



# REPORT TO COUNCIL

## City of Sacramento

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www.CityofSacramento.org

CONSENT  
January 27, 2009

Honorable Mayor and  
Members of the City Council

**Title: Amendment: Fleet Sustainability Policies**

**Location/Council District:** Citywide

**Recommendation:** Adopt a **Resolution** approving an amendment to the Fleet Sustainability Policy regarding emission reduction and monitoring and reporting.

**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.

In addition, staff is recommending an amendment to the Fleet Sustainability Policy (Exhibit A) in an effort to address new technologies and ensure that the City's fleet purchasing and fuel consumption policies are current,

Emission Reductions

In 2008, City Council authorized the accelerated replacement of 22 diesel refuse trucks with LNG powered trucks. By accelerating the replacement of the 22 older diesel trucks, the City will reduce emissions and contribute to improved air quality immediately. It is estimated that annual nitrous oxide (NOx) emissions produced by the 22 new LNG refuse trucks, will be eight metric tons less than the older diesels they are replacing. This will result in an estimated 56 ton reduction in

NOx emissions and an eight ton reduction in particulate matter (PM) emissions over the seven year life cycle of the refuse trucks.

Low Emission Vehicle Acquisitions

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 4 provides information on vehicles purchased during FY2006/07 and FY2007/08.

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% from 2003 levels by FY2010 with an annual adjustment to the 2003 level to reflect the City's growing fleet operations. When adjusted for growth, the City is on target to meet the fuel consumption reduction goal by FY2009/10 as shown in Attachment 3.

To assist City departments in meeting the fuel consumption reduction goal, Fleet Management is committed to lowering fuel consumption by providing technological tools such as global positioning systems (GPS) monitoring systems, automated fuel interface systems, and statistical reports from the Fleet Management system for departments to more closely monitor fleet usage.

Vehicle Operations

The City fleet consists of 1,959 licensed, fuel-powered vehicles. The following table provides an itemization of this total by vehicle fuel type. On average, these vehicles travel about 19 million miles annually consuming approximately two million gallons of fossil fuel and 200,000 gallons of liquefied natural gas (LNG).

Vehicle Fuel Type	Number of Vehicles
Unleaded gasoline	1,322
Diesel	422
E85*	75
LNG	63
Hybrid	33
Propane	22
Electric	19
Compressed natural gas	3
Total	1,959

\*85% ethanol/15% unleaded gasoline

### Cost Effectiveness and Performance

Fleet Management has been partnering with its customers (City departments) for the past five years to provide annual customer service agreements. These agreements provide Fleet customers with Fleet's goals as a comprehensive fleet operation and share the fleet billing model, hourly rates, and services provided. Each customer service agreement includes the prior year's billing and vehicle purchases, the current vehicle inventory, the following year's vehicle replacement budget, and a list of potentially under utilized vehicles.

On a quarterly basis, Fleet Management holds its Fleet Advisory Board meetings. These meetings maintain open communication between Fleet Management and its customers, and provide an opportunity for Fleet Management to share successes, and inform and educate customers about upcoming mandates, grant opportunities, and new technology.

### Monitoring and Reporting

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

During FY2007/08, a pilot GPS implementation on eleven Animal Care Service vehicles resulted in a 20% reduction in fuel consumption and related expenditures by providing staff with data to understand the impact of behavioral decisions in driving (such as idling and speeding) as well as providing efficient routes to the driver.

During FY2008/09, Fleet Management will conduct a pilot program to test the effectiveness and functionality of an electronic vehicle inspection and GPS system. This system will provide a verified State of California Department of Transportation required daily vehicle inspection process and will automate the record keeping process to satisfy California Highway Patrol requirements. The system also provides valuable GPS information similar to that obtained during the GPS pilot for Animal Care Services. The test group will be comprised of approximately 91 vehicles from divisions such as Solid Waste, Water Distribution, Urban Forest Services, Street Maintenance, Code Enforcement, Parking Enforcement, and Development Services.

