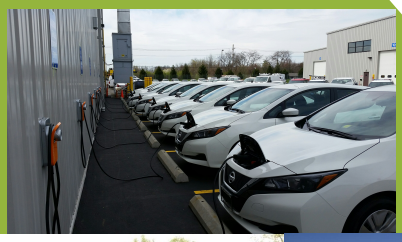
CITY OF COLUMBUS
DIVISION OF FLEET MANAGEMENT

GREEN FLEET ACTION PLAN 2019-2021

2019 Year-End Update



THE CITY OF COLUMBUS
ANDREW J. GINTHER, MAYOR

DEPARTMENT OF FINANCE AND MANAGEMENT

SUSTAINABLE COLUMBUS
ANDREW J. GINTHER, MAYOR

INTRODUCTION

Recognizing the role a healthy environment plays in contributing to the City of Columbus' reputation as an Opportunity City, the City has established the Sustainable Columbus initiative. This initiative, under the leadership of Columbus Mayor Andrew J. Ginther, focuses on optimizing city operations and working with external stakeholders to enhance and promote environmentally friendly policies throughout our community. As part of our sustainability initiatives, Fleet Management developed a green fleet action plan, which serves as a road map to greening our city's fleet. This is now the fourth update of this plan, which builds upon our successes while strengthening our ongoing efforts to reduce our carbon footprint.

