

**State of California  
California Environmental Protection Agency  
AIR RESOURCES BOARD**

**2006  
LOWER-EMISSION SCHOOL BUS PROGRAM  
GUIDELINES**



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## Lower-Emission School Bus Program Guidelines – 2006

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# **I. INTRODUCTION AND SUMMARY**

## **A. Introduction**

The State Legislature has appropriated \$25 million in the 2005-2006 fiscal year (FY) budget to the California Air Resources Board (ARB or Board) for the Lower-Emission School Bus Program. The primary goal of the Lower-Emission School Bus Program is to reduce school children's exposure to both cancer-causing and smog-forming pollution. The program will provide grants to school districts to reduce harmful emissions from school buses in two ways: 1) to purchase new school buses to replace older, high-emitting buses; and 2) to retrofit in-use diesel school buses with ARB-verified emission control strategies. The \$25 million allocated in the 2005-2006 FY State budget is divided equally between the two program components.

This document, the Lower-Emission School Bus Program Guidelines (Guidelines), provides the protocols for use by the California Energy Commission (CEC) and the local air pollution control and air quality management districts in implementing the program with 2005-2006 fiscal year State budget funds. It also provides the protocols applicable to other funds for lower-emission school bus projects, such as Assembly Bill 923 (AB 923; Stats. 2004, Ch. 707) funds or other funding sources (e.g., local district funds; motor vehicle registration fee surcharge funds).

## **B. Summary of the Program**

The Lower-Emission School Bus Program was established in the 2000-2001 FY with an allocation of \$50 million through the State budget process. The program received an additional \$16 million for the 2001-2002 FY. In the following two years, the program received nearly another \$10 million from Proposition 40 funds, the voter-approved initiative to conserve natural resources and improve state and local parks. State funds for the first four years of the program have totaled nearly \$76 million. Of these State funds, nearly \$60 million has been used to replace over 500 pre-1987 model year buses and \$16.5 million has been used to retrofit about 3,000 in-use diesel buses with emission control devices that reduce particulate matter (PM) emissions.

### **1. Administering Agencies**

Some larger local air districts will directly administer the State new bus purchase funds in their own regions. The CEC shall administer the remainder of the funds. The retrofit funds shall be administered by local air districts that choose to participate. The agency administering the funds, either CEC or a local air district, will be referred to as the "administering agency."

### **2. Funding Sources and Associated Allocation Requirements**

These Guidelines provide guidance for both the expenditure of the 2005-2006 FY State budget funds appropriated by the State Legislature and for other sources of funding for Lower-Emission School Bus projects. The 2005-2006 FY State budget funds are

subject to constraints specified by the budget language that do not apply to other sources of funding. The Guidelines note where these constraints are specific to 2005-2006 FY State budget funding and provide more general guidance for other sources of funding.

(a) 2005-2006 FY State Budget Allocation

The State Legislature has appropriated \$25 million for the Lower-Emission School Bus Program in the 2005-2006 FY. Half of the funding is to be used for new school bus purchases and half for in-use diesel bus retrofits. The ARB has been directed to allocate the 2005-2006 FY State budget new bus purchase funds to replace pre-1977 model year school buses, in order of oldest bus first. This allocation method provides for selected buses (listed in Appendix A) to be replaced, oldest first, until the funds are exhausted. Appendix A includes a list of the oldest school buses in California, as determined by the data base from the California Highway Patrol (CHP) school bus safety certification program. A phone survey conducted by ARB staff verified that these buses were still actively in use in school bus fleets. Current funding is not sufficient to replace all of the buses on the list.

The ARB will allocate the retrofit funding to air districts throughout California on a per capita basis. The 2005-2006 FY State budget language is specific regarding the technologies to be funded by the retrofit portion of the funds. According to the budget language (Senate Bill 77, Stats. 2005, Ch. 38), the funded technologies shall reduce particulate matter emissions by at least 85 percent and produce the lowest possible nitrogen dioxide (NO<sub>2</sub>) across the device. Additionally, the budget language includes other less specific requirements. Section IV of this document provides compliance requirements for the retrofit component of the program.

(b) Assembly Bill 923 Funds

Funds provided through AB 923 are another possible source of new school bus purchase funding. This legislation has provided a mechanism for air districts to increase the motor vehicle registration fee surcharge from four dollars to six dollars. The additional two dollar surcharge may be used by air districts for a number of clean air projects including the new purchase of school buses pursuant to these Lower-Emission School Bus Program Guidelines.

(c) Assembly Bill 2766 Funds

Revenues collected from the first four dollars of the motor vehicle registration fee surcharge, authorized by the passage of Assembly Bill 2766 (AB 2776: Stats. 1990, Ch. 1705), are to be used for the reduction of air pollution from vehicles. These revenues may be used by air districts to fund the replacement of on-board fuel tanks on school buses operating on compressed natural gas (CNG). The Department of Transportation requires, per title 49 Code of Federal Regulations (CFR) Part 571.304, that these tanks be visually inspected every three years or 36,000 miles, and not used after the end of the manufacturer's recommended service life, typically 15 years.

(d) Local District Funds

Local air district funds (such as AB 923 and AB 2766 funds) available for new school bus purchases or retrofits for in-use diesel buses are not subject to the constraints of the budget language for the 2005-2006 FY State budget funding. However, ARB recommends that retrofit funds be used to purchase the highest level of ARB-verified technology possible that is applicable to the engine and the associated bus route.

(e) Future State Budget Funds

Future State budget funds shall be spent in accordance with the criteria in the appropriation bill.

**C. Program Status**

Over 500 pre-1987 model year school buses have been replaced with new, lower-emitting buses and about 3,000 in-use diesel buses have been equipped with ARB-verified retrofit devices during the first four years of the program using State funds. With the \$25 million in funding for the 2005-2006 fiscal year, approximately 90 more new buses will be purchased to replace pre-1977 model year buses and nearly 1,000 more in-use diesel buses will be equipped with ARB-verified in-use diesel retrofit devices. The most recent data from the CHP school bus safety certification program, cross checked by ARB staff through a phone survey of school districts, indicate that about 300 school buses manufactured before 1977 remain in the current public school bus fleet.

