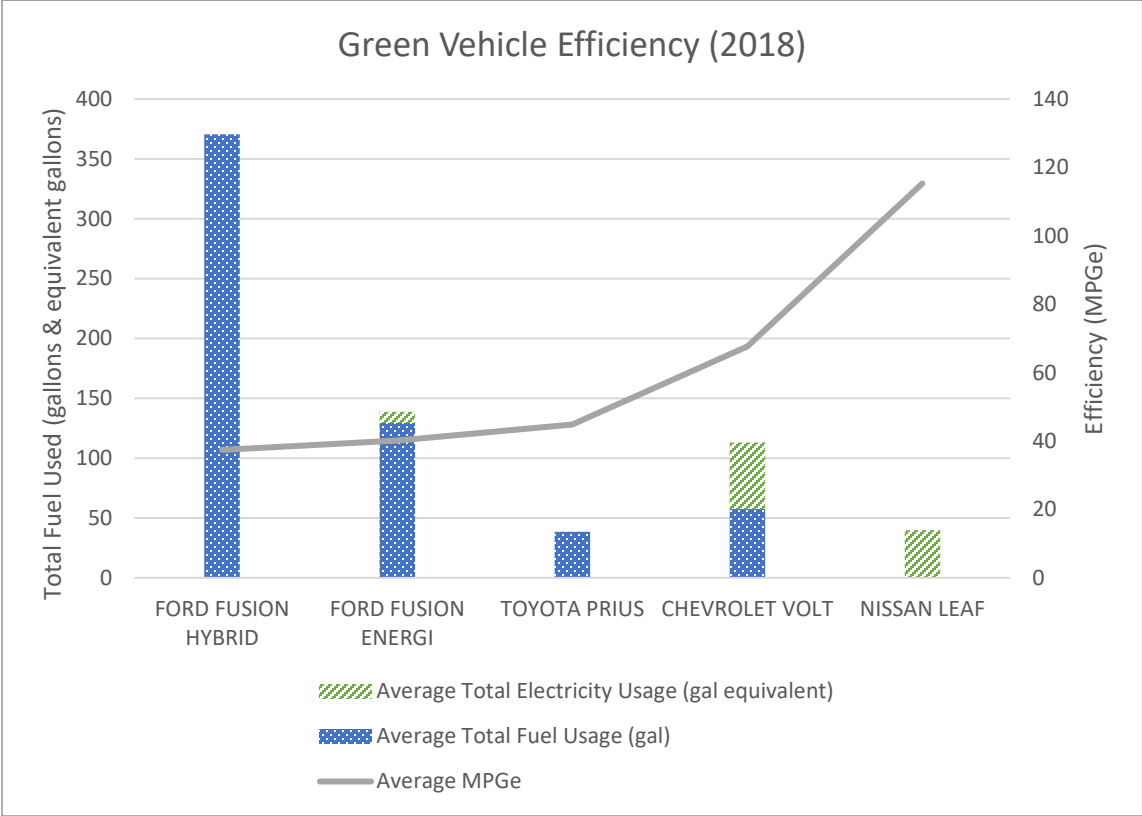


FIGURE 4: GREEN VEHICLE EFFICIENCY (2018)

Electric Vehicle Infrastructure

Ulster County added 4 new charging ports in 2018, for a total of 30 charging ports county-wide. The charging station network is used by three distinct groups:

- employees operating fleet vehicles
- employees and contract employees charging personal vehicles at work
- the public (Ulster County residents and visitors)

Ulster County fleet charging sessions accounted for 20% of energy dispensed from Ulster County stations in 2018. The usage of and emissions from this electricity are included in this report. The cost of this energy is included in the electricity bills of the Ulster County properties where charging stations are located and is reported in the annual building benchmarking report, as it cannot be separated accurately from the cost of the electricity consumed to operate the building. Electricity costs contained in this report are estimated based on the average cost of electricity at properties where EV charging stations are installed.