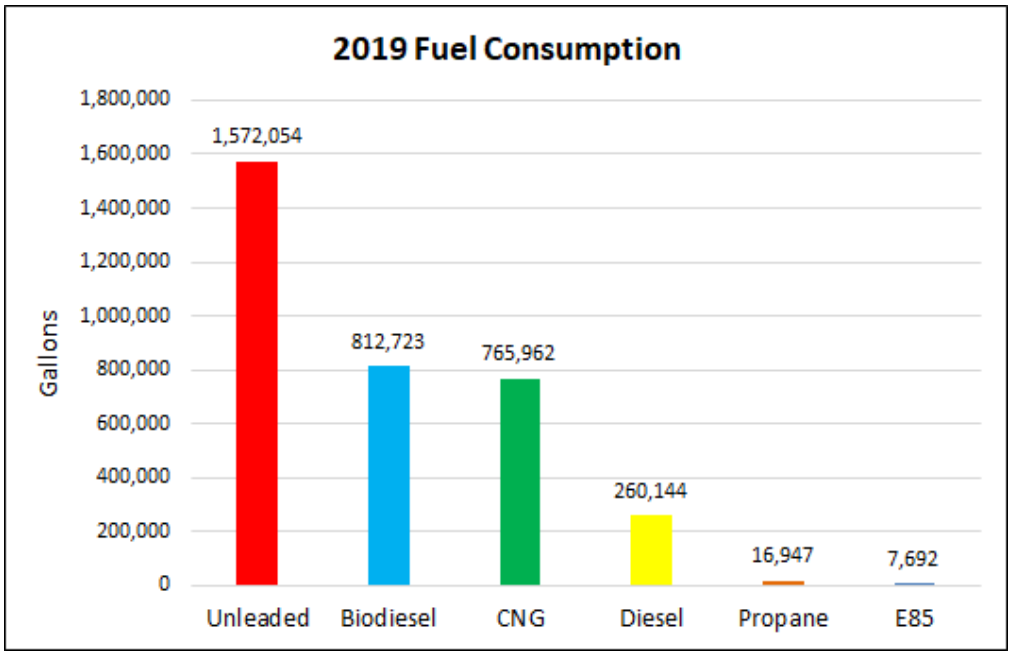
GREEN AWARDS

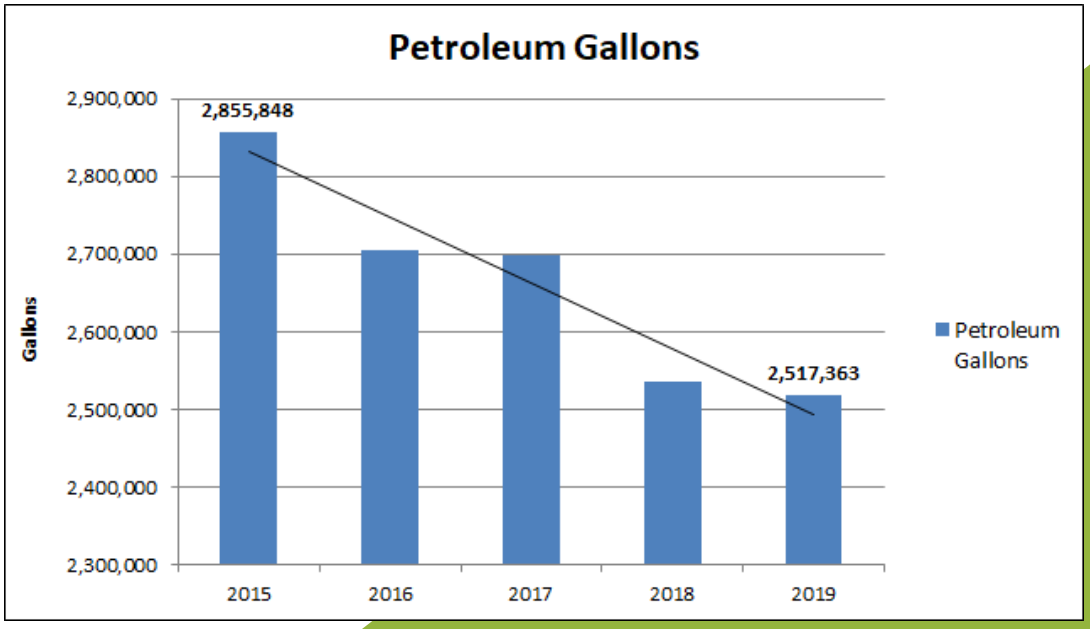
Columbus Fleet Management continues to be a front-runner in the nation in building a sustainable fleet. The past several years have yielded significant accomplishments toward this end goal, including:

- City of Columbus named the #1 Greenest Fleet in North America by Government Fleet
- City of Columbus awarded the #1 Leading Fleet in the U.S., due largely to our alternative fuel program - now considered an “elite” fleet and sits on the judging panel for Government Fleet
- Awarded one of Heavy Duty Trucking’s Top 50 Green Fleets every year from 2013-2018
- Seven Columbus divisions (Fleet Management, Refuse Collection, Facilities Management, Infrastructure Management, Sewerage and Drainage, Code Enforcement and the Division of Police) are all certified as Ohio Green Fleets
- Received the 2012 Sustainability award from Government Green Fleets
- Awarded the “Clean Fuels Champion” statewide award by Clean Fuels Ohio in 2008 and again in 2011
- Environmental Stewardship Award (2009) presented by Government Fleet Magazine, Bobit Publishing for public sector fleets in the USA

DIVISION OF FLEET MANAGEMENT

- The City of Columbus Fleet Management Division maintains over 6160 pieces of equipment
- Approximately 3034 are on-road vehicles, i.e., cars, trucks, SUVs, etc.
- Approximately 3127 are off-road, e.g. construction equipment
- Over half (56%) of Columbus' on-road fleet are some type of alternative fueled vehicle
- 3,435,521 total gallons of fuel were consumed in 2019 (including all alternative fuel). Fuel breakdown below
- Petroleum fuel use has steadily declined since sustainability initiatives have been put in place - over 27% reduction since 2010





PURPOSE/STRATEGIES

As part of its commitment to the American Cities Climate Challenge and to meet the goals of the Paris Agreement, Columbus has committed to reducing greenhouse gas emissions by 30% from City operations by the end of 2020. In order to help meet this goal, the main objective of Columbus' green fleet plan is to reduce our overall fleet emissions. Our efficient management of fuel consumption and increase in the overall efficiency of the fleet has driven down our greenhouse gas emissions over the last few years. From 2013-2018, Columbus reduced our fleet emissions by more than 22**%.**

One of the most effective ways to drive down fleet emissions is to reduce petroleum use. From 2010-2019, city fleet vehicles reduced petroleum use by over 27**%** (over 938,000 gallons). We expect this trend to continue with the yearly addition of CNG and electric vehicles to our fleet as well as our continued use of biodiesel, E85 and propane fuels. We also continue to refine and enhance "green" procurement policies; to work with city agencies to right-size and downsize their fleets; promote the anti-idle policy and install anti-idle technology where possible, and utilize GPS and AVL telematic technologies.