**D. Timetables for the 2005-2006 FY State Budget Funding**

Timetables for the two components of the Lower-Emission School Bus Program are shown below in Table 1 and Table 2. Dates shown are the final dates for execution of the designated activities related to the 2005-2006 FY State budget funding.

<b>Table 1 Lower-Emission School Bus Replacement Program Timetable</b>	
February 23, 2006	Board acts on allocation plan and proposed guidelines
March – June 2006	Funding grant agreements to local air districts and CEC
August 1, 2007	New buses delivered and infrastructure completed
December 31, 2007	Final reports due to ARB

<b>Table 2 Lower-Emission School Bus Retrofit Program Timetable</b>	
October 27, 2005	Retrofit funding grant agreements to larger air districts for 90% of retrofit funds
February 23, 2006	Board acts on allocation plan and guidelines
March 31, 2006	Smaller air districts apply to ARB to participate
May - June, 2006	Remainder of grant agreements finalized
June 30, 2007	Air districts obligate all retrofit funds
September 30, 2008	Final reports to ARB on use of funds

## II. ADMINISTRATION OF LOWER-EMISSION SCHOOL BUS PROGRAM

### A. Funding Agreements/Awards to Administering Agencies

#### 1. New School Bus Purchase Funds

The ARB will allocate new school bus purchase funds to replace the oldest school buses in California (see Appendix A). Therefore, specific buses will be targeted for replacement based on school bus age. The ARB staff will initiate grant award agreements for the new school bus purchase funds with the three largest air districts that administer school bus programs for school districts in their respective regions and that have the oldest buses in California. These three air districts are: the Bay Area Air Quality Management District, the San Joaquin Valley Air Pollution Control District, and the South Coast Air Quality Management District. The new bus purchase funds available to school districts with the oldest buses throughout the remainder of California shall be administered by CEC. The funding allocations to CEC and the three air districts self-administering their programs are shown in Table 3. The ARB will provide the funds to CEC through an interagency contract and eligible school districts must apply directly to the CEC to receive the funds. Eligible school districts shall be contacted by either the air district or the CEC and asked to apply for new bus funds.

<u><i>Air District Administered Program</i></u>	<b>Funds</b>	<b>Approx. # of New Buses</b>
San Joaquin Valley APCD	\$4,340,000	31
South Coast AQMD	\$2,100,000	15
Bay Area AQMD	\$560,000	4
San Diego County APCD	\$0	0
Sacramento Metropolitan AQMD	\$0	0
<i>Total Air District Administered Program</i>	\$7,000,000	50
<u><i>CEC Administered Program</i></u>		
<i>Total CEC Administered Program</i>	\$5,500,000	~40
<b>Total</b>	<b>\$12,500,000</b>	<b>~90</b>

#### 2. In-Use Diesel School Bus Retrofit Funds

As done previously in the Lower-Emission School Bus Program, the ARB will allocate retrofit funds on a per capita basis to participating air districts. Table 4 shows the nine air districts with greater than one percent of the State's population; funding allocations to these air districts account for approximately 90 percent of the retrofit funding. Grant agreements for retrofit funds were sent to the nine air districts shown in Table 4 on October 27, 2005.

The ARB will release retrofit funds to these air districts, which have participated in the retrofit program previously, upon meeting the terms and conditions of their grant agreements. Four of these nine air districts have unspent retrofit funds from previous years. The terms and conditions of their grant agreements state that they must obligate prior retrofit funds by March 15, 2006, or submit a plan to the ARB by March 31, 2006, demonstrating their ability to obligate prior retrofit funds and the 2005-2006 FY retrofit funds. If the Executive Officer does not approve the plan, a district's 2005 – 2006 fiscal year retrofit fund allocation may be reallocated to other local air districts participating in the retrofit component of the Lower-Emission School Bus Program.

<b>Table 4 Retrofit Funding Allocations (2005 – 2006 FY)</b>		
<b>Region</b>	<b>Funds</b>	<b>Approximate # of Retrofits Fundable<sup>(c)</sup></b>
<b>Air Districts with <math>\geq</math> 1% of Statewide Population</b>		
Bay Area AQMD <sup>(a)</sup>	\$2,395,000	165
Mojave Desert AQMD <sup>(a)</sup>	\$153,000	10
Monterey Bay Unified APCD <sup>(a)</sup>	\$266,000	18
Sacramento Metropolitan AQMD	\$456,000	31
San Diego County APCD	\$1,051,000	72
San Joaquin Valley APCD	\$1,223,000	84
Santa Barbara County APCD <sup>(a)</sup>	\$145,000	10
South Coast AQMD	\$5,449,000	375
Ventura County APCD	\$273,000	18
<b>SUBTOTAL</b>	<b>\$11,411,000</b>	<b>783</b>
<b>Retrofit Pool (Air Districts with &lt;1% of Statewide Population)<sup>(b)</sup></b>		
All Other Air Districts (26)	\$1,089,000	75
<b>TOTAL</b>	<b>\$12,500,000</b>	<b>858</b>
<p>(a) Air districts with unspent retrofit funds from previous years must obligate those funds by March 15, 2006, or submit a plan to ARB by March 31, 2006, in order to receive 05-06 FY retrofit funds.</p> <p>(b) Each air district in the Retrofit Pool that chooses to participate would receive a minimum allocation of \$41,885. Air districts in the Retrofit Pool with unspent retrofit funds from previous years must obligate those funds by March 15, 2006, or submit a plan to ARB by March 31, 2006, in order to receive 05-06 FY retrofit funds.</p> <p>(c) Approximate number of funded retrofits based on ARB-verified Level 3 PM retrofit device estimated average cost of \$14,500. Includes up to \$4,000 for de-ashing.</p>		

The ARB will notify the 26 smaller air districts of the opportunity to participate in the retrofit program and will allocate the remaining 2005-2006 FY State budget retrofit funds equally to these air districts, should they choose to participate in the program. Each of the 26 smaller air districts (comprising the Retrofit Pool, as shown in Table 3) is eligible for a minimum allocation of \$41,885 in retrofit funds. This minimum allocation assumes all 26 of the smaller air districts choose to participate in the retrofit program. Air

districts that plan to apply for retrofit funding must respond to ARB by March 31, 2006. The smaller air districts shall indicate if they can accept the minimum allocation of \$41,885 or if they can accept more retrofit funding, up to a maximum of \$145,000. Grant agreements will be supplied to the air districts upon receipt of their intention to accept the funds. Unclaimed funds will be reallocated to air districts that are able to obligate the additional funds.

