2019
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 UCAT expansion of service in the City of Kingston in 2019.

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 and have no internal combustion engine in the vehicle.

2. Fleet Size and Composition

Number of Vehicles

As of December 31st, 2019, the County's inventory included 458 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.

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. Each year, 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.

In 2019, UCAT expanded its service to the City of Kingston, adding six vehicles to its fleet and three new routes to its operations. This expansion of service has resulted in increased fuel usage and greenhouse gas emissions in 2019.

Retired/Auctioned Vehicles

A total of 63 vehicles were retired in 2019. Forty-three (43) of these were auctioned. The remainder are located at the Central Auto garage awaiting auction. These vehicles are included in the fleet inventory. A detailed list of auctioned vehicles is included as Appendix C.

TABLE 1: VEHICLES RETIRED AND NEW TO SERVICE (2019)

Type	Retired in 2019	New to Service in 2019
Passenger Vehicle	22	4 (1) Dodge Charger (2) Hyundai Ioniq – Green Fleet (1) Scion tC
Light Duty Truck	1	7 (1) Chevrolet Colorado (2) Jeep Cherokee (4) Mitsubishi Outlander – Green Fleet
Medium Duty Vehicle	15	21 (2) Chevrolet Express (2) Chevrolet Silverado (1) Chevrolet Tahoe (1) Chevrolet Traverse (6) Chrysler Pacifica – Green Fleet (5) Dodge Durango (2) Ford E-450 Phoenix (1) Ford Explorer (1) Ford F-350

Heavy Duty Vehicle	25	9 (1) Gillig G27E102N2 (4) Gillig G29B1D2N4 (1) Freightliner MT55 (3) International HV507 SFA 4x2
Total	63	41 (including 12 Green Fleet)

Green Vehicle Integration

The Green Fleet Policy mandates that 5% of the fleet will be Green vehicles by 2020. As of December 31st, 2019, the County fleet included 38 Green vehicles, per the policy definition, including: (5) hybrid transit buses, (12) hybrid passenger vehicles, (10) plug-In hybrid (PHEV) passenger vehicles, (4) plug-in hybrid light duty trucks, (6) plug-in hybrid medium duty vans and (1) battery electric (BEV) passenger vehicle. The County exceeded the 2020 Green Fleet goal in 2018.

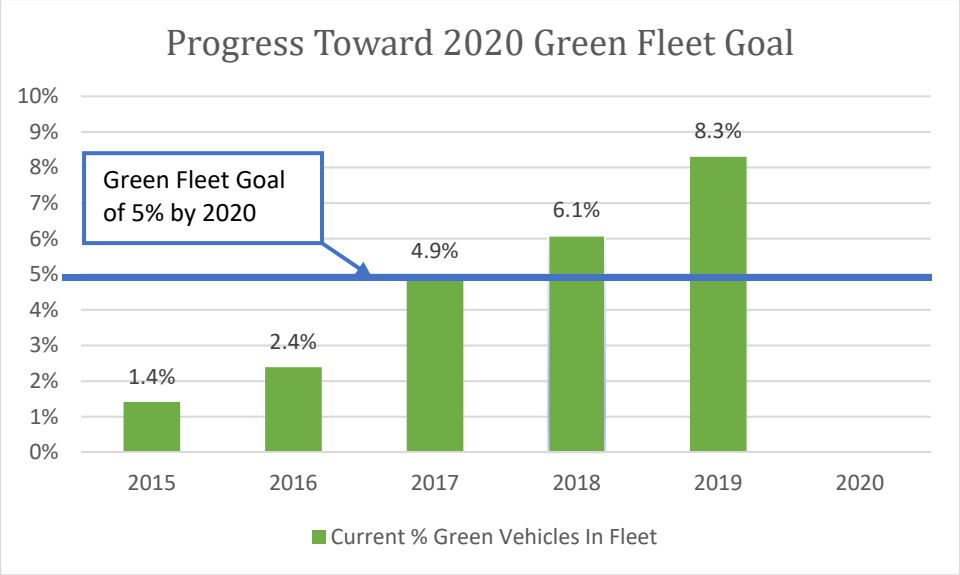

FIGURE 1: PROGRESS TOWARD 2020 GREEN FLEET GOAL

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. The Fuelmaster system provides data on fuel dispensed at these tanks.
- **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. UCAT's fueling management system provides data on fuel dispensed from these tanks.

- **SUNY New Paltz Fuel:** Ulster County used approximately 8,000 gallons of diesel fuel from pumps at SUNY New Paltz for the New Paltz bus loop. This usage is reported quarterly to the County and is included in the fuel usage totals in this report.

TABLE 2: TOTAL FUEL USAGE BY TYPE (2019)

Fuel Type	2015	2016	2017	2018	2019
Diesel (gallons)	286,963	260,584	269,670	276,476	301,466
Gasoline (gallons)	220,950	243,530	226,218	239,060	249,513
Ethanol (gallons)	24,550	27,059	25,135	26,562	27,724
Biodiesel (gallons)	-	3,986	3,226	3,521	2,610
Electricity (gallons equivalent)	-	66	172	239	608
Total	**532,463**	**535,225**	**524,421**	**545,858**	**581,921**

Notes:

1. Fuel usage is the total fuel dispensed to a vehicle in the calendar year reported. This accounting methodology was updated in 2019. Totals prior to 2019 are for fuel purchased, not necessarily fuel used.
2. UCAT began using biodiesel in 2015 and began reporting usage in 2016.
3. 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. The Gasoline delivered to UCAT tanks is an E10 blend of 90% conventional gasoline and 10% ethanol.
4. Ulster County put its first electric vehicles into service in 2016.
5. Gasoline equivalent was calculated using the EPA conversion estimate of 33.7 kWh per gallon of gasoline. Total electricity use in 2019 for fleet operations was 20,505 kWh.
6. For part of the year, UCAT uses a B5 Biodiesel blend fuel, containing 95% conventional diesel fuel and 5% biodiesel. In 2019, the UCAT fleet used this biodiesel blend approximately 34% of the time.
7. Non-Road usage consists of fuel used by DPW Buildings & Grounds division for grounds maintenance and other tasks using small engine equipment. This fuel is purchased through the WexOnline system and transported in gas cans or the equipment.

TABLE 3: FLEET FUEL PURCHASED (2019)

Fleet	Fuel Type	Consumption (gallons)	Cost ($)
Vehicle	E10 Gasoline	234,789.6	$483,097.07
	Diesel	133,479.9	$301,847.41
	Electricity	608.5 (gallons equivalent)	$2,235.03
Transit	E10 Gasoline	40,132.3	$88,789.53
	Diesel	92,027.9	$202,128.24
	B5 Biodiesel Blend	52,206.0	$113,404.10
Non-Road	E10 Gasoline	2,314.7	$5,400.14
	Diesel	107.6	$285.95
Total	**All Fuels**	**555,666.4**	**$1,197,187.47**

Notes:

1. Fuel purchased is fuel delivered to an Ulster County-owned tank or purchased through the Wex fueling system. This number differs from fuel usage above due to the tank levels at the end of the year and fuel acquired from other sources.
2. The average blended electricity cost for UC Buildings with EV charging stations installed is $0.109/kWh. (2018 electricity cost data, UC Department of the Environment)

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, the FuelMaster system and UCAT vehicles, but does not include vehicles without accurate mileage data available. Annual miles traveled is calculated using either: 1) user reported odometer readings in the Wex fleet system, 2) odometer readings recorded in the FuelMaster system and 3) end of year mileage readings compiled by UCAT for transit vehicles. An annual efficiency value cannot be calculated where odometer information is missing, incomplete or inaccurate. A summary of fleet fuel efficiency is contained in the following charts.