The County's charging network provides access to workplace charging for 97% of the County's workforce. Currently, workplace charging does not represent significant portion of usage, however, access to infrastructure is an important first step to ensure that Ulster County employees can consider the purchase of a green vehicle. When an employee purchases a green vehicle, the benefit of decreased emissions extends beyond the commute—a benefit to the entire community. Workplace charging not only reduces the County's carbon footprint but leads to wider community and regional benefits. Ulster County is invested in increasing the rate of employee electric vehicle adoption. Ulster County includes Scope 3 GHG emissions associated with employee commuting in its GHG inventory, and offsets these emissions through the purchase of carbon credits in accordance with the Net-Zero Government Operations policy. In 2017, employee commutes led to the emission of approximately 2,111 metric tons of CO₂-equivalent greenhouse gases—19% of all measured government operations emissions.

The largest user group, both in number of individual charging sessions and energy dispensed, are public users. Starting in 2016, the Ulster County Regional Chamber of Commerce has sponsored the electricity cost of public charging sessions, allowing the energy to be offered to the public at no charge. In 2018, the Ulster County charging network hosted a total of 231 unique public drivers.

TABLE 6: ULSTER COUNTY ELECTRIC VEHICLE CHARGING NETWORK (AS OF 12/31/18)

Location	# of Ports
Carr Building (1 Pearl Street, Kingston)	2
Department of Public Works	2
Golden Hill Office Building / Health Department	8
Kingston SUNY Extension	2
Probation Department	2
Trudy Resnick Farber Building (50 Center St, Ellenville)	2
Ulster County Courthouse	2
Ulster County Law Enforcement Center	2
Ulster County Office Building	2
Ulster County Office Complex /Dept. of Social Services	6
Total	30

EV Charging Station Usage

The County charging station network, which became operational in July of 2015, has experienced increased use in 2018. The charts below show the rate of charging station utilization by year. Any sessions during which less than 0.1 kWh was dispensed have been removed from the annual session data.

Detailed information on the usage of the County's network of stations (by the public and the UC fleet) is included as Appendix B.