### **B. Fund Disbursement to Air Districts**

The air districts shall provide two documents in order to receive their allocated funding. These documents are the grant agreement, provided by ARB, signed by an air district official with fiscal authority, and a resolution from the district governing board (or other documentation signed by a duly authorized official) that authorizes the district to accept the funds. Districts may want to include language and funding amounts in the resolution that provide the districts with the opportunity to accept additional funds, should additional program funds become available.

### **C. Air Districts' Lower-Emission School Bus Program Notification**

Administering agencies shall notify school districts of opportunities to participate in the Lower-Emission School Bus Program. The ARB will monitor the ongoing implementation of both program components and assist the administering agencies where needed.

#### **1. Outreach**

Outreach prior to and during the time frame of program notification is critical for the success of a local program. The air districts and the CEC should focus their outreach in a way that encourages applications from all school districts, including environmental justice communities and rural districts. Below are brief descriptions of the types of practices that might be included as part of an air district's or the CEC's outreach activities.

##### **(a) List of School Districts**

Air districts and the CEC should maintain a list of school districts within their respective regions and the contact information for the school bus fleet maintenance personnel. A notification should be mailed to the contacts on the list when funds are available.

##### **(b) Local Newspaper Announcement**

Air districts are encouraged to put an announcement in local newspapers and in appropriate local newsletters.

##### **(c) Web Site Notification**

If an air district has a web site, the Lower-Emission School Bus Program opportunity notice should be advertised on the district's web site. If the district has a newsletter, the Lower-Emission School Bus Program opportunity notice should be advertised in the district's newsletter. Similarly, the CEC should advertise its program opportunity notice on its web site.

#### (d) Site Visits

Air districts are encouraged to conduct site visits or telephone conference calls with school districts, particularly to advise them of the opportunity to participate in the retrofit component of the program.

#### 2. Environmental Justice

For the 2005-2006 FY State funds now available for new school bus purchases, the Legislature has directed that the funds be used to replace pre-1977 model year school buses, in order of oldest bus first. Therefore, the funds shall be used to replace specific pre-1977 model year school buses in public school districts identified by ARB staff as having the oldest school buses in California. That legislative directive takes precedence over environmental justice criteria for 2005-06 FY State school bus funding. For AB 923 funding, and for other air district funding, ARB encourages air districts to consider environmental justice; therefore, a discussion of environmental justice criteria follows.

It is important that school bus projects funded through the Lower-Emission School Bus Program benefit all communities of California, particularly those disproportionately affected by air pollution. Health and Safety Code section 43023.5 requires air districts with populations greater than one million inhabitants to distribute not less than 50 percent of the funds appropriated by the State Legislature for the purchase of new, lower-emitting school buses to directly reduce air contaminants or the associated public health risk in communities with the most significant exposures, including communities of minority populations and/or low-income populations. The ARB, CEC, and local air districts have worked cooperatively to implement this requirement affecting State funding appropriations within the Lower-Emission School Bus Program beginning in 2001, when the statute first went into effect. This requirement remains in effect until January 1, 2007, unless subsequent legislation deletes or extends the date.

While Health and Safety Code section 43023.5 affects only State funding appropriations, the ARB encourages air districts to expend their local AB 923 funds dedicated to new school bus purchases, and other local funds used for new school bus purchases, in a manner consistent with the Health and Safety Code provision. In addition, the ARB also encourages air districts not subject to Health and Safety Code section 43023.5 (i.e., those air districts with less than one million inhabitants) to expend their local funds for new school bus purchases in a similar manner.

To assist air districts in their efforts to focus funds for new school bus purchases in communities pursuant to Health and Safety Code section 43023.5, the ARB has developed recommended criteria for use in the Lower-Emission School Bus Program. These criteria would be used primarily by air districts, should they choose to do so, in expending their local funds on new school bus purchases since the 2005-2006 FY State funds are targeted directly at removing the oldest buses in the fleet first. While the ARB recognizes that communities disproportionately affected by air pollution are not limited to low-income communities and/or communities of color, the ARB-recommended criteria use the percentage of students within a public school district participating in the free and

reduced-lunch meal program as a way to identify a region in which to target funds for new school bus purchases. Alternatively, air districts may develop different criteria, in consultation with the ARB staff, to identify communities in which to focus funds for new school bus purchases.

#### **D. Award Process**

For the 2005-2006 FY State budget new bus purchase funding, the administering agency shall contact each school district in its respective region with the oldest buses to be replaced, as indicated in Appendix A. The administering agency shall determine the application due dates necessary to complete the program according to the program timetable specified in Table 1. School districts desiring to replace these buses must submit an application to the administering agency by the date determined by the administering agency. Buses shall be replaced oldest first until the 2005-2006 FY State funds are expended. If, towards the end of the process, there are two or more buses of the same age competing for remaining funds, the administering agency will use a lottery selection method to allocate the final funding.

For other sources of new bus funding, the administering agency will release a program opportunity notice to the school districts in their respective regions. Each interested school district must complete an application for the Lower-Emission School Bus Program grant money. The administering agency will review the application for completeness and eligibility and award grants through a non-competitive process (e.g., lottery-type award process for all eligible applicants). School districts will be notified by mail after awards are approved by the administering agency.