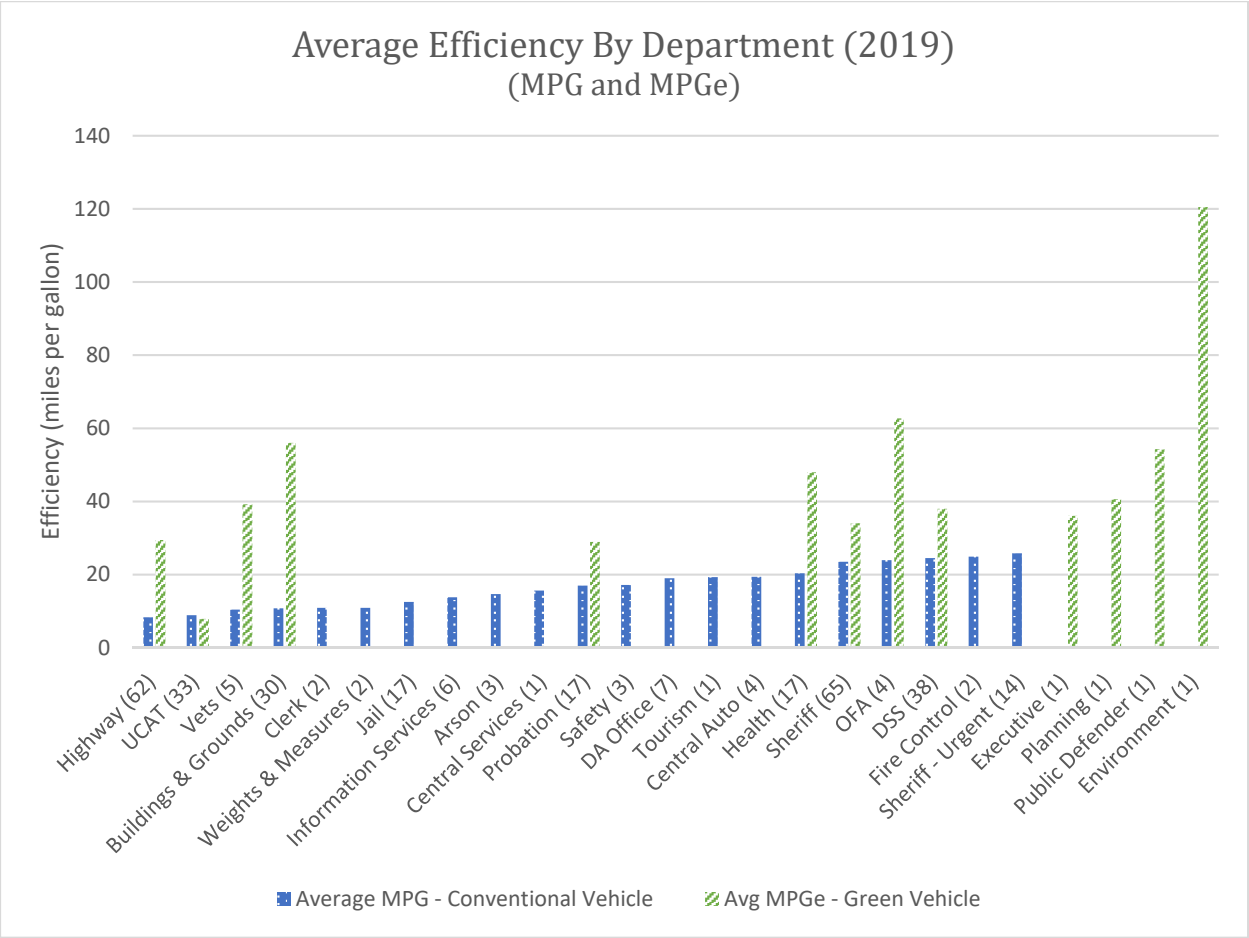

FIGURE 2: AVERAGE EFFICIENCY BY DEPARTMENT (2019)

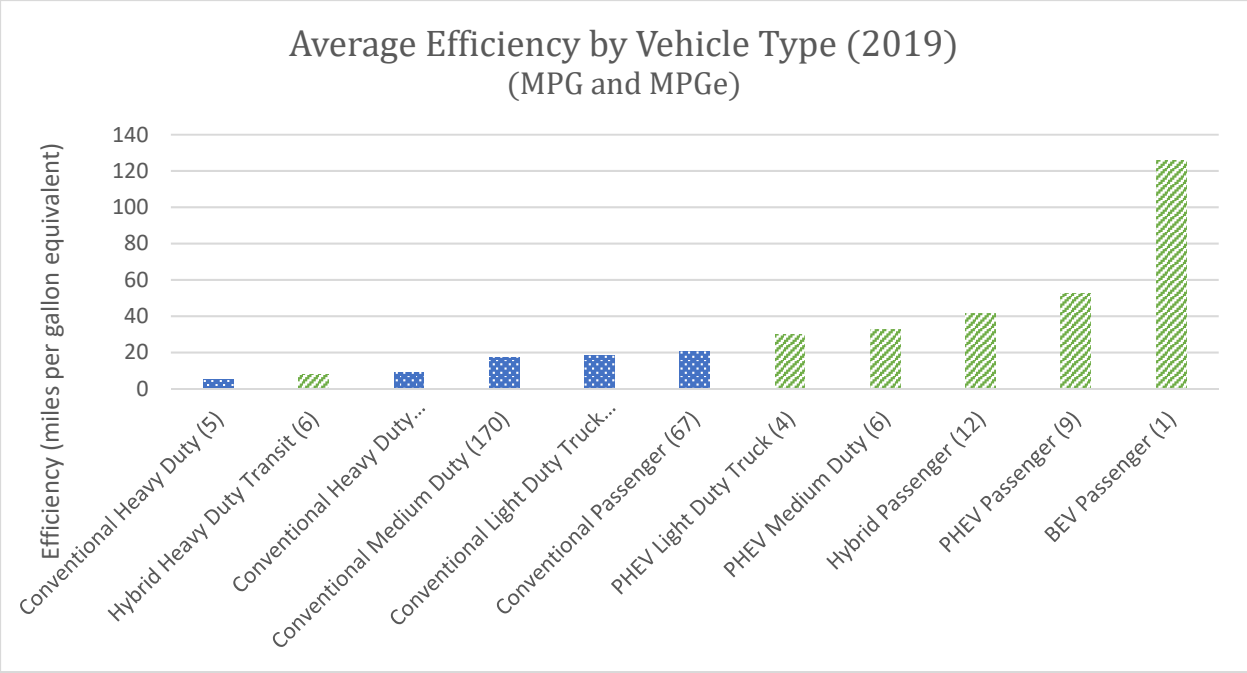

FIGURE 3: AVERAGE EFFICIENCY BY VEHICLE CLASS (2019)

Notes:

1. The number listed in parentheses beside each department name indicates the number of vehicles with valid mileage data reported.
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; 15% 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 (GHG) 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 Protocol[1] 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*[2] (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.[3]

Ulster County does collect and maintain data on vehicle miles traveled (VMT) for vehicle fleet and transit fleet vehicles to the extent possible. However, to simplify the accounting process for mobile combustion, Methane

[1] Local Governments for Sustainability (ICLEI), Local Government Operations Protocol Version 1.1, 2010
[2] Available here: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf
[3] Available here: https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

(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).[4] 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 CO2e)	Total Scope 2 Emissions (metric tons CO2e)
2015	5,076.5	N/A
2016	4,883.1	0.4
2017	4,761.2	1.0
2018	5,015.3	1.1
2019	5,372.1	2.8

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 2019, 96.7% 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 2019, biogenic emissions from biofuel combustion totaled 184.1 (metric tons of CO2e).

Per the EPA's carbon equivalencies calculator, Ulster County's 2019 fleet emissions quantity (without offsets) is equivalent to that released by burning 29.6 railcars worth of coal or 12,444 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. [5] However, as discussed, 100% of these emissions are offset through the purchase of carbon credits.

Due to the expansion of services to the City of Kingston in 2019, Ulster County's emissions in the transit sector increased 20.4% over the historic average since 2012. For the 2019 Ulster County Greenhouse Gas inventory update, this difference of 327.7 metric tons CO2e will be added to the 2012 GHG baseline to adjust for the new area of government jurisdiction, per the methodology defined in the Ulster County Climate Action Plan.[6]

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 gasoline[7]. 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.

