



REPORT TO COUNCIL City of Sacramento

20

915 I Street, Sacramento, CA 95814-2604
www.CityofSacramento.org

STAFF
February 16, 2010

Honorable Mayor and
Members of the City Council

Title: Fleet Sustainability Policies

Location/Council District: Citywide

Recommendation: Adopt a **Resolution:** 1) approving an amendment to sections F(bi) and F(bii) of the current Fleet Sustainability Policy as it relates to reporting; 2) authorizing staff to implement greenhouse gas scores as opposed to the current Low Emission Vehicle (LEV) measurement; and 3) receiving and filing annual Fleet report back data.

Contact: Keith Leech, Fleet Manager, 808-5869

Presenter: Not applicable

Department: General Services

Divisions: Fleet Management

Organization No: 13001311

Description/Analysis:

Issue:

On October 23, 2007, City Council adopted Resolution No. 2007-771, approving a comprehensive Fleet Sustainability Policy (Exhibit A), in which Fleet Management committed to an annual report back on the status of efforts in emission reductions, low emission vehicle acquisitions, fuel consumption, vehicle operations, cost effectiveness, performance, monitoring, and reporting as shown in Attachment 1. On January 27, 2009, this policy was amended to include a commitment of 30 percent for alternative fuel and/or alternatively powered vehicle replacements to further reduce emissions and fossil fuel consumption.

Policy Considerations: The recommended amendment to emission data, ratings, and categories as it pertains to measurements for monitoring and reporting as outlined in the Fleet Sustainability Policy addresses the goals of clean energy and improved air quality identified in the City Council FY2006/07 Sustainability and Livability Focus Area.

Committee/Commission Action: None**Environmental Considerations:**

California Environmental Quality Act (CEQA): The Environmental Services Manager has determined that the action of an amendment to emission data, ratings, and categories related to the Fleet Sustainability Policy does not have the potential for causing a significant effect on the environment and is therefore exempt under CEQA Guidelines, Categorical Exemption Section 15061(b)(3).

Sustainability Considerations: Based on the Fleet Sustainability Policy adopted in October 2007, Fleet Management has exceeded the target fuel consumption reduction goal of 15 percent from the FY2002/03 levels by FY2009/10. In efforts toward even greater fuel efficiency, all vehicle and equipment purchases will continue to include the exploration and analysis of possibilities for more fuel efficient, lower emission or alternatively powered options such as Liquefied Natural Gas (LNG), propane, E85 (15% unleaded and 85% ethanol), electricity or smaller fuel efficient vehicles. Vehicle utilization is currently being evaluated to identify and address the proper use and actual need for vehicles assigned to work groups citywide. Additionally, a citywide Global Positioning System (GPS) telematics and electronic work order system implementation began in FY2009/10 to assist Fleet Management in tracking and reducing idle times, fuel consumption, engine problems and trip distances.

Rationale for Recommendation: Under the LEV system, staff cannot clearly measure or report improvements as LEV criteria changes every year from prior year's major emissions categories, making this measurement inconsistent. As system enhancements are implemented, staff hopes to have more accurate data and better measuring tools such as greenhouse gas score measurements..

Financial Considerations: During FY2008/09, Fleet Management purchased 161 vehicles for approximately \$15.5 million in support of City departments. Fleet Management has taken the lead in seeking grant opportunities to offset the cost of these purchases.

Since FY 2000/01, Fleet Management has received 13 grants and nearly \$3.3 million in grant funding for the following alternative fuel projects:

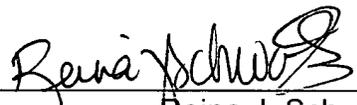
- \$670,000 for the installation of one LNG fuel site at the Meadowview City Service Complex.
- \$1.9 million for the purchase of 54 LNG Solid Waste operations side loaders and rear loaders.
- \$294,000 for the incremental costs of purchasing LNG fuel versus diesel fuel.

- \$42,000 for testing Purinox low nitrous oxide fuel.
- \$300,000 for the purchase of a LNG mobile fueling trailer.
- \$66,500 for installation of E85 fuel infrastructure at the Rooney Police Station.