Those interested in participating in the retrofit program shall apply directly to their local air district for funding. Applicants (school districts and private transportation contractors that provide service for public schools) must complete an application for the Lower-Emission School Bus Particulate Matter Retrofit Program grant money and submit it to their local air district. The air district shall review the application for completeness and eligibility and make grant awards through a non-competitive process. Applicants shall be notified by mail after awards are approved by the air district.

Staff at the administering agency shall prepare funding agreements that set forth the terms, conditions, and reporting requirements for each grant. No funds will be released until the school district and the administering agency have signed the funding agreement. Air district staff shall notify ARB when retrofit funds are released so that ARB may notify CHP of the bus modifications.

##### **1. Application**

###### **(a) New School Bus Purchase**

Applicants for new bus purchase funds must submit an application to the administering agency (application will be supplied by the administering agency).

Required information includes (at a minimum):

- Name of school district or Joint Powers Authority (JPA)
- Bus(es) to be replaced: VIN number, ID number, type, make and model year, fuel, total mileage, mileage for last school year, GVWR, proof of CHP certification for the current school year (and as of December 31, 2005), and method of bus disposal.
- Bus(es) to be purchased: type of bus(es), make and model year, engine size, manufacturer, cost, and assumed date(s) of delivery.
- Fuel: type(s) of fuel needed, availability of refueling capability and delivery of fuel by bus delivery date(s).
- If requesting alternative fuel and electric infrastructure funding: demonstrated need based on accessibility of off-site station; cost of CNG slow-fill equipment; cost of recharging station.

Grant applications must include a resolution from the school district governing board (or a duly authorized official with authority to make financial decisions) authorizing the submittal of the application and identifying the individual authorized to implement and administer the bus replacement project.

#### (b) School Bus Retrofit

Applicants that want to purchase and install retrofit devices on eligible school buses using grant funds must submit an application to the administering agency (application will be supplied by the administering agency).

Required information includes (at a minimum):

- Name of school district, JPA, or school transportation contractor.
- Bus(es) to be retrofitted: VIN number, bus manufacturer, model year, total mileage, and engine type.
- Identification of the retrofit device installed (manufacturer and model).
- Availability of ultra-low sulfur diesel (ULSD) fuel on PM retrofit installation date(s), if retrofit device is installed prior to September 1, 2006.

Grant applications must include a resolution from the school district governing board (or other documentation signed by a duly authorized official) authorizing the submittal of the application and identifying the individual authorized to implement and administer the retrofit device installation project.

#### (c) Application Tracking

Districts must have a system for tracking applications. At a minimum, the tracking system shall include the name and address of the bus owner, whether the application is in regards to a bus replacement, retrofit, or tank replacement, and the model year of the bus to be replaced, retrofit, or receiving tank replacement. The district shall also maintain a copy of each application and a file for each selected project.

## 2. How Awards are Made

School districts will be notified by mail after awards are approved by the administering agency. Staff at these agencies shall prepare funding agreements that set forth the terms, conditions, and reporting requirements for each grant. Retrofit funding agreements shall include the requirement that the retrofitted bus be CHP inspected prior to return to service.

The payment schedule shall be established in the funding agreement. No funds shall be released until the applicant and the administering agency have signed the funding agreement. In general, payment will be made as purchase costs are incurred and documentation is provided to the administering agency.

Applicants can only be reimbursed for project costs incurred on or after the date of approval by the administering agency. The administering agency will not fund, nor be liable for any portion of, an applicant's cost of preparing and submitting an application.

The administering agency shall issue payment for a bus, infrastructure, fuel tank replacement, or retrofit device to vendors pursuant to the requirements of section 41200, et seq. of the California Education Code (California Proposition 98), to minimize the financial impacts to schools. The administering agency may not purchase buses, infrastructure, or replacement fuel tanks directly.

In the case of a new bus purchase, the school bus delivery deadline of August 1, 2007, specified in Table 1, must be included in the contract language in which the administering agency awards 2005-2006 FY State budget program funds to school districts and in the purchase order agreement between school districts and school bus distributors. The ARB will assess a monetary penalty against the business entity (e.g. engine manufacturer, school bus manufacturer, or school bus distributor) responsible for a delivery delay causing a failure to meet the delivery deadline. The performance penalty is discussed further in Section II.E.

## 3. Reporting Requirements and Records Retention

### (a) New Bus Purchases and Infrastructure

All school districts must report to the appropriate administering agency (CEC or participating air districts) upon ordering and delivery of bus(es), and contracts let for, and completion of, any funded alternative fuel or electric infrastructure funded by State monies. Any other requirements implemented by the administering agency must be specified in the funding agreements with school districts.

The administering agencies shall submit a final report to ARB by or before December 31, 2007. At a minimum, the administering agency shall report:

- Number of school buses replaced, and the model years, VINs, and license plate numbers of the replaced buses per air district.
- Model years, manufacturer, and fuel type of new buses funded.

- Efforts to meet environmental justice requirements.
- Penalty fees levied.
- Location and type of infrastructure funded.

Administering agencies shall retain files for each funded project containing the application, contract, invoice, proof of payment, and a copy of the CHP safety certification, bus registration, and documentation of the disposal of the replaced bus. These files shall be maintained for five years, the minimum number of years a new bus purchased with program funding must remain in the school district fleet that received the funding.

(b) Retrofit Device Purchase and Installation

All participating school districts and private transportation contractors must report to the participating air district upon ordering, delivery, and installation of retrofit devices. Any other requirements by the administering agency will be specified in the funding agreements with school districts.

Air districts shall submit a final retrofit report to the ARB by September 30, 2008. At a minimum, the report shall include the entity to which the air district awarded funds, identification of the buses on which the retrofits were installed, and identification of the retrofit device installed (manufacturer and model).