[4] Available here: https://www.dec.ny.gov/docs/administration_pdf/ghgguide.pdf
[5] Calculator available here: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
[6] Available here: https://ulstercountyny.gov/environment/
[7] More information here: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revisions-and-additions-motor-vehicle-fuel

In 2019, UC Fleet usage of electricity increased 154% above the 2018 value. The green vehicles in the Ulster County vehicle fleet achieved an average efficiency of 37.8 MPGe over 329,367 miles traveled in 2019. In general, the PHEV and BEV passenger vehicles in the fleet attained higher efficiency performance than hybrid vehicles.

TABLE 5: AVERAGE EFFICIENCY OF GREEN FLEET VEHICLES (2019)

Vehicle Type	2019 Sample Size	Average Efficiency (MPGe)
Hybrid Passenger	12	39.1
Plug-In Hybrid (PHEV) Passenger	9	52.7
Plug-In Hybrid (PHEV) Light Duty Truck	4	29.4
Plug-In Hybrid (PHEV) Medium Duty	6	32.7
Hybrid Transit Bus	6	6.9
Battery-Electric (BEV) Passenger	1	120.5

The chart below shows the relative proportions of gasoline and electricity usage for each green vehicle model in 2019:

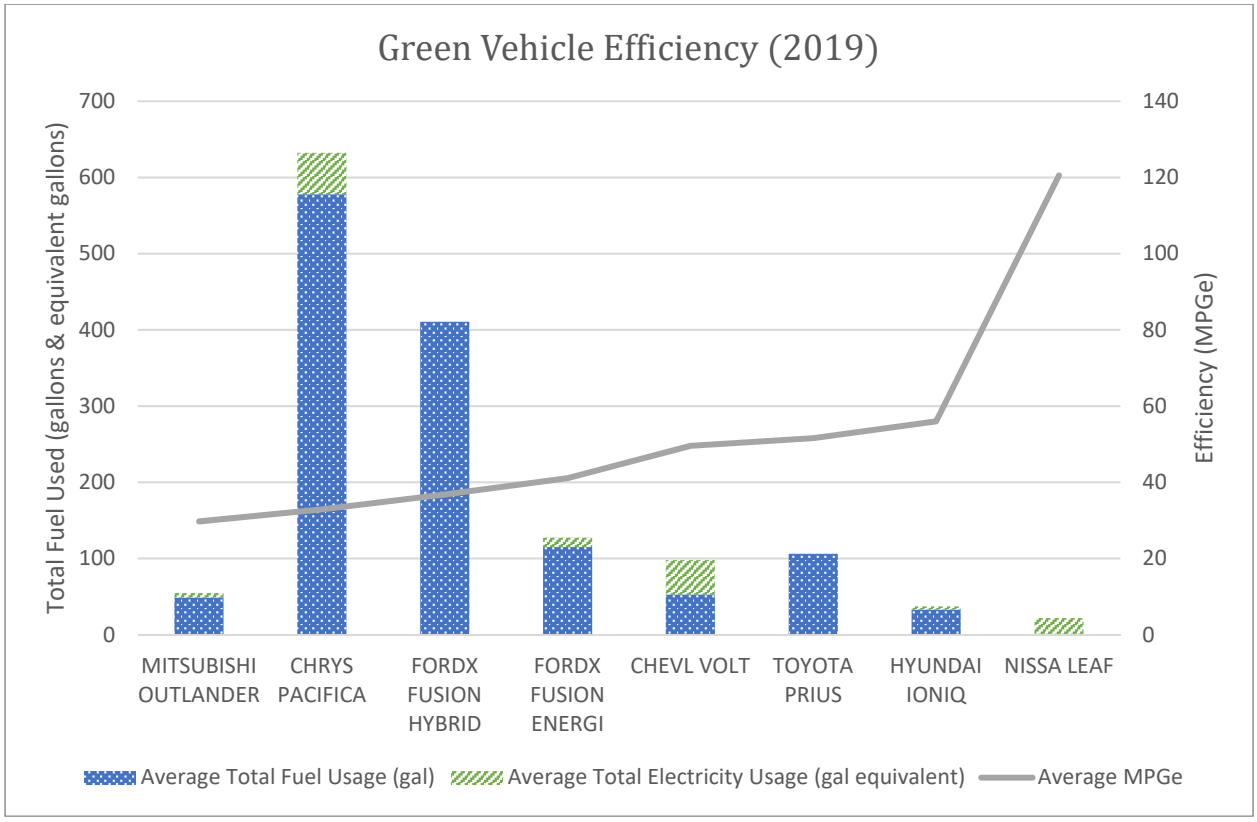

FIGURE 4: GREEN VEHICLE EFFICIENCY (2019)

Electric Vehicle Infrastructure

Ulster County added 4 new charging ports in 2019, for a total of 38 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 26.8% of energy dispensed from Ulster County stations in 2019. These totals are included in Appendix B. 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 2018, employee commutes led to the emission of approximately 2,127 metric tons of CO2-equivalent greenhouse gases—18.7% of all measured government operations emissions.

The largest user group, both in number of individual charging sessions and energy dispensed, are public users. From 2016 through 2019, 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 2019, the Ulster County charging network hosted a total of 327 unique public drivers.

