

Alternative Fuel Fleet Benchmarking Survey

Entity, Contact Information, and Geographic Information:	Overview of Fleet (Inventory & Sites) How many conventional and alternative fueling sites do you manage? How many charging sites do you manage for electric vehicles?	Does your organization have specific fuel efficiency goals? If so, please describe	What fuel efficiency/green initiatives have you implemented in recent years?																					
<p>City of Denver (DEN) Airport Contact Name: Jeffrey Booton Email: Jeffrey.Booton@flydenver.com Phone: 303-342-2022 (may be cell) Geographic Area: Colorado Plains</p>	<p>DEN currently has a total of 1,702 vehicles.</p> <table border="1" data-bbox="562 364 1106 439"> <thead> <tr> <th>Light</th> <th>Medium</th> <th>Heavy</th> </tr> </thead> <tbody> <tr> <td>439</td> <td>519</td> <td>744</td> </tr> </tbody> </table> <p>DEN has a diverse customer base with wide range of asset types to manage such as: Police department, Fire department (both airfield and standard), Paramedics, Graders / Loaders / Cranes / Paving Equipment, sedans / pickups / SUV's, Tractor/Mowers and Airfield Snow Removal equipment.</p> <p>DEN has three traditional fuel sites with diesel and unleaded fuels, one CNG site, and one dual charger charging site.</p>	Light	Medium	Heavy	439	519	744	<p>DEN follows Executive Order 123, which in Chapter 3 establishes a Green Fleet Program designed to ensure that to the extent the City needs to use vehicles for its operations, the City procures and operates a fleet of vehicles that minimizes environmental impact, contributes to enhancing domestic energy security, enhances regional energy resilience, and maximizes fuel efficiency and diversification. All City light-duty vehicles in need of replacement will be replaced with hybrids, alternative fuel vehicles, or the most fuel-efficient and least-polluting vehicles available for specific functions whenever cost and reliability are similar to traditional vehicles.</p>	<p>No radically new initiatives. The airport annually looks for right sizing and alternative fuel opportunities when working on the replacement program. It did move its telematics program from Verizon to Samsara this year as the data provided was better (but more expensive). Utilization and idling reports are beneficial in helping identify "green" initiatives and savings.</p>															
Light	Medium	Heavy																						
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<p>City of Fort Lauderdale (FTL) Contact Name: Sandy Leonard (Fleet Manager) Email: SLeonard@FortLauderdale.gov Phone: 954-828-5781 Mobile: 334-744-6364 Geographic Area: Fort Lauderdale</p>	<p>FTL maintains 1,750 vehicles.</p> <table border="1" data-bbox="562 943 1106 1018"> <thead> <tr> <th>Light</th> <th>Medium</th> <th>Heavy</th> </tr> </thead> <tbody> <tr> <td>791</td> <td>98</td> <td>377</td> </tr> </tbody> </table> <p>FTL has 25 EV charge sites that are owned by the City, located at parking garages and City buildings.</p>	Light	Medium	Heavy	791	98	377	<p>Reduce fuel consumption by 20% by 2035.</p>	<p>Purchased four (4) electric vehicles (Nissan Leafs), One solar powered EV charge. Light duty vehicle.</p>															
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<p>Palm Beach County (PBC) Contact Name: Sara Burnam (Fleet Director) Email: SBurnam@pbcgov.org Phone: 561-233-4568 Geographic Area: Palm Beach County</p>	<p>PBC maintains 1,865 vehicles.</p> <table border="1" data-bbox="562 1245 1106 1497"> <thead> <tr> <th>Type</th> <th>Light</th> <th>Heavy</th> </tr> </thead> <tbody> <tr> <td>Electric</td> <td>1</td> <td>0</td> </tr> <tr> <td>Gasoline</td> <td>1,322</td> <td>55</td> </tr> <tr> <td>Diesel</td> <td>55</td> <td>345</td> </tr> <tr> <td>Hybrid</td> <td>87</td> <td>0</td> </tr> <tr> <td>Natural Gas</td> <td>0</td> <td>0</td> </tr> <tr> <td>Other</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>PBC maintains various vehicles including light and heavy vehicles, buses / mobile offices, heavy equipment, specialized equipment, generators / pumps, trailers</p> <p>PBC has 14 fuel sites that they manage. PBC uses unleaded, blended with 10% ethanol and Diesel - Ultra Low Sulfur Red Dye fuel. PBC has one electric charging station for the only Electric Vehicle that is maintained.</p>	Type	Light	Heavy	Electric	1	0	Gasoline	1,322	55	Diesel	55	345	Hybrid	87	0	Natural Gas	0	0	Other	0	0	<p>PBC has a Fleet Management Sustainability Plan. Within this plan the following items are listed.</p> <ul style="list-style-type: none"> • Purchase Hybrid electric vehicles when replacing existing midsize, compact, SUV vehicles. • Select the most efficient vehicle for the application, to reduce unnecessary fuel consumption and emissions. • To ensure best fuel efficiency and most current exhaust reduction strategies, replace class 1 and 2 vehicles every 6 years, and class 3 - 7 every 7 years. <ul style="list-style-type: none"> ○ Class one vehicles under 6,000 lbs ○ Class two vehicles under 6,001- 10,001 lbs ○ Class three vehicles under 10,0001-14,000 lbs • Mandate a no-idle policy to ensure fuel is not wasted. A no idle reminder sticker is placed in every vehicle. • Enforce an aggressive maintenance schedule to ensure vehicles are running in the most fuel effective manner • Promote best driving practices that promote energy conservation • Encourage use of pool vehicles or car sharing whenever possible. • Purchasing nitrogen inflated tires on all vehicles to keep air pressure constant and at the optimum rolling resistance • Maintain Conditionally Exempt Small Quantity Facility Status • Ensure all waste materials are reused or recycled, including oil filters, antifreeze, used oil, wastewater, batteries, scrap metal, cardboard and aerosol cans. • Discontinue the use of lead weights and use recyclable steel weights. • Implement 4x10 work schedules to reduce fuel consumption for Fleet Management employees traveling to work. • Polish an average of 60,000 gallons a year of old generator fuel, so that it can be reused 	<p>None in recent years that isn't already listed on the Fleet Management Sustainability Plan. PBC is currently reviewing the possibility of implementing a small pool of electric vehicles for administrative use at a central location as a pilot.</p>