2019 Green Highlights:

- Completed the ordering of electric vehicles that will fulfill our portion of the Smart Columbus initiative
- As a result of the addition of electric vehicles, we were able to certify an additional division (Code Enforcement) as an Ohio Green Fleet through Clean Fuels Ohio
- The Police division purchased an off-road all electric utility cart for use at their horse barn and during parades
- Began using B20 year round instead of switching to B5 during the colder months
  - B20 is a biodiesel blend - 20% is made from soybean oil
  - Reduces carbon footprint by using 20% less diesel fuel - up to 24% fewer CO2 emissions
- Began ordering hybrids for police cruisers that will automatically shut the engine off while idling
- Saved over $1,083,000 by using CNG instead of diesel, through reduced costs and federal alternative fuel tax credits

OHIO GREEN FLEETS

#SMARTCOLUMBUS

GREEN ACTIONS AND TARGETS 2019-2021

Following are the actions and targets Columbus will utilize to reduce petroleum use and achieve emission reductions from 2019-21.

Action: Increase light duty vehicle purchases that are considered green

- **Target**: 75% each budget year

"Environmentally preferable purchasing" policy - Fleet will continue to review all vehicle specifications in conjunction with the end user agency and the Purchasing Office to ensure the most "green" vehicles possible are being specified and will continue to meet with City divisions to review purchase requests in order to right-size vehicles for their intended purpose.

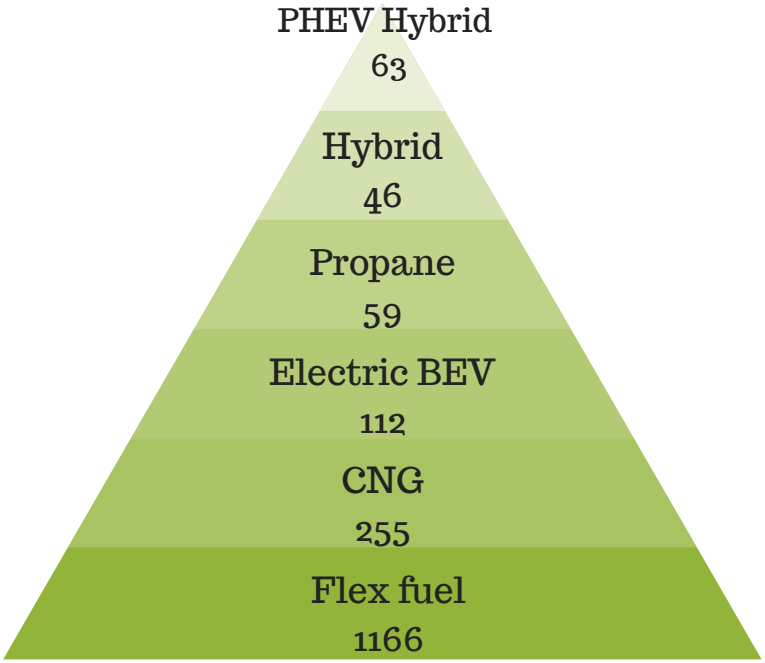
Electric vehicles - Fleet Management continues to implement its portion of the Smart Columbus initiative which includes the addition of 200 electric vehicles to our fleet by 2020, along with implementing the necessary charging infrastructure.

Start/stop technology - Columbus owns approximately 40 Ford Escape vehicles equipped with "start/stop" technology. Start/stop technology is now standard equipment on these Escapes, which allows the engine to shut down during stops, so the vehicle emits zero emissions and burns no fuel. This technology is estimated to boost fuel economy by as much as 6% in stop and go traffic.

Flex fuel - a large portion of Columbus' light duty fleet are flex fuel vehicles - vehicles that can run on either regular gasoline or gas-ethanol blends up to 85% ethanol (E85). The use of E85 reduces our petroleum use and is also typically less expensive than regular gasoline.

