

# Department of Vehicle Services

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LOB #299:

## **FUEL OPERATIONS**

### **Purpose**

The Fuel Operations LOB is responsible for fuel operations at 53 sites and administration of commercial fuel credit cards. Fuel operations are dynamic and heavily regulated by the EPA and DEQ. Management of the fuel sites requires providing an adequate supply of fuel by planning, coordinating, procuring and paying for fuel deliveries. DVS is responsible for managing repairs to and replacement of fuel tanks and equipment, managing the automated fuel system, ensuring compliance with Federal and State regulations regarding testing for leaks and any necessary notification remediation of site contamination.

### **Description**

The fuel operations program provides gasoline and ultra-low sulfur diesel fuel at 53 sites across the County, primarily located at police stations, fire stations, Fairfax County Public Schools, public works facilities, Park Authority maintenance centers, and DVS maintenance facilities. Fuel is pumped by all County agencies assigned vehicles and equipment to include FASTRAN, Connector and school buses. Commercial fuel credit cards are also provided to customers for specific needs approved by the Director of DVS.

Administration of the fuel operations program requires a keen understanding of logistics and supply and inventory management. Management of the fuel sites requires: providing an adequate fuel supply, coordinating fuel deliveries, procuring and remitting payment for fuel deliveries, identifying and coordinating fuel site repairs, managing the automated fuel system, ensuring compliance with all federal and state regulations, replacing tanks and equipment at the end of their useful life, auditing fuel usage and records, and billing customers.

Fairfax County purchases fuel through a cooperative contract with the Metropolitan Washington Council of Governments (COG). The Washington Metropolitan Area Transit Authority (WMATA) is the lead agency, and Mansfield Oil is Fairfax County's supplier. Fairfax County receives excellent pricing through the program. The more participation, the larger the collaborative volume, which results in additional buying leverage. The fuel card (Voyager card) program provides flexibility to purchase fuel at gas stations nationwide and is required in special circumstances. As a result, the cardholder pays the state-contracted price, instead of the price at the pump and is exempt from taxes.

County agencies pay for their fuel usage. The following table represents the percentage of revenue generated through the Fuel Program by category of customers in FY 2015:

<b>Category</b>	<b>Percent of DVS Fuel Revenue</b>
FCPS	33%
General Fund/General Fund Supported	45%
Other	22%

A combination of County employees and contractors deliver fuel to the 53 sites. Fuel sites are designed to replicate a typical gas station, but an Automated Fuel Management System (FUELFORCE) takes the place of a credit card or pay station. A County employee simply drives to one of the County-owned fuel sites, types specific vehicle and department information into the FUELFORCE system, and dispenses fuel from the designated pump. FUELFORCE records the date, gallons dispensed, and vehicle number. DVS audits all FUELFORCE records biweekly and agencies issued vehicles are billed monthly for fuel and provided with reports to audit fuel usage.

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## **Benefits**

Fairfax County currently purchases fuel through a cooperative contract with COG that is administered by DVS. Bulk purchasing power enables the County to purchase fuel at a cost significantly lower than commercial gas stations (excluding tax), resulting in an annual savings of approximately \$2.7 million. Participation provides the County with lower rates for fuel and helps to ensure the County is prepared in the event of fuel disruptions.

Central oversight of the fuel management program provides consistency and accountability over fuel controls to include compliance with federal and state regulations, vehicle operating costs, and product availability. In addition, it ensures corporate stewardship and that agencies can efficiently perform their missions.

## **Mandates**

Providing fuel is not a mandated activity; however, because the County chooses to provide fuel, each fuel site must adhere to federal and state regulations. Federal and state agencies issue regulations pertaining to the maintenance and management of fuel, fuel tank leak detection, installation specifications, site closures and cleanup of releases (leaks) from underground fuel tanks.

### **Federal**

Code of Federal Regulations: The federal regulations concerning underground storage tanks (USTs) are contained in 40 CFR Part 280.200 – 280.230 & 281.3. Included are the requirements for tank notification, interim prohibition, new tank standards, reporting and record keeping for existing tanks, corrective action, financial responsibility, compliance monitoring and enforcement, and approval of State programs.

Title XV, Section B of the Energy Policy Act of 2005 amends Subtitle I of the Solid Waste Disposal Act, the original legislation that created the underground storage tank (UST) program. The UST provisions of the Energy Policy Act focus on preventing releases and direct EPA to help states comply with the new UST requirements. DVS staff with a daily responsibility to operate and maintain UST systems has taken required classes.

Clean Air Act: 42 U.S.C §7401.

Clean Water Act: 33 U.S.C. §1251

Resource Conservation and Recovery Act 42 U.S.C. §6901 et seq.; 40 CFR part 280/281 - Underground Storage Tanks.

### **State**

DEQ Regulations - Chapter 580 – Underground Storage Tanks: Technical Standards and corrective action requirements.