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<p>Port of New York/New Jersey (PANY/NJ) Contact Name: Jeffrey Booton Email: Jeffrey.Booton@flydenver.com Phone: 303-342-2022 (may be cell) Geographic Area: Colorado Plains</p>	<p>PANY/NJ has 2,400 vehicles that it operates and maintains. The port also has 600 additional vehicles maintained by vendor contract.</p> <table border="1" data-bbox="562 314 1277 425"> <thead> <tr> <th colspan="2">City maintained</th> <th>Vendor maintained</th> </tr> <tr> <th>Light</th> <th>Heavy</th> <th>Mixed-use</th> </tr> </thead> <tbody> <tr> <td>1,600</td> <td>800</td> <td>600</td> </tr> </tbody> </table> <p>PANY/NJ has Seven automotive shops with approximately 160 employees who support 25 maintenance sites.</p> <p>The PANY/NJ has 13 fueling sites, excluding CNG fueling sites that are operated through partner agreements with other departments/agencies. (Note: due to operation changes made by partner agencies, CNG vehicles are being phased out by the PANY/NJ. Currently approximately 50 CNG vehicles remain in the fleet.)</p> <p>The PANY/NJ counts the number of electric charging ports, not locations. Each port can charge one vehicle at a time. There are currently 174 ports, of which:</p> <ul style="list-style-type: none"> • 104 are Level 2 ports, which can charge a light vehicle in about 4 to 6 hours. Forty of these Level 2 ports are located in customer parking areas (e.g. cell phone lots). Level 2 ports have been the most cost efficient for the Port Authority. • Four are solar ports, which have a slightly slower charging time and are used for Chevy Volts. These ports are supported by an “off the grid” solar canopy built in partnership with the company Envision Solar. • Twenty are DC Fast (Level 3) chargers which can charge a light duty vehicle in approximately 30 minutes, and can also charge larger vehicles such as shuttle buses. One issue with DC chargers is that they bypass built-in vehicle AC/DC inverters which help regulate charging speed, resulting in higher risk of battery damage. <p>The PANY/NJ is currently conducting a pilot project regarding employee use of charging ports. (Many employees have purchased electric vehicles for their personal use with the expectation that they would be able to charge their vehicles at work.)</p>	City maintained		Vendor maintained	Light	Heavy	Mixed-use	1,600	800	600	<p>Yes. The PANY/NJ is the first government fleet to align to the Paris climate agreement. Its goal is to convert 50% of its fleet to plug-in hybrid or fully electric vehicles by 2023. (For police vehicles only, traditional non plug-in hybrids will also count toward this goal.)</p>	<ul style="list-style-type: none"> • Electric vehicles: Installation of charging ports and purchase of hybrid and fully electric vehicles in all vehicle classes. Fleet anticipates more alternatives coming onto the market in 2021, especially for larger vehicles. By the end of this year the PANY/NJ will have 220 battery electric vehicles in the fleet. • Alternative fuels: Uses ethanol and biodiesel. Currently pursuing isobutanol, a renewable source of unleaded fuel; legislative approval from NY and NJ is required. (Note: Phil Sanders in Seattle has experience with isobutanol.) Fleet is also currently testing renewable biodiesel. (Note: There are supply issues with some renewable biodiesel such as Neste as much of the product is currently going to California.) • Solar: The PANY/NJ recently announced that they will be overseeing one of the largest airport solar projects in the world at Kennedy Airport, a carport canopy with 5.4 kilo watts battery storage. • Idle mitigation technology: The PANY/NJ has implemented idle management software that connects to vehicle computers and reduces engine RPM while the vehicle is in park or neutral. Fleet has partnered with the company Derive for police vehicles. • Other: Fleet has incorporated the use of soy tires and is testing bio-friendly shop products such as motor oil and reusable filters. The use of reusable filters has reduced turnaround time for maintenance jobs since there is no need to wait for parts. Additionally, less toxic shop products are safer for employees. 												
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<p>City of Miami Contact Name: Jennifer Ramirez (Assistant Director) Email: JRamirez@miamigov.com Phone: Geographic Area: City of Miami</p>	<p>The City of Miami maintains 2,301 light vehicles and 442 heavy vehicles.</p> <table border="1" data-bbox="562 1403 1277 1651"> <thead> <tr> <th>Type</th> <th>Light</th> <th>Heavy</th> </tr> </thead> <tbody> <tr> <td>Electric</td> <td>0</td> <td>2</td> </tr> <tr> <td>Gasoline</td> <td>2,250</td> <td>10</td> </tr> <tr> <td>Diesel</td> <td>51</td> <td>396</td> </tr> <tr> <td>Hybrid</td> <td>251</td> <td>0</td> </tr> <tr> <td>Natural Gas</td> <td>0</td> <td>0</td> </tr> <tr> <td>Other</td> <td>0</td> <td>3 (propane)</td> </tr> </tbody> </table> <p>The City of Miami manages one fueling site and only dispenses gasoline and diesel fuel. No other alternative fuels are used, and they do not have any electric charging sites/ports.</p>	Type	Light	Heavy	Electric	0	2	Gasoline	2,250	10	Diesel	51	396	Hybrid	251	0	Natural Gas	0	0	Other	0	3 (propane)	<p>The City of Miami is trying to purchase more fuel-efficient vehicles and in the past few years the City has focused on purchasing hybrid vehicles in order to accomplish this goal. The City of Miami does not have any intentions of changing its heavy vehicle fleet. The City of Miami stated that their diesel trucks are very efficient and run clean emissions.</p>	<p>For the Light Fleet Division, the City has focused on purchasing hybrid vehicles in order to reduce gasoline consumption.</p> <p>In past years, the City of Miami experimented with hybrid trucks. They had 6 hybrid trucks, but it did not work out. The trucks were too expensive to repair/maintain and suffered frequent breakdowns.</p>
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<p>City of Riverside Contact Name: Garret Reynolds Email: Greynolds@riversideca.gov Geographic Area: Southern California</p>	<p>The City of Riverside maintains about 2,000 vehicles.</p> <p>The City of Riverside mostly manages CNG, diesel and gasoline vehicles. The city of Riverside manages three CNG site and approximately 20 charging units for electric vehicles.</p>	<p>The City of Riverside is in the beginning stages of developing efficient goals. Nothing can be shared at this point.</p>	<p>Over the coming years, the City of Riverside is looking to expand its electric vehicle purchases. The City of Riverside is also looking at alternative fuel sources such as hydrogen, CNG, E-85, and LPG.</p>																					