TABLE 6: ULSTER COUNTY ELECTRIC VEHICLE CHARGING NETWORK (AS OF 12/31/19)

Location	# of Ports
Carr Building	2
Department of Public Works	2
Golden Hill Office Building / Health Department	8
Hall of Records	2
Kingston SUNY Extension	2
Probation Department	2
SUNY Ulster	2
Trudy Resnick Farber Building	2
Ulster County Courthouse	4
Ulster County Law Enforcement Center	2
Ulster County Office Building	2
Ulster County Office Complex /Dept. of Social Services	6
Ulster County Pool	2
Total	**38**

EV Charging Station Usage

The County charging station network, which became operational in July of 2015, has experienced increased use in 2019. The charts below show the rate of charging station utilization by year. To ensure accurate reporting of the number of charging sessions, any sessions drawing less than 0.1 kWh have been removed from the 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.

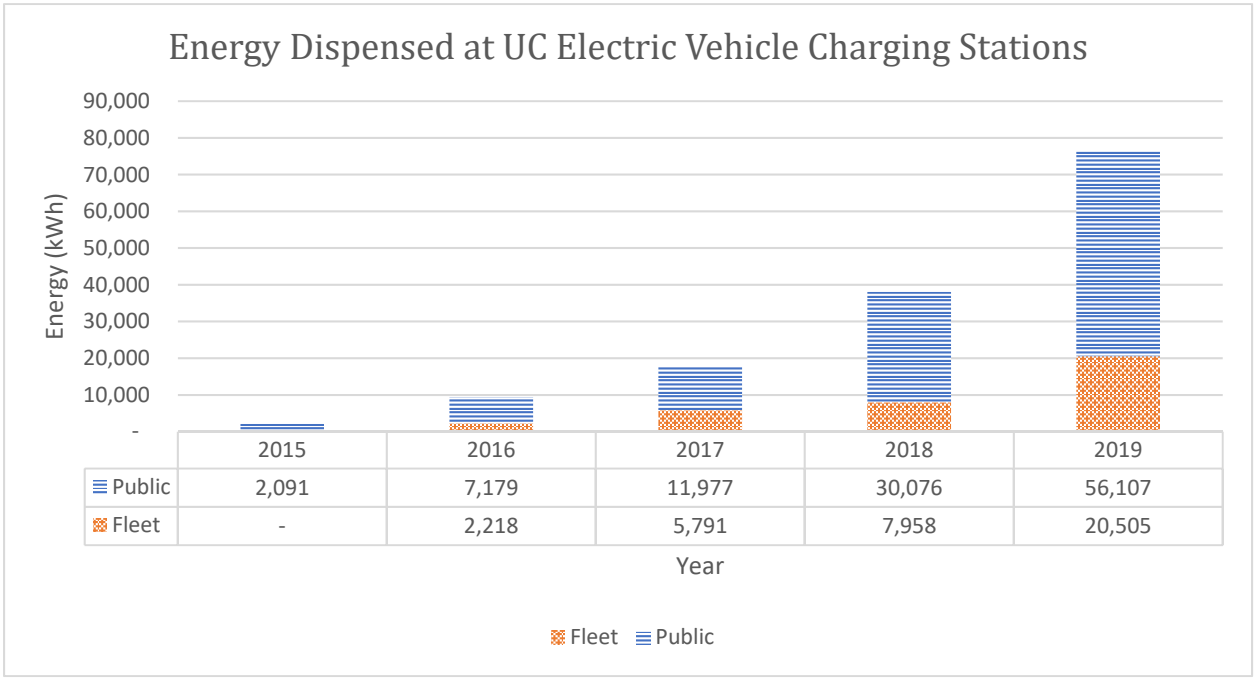

FIGURE 5: ENERGY DISPENSED AT UC ELECTRIC VEHICLE CHARGING STATIONS (2015-2019)