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## Trends and Challenges

### Diesel Exhaust Fluid

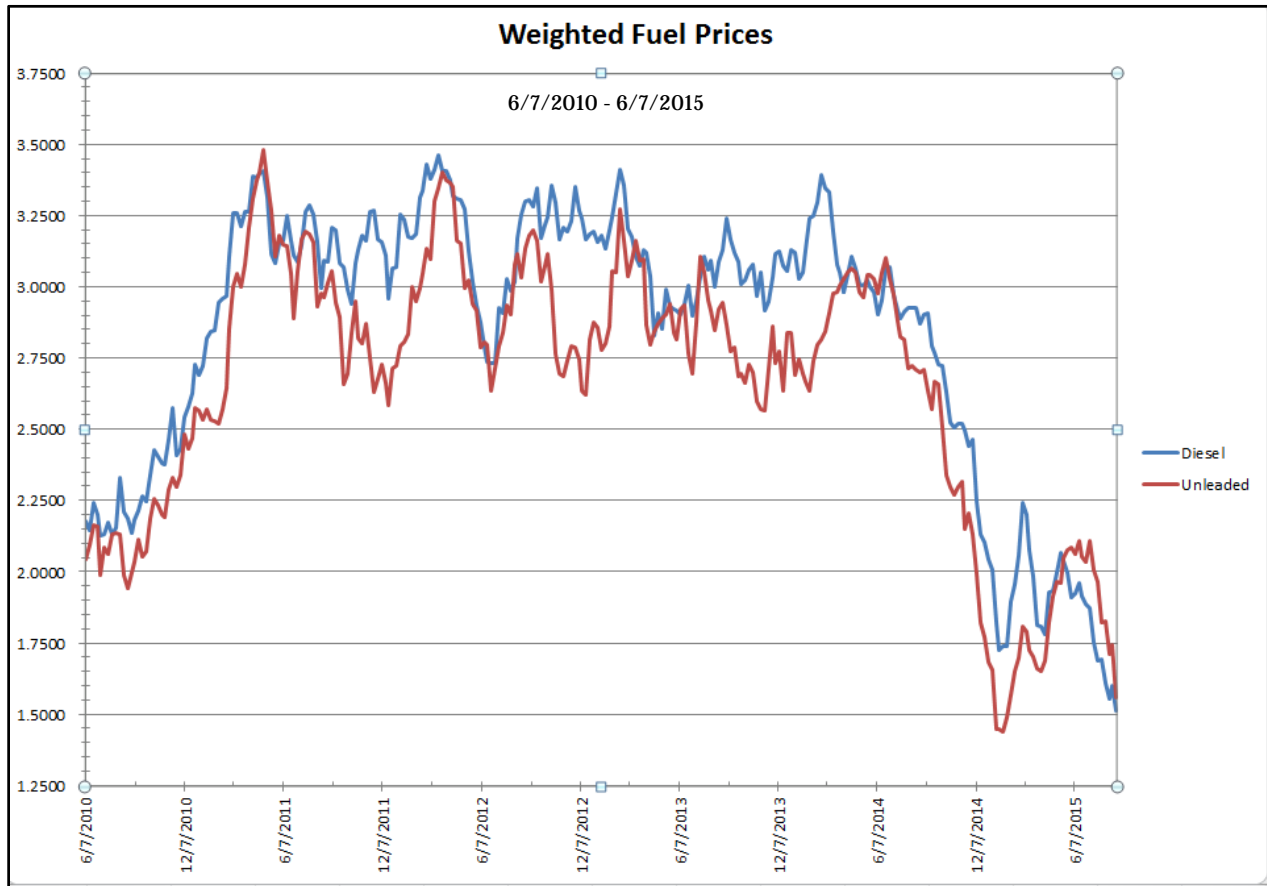
Diesel exhaust fluid (DEF) is used in selected diesel vehicles to lower the concentration of nitrous oxide in the exhaust emissions from diesel engines. Many heavy diesel vehicles have a DEF compartment, which is always separate from the gas tank. All school buses purchased after 2014 have a DEF compartment. Storage and replacement of DEF requires caution.

DEF is safe to handle, but can corrode some metals and must be maintained a certain temperatures. Also, the replacement rate in vehicles is typically a percentage of the diesel consumed by the vehicle. Therefore, DEF should not be dispensed every time diesel is dispensed.

As the County and FCPS purchase more vehicles that require DEF, DVS will need to evaluate how DEF is dispensed and whether the fuel sites should accommodate dispensing equipment.

### Fuel Prices

The volatile nature of fuel prices present a variety of challenges to DVS. Staff must estimate the cost of fuel several months in advance of the start of a new fiscal year. As a result, staff must monitor fuel prices on a weekly basis and monitor industry trends in an attempt to refine predictions. This is necessary as large fluctuations in prices can result in DVS being significantly over or under budgeted for fuel costs. The chart below shows the erratic fluctuations of monthly fuel prices during the period June 2010 and June 2015.