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<p>City of New York Police Department (NYPD) Contact Name: Robert Martinez (Deputy Commissioner) Email: robert.martinez@nypd.org Phone: 646-610-5763 Geographic Area: New York City</p>	<p>NYPD maintains a fleet of approximately 11,618 vehicles. This includes all NYPD vehicles, and Department of Transportation Police Bureau and Department of Environmental Protection Police Unit light/medium duty vehicles. The chart below summarizes the fleet by fuel type, excluding equipment such as trailers, cargo haulers, and backhoes.</p> <table border="1" data-bbox="562 385 1277 633"> <thead> <tr> <th>Type</th> <th>Light</th> <th>Heavy</th> </tr> </thead> <tbody> <tr> <td>Electric</td> <td>139</td> <td>0</td> </tr> <tr> <td>Gasoline</td> <td>6,665</td> <td>1</td> </tr> <tr> <td>Diesel</td> <td>0</td> <td>447</td> </tr> <tr> <td>Hybrid</td> <td>2,482</td> <td>4</td> </tr> <tr> <td>Natural Gas</td> <td>0</td> <td>0</td> </tr> <tr> <td>Other</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>The NYPD has 62 conventional/alternative fuel sites. Overall, the NYPD has about 700 electric charging stations that are installed and managed by New York City DCAS (Department of Citywide Administrative Services).</p>	Type	Light	Heavy	Electric	139	0	Gasoline	6,665	1	Diesel	0	447	Hybrid	2,482	4	Natural Gas	0	0	Other	0	0	<p>Yes, NYPD only purchases the most fuel efficient and environmentally friendly vehicles that fit end user needs.</p>	<p>NYPD had the first police hybrid vehicle in 2009 (Altima Hybrid). This year it is only buying hybrid or electric light duty vehicles. NYPD also started using Bio and renewable diesel.</p>
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<p>County of San Joaquin (CA) Contact Name: Kevin Myose Email: tbaptiste@sjgov.org Phone: 209-468-2068 Geographic Area: San Joaquin county</p>	<p>San Joaquin County maintains 886 vehicles.</p> <table border="1" data-bbox="562 979 1277 1227"> <thead> <tr> <th>Type</th> <th>Light</th> <th>Heavy</th> </tr> </thead> <tbody> <tr> <td>Electric</td> <td>26</td> <td>0</td> </tr> <tr> <td>Gasoline*</td> <td>640</td> <td>131</td> </tr> <tr> <td>Diesel*</td> <td></td> <td></td> </tr> <tr> <td>Hybrid</td> <td>89</td> <td>0</td> </tr> <tr> <td>Natural Gas</td> <td>0</td> <td>0</td> </tr> <tr> <td>Other</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>*Gasoline/Diesel are combined vehicle numbers</p> <p>San Joaquin provides fleet management services for all departments of San Joaquin County including Law Enforcement, Social and Public Health Services, Public Works and Parks.</p> <p>San Joaquin has seven conventional/alternative fueling sites. Overall, San Joaquin has three electric charging stations.</p>	Type	Light	Heavy	Electric	26	0	Gasoline*	640	131	Diesel*			Hybrid	89	0	Natural Gas	0	0	Other	0	0	<p>N/A</p>	<p>N/A</p>
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<p>City of Seattle Contact Name: Calvin W. Goings Email: calvin.goings@seattle.gov Phone: 206-684-5200</p> <p>Geographic Area: This includes all of Seattle and some services areas beyond city limits into their watershed and hydroelectric dam operations in the central and eastern parts of Washington state.</p>	<p>The City of Seattle maintains 3,879 vehicles.</p> <table border="1" data-bbox="646 399 1355 647"> <thead> <tr> <th>Type</th> <th>Light</th> <th>Heavy</th> </tr> </thead> <tbody> <tr> <td>Electric</td> <td>264</td> <td>3</td> </tr> <tr> <td>Gasoline*</td> <td>1,525</td> <td>74</td> </tr> <tr> <td>Diesel*</td> <td>609</td> <td>880</td> </tr> <tr> <td>Hybrid</td> <td>435</td> <td>7</td> </tr> <tr> <td>Natural Gas</td> <td>65</td> <td>17</td> </tr> <tr> <td>Other</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <ul style="list-style-type: none"> The City of Seattle manages fleet assets for all departments including fire, police, power and public utilities, parks, human services, transportation, etc. It maintains all equipment used by these customers ranging from off-road construction equipment to passenger vehicles, utility work trucks, fire apparatus, ambulances, and road maintenance equipment. The list of active fleet vehicles is published on data.seattle.gov and it is updated monthly. https://data.seattle.gov/City-Business/Active-Fleet-Complement/enxu-fgzb Overall, the City of Seattle has 33 fuel sites. Seattle also has over 250 Level 2 charging stations and one Level 3 Direct Current Fast Charging (DCFC) stations. 	Type	Light	Heavy	Electric	264	3	Gasoline*	1,525	74	Diesel*	609	880	Hybrid	435	7	Natural Gas	65	17	Other	0	0	<ul style="list-style-type: none"> Please see Page 3 of the 2019 Green Fleet Action Plan: http://www.seattle.gov/Documents/Departments/FAS/FleetManagement/2019-Green-Fleet-Action-Plan.pdf Seattle is focused on reducing Greenhouse Gas (GHG) emissions. The City has two defined goals that include: <ol style="list-style-type: none"> Reduce GHG emissions by 50 percent by 2025. Use only fossil-fuel-free (F3) fuel by 2030. Seattle’s Green Fleet Action Plan (GFAP) has three guiding principles to help shape what actions the City will pursue to have the most effect on reducing GHG emissions: <ol style="list-style-type: none"> Rapid fleet electrification – build the electric vehicle (EV) charging infrastructure, deploy market ready EVs, and pilot emerging EV technology in medium- and heavy-duty vehicles. Reduce fuel use – implement opportunities to increase service delivery efficiency, turn off engines when not in use and eliminate unnecessary vehicle miles traveled. Use Fossil Free Fuels (F3) – substitute sustainable bio-based fuels as a direct replacement for fossil-based fuels. The goals in the Green Fleet Action Plan require significant financial investment. The estimated cost to implement all action items and meet all current City climate goals is \$28 million over seven years of which \$4.7 million is currently funded in the 2019 adopted budget. 	<ul style="list-style-type: none"> In 2015, the Washington State Legislature adopted Revised Code of Washington 43.19.648, which mandates that 100 percent biofuel (renewable) and electric fuel use (to the extent practicable) for all publicly owned vehicles. In 2016, the City launched Drive Clean Seattle as a broad transportation electrification initiative and a key climate strategy using the municipal fleet to lead by example. Electrification is a primary focus in Seattle. Lastly, Seattle has made a commitment to the Paris Climate Accord and continues to demonstrate to the rest of the world the City’s commitment to defeating climate change. Moving forward, Seattle is exploring numerous initiatives to reach its 2025 50% GHG reduction goals such as the use of renewable/bio diesel, expanding its Electrical Vehicles Charging Stations, using fleet telematics technology; as well as, implementing Alternative Fuel Vehicle Conversions, Retrofits, and Repowers to meet the goals of the Green Fleet Action Plan.