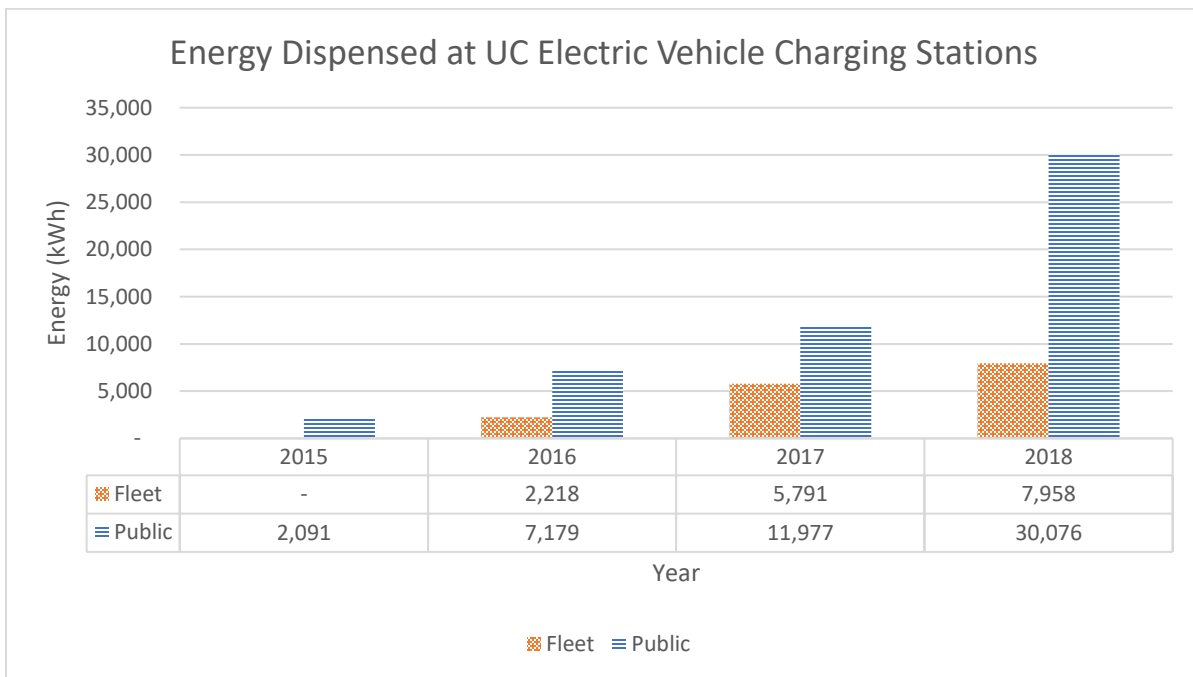


FIGURE 5: ENERGY DISPENSED AT UC ELECTRIC VEHICLE CHARGING STATIONS (2015-2018)

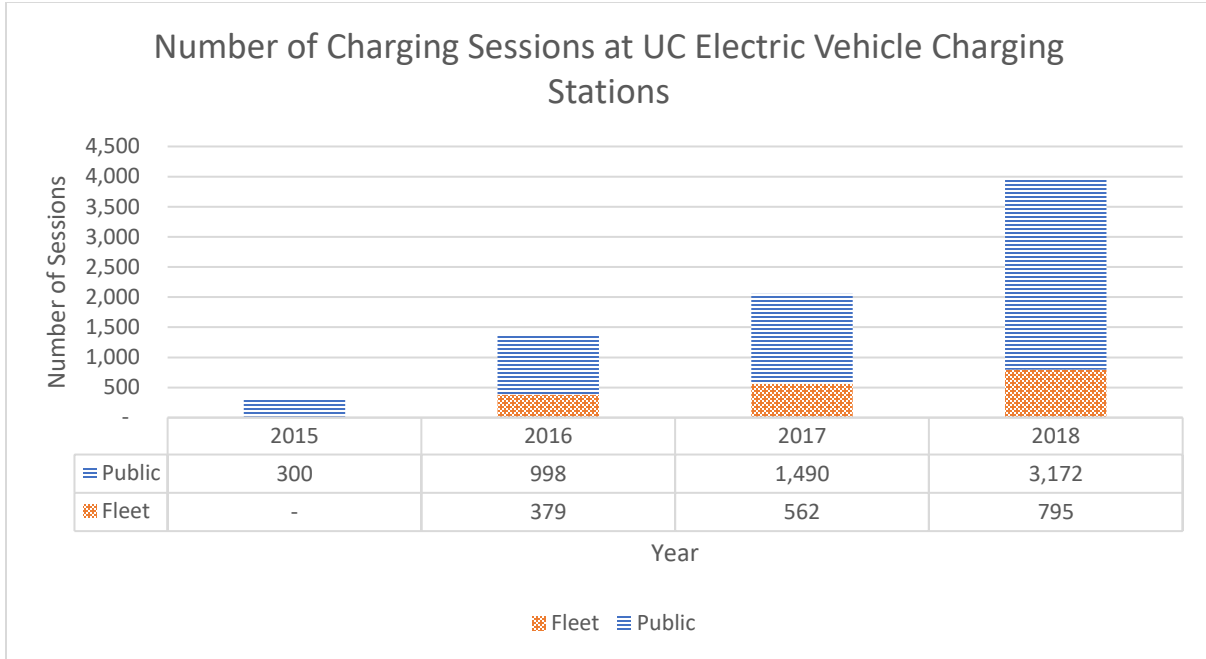


FIGURE 6: NUMBER OF SESSIONS AT UC CHARGING STATIONS (2015-2018)

7. Initiatives

Public Charging

Ulster County continues to operate an extensive network of EV charging stations which can be used by the public. One of the express goals of this initiative was to increase the use and awareness of public charging. Each year we have seen substantial increases in the number of individual public charging sessions at our stations. The charging station with the highest public usage is the station located at the Ulster County Courthouse. That particular station has averaged in excess of 50% utilization during weekday business hours (9am-5pm) over the past year. This is at least double the typical charger utilization rate in New York.