Fleet Management is committed to implementing new vehicle and fuel technologies to improve air quality, reduce fuel consumption, and save financial resources. Funding required to purchase hybrids and alternative fueled vehicles is dependent upon receiving grant funding and budget augmentations from user departments. These funds would need to be combined with the annual vehicle and equipment replacement budgets which are based on the City's established equipment standards which are normally determined by safety, reliability and the most economical total cost of ownership.

Emerging Small Business Development (ESBD): This report does not result in the purchase of any goods or services.

Respectfully Submitted by: 
 Keith Leech
 Fleet Manager

Approved by: 
 Reina J. Schwartz
 Director, Department of General Services

Recommendation Approved:

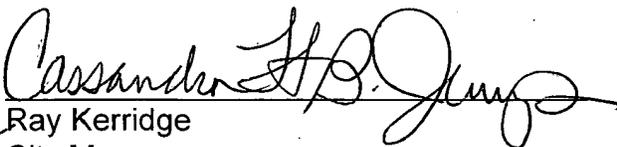

 for Ray Kerridge
 City Manager

Table of Contents:

Report	Pg 1
Attachments	
1 Background on Emissions Data	Pg 4
2 Summary of Vehicles Purchased and Total Fuel Consumed	Pg 7
3 Fuel Consumption	Pg 8
4 Resolution	Pg 9
Exhibit A - Redline Fleet Sustainability Policy	Pg 10
Exhibit B - Proposed Fleet Sustainability Policy	Pg 13

Attachment 1Background on Emissions Data

Fleet purchases for FY2005/06 and FY2006/07 are based on major emission categories set by CARB. Every year manufacturers are required to meet these standards and the scale becomes more stringent every year. In FY2006/07 the majority of the vehicles purchased were 19 per cent Partial Zero Emission Vehicles (PZEV). Similar to PZEV vehicles, 9 per cent of the vehicles purchased were hybrids rated as Super Ultra Low Emission Vehicles (SULEV)/AT-PZEV, rated similar to a PZEV vehicle. Technological advances in the automotive industry have resulted in improved vehicle emission ratings such that policies requiring certain vehicle emission ratings are no longer necessary since that is now what the industry offers at a base level.

Based on the June 14, 2005, Council report titled "Update on Fleet Operations and Adoption of Fuel Strategies" all vehicles purchased were based on emission standards set by CARB. The California LEV program defines automotive emission standards which are stricter than the United States' national "Tier" regulations. There have been two major phases. The first phase began in the 1990s and ended when the Low Emission Vehicle II (LEV II) standards began to be phased in for 2004. Several states other than California currently use the same restrictions. The States include Maine, Massachusetts, New York, Oregon, Vermont and Washington and referred to as "CARB states." The LEV standard created major emission categories for unleaded fueled vehicles only, each with several targets available depending on vehicle weight and cargo capacity. The major emission categories are listed below.

Major emission categories:

- LEV – Low Emission Vehicle
- LEV II – Replaced the LEV Program with even cleaner emissions standards
- ULEV – Ultra Low Emission Vehicle
- SULEV – Super Ultra Low Emission Vehicle
- SULEV II – Even cleaner emissions standards than SULEV
- PZEV – Partial Zero Emission Vehicle
- ZEV – Zero Emission Vehicle

Diesel vehicles have a different standard based on grams of particulate matter (PM) per brake horsepower-hour (g/bhp-hr). Emergency vehicles are exempt from reporting standards. The levels are based on engine year and requirements set by CARB.

- Model Years 1994-1998 – 5.0 g/bhp-hr
- Model Years 1999-2002 – 4.0 g/bhp-hr
- Model Years 2003-2006 – 2.5 g/bhp-hr
- Model Years 2007– 1.3 g/bhp-hr

LNG vehicles are also the same g/bhp-hr as diesel but the engines have a lower g/bhp-hr than conventional diesel engines based on model years.