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<p>Marion County Contact Name: Mark Williams Email: Mark.williams@marionfl.org Phone: 352-671-8570</p> <p>Geographic Area: Marion County</p>	<p>Marion County has over 1,500 vehicles and equipment assets.</p> <p>Marion County Fleet Management Division provides services to all county departments. Some of the many assets that are serviced include pick-up trucks, dump trucks, fire engines, ambulances, tractors, grapple trucks, roll off trucks, road maintenance equipment, loaders, and vacuum trucks.</p> <p>Marion County does not manage any alternative fuel sites. Overall, Marion County only has one fueling site.</p>	<p>Marion County does not have any fuel efficiency goals.</p>	<p>Marion County purchased approximately 70 light and heavy duty CNG vehicles.</p>																					

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<p>Miami-Dade County</p> <p>Geographic Area: Miami-Dade County covers a service area of 2,431 mi².</p> <p>Miami-Dade services a population of approximately 2.7M residents through 25 departments that provide various municipal services with a budgeted staff of approximately 27,593 positions.</p>	<p>Miami-Dade County’s total fleet size is 11,434 vehicles. This includes, 7,109 light duty vehicles, 958 medium duty vehicles (between 10,000 and 19,500 lbs.), and 2,100 heavy duty vehicles, as well as heavy equipment such as large construction equipment, all-terrain vehicles, yard tractors, forklifts, skid steer loaders, cranes, boom lift, telescopic lifts, large light towers, generators, and large air compressors.</p> <table border="1" data-bbox="634 479 1650 556"> <thead> <tr> <th>Light</th> <th>Medium</th> <th>Heavy</th> </tr> </thead> <tbody> <tr> <td>7,109</td> <td>958</td> <td>2, 100</td> </tr> </tbody> </table> <p>The Internal Services Department (ISD) is responsible for maintenance of most of the County’s Fleet; exceptions include Miami-Dade Transit, a division of the Department of Transportation and Public Works (DTPW) and Miami-Dade Fire Rescue (MDFR).</p> <p>ISD has a total of 29 unleaded and diesel fuel sites though out Miami-Dade County. ISD also manages four electric vehicle charging stations located at the Downtown Motor Pool garage. These newly installed charging stations are utilized for County owned vehicles that are part of the motor pool fleet.</p> <p>DTPW currently maintains three traditional and two Compressed Natural Gas (CNG) fueling sites that support its passenger bus fleet and light fleet. An additional CNG site has been set up on a temporary basis; a new fueling system that will replace the temporary site and provide CNG, diesel and unleaded gasoline is expected to be constructed within the next few years. Two of the traditional fueling stations are scheduled to be demolished later this year, since the CNG sites also provide diesel and unleaded.</p> <p>MDFR manages 4 electric vehicle charging stations located at its headquarters building. It has 27 conventional fueling sites and no alternative fueling sites.</p>	Light	Medium	Heavy	7,109	958	2, 100	<p>The Board of County Commission resolution No. R-1034-18 established goals for the reduction of fuel consumption throughout County operations. The resolution called for a) increasing the purchase of electric buses, with a goal of 50% electric bus fleet by 2035 and b) the reduction of gasoline consumption by 30% and diesel fuel consumption by 70% by the year 2028. These goals are compared against a baseline established in 2016.</p> <p>In 2016 the ISD Fleet Management Division, in concert with the Office of Management and Budget (OMB) and the County’s Finance Department, developed a Multi-Year Vehicle Replacement Plan to meet the operational needs of the various county departments. All vehicle requests are reviewed on an annual basis. Such requests must be operationally necessary and economically sustainable and must consider environmentally conscious technologies where available when setting out to consider the various department’s future purchase requests. This program requires departments to better analyze their vehicle needs and requires approval of vehicle type by both the department and Fleet Management. Closer scrutiny of vehicle requests is expected to reduce the number of larger, less efficient vehicles. Since then, departments have continued to attend one-on-one fleet purchase plan workshops with both the ISD Fleet Management Division and their respective OMB Business Analyst. At these meetings, a comprehensive review of each department’s fleet is conducted, to include projections on aging, the identification of any underutilized vehicles, and development of a priority-based replacement plan that is sustainable. During these annual fleet request reviews, vehicle types and the potential to utilize smaller, hybrid, electric or other alternatives are explored.</p>	<p>Miami-Dade County’s Department of Transit and Public Works has fully implemented Compressed Natural Gas facilities, which expended approximately 2.5 million gallons of diesel equivalents in 2019. This provides fuel to its fleet of passenger buses.</p> <p>In 2016, the County’s diesel fuel was converted to low-level biofuel blend consisting of approx. 5% pure biodiesel and 95% percent petroleum diesel fuel (representing approx. 605,133 gallons dispersed).</p> <p>The County has also deployed over 425 hybrid light vehicles and 63 hybrid transmission refuse trucks (representing approx. 5% of the on-the-road fleet). In Fiscal Year 2020-21, the County is projected to purchase an additional 78 hybrid vehicles for its light duty fleet. The ISD Fleet Management Division also manages four electric Nissan Leafs at the Downtown Motor Pool.</p> <p>Miami-Dade Transit has contracted with Proterra to purchase 33 electric vehicles. The first pilot bus is expected to arrive and be placed into service by June 2021. The remaining 32 buses are scheduled to arrive at DTPW by February 2023. There is an option to purchase an additional 42 buses with this order and that will bring the total to 75 buses.</p> <p>MDFR currently has 4 Chevy Bolts (Electric Vehicles), 209 Vehicles capable of E-85 fuel, and 6 Hybrid Vehicles (4 Ford Interceptors 2 Toyota Prius) in its light fleet. In its heavy fleet MDFR has 31 Rosenbauer Engines, which have an APU (Auxiliary Power Unit) to reduce emissions at idle. The rest of the MDFR heavy fleet frontline units are eco-friendly through the use of DEF (Diesel Exhaust Fluid) and DPF (Diesel Particulate Filter) systems.</p>
Light	Medium	Heavy							
7,109	958	2, 100							

Alternative Fuel Fleet Benchmarking Survey

Do you have any policies or guidelines regarding good/poor candidates for electric or alternative fuel vehicles? If so, please describe. If available, may we have a copy?	Were there any fuel efficiency ideas that you considered, but ultimately rejected? If so, why?	What, if any, infrastructure changes have been made in order to implement fuel efficiency initiatives?	What have been the costs and benefits of the efficiency initiatives? Have you documented a reduction in fuel use and/or cost savings? Have there been any unintended consequences – for better or for worse?
