DISTRICT OF COLUMBIA DEPARTMENT OF PUBLIC WORKS

ALTERNATIVE FUELS PLAN

APRIL 15, 2013

INTRODUCTION

This plan is submitted to Council pursuant to Section 106 of the Employee Transportation Act of 2012. In accordance with the Mayor's vision for a sustainable future, the Department of Public Works (DPW) will expand and promote the use of alternative fuels vehicles (AFVs) in the District of Columbia through the construction of necessary fuel infrastructure and continued acquisition of AFVs. Alternative fuels include, but are not limited to, compressed natural gas (CNG), propane (LPG), electricity, hydrogen, ethanol, and biodiesel.

THE DISTRICT FLEET TODAY

DPW has been very successful in the past few years expanding its existing alternative fuels programs mainly with biodiesel and ethanol (E-85). Biodiesel is a mixture of diesel fuel and an organic additive, the District uses a soy based mixture. Ethanol is a blended fuel consisting of 85 percent ethanol (corn) and 15 percent gasoline. Both biodiesel and ethanol are stored in and provided from existing infrastructure and are used in the Districts existing fleet.

In fiscal year 2012, DPW provided 1,262,544 gallons of biodiesel to the DC fleet which surpassed the total use of diesel fuel, 942,930 gallons. DPW also increased the use of ethanol by requiring all flex fuel vehicles to use E-85 exclusively through our fuel management system. In fiscal year 2012, DPW provided 226,495 gallons of E-85 to the DC fleet, almost tripling the

total of 80,056 gallons in the previous fiscal year. The DC fleet reduced emissions by over 800 metric tons of carbon dioxide through using biodiesel and ethanol in place of petroleum based fuels.

Other alternative fuels currently used by the District are CNG and electricity. There are currently 175 CNG vehicles in the DC fleet and 13 plug-in hybrid electric vehicles (Chevy Volts). DPW currently operates two CNG stations within the District. One is a fast-fill station at 1835 West Virginia Ave NE that fuels a vehicle in about 5 minutes and operates much like conventional gasoline pumps. The other is a small time-fill station at 1241 W St NE that fuels vehicles as they park overnight. Both stations have outdated equipment and have reached their fueling capacity with the current number of CNG vehicles in the fleet. Further deployment of CNG and electric vehicles is limited by available infrastructure and initial vehicle cost. However, the cost of these fuels is significantly less than gasoline, diesel, biodiesel, and ethanol.

PLANS FOR THE FUTURE

DPW is committed to 'greening' DC's fleet by expanding alternative fuels throughout the District as well as reducing fuel costs for all District agencies. The chart below shows a comparison of fuel emissions and costs for transportation fuels.

Fuel Type	Carbon Emissions (kgCo2/gallon)*	Regional Avg. Cost**
Propane	5.59	$2.77
E85	6.20	$3.35
CNG (GGE)	6.75	$2.17
CNG (DGE)	7.29	$2.42
Unleaded	8.78	$3.56
B20	10.06	$4.25
Diesel	10.21	$4.06

*From Table 13.1 US Default CO2 Emission Factors for Transport Fuels

**Clean Cities Alternative Fuel Price Report, January 2013
GGE: Gasoline Gallon Equivalent
DGE: Diesel Gallon Equivalent

DPW has identified CNG expansion as a top priority in the near future due to its low emission factor, low cost, and the wide availability of heavy-duty and light-duty CNG vehicles. CNG vehicles produce up to 29% less greenhouse gas emissions than comparable gasoline vehicles and up to 22 percent less than comparable diesel vehicles.

The District's sole fast-fill CNG station at 1835 West Virginia Ave NE is not capable of providing significantly more fuel to a larger District CNG fleet nor can it accommodate members of the public, or the needs of other local fleets. DPW is aware that there are a number of governmental and private entities that would acquire CNG vehicles and patronize our fueling station if it were available. Possible users of a future CNG fueling station include the United Parcel Service, Federal Express, AT&T, and the federal government.

New fueling infrastructure for CNG is costly, and requires the presence of high pressure gas lines. However, the current low cost of CNG, typically less than half that of gasoline and diesel, can be leveraged to the Districts' advantage. DPW and DGS are partnering to release one or more solicitations in the next few months to enter into public-private partnership(s) with a private energy company to design, construct, operate, and maintain CNG infrastructure on District property that will also provide CNG to the public. This will provide a significant public good making its low-cost and environmental advantages available to all local fleets and vehicle owners. In exchange District government vehicles will receive a significant discount on CNG to a price near the company's cost.

In order to take advantage of the reduced fuel costs and state-of-the-art infrastructure, DPW will begin purchasing new CNG vehicles immediately to replace the oldest and highest usage vehicles in the fleet. Heavy duty vehicles, including refuse trucks, use the most fuel and will take priority in FY14 to maximize return on investment. Similar and successful programs exist in Chicago, where two public access stations were opened in 2011, and Los Angeles whose transit authority avoids emitting nearly 300,000 pounds of greenhouse gas emissions per day due to conversions to CNG. In the coming years DPW will focus on converting the District fleet whenever possible to alternative fuels through new purchases or vehicle conversions and has set a goal of 50% of all new vehicles to be AFVs.

There is now an opportunity to be a regional and national model for the expansion of alternative fuels while also passing on all of their associated benefits to the public (reduced fuel costs, better air quality, and energy security). DPW is pursuing the following strategies to increase the use of alternative fuels in the District of Columbia:

1. Release solicitations for the design, construction, operation, and maintenance of one or more CNG fueling stations at no up-front cost to the District and by the end of FY14 complete construction on a CNG refueling station in the District of Columbia that would be open to the public, as well as federal, state and private fleets.
2. Exploring similar solicitations for Electric and Liquid Propane Gas (LPG) infrastructure and vehicles.
3. Continuing and expanding the use of biodiesel in District fleet vehicles.
4. Seeking available federal funds for the construction of infrastructure and the purchase of alternative fuel vehicles.

Recommended policy initiatives include the following:

1. Develop legislative proposals to require or encourage the use of alternative fuel vehicles. For example, Montgomery County has required that all its refuse collectors use CNG.
2. Require developers in D.C. to provide appropriate alternative fuel infrastructure as part of the project. For example, require new or remodeled gas stations to add CNG pumps, or require apartment complexes to set up a certain number of EV stations.

Over the years, the expansion of alternative fuels in the District fleet has been stymied by a lack of commitment to both infrastructure and vehicles. Now is the time for the District government to take a proactive role in this area.