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Charlottesville Goes 'Green'

By Lauren Colin

Charlottesville, Va. is working to change the way things are "usually done" with its initiative to "green" the city's fleet, most recently with the addition of a new gas-electric Ford Escape Hybrid to its fire department fleet.

The Charlottesville Fire Department (CFD) is a combination career and volunteer fire department, consisting of 90 career personnel and 20 volunteers. CFD is also an advanced life support emergency medical system (EMS) protection service for the County of Albermarle and the University of Virginia. CFD operates five engine companies, a truck company, and battalion chief vehicle.

Government Fleet caught up with Kristel Riddervold, environmental administrator for the City of Charlottesville public works department, and Charles Werner, fire chief of the Charlottesville Fire Department, to learn more about the city's green initiative. Werner has 29 years of experience with the fire department and has served as fire chief the past two years.

Charlottesville City Fleet Aims for Sustainability

The City of Charlottesville has taken a city-wide view on greening its fleet due to a vision of becoming an environmentally sustainable city. As part of the city's commitment to environmental sustainability, various opportunities have been taken to green fleet vehicles with the goal of fuel efficiency and environmental stewardship.

"One of the main ways the City has been working towards environmental improvement is through the development of an ISO14001-based environmental management system (EMS)," said Riddervold. "Our public works fleet division has been involved in this process since mid-2004."

Green fleets can have a positive impact on air quality, greenhouse gas emissions, and waste reduction. The city's greening initiatives currently include:

- Conversion of gasoline- to electric-powered golf carts at the municipal golf course.
- A fleet right-sizing study in 2005 that reduced fleet size by 10 percent.
- Biodiesel pilot project initiated in a portion of the City's fleet in 2006, involving more than 60 vehicles and displacing approximately 25,000 gallons of petroleum diesel.
- A city-wide anti-idling policy formally adopted in 2007.
- Recycling and other pollution prevention activities now part of the fleet shop operations.
- A review of each vehicle replacement request to identify the most environmentally responsible option available.

Of Charlottesville's 675 vehicles/pieces of equipment, the city's fleet now includes 21 gas-electric hybrids, two dedicated CNG school buses, several dual-fuel CNG vehicles, and two E-85 vans. According to Riddervold, the city plans to continue expansion of the alternatively-fueled portion of its vehicle fleet. These vehicles are spread throughout the organization (e.g. social services, public works, neighborhood development services, parks and recreation, police, and the city managers' office). A majority of the hybrid vehicles are Toyota Prius and Honda Civic sedans.





Fleet Manager Jim McClung shows off the City's Toyota Prius.

According to Riddervold, the greening of Charlottesville's fleet was an obvious component of municipal operations, providing opportunities for improvement and management. Technology continues to change, and it is imperative that opportunities to reduce the city's environmental footprint be continually evaluated, said Riddervold.

"This sends an important message to the community that the city is implementing the types of environmental practices we promote and results in a cleaner and safer environment for staff and the community," she added.

Getting buy-in from some users that alternative-fueled vehicles work as efficiently as their petroleum-fueled counterparts has been a challenge, but like Werner, Fleet Manager Jim McClung welcomes the challenge.



A Charlottesville city school bus fuels up with CNG as part of the city's green initiatives.

Hybrids Benefit and Challenge Fire Department Fleet

Charlottesville Fire Department has been an active player in the city's overall green efforts.

"The fire department is dedicated to providing the best service, being environmentally responsible, and a leader in moving forward with such initiatives," said Werner. "The Ford Escape Hybrid 4WD was selected to serve as a response vehicle and a pilot program for the CFD, because it is 4WD."

The new unit has all the lights, sirens, and communications equipment found in traditional vehicles; however, it does pose a few challenges.

"We needed space for operational needs, radio and siren/light controls, and also have light amperage limitations," said Werner. "The size of this vehicle is smaller, so it limits the number of vehicles we can replace."

Operationally, the space offered in the Escape is sufficient for Werner as the secondary incident commander. However, it is inadequate to replace primary incident commander vehicles due to space requirements and installed equipment.

"As new, larger hybrid vehicles become available, I will re-evaluate this decision. CFD ordered another hybrid vehicle (sedan) that will be used by the fire inspector," Werner said.

A few challenges posed by the Escape Hybrid have already been met. Space for radio and emergency/siren light controls was provided by new technology. According to Werner, Charlottesville utilizes Motorola for its public safety radio system.

"Motorola offers a new radio that integrates the controls into the handset, removing the traditional bulky radio control head," said Werner. "The light/siren bar also has controls now integrated into a handheld mechanism."

New LED emergency lightbars and lights have been added, which use very little amperage to accommodate a limitation in the Ford Escape Hybrid, without sacrificing visibility or lighting levels.

"All of our new technology allows for installation of traditional emergency communication warning systems without invading the vehicle's control space," said Werner. "A side benefit was the preservation of cup holders typically lost by the need to install custom vehicle consoles."



A Ford Escape Hybrid was added to the fire department fleet as a response vehicle after a pilot program.

Department Transitions to B-20 Biodiesel

Despite a few concerns, Werner is confident the City will find the right hybrid vehicles for the CFD.

"The goal of CFD is to continue to evaluate every alternative-fuel vehicle and replace current vehicles with those that will meet emergency operational needs combined with environmentally friendly technology," Werner said.

In addition to the new hybrid vehicle, the department is changing other vehicles to run on B-20. "Our goal, after testing one of the older pumpers on B-20, is to transition over six months," Werner said. The switch to B-20 responds to the City's environmentally responsible initiative to use alternative fuel and produce fewer emissions. Prior to a full transition, the department must clean its regular diesel fuel tanks. Werner also cited the potential for more frequent changing of vehicle filters, although this has not been the experience with other city vehicles using biodiesel.

"The unique thing about the switch to B-20 is that it reduces the amount of petroleum we're using and is a cleaner-burning type of fuel as well," said Werner. "It's been an interesting challenge, but it's well worth it."



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