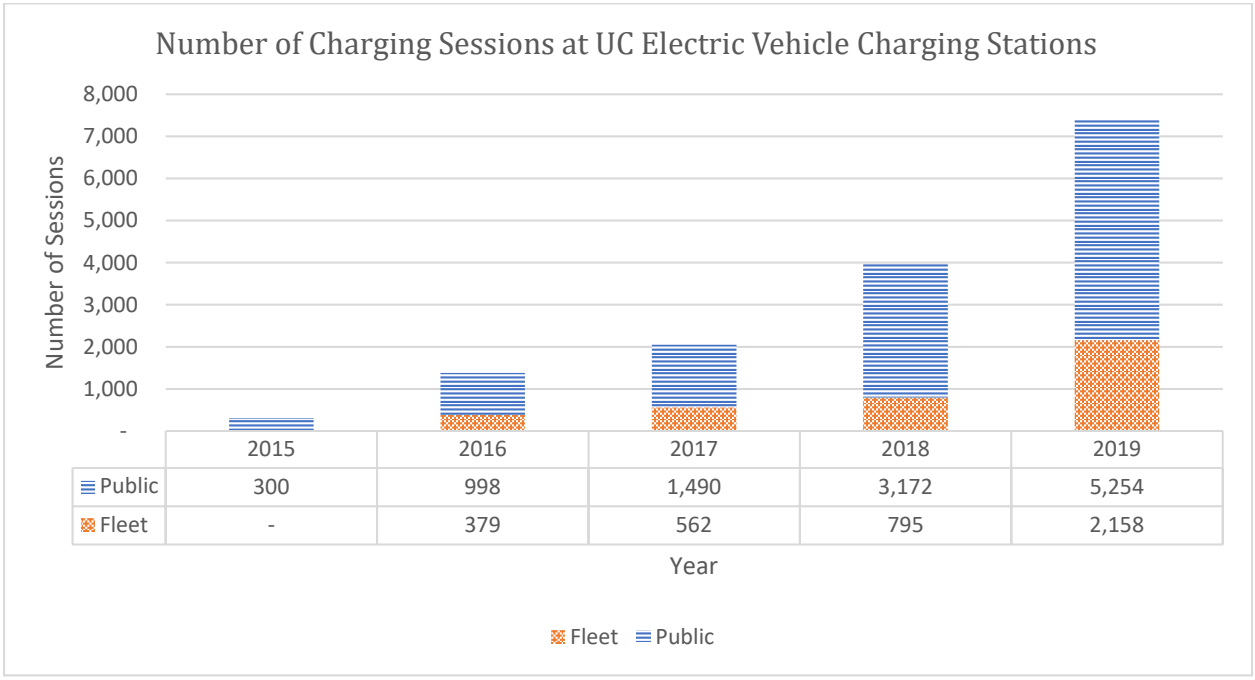

FIGURE 6: NUMBER OF SESSIONS AT UC CHARGING STATIONS (2015-2019)

7. Initiatives

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 26.7 metric tons in 2019.

Education and Presentations

Departments receiving electric vehicles receive training on the use of the cars, charging stations, the goals of the Green Fleet Policy. This training also covers charging station policy, the availability of workplace charging and other ways to green the employee's daily 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 2020.

In addition, the County's has presented details on its Green Fleet efforts to audiences across the state through NYS DEC and NYSERDA sponsored forums including webinars and conferences. Ulster County Department of the Environment staff also presented at Central Hudson's Electric Vehicle Summit on December 5th. This presentation highlighted the implementation of Green Fleet initiatives through Ulster County's Climate Action Plan.

On September 14th, 2019, Ulster County hosted the 4th annual Ulster County National Drive Electric Week event in Kingston at the County courthouse parking lot. This event featured a wide variety of electric vehicles and provided an opportunity for the public to learn about Ulster County's Green Fleet initiatives.

Bus Fleet Electrification

The Ulster County Department of the Environment received funding from NYSERDA under the Public Transit Technology and Innovation Program (PON 3914) solicitation for a Transit Electrification Feasibility Study.

UCAT will use VW settlement money to help fund electrified fleet buses as well as funding the charging infrastructure at the UCAT garage for the buses. Ulster County is actively working with the New York Power Authority to develop this charging infrastructure to support the first electric transit buses in the fleet.

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, Gardiner, City of Kingston, Rosendale, Marbletown, Wawarsing, Village of New Paltz, and Town of New Paltz.

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 (2019)

Department	Number of Vehicles	Number of Vehicles Reporting Valid Mileage	Total Distance Driven (miles)	Total Fuel Usage (gallons equivalent)	Total Fuel Cost	Average Energy Cost per Mile
Arson	3	2	13,655	1,055	$2,121.88	$0.16
Buildings & Grounds	34	30	115,989	10,806	$23,627.94	$0.20
Central Auto	20	5	22,302	1,149	$2,314.18	$0.10
Central Services	1	1	7,146	457	$885.30	$0.12
Clerk	2	2	5,414	492	$959.94	$0.18
DA Office	9	7	58,091	2,958	$6,032.15	$0.10
DSS	41	38	494,876	16,855	$34,216.75	$0.07
Elections	1	0	-	-	-	-
Emergency Communication	2	0	-	-	-	-
Environment	1	1	2,625	22	$80.01	$0.03
Executive	1	1	2,895	80	$163.39	$0.06
Fire Control	3	2	22,471	1,364	$2,747.60	$0.12
Health	17	17	125,686	5,079	$10,699.46	$0.09
Highway	165	67	636,683	84,382	$113,215.41	$0.18
Information Services	6	6	12,549	942	$1,844.54	$0.15
Jail	20	17	135,073	10,671	$22,230.62	$0.16
OFA	6	4	12,791	404	$862.01	$0.07
Planning	1	1	1,688	42	$86.58	$0.05
Probation	22	18	98,152	5,677	$11,756.47	$0.12
Public Defender	1	1	4,210	78	$161.11	$0.04
Safety	3	3	16,245	983	$1,988.99	$0.12
Sheriff	71	66	929,795	71,636	$148,274.92	$0.16
Sheriff - Urgent	21	16	218,423	9,295	$19,088.88	$0.09
Tourism	1	1	4,055	210	$423.88	$0.10
UCAT	43	34	1,127,700	137,349	$302,394.58	$0.27
Vets	6	5	69,385	5,283	$10,279.26	$0.15
Weights & Measures	2	2	17,143	1,557	$3,025.37	$0.18

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 (2019)

	Fleet	Public	Total
Total Energy Usage (kWh)*	20,505	56,107	76,612
Total Cost to County**	$2,235	$6,124	$8,359
Number of Charging Sessions	2,158	5,254	7,412
Average Energy Dispensed per Session (kWh)	9.5	10.7	-
Average Electricity Cost per Session	$1.04	$1.16	-
Greenhouse Gas Avoided (kg CO2e)***	8,612	23,565	32,177
Gallons of Gas Saved***	2,573	7,040	9,613
Median Time Charging	2:18	1:56	2:05
Number of Unique Users	21	327	348

*Sessions drawing less than 0.1 kWh of electricity have been removed
**Based on average blended cost of electricity for previous year - $0.109/kWh
***Calculated using conversions provided by Chargepoint, Inc.

