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**DEPARTMENT OF
PUBLIC WORKS**

MAINTENANCE SERVICES
DIVISION

**CITY OF SACRAMENTO
CALIFORNIA**

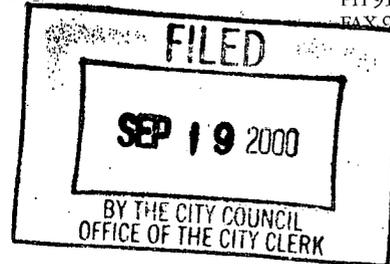
September 8, 2000

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City Council
Sacramento, California

Honorable Members In Session:



**SUBJECT: ESTABLISHMENT OF CITY/COUNTY LOW EMISSION VEHICLE (LEV)
ACQUISITION GUIDELINES**

LOCATION AND COUNCIL DISTRICT: All Districts

RECOMMENDATION:

This report recommends that Council adopt the proposed City/County Low Emission Vehicle (LEV) Acquisition Guidelines (Exhibit A). The same guidelines will be put before the County Board of Supervisors by County staff for consideration and recommended adoption.

COUNCIL CONTACT: Gene Moore, Maintenance Services Division Manager 433-6319
Bob Summersett, Fleet Management Superintendent 433-6309

FOR COUNCIL MEETING OF: September 19, 2000

SUMMARY:

This report recommends guidelines for City/County acquisition of low emission vehicles (LEVs) and related technology. These guidelines build upon the City/County Heavy-Duty LEV Acquisition Policy, adopted by both the City Council and the County Board of Supervisors in October, 1999.

COMMITTEE/COMMISSION ACTION:

None.

BACKGROUND INFORMATION:

In recognition of the tremendous importance of emissions reduction to our region in terms of livability, health, economic, and other benefits, the City and County of Sacramento jointly adopted a Heavy Duty Low Emission Vehicle Acquisition Policy in October, 1999 (see Attachment A). The intent of the policy is to help reduce NOx emissions from the City and County's heavy-duty vehicle fleets and thus help the region meet the year 2002 and 2005 standards for ozone in the Sacramento Federal Ozone non-attainment area.

The policy includes a commitment by the City and County to serve as community leaders in demonstrating how organizations can overcome training, facility, and operational issues to aggressively and successfully incorporate low-emission vehicles into fleet operations. The City fleet has a current inventory of 1,566 vehicles, including 400 trucks which meet the Sacramento Metropolitan Air Quality Management District's definition of heavy-duty truck (57 of these heavy-duty trucks are emergency response vehicles, including fire engines, fire trucks, and other fire apparatus). LEVs already within the City fleet currently include two heavy-duty side loader refuse trucks, three Honda Civic Ultra low emission sedans, and five Toyota RAV electric zero emission vehicles.

The policy calls for 20 percent of the heavy-duty units replaced in 2001 to be replaced with LEVs, increasing to 50 percent of the heavy-duty units replaced in 2004. Other opportunities for air quality improvements in light-duty and off-road fleets are to be pursued as well. The City of Sacramento has exceeded the 20 percent replacement goal at this time. In fact, 33 percent of the heavy-duty units scheduled for replacement will be replaced with low-emission vehicles, currently on order.

In order to continue to meet the requirements of the acquisition policy and reach additional air quality improvement milestones, staff has developed a set of guidelines which, if adopted, will govern future LEV acquisitions. Although these proposed guidelines are tailored to LEV heavy-duty vehicle acquisitions, they also apply and would be used to guide all LEV fleet purchases. The recommended guidelines (contained in detail in Exhibit A) were developed based on the following principles and considerations:

Public safety. LEVs represent an emerging technology and as such, their long-term reliability cannot yet be measured. The City's fleet of emergency response vehicles provides critical and often life-saving support for residents and visitors, and must be extremely dependable at all times. For this reason, staff believes that in the interest of public safety, emergency response vehicles should not be considered at this time for LEV replacement.