<p>City of Denver (DEN) Airport</p> <p>Outside of the City’s overall guidance in Executive Order 123, DEN doesn’t have a document of this type. Much of this is driven by the local availability of alternative fuel options, funding opportunities and local governments willingness to try something new.</p>	<ul style="list-style-type: none"> The light-duty fleet is predominantly pickup trucks (approx. 250). DEN has been waiting for viable electric options to come available but for now, it cannot get the needed support to build out its electrical infrastructure, so this initiative is on hold. DEN also considered hydrogen fuel cell vehicles. Fleet proposed building a hydrogen generator that would be powered by their solar field. DEN could use some of the fuel for vehicles and create a revenue stream in the process. Ultimately the idea was not pursued by the Sustainability team. 	<p>In addition to the CNG fleet, many of the airlines have adopted CNG for their baggage tugs. It requires a robust infrastructure but that was all coordinated/installed when the airport was built.</p>	<p>DEN documents efficiency /savings on an individual vehicle level, but it’s more difficult to see when looking at the entire fleet. The airport is in the snow belt and every snow season brings conditions that are not standard from year to year so sometime the fuel usage is up and sometimes down. It’s easier to look at the fleet in terms of Greenhouse Gas (GHG) emissions as opposed to material usage. Also, seeing big efficiencies in the numbers only really happens when you initially make a significant change in your program (e.g. converting to a new type of fuel). After that, just showing that the original reductions are being maintained is the focus until another opportunity is found, but then the changes are small from year to year.</p>
<p>City of Fort Lauderdale (FTL)</p> <p>Not at this time.</p>	<p>Considered(ing) Autogas but at this time space is not available to deploy fuel site and funding isn’t available for conversions</p>	<p>Add EV Charges to existing City buildings as funding is available.</p>	<p>The savings are evident with the Nissan Leafs. Most of the recharges occur utilizing the Solar Charger but these are negligible when compared to the overall Fleet. The advantage seen at this time is many people are driving the EV Loaners and are having a positive experience with the EV drivetrain.</p>
<p>Palm Beach County (PBC)</p> <p>PBC does not have any policies.</p>	<ul style="list-style-type: none"> Electric vehicles in the past have been reviewed but ultimately rejected due to the cost, as well as the large geographical area that the County serves. PBC reviewed an idle fuel management system, which adjusts engine calibrations during idle. This was ultimately stopped and did not move forward because the estimated savings were 6%. Furthermore, it was not applicable across PBC’s entire fleet, and was ultimately changing the calibration settings set by the factory. PBC was one of the first fleets to implement Hybrid Bucket trucks back in 2008. These trucks had many issues, were very expensive to maintain due to the specialized nature, and had excessive downtime. The operators didn’t want to use them as a result, and they have since been replaced with conventional trucks. In addition, at the end of their life, the hybrid trucks had comparably lower resale value. 	<ul style="list-style-type: none"> The changes illustrated below were implemented by a past administration but still relevant as it relates to alternative fuel considerations. <ul style="list-style-type: none"> PBC received grant funding to build two CNG filling stations in 1993 & 1994 at a cost of about \$300,000 per station. As part of the grant submittal, PBC had to purchase CNG vehicles. PBC ended up with approximately 50 gas powered vehicles. As CNG did not work as a bi-fuel with diesel, only cars and light trucks were used. The program became unsuccessful because the CNG stations were very unreliable, were out of service for long periods at a time, and became very costly to repair (the nature of dealing with 4500-psi delivery systems of the CNG). It should be noted that CNG stations must be built in close proximity to an existing natural gas line. The vehicles all had to be bi-fuel (IE gasoline & CNG) due to not having enough infrastructure (CNG-only fill stations) available throughout the county and state. General Motors and Ford built CNG vehicles in that time, in addition to some conversions done by aftermarket suppliers. The Original Equipment Manufacture (OEM) went out of the business after a few years due to problems and not selling enough product. The conversion company went out of business and did not support the products after the conversions were done. The cost was between \$5,000 to \$9,000 added to the vehicle for the OEM purchase or conversion. This added another operating system to the vehicle, which required additional maintenance like having to static test the CNG fuel vessel. The CNG fuel vessel took up a good portion of the available space either in the trunk of the car, storage area of an SUV or the bed of pick-ups or storage areas of vans. The two stations were de-commissioned in early 2000’s and disposed of. 	<p>PBC does not have this information in terms of dollars; however, a reduction of 407 metric tons of Greenhouse Gas from 2017 to 2019 has been seen.</p>

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<p>Port of New York/New Jersey (PANY/NJ)</p> <ul style="list-style-type: none"> • So far, good candidates for battery electric vehicles have been lower mileage, non-emergency vehicles used for a single shift. • In general, when introducing new technology vehicles, a good place to start is with the fleet motor pool. • Only one employee (a Port Authority executive) has a take-home electric vehicle. In general, take-home cars are poor candidates due to lengthy commutes / high mileage. Additionally, wider implementation of take-home electric vehicles would require the development of new policies related to home charging, etc. • Snow is a major challenge for the PANY/NJ. Fleet is replacing sedans with newer plug-in SUVs coming onto the market for better handling in winter conditions. This includes Ford Police Interceptor Utility hybrids. • The PANY/NJ has a robust telematics program, which entails software connected to vehicles to collect information such as mileage, idling time, location, etc., and has dedicated three FTEs to the program. The use of telematics has greatly helped fleet identify which vehicles would be good candidates for alternative technology as well as to identify optimal locations for charging ports. Additionally, telematics data is used to educate customers on what vehicles might meet operational needs. (Fleet staff cannot mandate customer use of any particular type of vehicle.) 	<p>Yes – hydrogen vehicles. Fleet tested Toyota hydrogen vehicles 10-15 years ago and they were functionally very good. However, the PANY/NJ is not permitted to use them in bridges or tunnels due to the possible risk of explosion. The infrastructure is expensive, but one station could charge 400 vehicles with a charging time of 15 minutes. Fleet staff recommends this technology if it is feasible / permissible</p>	<ul style="list-style-type: none"> • Alternative fuels: Liquid fuels are easy to integrate, requiring only minor upgrades to fuel lines or in some cases none at all. Ethanol requires line upgrades because it is corrosive. • Electric charging stations require digging, permitting, and related infrastructure upgrades such as transformers, etc. It is better to invest once in the beginning and project future needs. One facility has had to rip up ground three times every time they wanted to add ports, which resulted in much higher cost. 	<p>Yes. The total cost of ownership is lowest for fully electric vehicles. For hybrid plug-in vehicles, total cost of ownership savings are not as high when compared to fully electric vehicles, but hybrids offer more operational flexibility.</p>
<p>City of Miami</p> <p>The City of Miami did not provide any input for this question.</p>	<p>The City of Miami did not provide any input for this question.</p>	<p>The City of Miami did not provide any input for this question.</p>	<p>This data is still being collected.</p>
<p>City of Riverside</p> <p>The City of Riverside does not have any policies or guidelines at this point.</p>	<p>The City of Riverside does not have any input for this question.</p>	<p>The City of Riverside has not made any infrastructure changes. Alternative fueling sites have been built, but not specifically for fuel efficiency purposes.</p>	<p>CNG has resulted in the greatest savings in that the price of CNG has remained under \$2 a gallon for 15+ years.</p>

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<p>City of New York Police Department (NYPD)</p> <p>NYPD buys electric/hybrid vehicles that meet operational needs.</p>	<p>NYPD purchased Diesel Hybrid rack trucks, but they didn't perform as expected. The hybrid system failed, and the manufacturer was not able to repair after multiple attempts.</p>	<p>Installation of electric chargers citywide enabled NYPD to expand electric fleet.</p>	<ul style="list-style-type: none"> The Initial cost of electric and hybrid vehicles is higher but is offset by reduction of maintenance and fuel cost. (Maintenance cost per mile for Ford Fusion Hybrid is \$0.13, compared to Chevrolet Impala cost per mile of \$0.23). There is reduced downtime with the electric and hybrid vehicles as well as environmental benefits by reduction of emission and carbon-footprint.
