Central Fleet Pollution Prevention Program

The City of Chesapeake Central Fleet Management is involved in the removal and or recycling of used vehicle tires, used oil and antifreeze; used cleaning solvents; scrap metal; speedy dry soaked with oils; and used oil and fuel filters. Our recycler/vendor for our used oils, used fuel filters and antifreeze is FCC Environmental. Our used fuel filters are collected in 55 gallon drums; our antifreeze is collected in a 90 gallon container; and our waste oil is collected in a 1000 gallon above ground tank.

Our Oil soaked speedy dry is collected in 55 gallon drums and our vendor is HEPACO or FCC Environmental. Our used fuel filters are drained, crushed and, as per the Environmental Supervisor of our landfills with the Southeastern Public Service Authority, are disposed of as non-hazardous waste. Our used solvents are recycled by FCC Environmental; we have 4-25 gallon containers that are used for parts washing. Scrap Metal is recycled with Meeks. Meeks provides a 40 cubic foot roll-off container for recyclable metal.

Based on approximately 1470 Fleet service vehicles, for 2014, the following assumptions apply:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of oil Filters generated due to PM Service</td>
<td>2046</td>
</tr>
<tr>
<td>Gallons of used oil for recycling</td>
<td>6617 gal</td>
</tr>
<tr>
<td>Gallons of used antifreeze</td>
<td>579</td>
</tr>
<tr>
<td>Gallons of used Solvents</td>
<td>288</td>
</tr>
<tr>
<td>Drums of soiled speedy dry &amp; oils</td>
<td>2</td>
</tr>
<tr>
<td>Drums of used fuel filters</td>
<td>8</td>
</tr>
<tr>
<td>Used recapped tires</td>
<td>527</td>
</tr>
<tr>
<td>Weight of used scrap tires to landfill</td>
<td>75,760 lbs</td>
</tr>
</tbody>
</table>

Misc: Providing scheduled and non-scheduled maintenance on over 1600 pieces of machinery and equipment Central Fleet recycled approximately 124,960 pounds of scrap metal in 2014.

Waste prevented: Central Fleet Management safely disposed or recycled all used oil, used antifreeze, used solvent, and used filters, as well as scrap metal and mixed recyclables (paper, cardboard, plastic, etc.).

Pollution Prevention Initiatives

CNG Garbage Fleet Conversion

Central Fleet has purchased 30 CNG garbage trucks with plans to convert the entire fleet (50+ trucks) over the next several years. A municipal CNG fueling station was constructed in 2012. The City also constructed an Autogas (propane) fueling station at the City’s main fueling site next to the City Garage. The City continues to consider construction of a CNG re-fueling site which will be open to the public.

Hybrid and Flex Fuel Vehicles

Central Fleet currently maintains 53 hybrid electric-gasoline vehicles, namely Toyota Prius and Ford Escapes. In addition, Central Fleet maintains over 152 Flex-Fuel vehicles which can run off gasoline or E85. This is approximately 13% of the City’s light duty fleet. Currently there is no local supplier for ethanol. Central Fleet is continuing to study the various options and benefits for alternative fuel vehicles. Additionally, the City has 12 Autogas vehicles in the City fleet and one hybrid diesel electric vehicle.
**Parts Washers**

Central Fleet continues to make improvements in the quantity and types of solvents used in their parts washers. In February 2004, the City switched from using Safety-Kleen 105 Solvent to Safety-Kleen Premium Gold Solvent in all but one of the parts washers. The Premium Gold Solvent is considered non-hazardous due to a higher flash point (148°F vs 105°F) and does not contain tetrachloroethene, a carcinogen. During removal of spent solvent, Premium Gold is not considered a hazardous waste. In addition, the number of parts washers in the shop was reduced from 10 to 6, and the service intervals for changing out the solvent were reduced from once/5 weeks to once/8 weeks. These actions resulted in an approximate 99% reduction in hazardous materials used and transported, and an approximate 63% reduction in the amount of solvent used, as well as a safer workplace. Central Fleet is continuing to explore options to utilize non-hazardous solvents and reduce and in some cases eliminate the use of petroleum based solvents. In 2007 Central Fleet again reduced the number of parts washers from 6 to 4 and has a contract with FCC Environmental for proper cleaning and maintaining of these washers. All parts washers utilize non-hazardous 148 degree flash point solvent which is recycled after use. 4 parts washers are still in use, although the amount of spent solvent has been even further reduced since 2007 by reducing service frequency of the washers.

**Preventive Maintenance Service Interval Study**

Central Fleet Management has reduced oil change intervals from once every 3000 miles to once every 5000 miles. (This excludes emergency vehicles that still have oil changes at 3000 miles.) Since implementation, this change has demonstrated tremendous reductions in the use of natural resources (oil, filters), reduced shop labor, reduced numbers of trips by City employees for scheduled service, and tremendous cost savings for the City of Chesapeake. Additionally, Police and Sheriff’s Department vehicles are now using synthetic oil, which allows even greater 10,000 mile intervals. The amount of used oil generated has been reduced by over 4000 gallons since 2007 due to these changes.

**Solid Waste Reduction**

Central Fleet currently utilizes refillable spray containers for solvents used for onsite parts washing (degreasers). This action has eliminated the solid, and potentially hazardous waste generated from the disposal of aerosol parts washer cans.

A comprehensive solid waste recycling program was implemented for the City Garage on a trial basis for July and August 2008. During that time paper, cardboard, plastic, cans, and glass were recycled utilizing an 8 cubic yard container which was emptied by a contractor weekly. Approximately 900 lbs of material was recycled each week, diverting 3600 lbs of solid waste from the landfill on a monthly basis. This successful program has been instituted on a permanent basis and expanded to other city facilities and buildings. In 2014, Central fleet recycled 115,000 pounds of mixed recyclables, not including scrap metal.

Central fleet is considering implementing an aerosol can recycling system which would enable puncturing and recapturing all the residues prior to crushing the cans for recycling.

**Tire Recap/Resale Program**

From 2005 to 2007 the number of heavy tires recapped increased from about 200 to about 800 and remains at this level. This action has a tremendous cost benefit to the City. Currently options are being explored to sell the City’s used tires on the secondary market as there is tremendous demand.

The City now has a vendor (as of February 2015) to purchase used automotive tires vs. disposing or recycling them through SPSA.
**Refrigerant Recovery and Recycling**

In order to ensure that Central Fleet handles all refrigerants in an environmentally safe manner, a program has been put in place for all mechanics that service air conditioning systems. Anyone who handles refrigerant recovery at Central Fleet must become ASE certified in Refrigerant Recovery and Recycling.

**Used Oil and Gasoline Segregation**

Central Fleet has recognized that the accidental mixing of used gasoline with used motor oil has a detrimental effect on the used motor oil, which is recycled. It could potentially turn the used motor oil shipment into a hazardous material. An effort has been implemented to ensure that gasoline does not get mixed into used motor oil. This effort includes new used gas collection containers which are color coded and clearly labeled, as well as an educational program for shop staff.

**Energy and Water Efficiency**

All high bay metal halide and other lighting fixtures at the City Garage have been replaced with energy efficient fluorescent lighting fixtures. Additionally occupancy sensors and automatic shutoff switches have been installed.

The vehicle wash rack washing system has been replaced with a new, reduced flow system in 2011 which has significantly decreased water usage.

Additionally, a sediment basin (pre-treatment) was added to the wash rack system in 2009 which prevents sediment from entering the oil/water separator, and thus preventing more frequent maintenance which used to be required.