Emissions reduction. All LEVs purchased by the City must be certified by the California Air Resources Board (CARB). LEV and fuel purchases will be evaluated based on their proven ability to contribute to emissions reduction. Consideration will be given to the ratio of emission reduction per dollar spent. Fuels to be considered include compressed natural gas (CNG), liquefied natural gas (LNG), low sulfur diesel, emulsified fuels, methanol, and electricity.

Vehicle usage. High-use vehicles will be given special consideration for LEV replacement as they have the most potential to contribute significantly to overall emissions reduction. Refuse, dump, and service trucks within the City fleet are examples of vehicles with high usage. These types of vehicles (particularly solid waste collection trucks) often also make frequent trips through high-density residential areas, another important reason to find ways to reduce their emissions.

Functionality. Basic functionality is, obviously, essential. The City's internal and external customers must be able to continue to depend on the services the City's fleet and its operators provide. Due to limited makes and models of LEVs at this time, however, staff recognizes that it is not always reasonable to expect the exact, preferred configurations to which operators may be accustomed. Staff believes that as long as the vehicle meets basic functional design, then the environmental benefits of LEV utilization outweigh the necessity to conform to all existing expectations and/or configurations.

Redundancy. Specialized, one-of-a-kind vehicles will not be targeted for LEV replacement due to cost and workload impact considerations should the vehicle break down. Instead, target vehicles will be those with sufficient redundancy within the fleet to assure seamless service to customers. Again, refuse, dump, and service trucks within the City fleet are examples of vehicles with adequate spare units available.

Availability of related infrastructure, fuel, and mechanical support services. LEV infrastructure must be able to be accommodated and serviced within City maintenance shops. Adequate refueling stations must be available within the City fleet service area. LEV purchases should be made only from manufacturers who can offer and consistently provide excellent and reliable product support, warranties, parts, and service.

Cost. LEVs are currently more expensive than traditional gasoline- or diesel-powered vehicles. As an example, a typical solid waste rear loader currently costs approximately \$140,000. The LEV equivalent costs \$173,400. Depending on the particular engine, this difference can be even greater. Staff believes that the City's commitment to clean air (as well as potential life cycle costs and/or savings) make some additional expense acceptable. Each potential LEV purchase will be evaluated based on a ratio of dollars spent versus estimated emissions reduction achieved.

FINANCIAL CONSIDERATIONS:

LEV equipment purchases that are made as part of the regular vehicle replacement program may result in additional costs to the City. Due to the uncertainties related to reliability of LEV equipment, the City may incur higher costs related to operational down time, shorter equipment life cycles, and increased requirements for spare equipment units. Further, ongoing LEV operational costs may increase due to higher fuel, maintenance, and repair costs. This may result in higher fleet rental rates passed on to user departments, resulting in increased

program costs to the City. The purchase price of LEV equipment is estimated to be 30 to 50 percent higher than that of non-LEV equipment. It is anticipated that pursuing grant opportunities and adopting the recommended guidelines with cost/benefit criteria will minimize future budgetary impacts.

ENVIRONMENTAL CONSIDERATIONS:

The continuing goal of the City of Sacramento is to be a community leader in emission reduction efforts. We will do our fair share to implement the region's air quality plan by reducing NOx emissions from our heavy-duty vehicle fleet and to meet the year 2002 and 2005 standards for ozone in the Sacramento Federal Ozone Non-Attainment Area.

To maximize purchasing power for environmentally friendly replacements for diesel-powered, heavy-duty vehicles, the City and the County are working to develop common equipment specifications and plan to seek a common bid when procuring these vehicles. Adoption of the recommended guidelines will further that cooperative effort.

POLICY CONSIDERATIONS:

The recommended Low Emission Vehicle Acquisition Guidelines are consistent with, and compliment, the City/County Heavy-Duty Low Emission (LEV) Acquisition Policy approved by Council on October 5, 1999.