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## Fossil Fuel Alternatives

DVS continues to explore alternatives to fossil fuel. In 2011, the Fairfax County Environmental Quality Advisory Council (EQAC), an appointed citizen advisory board, selected DVS as one of two recipients of EQAC's annual Environmental Excellence Award. The award recognized DVS's strong environmental stewardship as demonstrated by initiatives including the development and continuing expansion of a hybrid-electric vehicle fleet. The County saves more than 16,000 gallons of fuel on average from use of hybrid vehicles.

The current breakdown of alternative fuel vehicles in the fleet are as follows:

Hybrids	117
Flex Fuel Vehicles	1
Hybrid Electric Plugins	1
Electric	1
Hybrid bus	1
Hybrid cargo	1
Hybrid refuse truck	1

DVS envisions that electricity will be a major alternative fuel in the future. If so, there are infrastructure costs, such as charging stations that need to be considered.

## Emissions Control/Fuel Consumption

DVS, FCPS and Fairfax County Department of Transportation (DOT) have established a number of initiatives to improve the energy and environmental performance of the vehicles they manage and maintain. For example, in FY 2015, 132 school buses were purchased with Selective Catalytic Reduction (SCR) technology. SCR meets the EPA2010 requirement of providing engine emissions to near zero (a NOx level of 0.2g/bhp-hr). To reduce fuel consumption and vehicular emissions, DVS and DOT programmed automatic idle shutdown into all county solid waste trucks and Fairfax Connector buses. DVS retrofitted 1,012 school buses and 113 heavy duty trucks with exhaust after-treatments that reduce particulate emissions.

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## Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>LOB #299: Fuel Operations</b>			
<b>FUNDING</b>			
<u>Expenditures:</u>			
Compensation	\$47,876	\$48,851	\$54,841
Benefits	12,934	13,600	15,665
Operating Expenses	32,701,708	24,636,534	28,145,081
Capital Equipment	0	349,490	0
<b>Total Expenditures</b>	<b>\$32,762,518</b>	<b>\$25,048,475</b>	<b>\$28,215,587</b>
<b>Total Revenue</b>	<b>\$31,913,911</b>	<b>\$24,588,720</b>	<b>\$28,190,693</b>
<b>POSITIONS</b>			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	1/1	1/1	1/1
<b>Total Positions</b>	<b>1/1</b>	<b>1/1</b>	<b>1/1</b>

## Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Gallons of unleaded gasoline purchased	2,549,342	2,469,867	2,551,574	2,566,574	2,581,574
Gallons of diesel purchased	7,677,225	7,844,917	7,876,283	7,907,649	7,942,649
Average cost per gallon	\$3.17	\$3.17	\$2.34	\$2.16	\$2.16
Price Savings between in-house and commercial stations for unleaded gasoline	\$0.28	\$0.24	\$0.20	\$0.10	\$0.10
Price Savings between in-house and commercial stations for diesel	\$0.34	\$0.32	\$0.44	\$0.10	\$0.10
Percent of customers satisfied	100%	100%	100%	100%	100%

Gallons of unleaded gasoline purchased have been largely consistent, with limited vehicle growth offset by Fairfax County purchasing vehicles with greater fuel efficiency or that use alternative fuel sources. The County's current fleet includes 117 hybrid-electric and plug-in hybrid-electric vehicles. The County saves more than 16,000 gallons of gas on average each year from its use of hybrid vehicles. In December 2014, DVS purchased an all-electric Nissan LEAF. In FY 2016, DVS plans to purchase additional all-electric vehicles and increase the fleet of hybrid-electric to 135. DVS expects the ratios for unleaded gasoline to level or become better as we pursue alternative fuel sources and purchase cars with great fuel efficiency.

Gallons of diesel purchased are increasing, which reflects the increase in diesel operated vehicles maintained by Fairfax County. Between FY 2011 and FY 2015, FCPS' fleet has grown from 2,260 vehicles to 2,413 vehicles, representing an increase of 7 percent. The change in bell schedules for the 2015-2016 school year added 46 additional buses. These factors have contributed to increases in outputs for gallons of diesel purchased.

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Fuel supplied by DVS is consistently lower in price than retail fuel. Fuel prices under the MWCOG contract have been favorable compared to retail prices and are competitive with prices in other available fuel contracts, such as Virginia's State Motor Fuel Program (SMFP). The average price for fuel under the COG contracts has been close to the average price under the SMFP contracts.

The price of fuel will fluctuate over time thus making it difficult to project trends. When drafting this section in September 2015, the prices of diesel and gasoline fuel had dropped for several consecutive weeks according to the U.S. Energy Department. Heavy Duty Trucking noted that the national average price of a gallon of diesel fuel was down \$1.285 and gasoline was down \$1.026 when compared to the same week last year. The drop is reflected in the attached chart from the U.S. Energy Information Administration (EIA).