<p>City of Seattle</p> <ul style="list-style-type: none"> The City of Seattle compares the Total Cost of Ownership (TCO) of potential "green fleet" candidates to the current standard in their fleet. When the green fleet option's TCO is within 10% of the current standard, the City makes efforts to bring that green fleet option into their fleet. Operational considerations regarding manufacture and their ability to provide sufficient maintenance comes into play. For the most part, The City of Seattle tries to purchase from manufacturers that have regional representation in the private sector to ensure that they have a back up to their in-house maintenance program. Other considerations that may sideline a candidate is Seattle's ability to provide fueling resources (e.g. CNG is not readily available in their area). 	<p>The City of Seattle considered a "wet-hosing" service for their unleaded vehicles. Permitting obstacles, cost, and an overall operational mismatch ended this notion. For example, the service cannot be performed in parking garages. Seattle's biggest unleaded users are police vehicles, which are used constantly on various shifts and don't stay in one place long enough to benefit from wet-hosing.</p> <p><i>*Note: Wet hosing, also known as mobile fueling, fleet fueling, or on-site fueling, is the process of filling the tanks of large commercial vehicles from tank trucks. These tank trucks are driven to locations where trucks that require fuel and are not in-use can be stationed.</i></p>	<ul style="list-style-type: none"> The City of Seattle has over 200 Level 2 charging stations in their downtown parking garages for City fleet vehicles. Additional Level 2 chargers have been installed in many City facilities where EVs park overnight, including fire stations, police precincts, and other department administrative buildings and parking lots. None of these chargers are open to the public. Seattle is also expanding it Level 3 DCFC charging stations over the next 12-24 months. 	<ul style="list-style-type: none"> Fuel: The costs of bio and renewable fuels is high up front. Biofuels have attained enough market share and popularity to be close to, and sometimes better than, the price point of standard fuel. Biofuels provide a moderate but noticeable greenhouse gas reduction. Renewable fuels are a much newer technology and are still quite expensive. <ul style="list-style-type: none"> Seattle has had tankers of renewable fuel sent from thousands of miles away, so pricing may be better if you have a more local source. The greenhouse gas reduction from renewable fuel is profound and should be considered since it will continue to gain popularity and, eventually, its production will increase and drive prices down. Seattle has used less fuel, but that has more to do with the electrification of its light fleet and an overall vehicle reduction over recent years. However, the fuel being used now is cleaner. Bottom line, the sticker shock is the only negative thing about renewable fuel. Operationally these fuels perform identically to standard fuel and the greenhouse gas reduction is well worth the cost. EV/PHEV/Hybrid fleet purchases: These vehicles are more expensive and have increased Seattle's capital costs. There is a marked reduction in fuel consumption after having these types of vehicles in their fleet (e.g. Hybrid Patrol cars, Hybrid Medic Units, EV and PHEV light-duty fleet). The tradeoff between higher capital costs and lower fuel costs/GHG emissions is a known issue, and it continues to be highlighted as Seattle works with budget and policy makers to increase its capital budget.
<p>Marion County</p> <p>Marion County does not have any policies or guidelines in relation to alternative fuel vehicles.</p>	<p>Marion County only considered CNG vehicles.</p>	<p>Marion count has not undertaken any infrastructure changes. Instead, the focus for Marion County has been in training and employee education.</p>	<p>Marion County does not consider CNG a viable option at this point. As gasoline and diesel prices decrease and remain low in today's environment, the use of alternative fuels sources becomes less appealing.</p>

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<p>Miami-Dade County</p> <p>Miami-Dade County is currently exploring policies and guidelines for the use of alternative fuel vehicles.</p>	<p>ISD had a discussion with a Flex Fuel vendor to integrate a gasoline methanol and/or ethanol mix alternative fuel into the County’s fleet operations. This fuel type burns cleaner and produces fewer greenhouse gases in comparison to traditional unleaded fuel.</p> <p>This option was not adopted since it requires vehicles that are manufactured specifically to utilize both conventional and Flex Fuel grades. Additionally, a vehicle’s mileage economy is reduced by 20 to 30 percent lower miles per gallon than the same car would get running on regular gasoline. As such, this option would require more fuel consumption that would negate any potential cost savings in switching to this fuel option. There were also concerns reported by fleet industry periodicals regarding the potential damage to a vehicle’s engine since ethanol absorbs dirt easily, which can potentially corrode the vehicles engine.</p> <p>The vendor required special fueling dispensers that would be installed at one location and expressed interest in exclusive rights to sell fuel to the county. After a review, it was determined that this option was not in the County’s best interest.</p>	<p>ISD has recently rolled out a passive telematic solution through its Fleet Management Solution. Through this solution, ISD Fleet Management is able to obtain various readings from the vehicle’s onboard computer for future predictive analytics and maintenance. However, this system has only recently been deployed to approximately 200 county vehicles and ISD Fleet is currently reviewing technology solutions to better analyze and manage the data.</p>	<p>Miami-Dade Transit has experienced a significant drop in fuel expenses for its buses, going from \$17 million to under \$10.3 million in just over 3 years:</p> <p>Diesel Fuel Expenditures</p> <table border="1" data-bbox="2156 445 2800 520"> <thead> <tr> <th>FY 16/17</th> <th>FY 17/18</th> <th>FY 18/19</th> <th>FY 19/20</th> </tr> </thead> <tbody> <tr> <td>17,042,348</td> <td>17,480,582</td> <td>12,672,962</td> <td>5,715,559</td> </tr> </tbody> </table> <p>CNG Fuel Expenditures</p> <table border="1" data-bbox="2156 586 2800 661"> <thead> <tr> <th>FY 16/17</th> <th>FY 17/18</th> <th>FY 18/19</th> <th>FY 19/20</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>2,286,894</td> <td>4,532,430</td> </tr> </tbody> </table> <p>MDFR’s initiatives are still in the inception stage and it is too early to accurately determine the benefits. One unintended consequence was that some hybrid vehicles (Toyota Priuses) had to be retired early due to the cost of replacing the battery pack being higher than the value of the hybrid vehicle.</p>	FY 16/17	FY 17/18	FY 18/19	FY 19/20	17,042,348	17,480,582	12,672,962	5,715,559	FY 16/17	FY 17/18	FY 18/19	FY 19/20			2,286,894	4,532,430