As stated earlier, both the County Board of Supervisors and the Sacramento City Council will consider adoption of the City/County Low Emission Vehicle Acquisition Guidelines. Working together, the two agencies can make significant progress in the region's efforts to meet air quality standards in the Non-Attainment Area.

ESBD CONSIDERATIONS:

This report does not involve the purchase of goods or services.

Respectfully submitted,



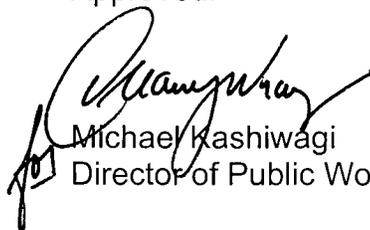
For: Gene Moore
Maintenance Services Manager

RECOMMENDATION APPROVED:

Approved:



ROBERT P. THOMAS
City Manager



Michael Kashiwagi
Director of Public Works

PROPOSED

City of Sacramento/County of Sacramento

Low Emission Vehicle (LEV) Acquisition Guidelines

- **Certification:** All LEVs purchased by the City must be certified by the California Air Resources Board (CARB).
- **Functionality:** Basic functionality is essential. Due to limited makes and models of LEVs at this time, it is not always reasonable to expect the exact preferred configuration to which operators may be accustomed. If the vehicle meets the basic functional design, environmental benefits should outweigh the necessity to meet existing operational standards.
- **Replacement Schedule:**
 - LEVs will be added to the City/County fleet at currently scheduled vehicle replacement times.
 - Accelerated replacement will be considered only if funding is available and if the LEV replacement under consideration is industry-proven to significantly reduce emissions.
- **Public Safety Concerns:** Emergency response vehicles will not be considered for LEV replacement due to the uncertainty of LEV long-term reliability and potential problems with fueling infrastructure and fuel availability. Consideration will be given to amending these guidelines to remove this restriction if/when present uncertainties are resolved and vehicle dependability can be assured.
- **Cost considerations:**
 - LEVs at this time are typically more expensive than traditional gasoline or diesel vehicles. The value of NOx reductions per dollar spent will be considered in evaluating proposed purchases.
 - Potential life cycle costs and/or savings, and support for clean air, make some additional expense acceptable. Many LEVs are excessively priced and are not cost effective for the amount of emission reduction provided.
 - High use vehicles will be given special consideration for low emission technology or LEV replacement given the total NOx emissions these vehicles produce per year compared with light use vehicles.

- Availability of special funding (including grants) will be pursued. Parameters governing the special funds may supercede the guidelines presented here for those specially funded acquisitions.
- **Operational considerations**
 - Infrastructure: Maintenance Shops must be properly designed and equipped
 - Staffing: Technicians must have sufficient training to provide ongoing maintenance.
 - Manufacturer's Support: Adequate supplies of parts and timely service must be available.
 - Fuel availability: Adequate refueling stations must be available in the service area.
 - Redundancy: Until LEV technology is more proven, it is essential that a sufficient number of spare vehicles be retained for back up to be used during unexpected down times. Therefore LEV replacement will not normally be considered for any one-of-a-kind vehicles.
- **Fuel Considerations:**

Potential emission reductions will be fully considered when alternative fuels are evaluated. All fuels will be considered and evaluated based on expected benefits to the environment, including reduced emissions (NOx). Alternative fuels to be considered include compressed natural gas (CNG), liquefied natural gas (LNG), low sulfur diesel, emulsified fuels, methanol and electricity.
- **Service Availability/Reliability:**
 - Purchases of LEVs should be from a manufacturer who can provide excellent product support, warranty, parts, and service.
 - Prototypes will be considered only on a limited test basis. Manufacturers with many similar units can offer the support and dependability that is needed in City/County fleet environment.
 - The City/County will offer proactive support for the practical test of experimental products in alliance with reputable agencies such as the Sacramento Metropolitan Air Quality Management District or the California Air Resource Board. This support will be done on a limited basis, in recognition of the financial risk involved.
- **Other Alternatives:** Consideration should be given to other emission reducing technologies in addition to vehicle replacement.
 - Engine Replacement
 - Alternative fuels: reformulated gasoline, low sulfur diesel, battery, emulsion fuels
 - Catalytic Converters and other add-on devices

Purchases of alternate technologies will follow applicable guidelines.