Unique User Zip Codes (total 126):

Fitchburg MA, Stow MA, Brookline MA, Chilmark MA, Winooski VT, Waterbury VT, Shoreham VT, Meriden CT, Harwington CT, Danbury CT, Fairfield CT, Bloomfield NJ, Edgewater NJ, Maplewood NJ, Montclair NJ, Verona NJ, Jersey City NJ, Woodcliff Lake NJ, Sayreville NJ, New York NY, Staten Island NY, Bedford NY, Chappaqua NY, Dobbs Ferry NY, Katonah NY, Mahopac NY, Ossining NY, Cortlandt Manor NY, West Harrison NY, Yonkers NY, Hastings on Hudson NY, Goshen NY, Monroe NY, New Hampton NY, Nyack NY, Brooklyn NY, Oakland Gardens NY, Bellerose NY, Glen Cove NY, Locust Valley NY, Seaford NY, Athens NY, Averill Park NY, Ballston Spa NY, Cohoes NY, Delanson NY, Delmar NY, Clifton Park NY, Guilderland NY, Ravena NY, Albany NY, Schenectady NY, Kingston NY, Accord NY, Arkville NY, Bearsville NY, Big Indian NY, Boiceville NY, Catskill NY, Chichester NY, Cottekill NY, Ellenville NY, Glenford NY, High Falls NY, Hurley NY, Kerhonkson NY, Lake Katrine NY, Lexington NY, Margaretville NY, Olivebridge NY, Rosendale NY, Saugerties NY, Shandaken NY, Shokan NY, Stone Ridge NY, Tillson NY, Ulster Park NY, West Hurley NY, West Park NY, West Shokan NY, Woodstock NY, Beacon NY, Clintondale NY, Copake NY, Cornwall NY, Cornwall-on-Hudson NY, Gardiner NY, Highland NY, Hopewell Junction NY, Hudson NY, Hyde Park NY, Millbrook NY, Montgomery NY, Newburgh NY, New Paltz NY, Pine Bush NY, Poughquag NY, Red Hook NY, Rhinebeck NY, Tivoli NY, Wallkill NY, Poughkeepsie NY, Callicoon NY, Hurleyville NY, South Fallsburg NY, Woodridge NY, Wurtsboro NY, Saratoga Springs NY, Cooperstown NY, Delhi NY, Rochester NY, Rochester NY, Jamestown NY, Ithaca NY, Watkins Glen NY, Hummelstown PA, Muncy PA, Mount Pocono PA, Brookhaven PA, Wayne PA, Bel Air MD, Pikesville MD, Baltimore MD, Frederick MD, Chapel Hill NC, Lakewood OH, Lafayette CA

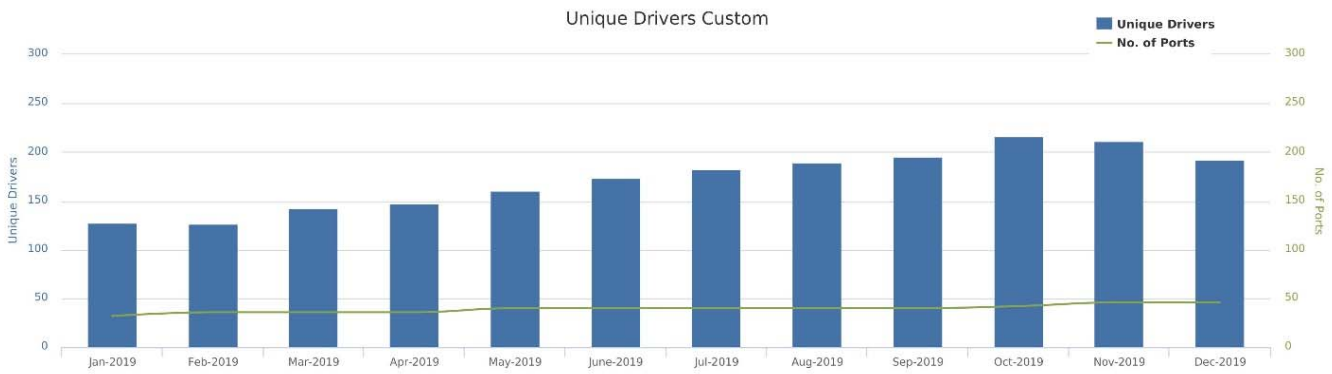

FIGURE 7: NUMBER OF UNIQUE DRIVERS USING ULSTER COUNTY CHARGING EQUIPMENT IN 2019 (SOURCE - CHARGEPOINT)