Right-Sizing of the Fleet

The Fleet Manager continues to actively manage the fleet for efficiency. Older, less-efficient vehicles are retired from the fleet as they reach the end of service life. Vehicles are then auctioned as documented in Appendix C. When acquiring new vehicles, the Fleet Manager works with departments to determine their needs and provides vehicles of an appropriate vehicle-class and type for the job, targeting optimum fuel efficiency for the application. As more and more models of electric vehicles, plug-in hybrids and hybrids become available, there will be additional options for a green vehicle to be used as a replacement to an existing vehicle.

Use of Biodiesel B5 Blend

The County continues to use biodiesel blend (B5) at UCAT when operationally feasible. Biodiesel has a higher gelling temperature, and if used during cold weather it will clog and block fuels lines. Biodiesel is derived from plant and animal sources versus conventional fossil-derived diesel fuel which is refined from crude petroleum. Biodiesel is generally considered a greener, more sustainable alternative to conventional diesel since it is not fossil-fuel based and the subsequent regeneration of the plant and animal stock sequesters the CO₂ emissions associated with the burning of the biodiesel product. Ulster County's use of biodiesel blend fuel for transit fleet operations reduced greenhouse gas emissions (CO₂e) by 36.0 metric tons in 2018.

Education and Presentations

All departments receiving electric vehicles have been trained on the use of the cars, charging stations, the goals of the Green Fleet Policy, the availability of workplace charging and other ways to green their commute (including reduced UCAT fares for County employees and ride sharing resources). This training program will continue with the addition of new vehicles to new departments.

In addition, the County's Green Fleet efforts have been presented to audiences across the state through NYS DEC and NYSEDA sponsored forums including webinars and conferences. On September 8th, 2018, the Department of the Environment helped to organize the 3rd annual Ulster County National Drive Electric Week event in Kingston. This event featured a wide variety of electric vehicles and provides another opportunity for the public to learn about Ulster County's Green Fleet initiatives.

Ulster County Department of the Environment staff also presented at Central Hudson's Electric Vehicle Summit on October 30th. This presentation highlighted the implementation of Green Fleet initiatives in Ulster County.

Bus Fleet Electrification

The Ulster County Department of the Environment prepared an application to NYSEDA under the Public Transit Technology and Innovation Program (PON 3914) solicitation. Our application would fund a study of a comprehensive electrification of the UCAT fleet. A concept paper was submitted in August and it was favorably received and the County was invited to submit a full proposal which it did in November. Notice of award is expected in early 2019.

Ulster County Area Transit hosted demonstrations from two manufacturers of fully electric full size buses. The buses were ridden/driven by UCAT and other County staff. They performed well including retaining excellent power on steep hills in the vicinity of Kingston. UCAT is continuing to actively pursue the potential for fully electric fleet buses.

UCAT and the Department of the Environment are working closely with partners on the possibility of using VW settlement money to help fund electrified fleet buses as well as funding the charging infrastructure at the UCAT garage for the buses. Staff has met with Central Hudson regarding the electrical requirements for depot electric bus charging units.

Technical Assistance

The County continues to provide technical support to municipalities in Ulster County on electric vehicles and charging station initiatives. The Department of the Environment has worked with the following municipalities on efforts to install municipally sponsored charging stations: Woodstock, City of Kingston, Rosendale, Marbletown, Wawarsing, Village of New Paltz, and Town of New Paltz. All of the municipally sponsored stations in Ulster County currently offer free charging to the public.

Utilization of Grant Funding and Incentives

Ulster County intends to continue to utilize available funding and rebates to accomplish Green Fleet Policy goals. Currently, the preference for charging stations is to use the NYSERDA ChargeReady NY funding. For vehicles, we will continue to use the NY Department of Environmental Conservation Municipal Zero-Emission Vehicle (ZEV) Rebate program and the NYSERDA Drive Clean Rebate to help offset the cost of plug in and electric vehicles.