RESOLUTION NO. 99-565

ADOPTED BY THE SACRAMENTO CITY COUNCIL

ON DATE OF OCT 05 1999

**RESOLUTION APPROVING THE CITY OF SACRAMENTO/COUNTY OF
SACRAMENTO HEAVY-DUTY LOW-EMISSION VEHICLE (LEV)
ACQUISITION POLICY**

WHEREAS, the City Council (the "Council") of the City of Sacramento (the "City") recognizes that the region has an air quality problem related to the heavy-duty vehicles; and

WHEREAS, the Council recognizes that public agencies in the City operate large vehicle fleets which have significant numbers of heavy-duty vehicles, and

WHEREAS, the Council recognizes that public agencies have a significant role to play in improving air quality by reducing the emissions from their fleet operations, especially their heavy-duty vehicles; and

WHEREAS, the Council is committed to doing our fair share to implement the region's air quality plan by reducing oxides of nitrogen (NOx) emissions from our heavy-duty fleet to meet the year 2005 standard for ozone in the Sacramento Federal Ozone Non-attainment Area.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO THAT:

1. The Council finds that the above recitals are true and correct.
2. The Council hereby approves the attached City of Sacramento/County of Sacramento Heavy-Duty Low-Emission Vehicle (LEV) Acquisition Policy.


MAYOR

ATTEST:



CITY CLERK

FOR CITY CLERK USE ONLY

RESOLUTION NO.: 99-565

DATE ADOPTED: OCT 05 1999

City of Sacramento/County of Sacramento Heavy-Duty Low-Emission Vehicle (LEV) Acquisition Policy

Policy Goal The City and County of Sacramento are committed to doing our fair share to implement the region's air quality plan by reducing oxides of nitrogen (NO_x) emissions from our heavy-duty fleet to meet the year 2005 standard for ozone in the Sacramento Federal Ozone Non-attainment Area.

Foundational Statement We recognize that the region has an air quality problem which is related to vehicle operations, especially the operation of heavy-duty vehicles;

We recognize that public agencies in Sacramento County operate large vehicle fleets which have significant numbers of heavy-duty vehicles;

We recognize that public agencies have a significant role to play in improving air quality by reducing the emissions from their fleet operations, especially their heavy-duty vehicles.

Commitment Commit to being a community leader by:

- Showing how fleets can aggressively incorporate low-emission vehicles into fleet operations;
- Showing how fleets can overcome training, facility and operational issues with resolve and commitment.

Our efforts will focus on the conversion of the on-road, heavy-duty equipment fleets to certified low-emission vehicles as these vehicles are replaced as part of our regular systematic replacement programs.

We are committed to the following replacement schedule for our heavy-duty vehicles with certified low-emission heavy-duty vehicles:

- A minimum of 20% of all replacements in 2001 will be certified low-emission;
- A minimum of 30% of all replacements in 2002 will be certified low-emission;
- A minimum of 40% of all replacements in 2003 will be certified low-emission;
- A minimum of 50% of all replacements in 2004 and thereafter will be certified low-emission.

We will pursue grant and other sources of funding for the provision of alternative fuel facilities.

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We will pursue grant and other funding sources, excluding general purpose regional transportation funds, in order to fund any incremental increased costs of the low-emission heavy-duty vehicle conversion program.

We will continue to analyze other emission reduction strategies on an on-going basis.

We will continue to consult with the Air District about all types of ways to reduce emissions from on-road and off-road vehicles as well as passenger cars and light duty trucks.