During FY 2008/09, Fleet Management has been testing an automated web enabled car sharing and motor pool software program. Currently, there are approximately 20 vehicles installed with this software system. This system is capable of creating an internal car sharing system to help "right size" the Fleet and manage motor pool operations.

**Policy Considerations:** The recommended amendment to 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 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 continues to work with City departments to reach the target fuel consumption reduction goal of 15 percent from the FY2002/03 levels by FY2009/10. In efforts toward this goal, all vehicle and equipment purchases will include the exploration and analysis of possibilities for more fuel efficient, lower emission or alternatively powered options such as LNG, propane, E85, 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 GPS and electronic work order system implementation will begin in FY2008/09 to assist Fleet Management in tracking and reducing idle times, miles per gallon, engine problems and trip distances.

**Rationale for Recommendation:** Fleet Management recommends City Council conceptual approval contingent on future fund availability in achieving energy efficient transportation by adding the following to the Fleet Sustainability Policy:

- Expand alternative fuels infrastructure availability to facilitate expansion of increased numbers of alternative fueled vehicles
- 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
- Enhance Fleet Management systems and implement new technology with emphasis on reducing fossil fuel consumption and "right sizing" the City fleet

**Financial Considerations:**

During FY2006/07 and FY2007/08, Fleet Management purchased 546 vehicles for approximately \$24.2 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, the Department of General Services, Fleet Management Division

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. Additional budget appropriations of between \$1 million to \$1.5 million annually would be needed to fund the incremental costs of purchasing alternative fuel and hybrid vehicles and fueling infrastructure. In the current budget climate, such financial commitments are not available. Therefore, any increased incremental 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.

Other potential sources of funding for the proposed initiatives which Fleet Management continues to pursue include:

- Reinvest and/or leverage fuel budgetary savings by debt financing
- Cost avoidance of State of California Air Resource Board mandated particulate trap retrofits
- AB118 Grant Funds
- Department of Energy Alternative Fuel Tax Credit refunds
- Carl Moyer Grant Funds
- Congestion Mitigation and Air Quality (CMAQ) Grant Funds

**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:

*Don*   
Ray Kerridge  
City Manager

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**Attachment 1**Background on Emissions Data

The California Low Emission Vehicle (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. A number of other states also use the same restrictions as California. These include Maine, Massachusetts, New York, Oregon, Vermont and Washington. Collectively, these states are referred to as California Air Resources Board (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 displayed below.

Major emission categories:

- LEV – Low Emission Vehicle
- LEV II – Replaced the LEV Program with even cleaner emissions standards
- ULEV – Ultra Low Emission Vehicle
- ULEV II – Even cleaner emissions standards than ULEV
- 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 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 1999-2002 – 4.0 g/bhp-hr
- Model Years 2003-2006 – 2.5 g/bhp-hr
- Model Year 2007-2009 – 1.3 g/bhp-hr

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

- Model Years           Prior to 2004 – 2.5 g/bhp-hr
- Model Years           2004-2006 – 1.8 g/bhp-hr
- Model Years           2007-2009 – 0.2 g/bhp-hr

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.

**Attachment 2**

**Summary of Vehicles Purchased**  
**By Fuel Type**

Fuel Type	FY2006/07				FY2007/08			
	Count	% of Count	Purchase \$	% of \$	Count	% of Count	Purchase \$	% of \$
Diesel	35	17%	\$ 3,473,291	41%	69	20%	\$ 8,134,809	52%
Unleaded	152	73%	\$ 3,642,496	43%	209	62%	\$ 5,575,249	36%
Hybrids (unleaded)	10	5%	\$ 288,307	3%	12	4%	\$ 303,478	3%
LNG	5	2%	\$ 940,642	11%	4	1%	\$ 440,953	3%
E85	5	2%	\$ 116,585	1%	44	13%	\$ 1,234,861	8%
Propane	1	1%	\$30,755	1%	0	0%	\$ 0.00	0%
<b>Total</b>	<b>208</b>	<b>100%</b>	<b>\$8,492,076</b>	<b>100%</b>	<b>338</b>	<b>100%</b>	<b>\$15,689,350</b>	<b>100%</b>