- Model Years >2004 – 2.5 g/bhp-hr
- Model Years 2004-2006 – 1.8 g/bhp-hr
- Model Years 2007-Now – 0.2 g/bhp-hr

Low Emission Vehicle Acquisitions

In FY2008/09, Fleet purchased 41 diesel, 41 unleaded, 20 Liquid Natural Gas (LNG), and 59 flex-fuel (E85) vehicles for a total of 161 vehicles purchased. Vehicles purchased in any given year are based on each year's replacement schedule, as well as any additions to the fleet that have been approved within the adopted budget. Attachment 2 provides comparison information on vehicles purchased during FY2007/08 and FY2008/09.

Fuel Consumption

City Council adopted a long term fuel strategy to reduce fuel costs, emissions, and the City's dependence on foreign energy sources. The strategy includes replacing existing vehicles with more efficient, higher fuel mileage vehicles, setting goals for reducing fuel consumption for all City departments, and changing how vehicles and equipment are used. The policy includes a goal to reduce fuel consumption 15 percent from 2003 levels by FY2010 with an annual adjustment to the 2003 level to reflect the City's growing fleet operations.

Since 2003, the City's fleet has grown by 32 percent in the number of equipment units. Additionally, the fleet now travels 1.6 million more miles than in 2003. In spite of this growth in the fleet and increase in miles driven, Fleet Management continues to use less carbon-based fuels than in 2003 and has decreased the annual consumption of petroleum-based fossil fuels by 290,780 gallons per year. When adjusted for growth, the City has exceeded its fuel consumption reduction goal as shown in Attachment 3. With ever evolving fuel technologies and telematics, Fleet Management expects similar, if not better, fuel consumption results over the next 10 year period, especially with 30 percent of the current fleet now being replaced with alternative fuel vehicles.

Vehicle Operations

The City fleet consists of 2,074 licensed, fuel-powered vehicles. The following table provides an itemization of this total by vehicle fuel type. On average, these vehicles travel about 18.7 million miles annually consuming approximately 2.1 million gallons of petroleum-based fossil fuel, 169,484 gallons of LNG, and 22,503 gallons of E85.

Vehicle Fuel Type	Number of Vehicles
Unleaded gasoline	1,421
Diesel	398
E85	82
LNG	49
Hybrid	34
Propane	30
Electric	20
Compressed natural gas	3
Total	2,074

Monitoring and Reporting

Fleet Management continually seeks new ways to improve monitoring and reporting capability through the use of emerging technologies such as Global Positioning System (GPS) telematics devices and vehicle identification boxes (VIBs).

On July 14, 2009, City Council adopted Resolution No. 2009-455 awarding a five-year contract for the purchase of fleet telematics equipment and related services to Zonar Systems. The Zonar Systems product provides a standardized city-wide GPS system using high definition data that can be used to verify services rendered by City departments. During the Zonar Systems implementation in the Solid Waste division, data was captured that showed each waste container picked up during daily routes. This high definition GPS data is different from other GPS systems because of its very high sample rate providing accurate and real time location data.

Currently, Zonar is installed in 157 vehicles, with 275 additional units scheduled for installation during the 2010 calendar year.

During FY 2009/10, Fleet Management implemented an automated web enabled car sharing and motor pool software management program. Currently, there are approximately 30 vehicles shared by City employees through this system which enables further "right sizing" of the fleet and manages motor pool operations. The automated web enabled car sharing and motor pool software program is accessible at four locations: the 24th Street Corp Yard; City Hall; Sutters Landing; and 300 Richards Boulevard.

Attachment 2

**Summary of Vehicles Purchased
By Fuel Type**

Fuel Type	FY2007/08				FY2008/09			
	Count	% of Count	Purchase \$	% of \$	Count	% of Count	Purchase \$	% of \$
Diesel	69	20%	\$ 8,134,809	52%	41	25	\$8,305,412	54
Unleaded	209	62%	\$ 5,575,249	36%	41	37	\$1,120,496	7
Hybrids (unleaded)	12	4%	\$ 303,478	3%	0	0	\$0	0
LNG	4	1%	\$ 440,953	3%	20	12	\$4,414,142	29
E85	44	13%	\$ 1,234,861	8%	59	26	\$1,647,798	11
Propane	0	0%	\$ 0.00	0%	0	0	\$0	0
Total	338	100%	\$15,689,350	100%	161	100%	\$15,487,848	100%