Air districts shall retain files for each funded project containing the application, contract, invoice, proof of payment, and a copy of the CHP certification for the post-retrofit safety certification inspection of the retrofitted bus. These files shall be maintained for five years.

**E. Performance Penalty for Late Delivery of School Buses**

The ARB will assess a monetary performance penalty against the business entity responsible for a delay that results in the failure to deliver program-funded school buses to school districts by the specified delivery deadline of August 1, 2007. Specifically, the ARB will assess a performance penalty of \$100.00 per day per bus for each day a bus is delivered after the delivery deadline. The purpose of this performance penalty is to ensure a level playing field for all business entities that stand to profit from the sale of program-funded school buses, to minimize any potential risks to school districts, and to forestall delays in achieving emission benefits.

For the air districts that self-administer the program, the performance penalty will be administered through a withhold by the ARB of five percent of the total grant fund award to each air district until after the August 1, 2007, delivery deadline. Upon confirmation by each air district that all program-funded buses have been delivered to school districts by August 1, 2007, the ARB will immediately release the remaining five percent of their respective grant awards to each air district. For each bus delivered late, the air districts shall reduce the grant payment to either the school bus distributor or the school district (depending on the contract arrangements for the payment of bus purchase orders) by \$100.00 per day per bus for each day a bus is delivered after August 1, 2007. The ARB

will retain an amount equal to the calculated performance penalty from the applicable air district's grant withhold. Upon confirmation of final bus delivery to the school districts, the ARB will then release the remaining grant award balance, if any, to the air district.

The CEC shall similarly administer the performance penalty for the regions in California for which the CEC administers the program. For each bus delivered late, the CEC shall reduce the grant payment to either the school bus vendor or the school district (depending on the contract arrangements for the payment of bus purchase orders) by \$100.00 per day per bus for each day a bus is delivered after August 1, 2007. For each bus delivered after this deadline, the ARB will reimburse the CEC, upon receipt of contractually-specified invoices, an amount equal to the State's share of the bus purchase price minus the calculated performance penalties.

The delivery deadline must be included in the contract language in which the administering agency (either the CEC or the local air districts that self-administer the program) awards funds to school districts, and in the terms and conditions of the purchase order agreement between school districts and school bus distributors. In addition, each funding award contract and school bus purchase order agreement must contain the following statement:

"The ARB shall assess a performance penalty of \$100.00 per day per bus on the business entity responsible for a delay that results in the failure to deliver to school districts any school bus purchased with funds from the Lower-Emission School Bus Program by the delivery deadline contained in this agreement. For each bus delivered to a school district after August 1, 2007, the local air district or the California Energy Commission, whichever public agency is responsible for administering the program, shall reduce the grant award payable to the school bus distributor or school district by an amount equal to the calculated performance penalties."

Any funds generated through the enforcement of this performance penalty will be used to augment program funding on a statewide basis.

#### **F. Minimum Contract Requirements**

For the purpose of these Guidelines, a contract is defined as a contract, grant, or other legally binding agreement used by CEC, an air district, or an applicant to obligate and expend funds for a project funded through the Lower-Emission School Bus Program.

When paying for projects using Lower-Emission School Bus Program Funds, air districts must enter into a contract with the applicant. The contract must be signed and the project milestones (e.g., delivery, installation, final inspection, and acceptance) shown in the contract must be met before Lower-Emission School Bus Program funds are given to the vendor.

All air districts participating in the Lower-Emission School Bus Program must incorporate the following minimum requirements in contracts entered into with applicants that have been selected to receive funds under the Lower-Emission School

Bus Program. Each district shall establish the actual language in their contracts in consultation with the district's legal staff. Applicants must incorporate these minimum requirements in purchase order agreements with vendors.

#### 1. Party Names and Date

All contracts shall state the name of the district and the applicant as parties to the contract. All contracts shall also state that, in addition to enforcement by the district, the ARB, as an intended third party beneficiary, reserves the right to audit and enforce the terms of the contract at any time during the contract term.

#### 2. Project Completion

The contract shall include a specified time frame in which project completion shall occur, so that the funds are expended within the two-year required time frame. The contract shall also require that no work may begin on the project until the contract is fully executed.

#### 3. New Bus Purchase Delivery Deadline

Contracts for new bus purchases with 2005-2006 FY funds shall include a delivery deadline of August 1, 2007. This delivery deadline must be included in the contract language in which the administering agency awards funds to school districts, and in the terms and conditions of the purchase order agreement between school districts and school bus distributors. In addition, each funding award contract and school bus purchase order agreement must contain the following statement:

"The ARB shall assess a performance penalty of \$100.00 per day per bus on the business entity responsible for a delay that results in the failure to deliver to school districts any school bus purchased with funds from the Lower-Emission School Bus Program by the delivery deadline contained in this agreement. For each bus delivered to a school district after August 1, 2007, the local air district or the California Energy Commission, whichever public agency is responsible for administering the program, shall reduce the grant award payable to the school bus distributor or school district by an amount equal to the calculated performance penalties."

#### 4. Requirement for CHP Safety Inspection after Retrofit Installation

All retrofit contract agreements between air districts and applicants must include the requirement that each retrofitted bus undergo a CHP safety certification inspection after the retrofit installation and prior to the bus's return to service.

#### 5. Non-Compliance Terms

Districts shall include terms to cancel contracts or withhold payment for non-compliance with or not meeting the obligations of the contract, and may include a term that cancels the contract if it is not executed by the owner in a timely manner.

### **G. Documentation of Obligation and Expenditure of Previous Grant Awards**

Air districts that have previously been awarded Lower-Emission School Bus Program retrofit funds must have submitted, or submit with the application documents, documentation of the status (obligation/expenditure) of all previous years' retrofit funds. This documentation must, at a minimum, include the names and addresses of the school districts that received the funds, the number of buses retrofitted, the manufacturer and make of the retrofit device, the expenditure for each retrofit, and the total expenditure.