***2019 year-end update*:** Columbus purchased 345 light duty vehicles in 2019. Of these, 307, or **89%**, were some type of green vehicles. The majority of green light duty vehicle purchases this year were battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), with the remaining green purchases mainly comprised of flex fuel vehicles. Through collaboration with many agencies across the city, Fleet Management purchased its remaining commitment of electrified vehicles for the Smart Columbus initiative in 2019. All 200 Smart Columbus electric vehicles are expected to be in service by the end of first quarter 2020.

Number alternative fueled vehicles in Columbus fleet: **1701**



Action: Increase heavy duty vehicle purchases that are considered green (excluding Safety vehicles)

- **Target:** 80% each budget year

Compressed Natural Gas (CNG) vehicles - Fleet will continue to enforce the City's "environmentally preferable purchasing" policy and continue to review all vehicle specifications to ensure that green options are included where feasible on heavy duty vehicles. CNG vehicles will likely comprise the majority of "green" heavy duty purchases in the coming years. Fleet Management will work closely with divisions to purchase CNG vehicles that will keep pace with fueling infrastructure while continuing to meet operational need. All heavy duty purchases will be targeted for CNG when possible, as heavy duty vehicles are the largest consumers of fuel and therefore yield the greatest return on fuel savings and reduced emissions. Columbus currently operates four CNG fueling stations for use by both the city and the public located on the east, west, and north sides of the city, and an additional shared station with COTA located near downtown.

2019 year-end update: Columbus purchased 17 heavy duty vehicles in 2019. Of these, 13, or **76%**, were some type of green vehicle. The majority of green heavy duty vehicle purchases were CNG vehicles. City vehicles consumed 765,962 gge's of CNG in 2019, resulting in a combined savings of over $1,083,000 from reduced costs compared to diesel fuel, as well the $.50/gge federal alternative fuel tax credit rebate.

Action: Utilize anti-idling technology where feasible

- **Target:** 25% reduction in idle time when utilized

GRIP - Columbus installed anti-idling technology, known as GRIP units, on approximately 360 new police cruisers starting in 2015. These devices allow the cruisers to reduce idling, thereby significantly reducing fuel consumption. The technology stops and restarts a cruiser automatically without affecting the on-board power needs that are essential to operate computers and radio communications.

2019 year-end update: 2019 data is still being calculated and will be available for the 2020 mid-year update. As of 2018, the cumulative life-to-date reduction in idle time totaled approximately **33%**, or 346,050 hours, which equates to saving approximately 11,419,719 miles on the cruisers by avoiding wear and tear on the engines. The GRIP system saved an estimated 152,262 gallons of fuel and reduced carbon emissions by approximately 1,355 metric tons since being installed in 2015.

Beginning in 2019, all police cruisers are being ordered as hybrids so GRIP units will no longer be needed on new cruisers. In the new hybrid cruisers, the on board electrical equipment will be powered by a lithium-ion hybrid battery, allowing the gasoline engine to shut off when idling so will operate similarly to the GRIP units. The new cruisers are expected to begin arriving in early 2020.

Action: Implement green off-road options where equipment is available and fits the application

- **Target:** Continue to explore propane and electric options for off-road equipment

Fleet Management will work with divisions to explore available green off-road options, and will also work with our Purchasing Office to include green options in off-road equipment specifications.

Propane - Columbus currently has 52 propane mowers in service, for use mainly at municipal golf courses and parks. Mowers continue to be replaced with propane when available. We also have 6 propane powered forklifts and one propane floor sweeper.

Electric - Fleet has several electric utility carts in use around our Groves Road facility, and the Police division purchased one in 2019 for use at its horse barn and during parades. The utility carts come equipped with flat beds and are able to haul 6,000 pounds of load as well as tow. These carts all replace gasoline powered units.

Next Steps

Achieving these targets and reducing our emissions from fleet operations will require the participation of all City departments and divisions. The Fleet Management Division, with support from the Director of Finance and the Mayor's Sustainable Columbus initiative, will take the lead in implementing these actions and will track the progress of the targets. Updates will be provided at mid-year and year end to outline the activity that has taken place. We expect this document to be fluid- new technology, new grant opportunities, funding challenges, etc. are constantly happening. Every effort will be made to take advantage of the best options available to make our fleet as sustainable as possible while minimally impacting City operations.

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https://www.columbus.gov/finance/asset-management-group/Fleet-Management/