Total Fuel Consumed

DESCRIPTION	FY2002/03	FY2003/04	FY 2004/05	FY2005/06	FY2006/07	FY2007/08	FY2008/09
CNG	569	688	518	575	444		40
Diesel Fuel	958,241	994,366	881,533	947,787	911,697	984,826	931,306
-E85							22,503
LNG	10,526	95,098	226,170	241,388	334,604	198,893	260,091
Propane	7,443	11,736	15,430	19,142	17,924	847	11,799
Purinox	54,672	45,595	20,418	2,151			
Unleaded Gasoline	1,202,706	1,176,278	1,201,153	1,209,354	1,180,182	1,128,502	1,267,344
Total Fuel Used	2,234,158	2,323,761	2,345,222	2,420,398	2,444,851	2,313,069	2,493,082
Less Alternative Fuels	18,539	107,522	242,118	261,105	352,972	199,740	275,305
Total Petroleum Based Fuel Used	<u>2,215,619</u>	<u>2,216,239</u>	<u>2,103,104</u>	<u>2,159,293</u>	<u>2,091,879</u>	<u>2,113,329</u>	<u>2,217,777</u>
Fuel Consumption Goal	2,215,619	2,215,619	2,215,619	2,215,619	2,215,619	2,215,619	2,215,619
Growth Adjusted Fuel Consumption Goal	2,215,619	2,383,662	2,537,583	2,577,122	2,673,146	2,766,347	2,928,741
Less 15%	332,343	357,549	380,637	386,568	400,972	414,952	439,311
Fuel Consumption Goal Adjusted for Growth in Fleet	<u>1,883,276</u>	<u>2,026,112</u>	<u>2,156,945</u>	<u>2,190,554</u>	<u>2,272,175</u>	<u>2,351,395</u>	<u>2,489,429</u>
Diff From Goal	332,343	190,127	-53,842	-31,261	-180,296	-238,066	-271,653
Goal	-15%	-9%	+3%	+1%	+9%	+11%	+12%

Attachment 3

Fuel Consumption

Growth of Fleet						
Year	FY2003/04	FY2004/05	FY2005/06	FY2006/07	FY2007/08	FY2008/09
2003 Base	1,569	1,569	1,569	1,569	1,569	1,569
Unit Count	1,688	1,797	1,825	1,893	1,959	2,074
Difference	119	228	256	324	390	505
Variance from base	8%	15%	16%	21%	25%	32%
% Prior Year Growth	8%	7%	2%	4%	4%	7%
Miles Driven						
Year	FY2003/04	FY2004/05	FY2005/06	FY2006/07	FY2007/08	FY2008/09
2003 Base	17,126,411	17,126,411	17,126,411	17,126,411	17,126,411	17,126,411
Miles Driven	17,399,343	17,553,989	18,124,738	18,906,343	19,303,754	18,714,939
Difference	272,932	427,578	998,326	1,779,932	2,177,343	1,588,528
Variance from goal	2%	2%	6%	10%	13%	9%

*2010 Goal (adjusted): The fuel consumption goal is adjusted for vehicle growth in the fleet. The goal, per Resolution No. 2005-454, is to reduce fuel consumption 15% from the 2003 levels by FY2010.