### **H. Obligation of Funds**

Air districts shall obligate any Lower-Emission School Bus Program retrofit State budget funds by one year from June 30 of the fiscal year that the district receives its initial grant award. This requirement ensures ARB that State funds will be spent in a timely manner as required by law. Funds are considered to be obligated when the air district takes one of the following actions:

- The air district's governing board approves a project for funding through a resolution, minute order, letter or other written instrument.
- The Air Pollution Control Officer or designated district staff, if given the authority by the governing board, approves a contract.
- The contract between the air district and the school bus owner is fully executed.

### **I. Expenditures**

Lower-Emission School Bus Program State budget funds shall be expended by the air districts two years from June 30 of the fiscal year that the district receives its initial grant award. Air districts expend funds by paying invoices associated with approved projects.

In the event previous years' funds (that were obligated and invoiced) are returned to an air district, those returned funds may be re-obligated to projects along with the current year's funds. Administering agencies shall advise the ARB of returned funds and their intent to re-obligate the funds to eligible projects. For tracking purposes, returned funds must be reported with the correct previous year's reports.

### **J. ARB Administrative Action**

The administrative action described in this paragraph is the procedure the ARB shall use to recapture any State budget retrofit funds. Any Lower-Emission School Bus Program 2005-06 FY State budget retrofit funds not obligated by an air district by June 30, 2007, shall be returned to the ARB. The returned funds shall be reallocated to another district or districts based on their ability to obligate the funds.

### **K. Earned Interest**

Any Lower-Emission School Bus Program funds provided by the State that are deposited in interest bearing accounts must be reported to ARB. The interest income must be used to fund projects that meet the current Lower-Emission School Bus

Program Guidelines. Projects funded by interest earned shall be included in the final report for the year from which the interest accrued.

### **III. LOWER-EMISSION SCHOOL BUS REPLACEMENT PROGRAM REQUIREMENTS**

The school bus replacement program utilizes allocated funding for the purchase of new lower-emission school buses and infrastructure. For the 2005-2006 FY State budget funds allocated by the State Legislature, \$12.5 million is designated for the replacement of pre-1977 model year school buses with new school buses that comply with the most recent motor vehicle federal safety standards and that have been certified by the ARB to meet the lowest achievable emission levels, irrespective of fuel stock.

Approximately 10 percent of the funds spent on alternative-fueled buses may be used for new alternative fuel infrastructure, refueling stations, more capacity at existing stations, and recharging stations. Fuel tank replacement of in-use CNG-fueled buses may be funded from AB 2766 funds. The following sections describe the protocols and criteria for the expenditure of the 2005-2006 FY State budget legislative funds, as well as for new bus purchase funds from other sources.

#### **A. Eligible Buses and Infrastructure**

##### **1. Eligible Applicants**

Public school districts in California that own their own buses are eligible to receive funding for the replacement of older school buses. Where a JPA has been formed by several school districts, and the JPA holds ownership of the school buses, then the JPA is also eligible to participate. School transportation contractors are not eligible to apply. Also, school bus purchases by non-profit agencies, private schools, and other private companies are not eligible for State budget allocation funding.

##### **2. Buses Eligible for Replacement**

Older in-use diesel or gasoline school buses with a manufacturer's gross vehicle weight rating (GVWR) greater than 14,000 pounds may be eligible for replacement. Buses of this weight rating require heavy-duty engines. To be eligible for replacement, buses must have a current CHP safety certification as of December 31, 2005, and at the time a school district is awarded funding to replace the bus (i.e., the school bus cannot have a lapsed CHP safety certification), and must be currently registered with the Department of Motor Vehicles. While diesel-fueled buses are primarily targeted for replacement, gasoline-fueled buses that do not include an original-equipment catalytic converter are also eligible per the replacement priority given below.

The replacement of buses manufactured prior to April 1977, when federal motor vehicle safety standards went into effect, is a priority for the school bus replacement program. The State budget appropriation for new school bus purchases for the 2005-2006 FY specifically allocates \$12.5 million for the replacement of pre-1977 model year school buses, and will replace about 90 pre-1977 model year school buses.

For other sources of funds not subject to the 2005-2006 FY State budget language, ARB is allowing the replacement of pre-1987 model year buses because pre-1987 model year buses emit high levels of NOx and PM. The ARB's replacement priority is given below:

- Replacement of in-use pre-1977 model year school buses. First, each new purchase shall replace any in-use diesel pre-1977 model year school buses in the given fleet, and the pre-1977 model year buses must be crushed or otherwise rendered inoperative.
- Next, any pre-1977 model year heavy-duty gasoline buses that did not include an original-equipment catalytic converter shall be replaced and the pre-1977 model year buses crushed or otherwise rendered inoperative.
- Where fleets contain too few or no pre-1977 model year buses, pre-1987 model year diesel buses may be replaced. The 1977-1986 model year replaced bus will be crushed, or, alternatively, replace a CHP-certified, in-use pre-1977 model year school bus in another California bus fleet (not limited to public school bus fleets). Then this replaced pre-1977 model year bus must be crushed or otherwise rendered inoperative.
- Next, ARB criteria provide that any 1977-1986 model year heavy-duty gasoline buses that did not include an original-equipment catalytic converter may be replaced. The replaced bus must be crushed, or replace a CHP-certified, in-use, pre-1977 model year school bus in another California bus fleet (not limited to public school bus fleets). Then this replaced bus must be crushed or otherwise rendered inoperative.

### 3. Replacement Bus Requirements

The recipient school district must make an enforceable commitment to own and operate the new bus for five years or more. Only replacement buses may be funded by this program. Fleet expansion buses are not eligible for funding. New heavy-duty buses with engines that run on either diesel or an alternative fuel are eligible for funding if the engines meet or exceed the emission criteria shown in 5 below. Alternative-fueled buses may be powered by natural gas, liquefied petroleum gas (LPG or propane), electricity, methanol, or ethanol fuels, provided that the other program requirements are met. New heavy-duty gasoline internal combustion engine buses are not eligible for purchase.