**Attachment 3**

**Fuel Consumption**

Year	FY2003/04	FY2004/05	FY2005/06	FY2006/07	FY2007/08
2010 Goal (adjusted)*	1,937,674	2,062,796	2,094,938	2,172,996	2,248,758
Fuel Used	2,094,204	2,185,560	2,212,051	2,054,133	2,072,642
Difference	156,530	122,764	117,133	-118,863	-176,116
Variance	-23%	-21%	-21%	-10%	-7%
Variance from 2010 15% goal	8%	6%	6%	-5%	-8%
<b>Related Data</b>					
<b>Growth of Fleet</b>					
Year	FY2003/04	FY2004/05	FY2005/06	FY2006/07	FY2007/08
2003 Base	1,569	1,569	1,569	1,569	1,569
Unit Count	1,688	1,797	1,825	1,893	1,959
Difference	119	228	256	324	390
Variance from base	8%	15%	16%	21%	25%
<b>Miles Driven</b>					
Year	FY2003/04	FY2004/05	FY2005/06	FY2006/07	FY2007/08
2003 Base	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
Difference	272,932	427,578	998,326	1,779,932	2,177,343
Variance from goal	9%	17%	22%	31%	37%

\*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.

**Attachment 4**

**Composition of Fleet Purchases  
By Emissions Rating**

FUEL TYPE	Emission Rating	2007		2008		Total Count	Total %
		Count	%	Count	%		
DIESEL	TIER II/Off Road 1.3 g/bhp-hr	2	0.96%	11	3.25%	13	2.38%
		33	15.87%	58	17.16%	91	16.67%
DIESEL Total		35	16.83%	69	20.41%	104	19.05%
E85	ULEV II	5	2.40%	44	13.02%	49	8.97%
E85 Total		5	2.40%	44	13.02%	49	8.97%
HYBRID/ALT. FUEL	PZEV	10	4.81%	12	3.55%	22	4.03%
HYBRID/ALT. FUEL Total		10	4.81%	12	3.55%	22	4.03%
LNG	.02 g/bhp-hr	5	2.40%	4	1.18%	9	1.65%
LNG Total		5	2.40%	4	1.18%	9	1.65%
PROPANE	TIER I	1	0.48%		0.00%	1	0.18%
PROPANE Total		1	0.48%		0.00%	1	0.18%
UNLEADED	LEV	11	5.29%		0.00%	11	2.01%
	LEV II	34	16.35%	125	36.98%	159	29.12%
	PZEV	35	16.83%	22	6.51%	57	10.44%
	SULEV II	1	0.48%		0.00%	1	0.18%
	SULV II	1	0.48%		0.00%	1	0.18%
	ULEV	62	29.81%	15	4.44%	77	14.10%
	ULEV II	8	3.85%	47	13.91%	55	10.07%
UNLEADED Total		152	73.08%	209	61.83%	361	66.12%
Grand Total		208	100.00%	338	100.00%	546	100.00%

**RESOLUTION NO. 2009-XXXX**

Adopted by the Sacramento City Council

**January 27, 2009**

**APPROVING THE AMENDMENT TO 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 problems.
- 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. In an effort to address new technologies and ensure that the City's fleet purchasing and fuel consumption policies are current, staff is recommending an amendment to the Fleet Sustainability Policy (Exhibit A).

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

- Section 1. Section A "Emission Reduction" of the Fleet Sustainability Policy is hereby amended to include the following subsections:
  - g. Expand alternative fuels infrastructure availability to facilitate expansion of increased numbers of alternative fueled vehicles
  - 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
- Section 2. Section F "Monitoring and Reporting" of the Fleet Sustainability Policy is hereby amended to include the following subsection:

- c. Enhance Fleet Management systems and implement new technology with emphasis on reducing fossil fuel consumption and “right sizing” the City fleet.

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**Exhibit A****Fleet Sustainability Policy**

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.