RESOLUTION NO. 2010-XXXX

Adopted by the Sacramento City Council

February 16, 2010

APPROVING AN AMENDMENT TO THE EMISSIONS MEASUREMENTS USED FOR REPORTING AS OUTLINED IN THE FLEET SUSTAINABILITY POLICY

BACKGROUND

- A. The City of Sacramento recognizes that the region has an air quality problem and that public agencies have a significant role to play in improving air quality by reducing the emissions from their fleet operations.
- B. The Mayor and City Council are committed to working with other governmental agencies in the region to address existing air quality concerns.
- C. In FY 2006/07, the City Council adopted a Strategic Plan goal to achieve Sustainability and Livability. Reduced fuel consumption and improved air quality are key components of a sustainable and livable community.
- D. On October 23, 2007, City Council adopted Resolution No. 2007-771, approving a comprehensive Fleet Sustainability Policy.
- E. On January 27, 2009, City Council adopted Resolution No. 2009-045, amending the Fleet Sustainability Policy (Exhibit A) to address new technologies related to emission reduction and monitoring and reporting.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

- Section 1. An amendment to section F(bi) and F(bii) of the current Fleet Sustainability Policy as it relates to reporting is approved.
- Section 2. Staff is authorized to implement greenhouse gas scores as opposed to the current Low Emission Vehicle (LEV) measurement.
- Section 3. Annual Fleet report back data will be received and filed.

Table of Contents

- Exhibit A - Redline Fleet Sustainability Policy
- Exhibit B - Proposed Fleet Sustainability Policy

Exhibit A

Fleet Sustainability Policy

Red-Line Version

The City of Sacramento is committed to improving the Region's Air Quality by:

A. Emission Reduction

- a. Aggressively incorporating low-emission vehicles into fleet operations;
- b. Aggressively seeking fleet grants to convert, purchase and implement air quality improvements to existing and future fleet assets;
- c. Analyzing other emission reduction strategies and reporting back to the City Council as additional information on fuel efficiency opportunities become affordable and available;
- d. Continuously working with the Sacramento Metropolitan Air Quality Management District (SMAQMD) on reducing air emissions from the City's fleet;
- e. Actively participating with the Clean Cities Coalition to stay abreast of new innovative ideas and be willing to utilize City equipment to demonstrate promising technologies
- f. Conforming to the City's fleet purchasing and fuel consumption goals except when no financially viable alternative option is available.
- g. Expand alternative fuels infrastructure availability to facilitate expansion of increased numbers of alternative fueled vehicles; and
- h. Annual purchases of Fleet replacement equipment will include a commitment of 30% for alternative fuel and/or alternatively powered vehicle replacements to reduce emissions and fossil fuel consumption

B. Low Emission Vehicle Acquisitions

- a. Purchase vehicles based on the actual type of use and need of a particular position classification based upon an established vehicle standard with an emphasis on purchasing units offering the greatest fuel economy and lowest emissions in its respective class.

- b. Continue to expand the use of vehicles using Liquefied Natural Gas (LNG) or other available clean fuel sources for trucks and heavy equipment.
- C. Fuel Consumption
- a. Reduce fuel consumption 15% from the 2003 levels by 2010 with an annual adjustment to the 2003 level to reflect the City's growing fleet operations.
 - b. Continue to reduce miles driven annually by fleet vehicles through decentralization of City operations.
- D. Vehicle Operations
- a. Promote reduced idling, trip reduction, routing for efficiency and use of public transportation to operating departments within the City.
 - b. Reduce fleet size by removing under utilized units from the fleet or through reassignment in place of additional units.
 - c. Add systems to vehicles and equipment to allow continued operation of warning lights with the engine off without compromising the ability to restart.
 - d. Reduce the number of overnight retention vehicles to only those as needed for valid on-call response.
- E. Cost Effectiveness and Performance
- a. Actively seek grants and other funding opportunities to use in implementing alternative fuel, fuel infrastructure and new technology into the Fleet.
 - b. Identify opportunities and the financial resources needed to replace older fleet equipment with certified low emission equipment.
 - c. Work with the City departments to develop an implementation plan for compliance of all existing diesel powered fleet equipment with the California Environmental Protection Agency Air Resource Board Fleet Rule for Public Agencies and Utilities by calendar year end 2015
- F. Monitoring and Reporting
- a. Incorporate the use of future technologies such as electronic monitoring devices such as global positioning systems (GPS) devices and vehicle identification boxes (VIBs)

- b. Each fiscal year fleet management shall:
 - i. ~~Prepare an inventory and report on all light, medium and heavy duty vehicles in the fleet that are active, the emission rating for each vehicle, the miles each vehicle was driven, a listing of all vehicles that are exempt from being a low emission vehicle, explanation of the reasons for each exemption and identification of all vehicles that were purchased during the reporting period;~~
 - ii. ~~Prepare a detailed report showing the emission rating for each active piece of off-road equipment in the fleet, the hours of operation of each piece of equipment; and the progress in obtaining the low emission fleet status; and~~
 - iii. A report of any other actions taken to support or enhance the City's Fleet Sustainability Policies.
- c. Enhance Fleet Management systems and implement new technology with emphasis on reducing fossil fuel consumption and "right sizing" the City fleet.