The emission requirements for both new alternative-fueled and new diesel-fueled school buses purchased with program funding are set forth in Table 5 below. For comparison purposes, the table also includes mandatory diesel engine certification standards.

<b>Table 5 Emission Criteria for use of Lower-Emission School Bus Funding</b>				
	<b>2006 Model Year</b>		<b>2007 - 2009 Model Year</b>	
	HC+NOx (g/bhp-hr)	PM (g/bhp-hr)	NOx (g/bhp-hr)	PM (g/bhp-hr)
Alternative-fueled school buses	1.8	0.01	0.5	0.01
Diesel-fueled school buses	2.5	0.01	1.2	0.01
Mandatory Diesel Engine Standards applicable to school buses	2.5	0.10	1.2 <sup>(a)</sup>	0.01
(a) Between 2007 and 2009, U.S EPA requires 50 percent of heavy-duty diesel engine family certifications to meet the 0.2 g/bhp-hr oxides of nitrogen (NOx) standard. Averaging is allowed, and it is expected that most engines will conform to the fleet NOx average of approximately 1.2 g/bhp-hr				

#### 4. CNG/Diesel Purchase Split Statewide Goal

Previously, the Lower-Emission School Bus Program included a statewide new bus purchase funding goal of two-thirds of the State funding for alternative-fueled school bus purchases (and associated infrastructure) and one-third of the State funding for diesel-fueled school bus purchases. However, this statewide goal will not apply to the 2005-2006 FY State budget new bus purchase funding that is to be allocated to replace the oldest buses in California. In order to secure the replacement of these oldest buses, the school districts with these buses will be given the choice of either a diesel-fueled or alternative-fueled school bus as a replacement bus, subject to local air district rules.

#### 5. CNG: Infrastructure and Fuel Tank Replacement

Ten percent of new bus funding for alternative-fueled buses may be used for refueling infrastructure when no local CNG refueling site is available or the existing local CNG refueling site is inadequate. This equates to about \$14,000 per bus based on a \$144,000 new CNG bus cost, excluding applicable sales tax.

Air districts may allocate their AB 2766 funding for fuel tank replacement for in-use CNG-fueled buses. The fuel tank replacement funding shall be used for replacing CNG fuel tanks that have exceeded their maximum life and can no longer be certified. The Department of Transportation mandates CNG fuel tanks must be visually inspected every 3 years or 36,000 miles and replaced after the manufacturer's recommended service life, typically 15 years. A school bus life of 25 years results in the need to replace the natural gas fuel tanks once during the life of the bus. School districts should consult with their local air districts regarding the application process to receive AB 2766 funds for fuel tank replacement on in-use CNG-fueled buses.

### **B. Match Funds**

#### 1. School District

School districts are not required to provide match funds for pre-1977 model year school buses replaced with 2005-2006 FY State budget funding. Air districts funding new

school bus purchases with funds other than the 2005-2006 FY State budget money may choose to require \$10,000 in match funds from a school district replacing a pre-1977 model bus and \$25,000 in match funds from a school district replacing a 1977-1986 model year bus. Other grant funds, such as air district funds (e.g., motor vehicle registration fee monies) can be used to satisfy the school district match fund obligation to the extent the other grant or funding language allows this. To maximize State funds, Carl Moyer Program funds cannot be used as a source of the school district funds.

## 2. Air District

Air districts that administer their own programs using funds appropriated by the State Legislature are not required to contribute match funding.

# **IV. LOWER-EMISSION SCHOOL BUS PARTICULATE MATTER RETROFIT PROGRAM REQUIREMENTS**

The school bus retrofit program utilizes allocated funding for the purchase of ARB-verified diesel retrofit devices and their associated maintenance costs. For the 2005-2006 FY, \$12.5 million is available for the purchase of PM retrofits that are verified Level 3 control technologies achieving at least an 85 percent or greater reduction in particulate matter and produce the lowest possible NO<sub>2</sub> across the device.

## **A. Eligibility Requirements**

### 1. Eligible Applicants

Public school districts that own their own buses are eligible to receive funding for retrofits, including JPAs formed by several school districts, where the JPA holds ownership of the school buses. Private school transportation providers that contract with public school districts to provide transportation services are also eligible to receive grant funding.

### 2. Buses Eligible for Retrofit

All in-use diesel-fueled buses with a GVWR greater than 14,000 pounds, for which there is an ARB-verified retrofit device available, qualify for retrofit funding. The goal is to retrofit the highest polluting buses that can be reliably retrofitted with emission control devices.

### 3. Eligible Retrofit Devices

All retrofit devices purchased must be verified technologies, per the ARB's diesel emission control strategies verification procedures as prescribed in title 13, California Code of Regulations (CCR) sections 2700 through 2710. A current list of these devices verified by the ARB can be accessed through the ARB web site at: <http://www.arb.ca.gov/diesel/verdev/verdev.htm>. These ARB-verified strategies are categorized into three different levels depending on the degree of PM reduction provided by the strategy. These PM reduction levels are defined in Table 6.

<b>Table 6 Verification Classifications for Diesel Emission Control Strategies</b>		
<i>Pollutant</i>	<i>Reduction</i>	<i>Classification</i>
<i>PM</i>	< 25%	Not Verified
	≥ 25%	Level 1
	≥ 50%	Level 2
	≥ 85%, or ≤ 0.01 g/bhp-hr	Level 3
<i>NOx</i>	< 15%	Not Verified
	≥ 15%	Verified in 5% Increments

Under the ARB’s verification procedures, emission control strategies are verified for specific engine families and engine model years. These are listed in the executive order issued for the verification. Some verification executive orders include specific operating conditions, such as exhaust temperature profiles, that must be met in order for the control device to function properly. When operating conditions are specified for a control device, it is important that the prospective bus be data logged during normal route operation to verify that these operating requirements are satisfied. This requirement is discussed in Section IV.A.4(a). The ARB recommends that the school bus operator check directly with the control device manufacturer or the local distributor to ensure compatibility with the bus engine type and operating requirements when choosing a control strategy.