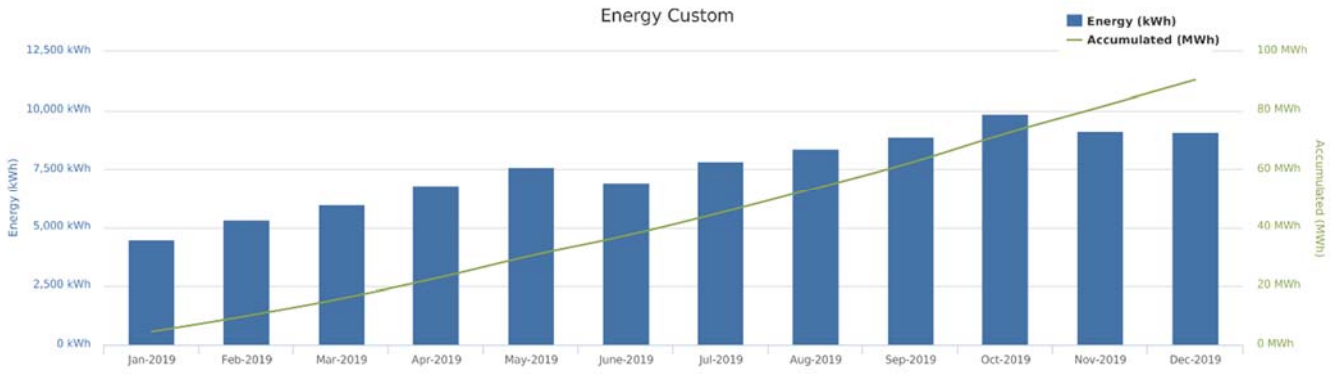

FIGURE 8: ENERGY DISPENSED AT ULSTER COUNTY CHARGING EQUIPMENT IN 2019 (SOURCE - CHARGEPOINT)

TABLE 9: NUMBER OF CHARGING SESSIONS IN 2019 AT UC EVSE NETWORK

Station & Session Type	2015	2016	2017	2018	2019
ULSTER COUNTY / CARR BUILDING				139	268
Fleet				95	73
Public	0	0	0	44	195
ULSTER COUNTY / COURTHOUSE 1	99	337	573	1162	1353
Fleet	0	0	5	0	5
Public	99	337	568	1162	1348
ULSTER COUNTY / COURTHOUSE 2					146
Fleet					0
Public					146
ULSTER COUNTY / DSS 1	21	62	169	37	554
Fleet	0	36	132	2	412
Public	21	26	37	35	142
ULSTER COUNTY / DSS 2				206	500
Fleet				195	431
Public				11	69
ULSTER COUNTY / DSS 3				48	482
Fleet				12	377
Public				36	105
ULSTER COUNTY / HALL OF RECORDS					13
Fleet					0
Public					13
ULSTER COUNTY / HEALTH DEPT 1	3	369	545	474	472
Fleet	0	169	285	230	244
Public	3	200	260	244	228
ULSTER COUNTY / HEALTH DEPT 2				44	320
Fleet				30	243
Public				14	77
ULSTER COUNTY / HEALTH DEPT 3				37	288
Fleet				7	155
Public				30	133
ULSTER COUNTY / HUTTON BUILDING				209	65
Fleet				186	55
Public				23	10
ULSTER COUNTY / OFFICE BUILDING	78	389	409	610	999
Fleet	0	171	135	36	20
Public	78	218	274	574	979
ULSTER COUNTY / POOL					1
Fleet					0
Public					1
ULSTER COUNTY / PROBATION DEPT	15	31	98	300	470
Fleet	0	0	0	0	72
Public	15	31	98	300	398
ULSTER COUNTY / UC PUBLIC WORKS	15	75	165	330	534
Fleet	0	0	3	0	43
Public	15	75	162	330	491
ULSTER COUNTY / SUNY EXTENSION	12	32	62	282	452
Fleet	0	1	3	2	3
Public	12	31	59	280	449
ULSTER COUNTY / SUNY ULSTER					216
Fleet					1
Public					215
ULSTER COUNTY / TRUDY RESNICK	59	86	37	88	166
Fleet	0	2	0	0	7
Public	59	84	37	88	159
ULSTER COUNTY / UCLEC	0	1	1	1	18
Fleet	0	0	0	0	18
Public	0	1	1	1	0

Appendix C: Fleet Vehicles Auctioned in 2019

TABLE 10: FLEET VEHICLES AUCTIONED IN 2019

VEHICLE#	YEAR, MAKE, MODEL
11	2001 Dodge Ram 2500
41	2002 Ford F-450
61	2002 Chevrolet Impala
64	2004 Chevrolet Cavalier
189	2007 Ford Taurus
228	2007 Dodge Charger
229	2007 Dodge Charger
230	2007 Dodge Charger
259	2008 Chevrolet Impala
368	2008 Ford Expedition
446	2013 Dodge Grand Caravan
462	2014 Ford F-150
467	2005 Chrysler Sebring
487	2014 Ford Explorer
490	2006 Chrysler Town & Country
516	2000 BMW 323
561	2011 Chevrolet Traverse
605	2018 Ford Fusion Hybrid
01DMV	1999 Blue Bird TFB32 Mobile Home
1370	2003 Chevrolet 2500HD Pickup
1380	2003 Chevrolet 2500HD Pickup
1780	2008 Chevrolet 3500 Pickup with Dump Body
1800	2005 GMC 3500 Pickup with Dump Body
1860	2006 GMC 3500 Pickup with Dump Body
2540	2002 Sterling L9511 Dump Truck
2550	2002 Sterling L9511 Dump Truck
2560	2002 Sterling L9511 Dump Truck
2590	2004 Sterling L9511 Dump Truck
2600	2004 Sterling L9511 Dump Truck
2610	2004 Sterling L9511 Dump Truck
2620	2004 Sterling L9511 Dump Truck
2630	2004 Sterling L9511 Dump Truck
2640	2004 Sterling L9511 Dump Truck
2650	2004 Sterling L9511 Dump Truck
2940	2002 Sterling Fuel Truck
3110	1986 Mack DM686SX
4440	1999 International Sander
4480	2008 Sterling LT9500
4500	2009 Sterling L9500
4520	2009 Sterling L9500
5220	1988 Cat IT18B Loader
5280	2002 Cat IT28G
5300	2002 Cat IT28G