Exhibit B

Fleet Sustainability Policy

The City of Sacramento is committed to improving the Region's Air Quality by:

A. Emission Reduction

- d. Aggressively incorporating low-emission vehicles into fleet operations;
- e. Aggressively seeking fleet grants to convert, purchase and implement air quality improvements to existing and future fleet assets;
- f. Analyzing other emission reduction strategies and reporting back to the City Council as additional information on fuel efficiency opportunities become affordable and available;
- g. Continuously working with the Sacramento Metropolitan Air Quality Management District (SMAQMD) on reducing air emissions from the City's fleet;
- h. Actively participating with the Clean Cities Coalition to stay abreast of new innovative ideas and be willing to utilize City equipment to demonstrate promising technologies
- i. Conforming to the City's fleet purchasing and fuel consumption goals except when no financially viable alternative option is available.
- j. Expand alternative fuels infrastructure availability to facilitate expansion of increased numbers of alternative fueled vehicles; and
- k. Annual purchases of Fleet replacement equipment will include a commitment of 30% for alternative fuel and/or alternatively powered vehicle replacements to reduce emissions and fossil fuel consumption

G. Low Emission Vehicle Acquisitions

- a. Purchase vehicles based on the actual type of use and need of a particular position classification based upon an established vehicle standard with an emphasis on purchasing units offering the greatest fuel economy and lowest emissions in its respective class.
- b. Continue to expand the use of vehicles using Liquefied Natural Gas (LNG) or other available clean fuel sources for trucks and heavy equipment.

H. Fuel Consumption

- a. Reduce fuel consumption 15% from the 2003 levels by 2010 with an annual adjustment to the 2003 level to reflect the City's growing fleet operations.
- b. Continue to reduce miles driven annually by fleet vehicles through decentralization of City operations.

I. Vehicle Operations

- a. Promote reduced idling, trip reduction, routing for efficiency and use of public transportation to operating departments within the City.
- b. Reduce fleet size by removing under utilized units from the fleet or through reassignment in place of additional units.
- c. Add systems to vehicles and equipment to allow continued operation of warning lights with the engine off without compromising the ability to restart.
- d. Reduce the number of overnight retention vehicles to only those as needed for valid on-call response.

J. Cost Effectiveness and Performance

- a. Actively seek grants and other funding opportunities to use in implementing alternative fuel, fuel infrastructure and new technology into the Fleet.
- b. Identify opportunities and the financial resources needed to replace older fleet equipment with certified low emission equipment.
- c. Work with the City departments to develop an implementation plan for compliance of all existing diesel powered fleet equipment with the California Environmental Protection Agency Air Resource Board Fleet Rule for Public Agencies and Utilities by calendar year end 2015

K. Monitoring and Reporting

- a. Incorporate the use of future technologies such as electronic monitoring devices such as global positioning systems (GPS) devices and vehicle identification boxes (VIBs)
- b. Each fiscal year fleet management shall:

- i. Prepare an inventory report on all vehicles in the fleet that are active and provide a summary of the following: vehicle purchases for the prior two fiscal years by fuel type as well as the amount paid; total fuel used by fuel type with associated greenhouse gas scores for the past six fiscal years; growth of the fleet over the past six fiscal years and the miles driven.
 - ii. A report of any other actions taken to support or enhance the City's Fleet Sustainability Policies.
- c. Enhance Fleet Management systems and implement new technology with emphasis on reducing fossil fuel consumption and "right sizing" the City fleet.