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<p>City of Denver (DEN) Airport</p> <p>Not in the big scheme of things. There was a time when CNG vehicle maintenance ran a little high but in the last 5-6 years, technological advances have caught up and the maintenance costs have leveled out with the rest of the fleet.</p>	<ul style="list-style-type: none"> There are currently some negative issues for their customers utilizing CNG vehicles. The CNG fueling station is only capable of providing a half-fill of vehicle fuel tanks due and needs a significant upgrade. DEN has incorporated these upgrades into the new CNG contract, but they are not scheduled until 2023. DEN is currently negotiating to get these upgrades completed sooner. For new initiatives, DEN recruits customers who are excited to try new technology or equipment and lets them be the test case. This definitely helps with buy-in as they now become the “sales force” for the rest of the customers. 	<p>The two biggest challenges are customer buy-in and infrastructure. DEN does well with the customer buy-in, but infrastructure is never cheap or easy. As fleet staff talks with various stakeholders about their various initiatives, they try to find ways to make the initiative important in their world.</p>	<p>Continue to find ways to earn credibility. That may be in the form of solid decision making over time or through recognition programs such as “100 Best Fleet/Green Fleet Program”, “Leading Fleets Awards” or even through recognition from the local “Clean Cities Coalition”. It’s more difficult for the local government to look past new ideas when the team has current national industry recognition.</p>
<p>City of Fort Lauderdale (FTL)</p> <p>The Electric Vehicles have received almost no maintenance. They are checked over and sent out. Hybrid vehicles seem to cost about the same in maintenance, but there is savings in fuel cost.</p>	<p>Yes. EVs so far cost less to operate.</p>	<p>Challenges include deploying new technology in Public Safety vehicles and additional costs</p>	<p>Educate all parties involved and make sure the technology works.</p>
<p>Palm Beach County (PBC)</p> <p>For older hybrid models, the cost to replace the batteries was higher and an added expense. However, the hybrids that are produced today have a more reliable battery system in the long term.</p>	<p>Reduced fuel costs, positive impacts on the environment.</p>	<ul style="list-style-type: none"> See CNG example in previous question. In the future, the PBC director stated that she would always do a pilot initiative before investing thousands of dollars into a project of that magnitude. PBC had no major challenges in implementing hybrid vehicles. Only one Department bought an electric vehicle in 2012. It is driven less than 1,400 miles a year due to range anxiety. PBC fuel sites have experienced much corrosion as a result of ethanol blended fuel, but they have been able to manage it. 	<p>Have County Administration buy-in if changing the behavior of the operators. Always consider the application, long-term stability, and all possible costs. Consider doing a pilot or speaking with a similar organization that implemented a similar change, as well as disaster planning/readiness</p>

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<p>Port of New York/New Jersey (PANY/NJ)</p> <p>For fully electric vehicles the costs of maintenance and parts are dramatically reduced.</p> <p>Maintenance costs of hybrid plug-in vehicles are roughly equivalent or slightly higher than maintenance costs for traditional vehicles.</p> <p>The use of telematics has also resulted in significant efficiencies and better decision making.</p>	<p>Feedback from police on idle mitigation software has been positive, with drivers reporting improved vehicle performance.</p>	<ul style="list-style-type: none"> • Electric vehicles have required additional training for mechanics; union agreements require all maintenance to be performed in-house • Employees often have “range anxiety” when introduced to electric vehicles, but outreach and education can overcome this, especially when informed by telematics data • There have been some recalls on batteries – e.g. Chevy Volt, Chrysler Pacifica • There is a risk that employees will be tempted to disable safety features to meet operating needs. Effective SOP’s will be required. 	<ul style="list-style-type: none"> • User education is critical and should be initiated as early as possible. It is important to provide a forum to get input from all customers as well as mechanics and other fleet staff. Leadership should be transparent about the features and drawbacks of alternative fuel and electric vehicles, including charge time and range, and to share telematics data on actual vehicle use. Fleet should also encourage users and mechanics to test drive new technology vehicles. • When the fleet organization wins accolades, share the recognition with fleet employees. • Engage executive management as well as budget staff when considering changes. Calculate the total cost of ownership over vehicle useful life. Have a plan for capital spending that projects future needs. • Telematics data is extremely helpful. However, the organization must dedicate adequate staffing for the program or data will not be used. • Be aware that manufacturer fuel efficiency information is usually overstated by about 20% due to use of a/c, radios, and other battery draining equipment. • Use telematics to identify optimal locations for charging stations. If you don’t own the property, consider exploring solar canopies. • When investing in electric and plug-in hybrid vehicles, consider the manner in which you are charged by the utility. Be aware of potential peak demand charges. For major projects it is essential to engage the utility; consider engaging microgrid companies to help manage power sources at specific times. When using bio/renewable fuels, be aware of potential supply issues. • Invest in multiple technologies and vehicle types, especially early on when the organization is still learning what works best. Be wary of companies which offer proprietary technology that does not integrate with other technology or infrastructure. • Consider the availability of back-up generators in emergency situations
<p>City of Miami</p> <p>No, the City continues to maintain the vehicles according to the vehicle manufactures recommended service intervals.</p>	<p>No, the hybrid vehicle operates just like a conventional vehicle with no impact to City departments</p>	<p>The City of Miami has a challenge in purchasing the Ford Police interceptor SUV Hybrid. This particular vehicle has had many start-up issues for a new product. In the future, The City of Miami will not be purchasing the Ford Police Interceptor SUV Hybrid for the Police Department.</p>	<p>For the City of Miami, the Toyota and Kia Hybrid vehicles have worked very well and have proven to be efficient and reliable. These vehicles have been placed into service in all departments across the City of Miami including the Fire and Police Departments.</p>
<p>City of Riverside</p> <p>The maintenance frequencies for the City of Riverside remain unchanged due to the need to mitigate liability.</p>	<p>Some customers do not like CNG due to the reduction in vehicle range, and incremental cost of the vehicles.</p>	<p>Again, emphasis not necessarily on efficiency, but regulatory compliance, South Coast Air Quality Management District (SCAQMD) rules, etc.</p>	<p>Alternative fuels by and large have worked well. Infrastructure is costly and adequate supply for the proposed locations of infrastructure (IE gas/electric supply) needs to be ensured.</p>

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<p>City of New York Police Department (NYPD)</p> <p>Yes, there has been a positive impact. PM intervals have increased from 4,000 to 6,000 miles.</p>	<p>Round the clock operations can't use electric vehicles because they need time to charge and they are better suited for single shift operations.</p>	<ul style="list-style-type: none"> • Infrastructure investment to upgrade the electric grid and install electric chargers. Surveys must be done prior to deciding on electric vehicle purchase and infrastructure must in place first. • Training drivers and technicians on new technologies. • Budget constraints (initial cost is higher) 	<ul style="list-style-type: none"> • Hybrid vehicles are better than electric vehicles for round the clock use. • Bio and renewable- diesel fuels work well on all diesel vehicles without additional modifications. • Choose the right vehicle that fits the operational needs (one shift or round the clock operations).