**Performance &
Cost as Issues**

We recognize that both performance and cost are issues and that accommodations will be required to make low-emission vehicles work.

We affirm that these issues will be addressed and managed and not used as roadblocks to the introduction of low-emission vehicles into the fleet.

We recognize that implementation of these policies may result in a need to increase user fees and/or service charges for the operations served by the low-emission vehicles which are incorporated in the fleets.

Cost-effectiveness

The maximum air quality benefit for dollars invested will be through the introduction of heavy-duty low-emission vehicles. While this should not be the exclusive focus, it should be the primary focus.

**Monitoring and
Reporting**

The heavy-duty replacement schedule outlined above will be monitored by staff and periodic progress reports will be presented to the Board of Supervisors and the City Council. These reports will also include a discussion of emerging low emission vehicle issues.

The Air District will quantify and use these emissions benefits towards meeting the region's attainment plan.

RESOLUTION NO. 99-565
DATE ADOPTED: OCT 05 1999

OFFICE OF THE
CITY MANAGER

CITY OF SACRAMENTO
CALIFORNIA

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June 9, 1999

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Steve Cohn, Chairman
Sacramento Transportation Authority

SUBJECT: SMAQMD - HEAVY-DUTY LOW-EMISSION VEHICLE CMAQ REQUEST

Dear Chairman Cohn:

On June 10, the Sacramento Transportation Authority will be asked to make funding decisions regarding the Transportation Equity Act for the 21st Century (TEA-21). As part of the project nomination process, SMAQMD requested \$8,853,000 for heavy-duty low-emission vehicle incentives and infrastructure. We do not support this request at the funding level proposed by SMAQMD.

Much of the money requested by SMAQMD is targeted towards public agency heavy-duty fleet which, for the City and County of Sacramento, represents vehicles and equipment used in support of Enterprise and other non-General Funded activities. Our position is based upon our belief that TEA-21 funding should be allocated to address countywide transportation needs versus subsidizing Enterprise functions. We will, however, continue to partner with SMAQMD to aggressively pursue viable alternative fuel opportunities as we all work together to implement strategies to improve air quality in the Sacramento region.

In addition, we are prepared to move forward to develop policy recommendations for consideration by the Sacramento City Council and Board of Supervisors to guide future direction and decisions regarding initiatives to effect regional air quality improvements. The recommended policy will be developed around the principles that:

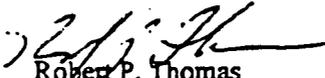
- Sacramento County and all cities within its border will equally and equitably commit to funding alternate fuel fleet conversions
- Alternate fuel heavy-duty fleet investments will be funded by the individual public entities vs general purpose regional transportation funds
- General purpose regional transportation funds will be targeted to fund alternate fuel infrastructure required to support low-emission fleet investments and to support pilot activities regarding heavy-duty equipment
- Fleet conversions will be based upon the availability and reliability of alternate fuel technologies
- Conversion activities will be conducted in accordance with a systematic replacement schedule responsive to business needs

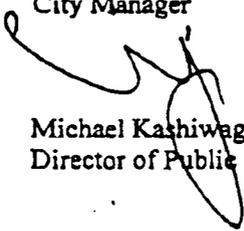
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DATE ADOPTED: OCT 05 1999

June 9, 1999
SMAQMD
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We believe our position provides an alternative approach to low-emission technology investments. We also believe our approach provides increased options and capacity for the Sacramento Transportation Authority to fund high-priority transportation system improvements identified for the Sacramento Region. Thank you for your consideration.

Sincerely,


Robert P. Thomas
City Manager


Michael Kashiwagi
Director of Public Works


Terry Schutten
County Executive


Warren H. Harada
Administrator, Public Works Agency

c: Norm Covell, Air Pollution Control Officer
Sacramento Air Quality Management District
Brian Williams, Executive Director
Sacramento Transportation Authority

RESOLUTION NO. 99-565
DATE ADOPTED: OCT-05-1999