Strategic Deployment of Electric Vehicle Infrastructure

The expansion of Ulster County's municipal charging infrastructure will increasingly require long range planning and coordination. The Ulster County Department of Environment will continue to assess fleet charging needs to prioritize siting of future electric vehicle charging stations. As available locations and suitable electrical circuits become occupied with deployed stations, the Department of the Environment will continue to work with the Department of Public Works and the local utility to find the best locations for additional stations.

8. Appendices

Appendix A: Fleet Usage Summary

TABLE 7: FLEET USAGE SUMMARY (2018)

Department	Total Number of Fleet Vehicles	Number of Vehicles Reporting Mileage	Total Distance Driven (miles)	Total Fuel Usage (gal)	Total Electricity Usage (gal eq.)	Total Energy Cost	Average Energy Cost per Mile
Arson	3	3	16,977	1,249	-	\$2,741.99	\$0.16
Buildings & Grounds	31	29	119,885	10,424	-	\$21,968.02	\$0.18
Central Auto	40	22	92,787	6,330	-	\$13,957.47	\$0.15
Central Services	1	1	5,019	351	-	\$770.43	\$0.15
County Clerk	2	2	5,360	474	-	\$1,006.42	\$0.19
DA Office	10	7	50,969	2,550	-	\$5,667.00	\$0.11
DSS	39	38	487,932	20,578	10	\$39,758.38	\$0.08
Environment	1	1	4,590	-	40	\$151.56	\$0.03
Executive	1	1	4,615	117	4	\$271.75	\$0.06
Fire Control	4	3	11,255	841	-	\$1,826.83	\$0.16
Health	15	15	115,444	4,760	139	\$11,086.99	\$0.10
Highway	152	58	671,988	71,752	-	\$149,323.20	\$0.22
Information Services	6	6	10,512	821	-	\$1,748.59	\$0.17
Jail	18	18	140,241	10,788	-	\$24,125.05	\$0.17
OFA	6	4	12,187	316	50	\$879.16	\$0.07
Planning	2	2	2,803	65	-	\$149.72	\$0.05
Probation	20	18	111,533	6,341	-	\$13,762.90	\$0.12
Public Defender	1	1	653	16	-	\$37.73	\$0.06
Safety	3	3	12,176	740	-	\$1,618.23	\$0.13
Sheriff	68	66	864,541	68,261	-	\$138,965.53	\$0.16
Sheriff - Urgent	16	15	195,185	11,264	-	\$23,515.68	\$0.12
Tourism	1	1	6,000	312	-	\$675.23	\$0.11
UCAT	38	38	1,060,734	162,107	-	\$376,056.82	\$0.35
Vets	7	7	69,939	5,557	-	\$11,212.06	\$0.16
Weights & Measures	2	2	16,902	1,511	-	\$3,204.05	\$0.19

Appendix B: Ulster County Electric Vehicle Charging Stations

Detailed Usage Report - Pursuant to Resolution No. 332 of 2015

TABLE 8: ULSTER COUNTY CHARGING STATION USAGE (2018)

	Fleet	Public	Total
Total Energy Usage (kWh)*	7,958	30,076	38,034
Total Cost to County**	\$899	\$3,399	\$4,298
Number of Charging Sessions	795	3,172	3,967
Average Energy Dispensed per Session (kWh)	10.0	9.5	-
Average Cost per Session	\$1.13	\$1.07	-
Greenhouse Gas Avoided (kg CO2e)	3,343	12,632	15,974
Gallons of Gas Saved	999	3,774	4,772
Median Time Charging	3:04	1:54	2:05
Number of Unique Users	8	231	239

*All sessions with usage greater than 0.1 kWh

**Based on average blended cost of electricity for previous year - \$0.113/kWh

Unique User Zip Codes:

Accord NY, Albany NY, Amityville NY, Arkville NY, Arlington VA, Athens NY, Averill Park NY, Ballston Lake NY, Beacon NY, Bearsville NY, Boiceville NY, Bronx NY, Brooklyn NY, Carmel NY, Chappaqua NY, Chichester NY, Clintondale NY, Cornwall NY, Cornwall-on-Hudson NY, Cottekill NY, Delanson NY, Delmar NY, Ellenville NY, Fishkill NY, Frederick MD, Gardiner NY, Germantown NY, Gilboa NY, Glen Spey NY, Glenford NY, Greenwich NY, Guilderland NY, High Falls NY, Highland NY, Hopewell Junction NY, Hudson NY, Hurley NY, Kerhonkson NY, Kiamesha Lake NY, Kingston NY, Kingston WA, Lake Katrine NY, Livonia MI, Margaretville NY, Maricopa AZ, Milton NY, Monroe NY, Montgomery NY, New Paltz NY, New York NY, Newburgh NY, North Hollywood CA, Oakland Gardens NY, Olivebridge NY, Oyster Bay NY, Palenville NY, Pawling NY, Pearl River NY, Pleasantville NY, Port Washington NY, Poughkeepsie NY, Ravena NY, Red Hook NY, Rhinebeck NY, Rockville MD, Rosendale NY, Saugerties NY, Schenectady NY, Shandaken NY, Shefford QC, Shokan NY, Slingerlands NY, Southampton NY, Sparrow Bush NY, Spring Valley NY, Stone Ridge NY, Tillson NY, Tivoli NY, Troy NY, Ulster Park NY, Victor NY, Wappingers Falls, NY, West Hurley NY, West Park NY, West Shokan NY, White Plains NY, Woodridge NY, Woodstock NY, Wurtsboro NY, Yonkers NY

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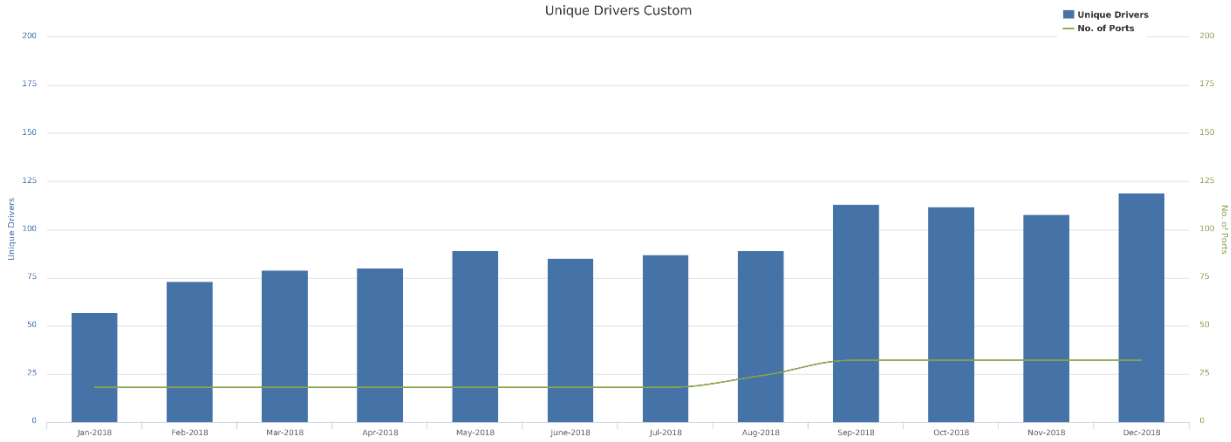


FIGURE 7: NUMBER OF UNIQUE DRIVERS USING ULSTER COUNTY CHARGING EQUIPMENT IN 2018 (SOURCE - CHARGEPOINT)