<p>City of Seattle</p> <p>EV adoption has reduced the amount of maintenance required on light-duty vehicles. Other green fleet initiatives have not had a measurable impact on fleet operations.</p>	<ul style="list-style-type: none"> • For the most part, customers' operations have not been affected by the switch to biodiesel and renewable diesel. Switching from Internal Combustion Engine Vehicles (ICE) to Electric Vehicles (EV) and Plugin Hybrid Electric Vehicles (PHEV) light duty fleet assets was low impact until the pandemic. Most light duty vehicles park overnight at City facilities, and the City has worked to provide a dedicated Level 2 charger for almost all EVs and PHEVs in the fleet. • Some departments responded to COVID-19 by allowing their staff to take their vehicles home daily. This makes it hard for EV drivers to keep their batteries charged. Whether that practice continues post-COVID is TBD, and it will impact how and where direct current fast charge is located in the future. 	<ul style="list-style-type: none"> • Electric Vehicle Supply Equipment: The biggest challenge for EV infrastructure is securing the funds necessary to build out the infrastructure to support electric vehicle supply equipment. Electrifying the medium and heavy-duty fleet will require expensive electric work in buildings and on the electrical service equipment to those buildings. Educating budget and policy staff about these huge expenses is a challenge, especially during COVID-19. • Renewable fuels: Challenges with renewable fuel will primarily have to do with finding a consistent supply at a feasible price point. There should be an expectation that renewables will be significantly more expensive than "dirty" fuels, especially in smaller amounts. If you can secure a long-term bulk supply, those costs can come down. At the height of Seattle's renewable usage, they were paying \$1-2 more per gallon for renewables compared to standard fuel. Seattle has noticed zero issues with renewable performance and the greenhouse gas reduction is quite profound. • Access to EVs in a non-ZEV state: Manufacturers prefer to sell their EVs in Zero Emissions States where they get incentives based on the number of EVs and PHEVs they sell. Seattle is eager to purchase the Toyota RAV4 Prime PHEV, but the City cannot buy them until the state's ZEV regulations are finalized (eta 2023). 	<p>If the state of Florida or Miami-Dade County have a broad contract with certain vendors, explore piggy-backing on those contracts to lock in a better price. When using bio/renewable fuels, try to get a contract directly with the supplier of the fuel, rather than a distributor. This will provide a better opportunity for attractive pricing and locking in a set amount.</p>
<p>Marion County</p> <p>Initially the County had a lot of issues with CNG engines but has worked most of them out now. The cost of maintenance is similar to regular fueled vehicles; however, parts are tougher to procure for some of the CNG systems.</p>	<p>Due to only having one refueling site for CNG in the County, some departments have changed the way they plan and operate their CNG vehicles. Also, some departments do not like that the fuel tank takes up room on truck beds or in the back-seat area.</p>	<p>More research on alternative fuels.</p>	<p>Do careful due diligence; sometimes there is information out there that can be misleading; also fleets all operate differently or have different needs; what works great for some fleets elsewhere in the country may not necessarily work to the same level in yours.</p>

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<p>Miami-Dade County</p> <p>ISD expects that cost, frequency and timeliness of vehicle maintenance and repair will improve as the system are fully rolled out and data solutions are identified.</p> <p>At MDR, the heavy fleet vehicles designed for fuel efficiency (Rosenbauer trucks) have not performed as expected due to their Auxiliary Power Units (APU). All vehicles which use Diesel Exhaust Fluid (DEF) have diesel particulate filter regeneration or APUs and have a higher repair and maintenance cost and more frequent out of service time than traditional vehicles. They have not been able to keep up with the abundance of use nor the demands required by the Fire Service.</p>	<p>Fire Rescue operations have been impacted by the fuel efficiency initiatives for worse. Newer emissions systems have severely impacted the lifespan of heavy fleet responding units. MDR currently has many units that are 18-23 years of age which are more reliable than emission friendly units with less than 7 years of age. One of the key contributors to the unreliability of these vehicles is the regenerating system.</p>	<p>With respect to the use of passive telematics technology, the most significant challenge is the lack of data analysis and predictive analytics available with the current platform used. The current telematics vendor does not provide this capability. As a result, ISD Fleet must manually analyze large data sets to reveal patterns and trends that can impact fleet operations.</p> <p>In reviewing possible resolutions, it was determined that either competing companies did not have a working relationship with the current passive telematics company in use, and/or the adoption of new technology to supplement the current system would carry a high operating price. ISD is still reviewing options and is revisiting the feasibility of migrating to a different solution.</p> <p>MDR purchases light vehicles that are designed to use alternative fuel which have proven effective. Purchasing heavy fleet vehicles with DEF and DFP capabilities have proven not to be cost effective. In the future, MDR recommends purchasing heavy fleet vehicles (Rescues and Suppressions) with limited emissions standards if possible, or replacing the fleet more often.</p>	<p>ISD would recommend that other organizations seek help from internal support departments to gauge the costs/benefits of introducing new initiatives and/or vehicles into their operations.</p> <p>For instance, in 2016, the ISD Fleet Management Division, in collaboration with the Office of Management and Budget and the County's Finance Department, developed a Multi-Year Vehicle Replacement Plan to meet the operational needs of the various County departments. As a result, all vehicle requests are now reviewed on an annual basis. Such requests must now be operationally necessary, economically sustainable, and consider environmentally conscious technologies when viable. This initiative requires departments to better analyze their vehicle needs and requires approval of vehicle type by both the department and Fleet Management. This provides for closer scrutiny of vehicle requests, which is expected to reduce the number of large, fuel-inefficient vehicles that are ordered.</p> <p>MDR has had a positive experience with the use of hybrid light fleet vehicles. Due to maintenance and repairs, fully electric vehicles have not been proven to be beneficial for the department.</p>