



## Action

# RESOURCE CONSERVATION & EFFICIENCY - FLEET

Fossil fuel from foreign countries power much of our nation's transportation and poses risks to national security, our economy and environment. Hallandale Beach's fleet of vehicles, police cars and refuse trucks is no different. Even when sourced domestically, as is increasingly the case, gasoline and diesel pollute the air, toxify soil and waterways and contribute to climate change.

A leaner fleet, comprised of more fuel efficient, alternatively fueled vehicles will reduce dependence on volatile-priced gasoline and diesel, while reducing noise and pollution. The goal is to reduce fossil fuel use (i.e. gasoline and diesel) by 10% from the City's 2016 baseline by 2022. This plan also contains great ambition for the future. By 2040 the City will strive to replace 90% of baseline gasoline and diesel use with fuel efficiency or alternative fuels, such as biofuels, natural gas, propane and electricity.

The City spends approximately \$2.1 million per year maintaining and fueling its fleet of 374 on-road and 71 off-road vehicles. The majority of this expenditure is for maintenance (approximately \$1.6 million). In 2016, nearly \$500,000 was spent on 309,000 gallons of fuel. The City utilizes gasoline, diesel and compressed natural gas (CNG). No vehicles currently use electricity, propane Autogas or biodiesel fuel. Hallandale Beach has approximately 0.70 on-road vehicles per employee, slightly higher than the cities of Sunrise (0.66) and Coral Gables (0.68). A study is currently underway to reduce the size of the City's fleet and the findings will be incorporated in the FY18/19 budget process. A project below initiates the process of "right-sizing" the City's fleet.

The average age of the fleet is approaching eight years old. For all on-road vehicles, the annual number of vehicle miles traveled (VMT) is small, averaging less than 5,000 miles per year. While this may be due to the relatively small area of Hallandale Beach, it is also due to a high number of lightly-used vehicles. About two thirds of on-road vehicles traveled less than 12,000 miles in a year.

The City of Hallandale Beach is already taking steps to manage the vehicle fleet to maximize efficiency and control costs and pollution. The City prepared a "Green Paper" on alternative fuels in 2012. The study included a series of ideas to improve the performance of the fleet, including idle-reduction technology for police and rescue vehicles, CNG refuse trucks, a CNG/alternative fuels station at or near the Department of Public Works and branding/communications.

Since publication of the Green Paper, the City expanded its CNG refuse truck fleet to a total of eight trucks. CNG cuts air pollution and reduces greenhouse gas emissions by up to 30%, while eliminating the risk of toxic fuel spills. Initially, these vehicles were fueled at the nearby City of Hollywood Fuel Station. However, this station closed in 2016, forcing the City to fuel these vehicles in distant Pompano Beach at a higher cost per gaseous-gallon equivalent, plus, the down time necessary to drive to and return from the facility. The next step for the City will be to investigate its opportunities to develop alternative fuels infrastructure. The City has started this process by planning two new, publicly-accessible, electric vehicle charging stations as part of the redevelopment of Bluesten Park and the Main Fire Station.



## ELECTRIC VEHICLES AND INFRASTRUCTURE

- NPV: \$71,000
- ROI: 287%
- Contribution to Goal: 25%
- Lead Department/Division: Public Works
- Responsibility: Fleet Administrator

## INCREASE FUEL ECONOMY

- NPV: \$118,000
- ROI: ∞\*
- Contribution to Goal: 25%
- Lead Department/Division: Public Works
- Responsibility: Fleet Administrator

## RIGHT-SIZE FLEET

- NPV: \$447,000
- ROI: 524%
- Contribution to Goal: 10%
- Lead Department/Division: Public Works
- Responsibility: Fleet Administrator

\*For projects with low or no cost, the return on investment is mathematically infinite, denoted by the symbol: ∞

\*\*Since this project benefits both city operations and community water use, contribution to goal is calculated relative to the SAP's 2040 Goal of reducing community water use by 40%.



Embrace  Change



Action

## PROJECTS

The SAP accelerates the City's commitment to a green fleet by including three projects; Electric Vehicles and Infrastructure, Increase Fuel Economy and Right-size Fleet. These projects will produce about \$636,000 in discounted net benefits over 10 years – at no net cost. While these efforts are currently projected to leave the City short of its 10% gasoline and diesel reduction goal (by year 2022), the City is already considering several next steps described below that are capable of creating cost-effective cuts to its current fuel budget and will strive to incorporate such opportunities into planning for the future.

### ELECTRIC VEHICLES AND INFRASTRUCTURE

Electric vehicles (EVs) have a substantially lower fuel cost per mile than gasoline vehicles. Meanwhile, the purchase price of EVs continues to decrease. They are now available to the City via a statewide procurement contract. As a result, EVs are good choices for replacing light-duty cars with high annual mileage or fuel consumption.

This project, will replace the most utilized passenger vehicles and light trucks aged seven or more years with EVs, where operationally feasible. Ten such vehicles have been preliminarily identified and will be replaced over two years. Purchase of additional EVs after FY19/20 will be contingent upon cost-effectiveness relative to alternatives. Vehicles will be replaced with the Nissan Leaf or equivalent. Technicians will be trained on EVs maintenance, as necessary. Vehicles will be decommissioned from the fleet after seven years and sold at auction.

EVs require electric vehicle support equipment (EVSE) to keep vehicles charged. The City is already moving forward with plans to install publicly-accessible EVSE at Blusten Park. To support 10 new EVs procured over the next three years, the City will install dedicated EVSE at the City Hall Complex, the Public Works compound and other strategic locations.

Careful planning will be required to site EVSE in appropriate locations, including the effect it will have on availability of parking, since Florida law prohibits vehicles with an internal combustion engine from parking in a spot designated for electric vehicle charging (Florida Statutes 366.94).

Since the new EVs will replace vehicles nearing the end of their useful life, the project considers the incremental cost of replacement with an electric model. This incremental cost is conservatively assumed to be the difference in procurement cost for a Nissan Leaf or equivalent and an average compact vehicle as defined by the current Florida DMS contract.

Based on current terms, is the incremental cost is approximately \$6,000 (e.g. \$28,500 vs. \$22,500). Incremental costs going forward will be monitored to determine whether further EVs procurement is cost effective relative to fuel-efficient vehicles. Salvage value is estimated to be \$2,500. The installed cost of EVSE is assumed to be \$2,000 per charge point. The total project cost of about \$80,000 is offset by the salvage value of replaced vehicles and fuel and maintenance savings, which area estimated at about \$170,000 over 10 years.

### INCREASE FUEL ECONOMY

New vehicles are more fuel efficient than in the past. Procuring new, high-efficiency models to replace older vehicles can reduce fuel use and save money. Replacing larger vehicles with compact alternatives, where appropriate, will increase these benefits.

This project will improve the average fuel economy of the City's fleet by procuring high-efficiency vehicles to replace less efficient vehicles.