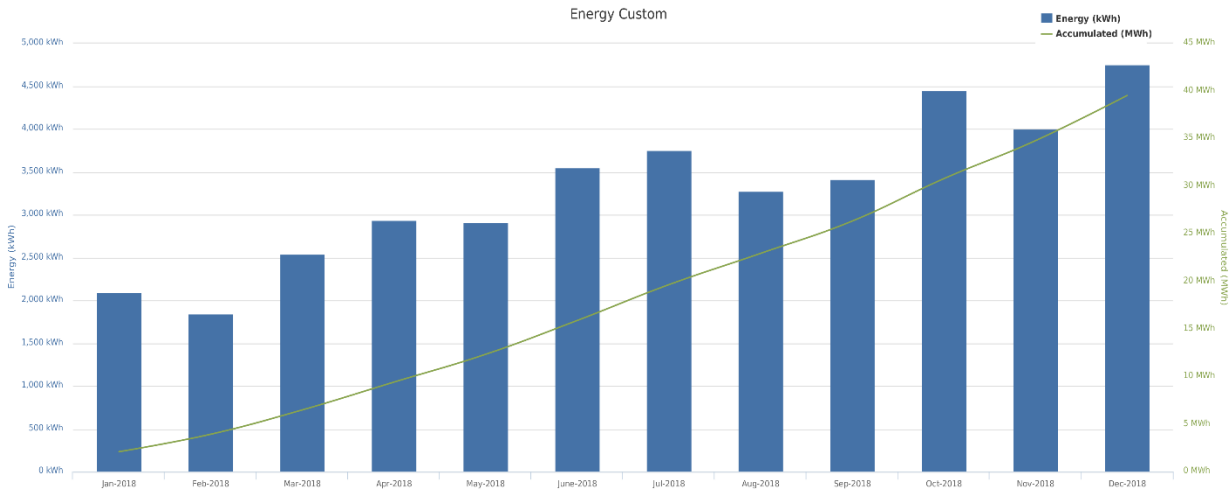


FIGURE 8: ENERGY DISPENSED AT ULSTER COUNTY CHARGING EQUIPMENT IN 2018 (SOURCE - CHARGEPOINT)

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TABLE 9: NUMBER OF CHARGING SESSIONS IN 2018 AT UC EVSE NETWORK

Station & Session Type	2015	2016	2017	2018
ULSTER COUNTY / ELLENVILLE				
Fleet	0	2	0	0
Public	60	84	37	88
ULSTER COUNTY / SUNY EXTENSION				
Fleet	0	1	3	2
Public	13	31	61	280
ULSTER COUNTY / CARR BUILDING				
Fleet	0	0	0	95
Public	0	0	0	44
ULSTER COUNTY / UC COURTHOUSE				
Fleet	0	0	5	0
Public	99	337	568	1,162
ULSTER COUNTY / UC DPW				
Fleet	0	0	3	0
Public	15	77	162	330
ULSTER COUNTY / UC DSS				
Fleet	0	36	134	209
Public	21	26	35	82
ULSTER COUNTY / UC GOLDEN HILL				
Fleet	0	170	288	453
Public	3	200	263	311
ULSTER COUNTY / UC OFFICE				
Fleet	0	171	137	36
Public	78	220	276	574
ULSTER COUNTY / UC PROBATION				
Fleet	0	0	0	0
Public	15	31	99	300
ULSTER COUNTY / UCLEC				
Fleet	0	0	0	0
Public	1	1	1	1

Appendix C: Fleet Vehicles Auctioned in 2018

TABLE 10: FLEET VEHICLES AUCTIONED IN 2018

VEHICLE#	YEAR, MAKE, MODEL	Type of Vehicle
28	1998 Chevrolet 2500	Pickup
111	1999 Ford Taurus	Sedan
117	2000 Ford Taurus	Sedan
134	2001 Ford Taurus	Sedan
140	2002 Chevrolet Impala	Sedan
144	2004 Chevrolet Impala	Sedan
185	2007 Dodge Caravan	Mini-Van
190	2007 Dodge Durango	SUV
210	2006 Ford Expedition	SUV
222	2007 Dodge Durango	SUV
262	2008 Chevrolet Impala	Sedan
269	2008 Dodge Grand Caravan	Mini-Van
280	2008 Ford Crown Vic	Sedan
282	2008 Dodge Durango	SUV
295	2008 Dodge Durango	SUV
339	2011 Ford Crown Vic	Sedan
501	2006 Dodge Grand Caravan	Mini-Van