The funded amount for each bus eligible for retrofit covers the total purchase price of the ARB-verified retrofit technology, including installation, plus \$50 for data logging, and up to an additional \$4,000 to cover costs for cleaning services to de-ash particulate filters throughout their estimated 11 year life. These funded amounts additional to the purchase and installation are discussed in Section IV.A.4.

(a) 2005-2006 FY State Budget Funding Eligible Device Requirements

The budget language appropriating retrofit funding for the 2005-2006 FY requires it be used to fund retrofit devices that reduce PM by at least 85 percent. This equates to a Level 3 device. The budget language specifically states that funded retrofit devices shall: “(a) have at least a Level 3 verification from the Board; (b) apply to the broadest range of year, make, and model of school bus diesel engine; (c) operate on CARB diesel fuel or ultra-low sulfur diesel fuel; (d) operate across the broadest range of school bus operating conditions and duty cycles; and (e) produce the lowest possible NO<sub>2</sub> across the device.” (Senate Bill 77, Stats. 2005, Ch. 38)

Based on the budget language requirements, all retrofit devices purchased with 2005-2006 FY State funding must be ARB-verified Level 3 devices. By June 1, 2006, all sales of diesel fuel at production or import facilities will be required to meet a 15 parts per million sulfur limit. After this date, California diesel fuel will be ultra-low sulfur diesel fuel. Consequently, all verified Level 3 devices will meet the requirement to operate on California diesel fuel or ultra-low sulfur diesel fuel.

Additionally, based on the budget language requirements, air districts shall fund grant applicants choosing Level 3 technologies that inherently produce less NO<sub>2</sub> than other candidate devices provided that the technologies and their required maintenance are practically applicable to the buses to be retrofit and the corresponding bus fleet operations, and that the costs of the device and related infrastructure are reasonable. Air districts may use all available specifications and data in determining which retrofit technologies produce the lowest possible NO<sub>2</sub>.

For practical implementation, this means that air districts shall give priority to applications from school districts requesting funds to install uncatalyzed active particulate filters on eligible school buses, even if they are more expensive than a catalyzed passive particulate filter. If school bus retrofit funding is still available after all reasonable applications for uncatalyzed active Level 3 devices and any necessary infrastructure are funded, then an air district may fund other Level 3 devices. (For a more detailed discussion of NO<sub>2</sub> emissions from retrofit technologies, please refer to the January 2006 Staff Report for the Lower-Emission School Bus Program.)

#### (b) Funding Not Subject to 2005-2006 FY State Budget Language

Air districts may choose to spend local funds on retrofitting buses with Level 3 devices or on retrofitting buses ineligible for Level 3 technologies with appropriate Level 1 or 2 technologies. However, retrofits funds should be used on the highest level of technology possible that is applicable to the engine and the associated bus route.

Although technologies verified at Level 1 and Level 2 provide a lower percent reduction in PM, they may provide broader applicability.

Currently, there are three Level 2 technologies verified for on-road application by the ARB Diesel Emission Control Strategies Verification Program. Two are flow through filters, one of which is paired with a crankcase filter, and the third is an alternative fuel. All of the Level 1 technologies include a diesel oxidation catalyst (DOC). For a number of these Level 1 technologies, the DOC is paired with a crankcase filter. A current list of the devices verified by the ARB can be accessed through the ARB web site at: <http://www.arb.ca.gov/diesel/verdev/verdev.htm>.

#### 4. Other Eligible Costs

##### (a) Data Logging

To ensure that an appropriate emission control technology is installed on each bus, funding of \$50 per bus shall be included in the funded amount to cover the cost of data logging for the candidate bus if the selected control device's verification executive order includes exhaust temperature requirements. Data logging the buses on their routes provides accurate information on how the buses are operated. The emission control system vendor needs this information to select and size a retrofit device. Data logging involves installing sensors and data logging equipment on the buses to be retrofit to gather accurate and complete exhaust temperature data. The data logging process

requires minimal installation time and does not interfere with normal bus operations.<sup>1</sup> After the assessment, the emission control system vendor can select the most appropriate emission control system for installation.

#### (b) Maintenance Costs

Up to \$4,000 may be allocated to fund passive diesel particulate filter (DPF) maintenance (baking and de-ashing) in addition to the cost of purchase and installation of the retrofit device. DPF devices generally require periodic maintenance to remove ash caused by motor oil combustion residues. This periodic maintenance can be handled by a maintenance contract at the time of device purchase, periodic cleaning by outside contractor, or cleaning by the bus maintenance personnel. The ARB estimated a cost of \$4,000 over the 11 year life based on the assumption that the DPF requires cleaning once every two years at a cost of up to \$800 per cleaning.

Active DPFs also require periodic cleaning. The manufacturer of the ARB-verified active DPF currently available is in the process of determining cleaning requirements, cleaning frequencies, and costs. We expect the associated cleaning costs to be less than those for passive DPFs and we will allow funding for this periodic maintenance.

#### **B. CHP Inspection Prior to Return to Service**

Any bus that has had a retrofit device installed must receive a CHP safety inspection prior to return to service. Title 13, CCR section 1272 (c) requires that the CHP inspect a school bus that has undergone any chassis modification; this includes the installation of a retrofit device. This inspection is to determine if the retrofit device installation or other modification was performed according to the manufacturer's procedures and is required in order to protect the school district and the children in the case of improper installation or modification. All contract agreements between air districts and applicants must include the requirement that retrofitted buses receive a CHP safety certification inspection prior to return to service.

#### **C. Availability of Ultra-Low Sulfur Diesel Fuel**

Starting June 1, 2006, all sales of California diesel fuel will be required to meet the 15 parts per million sulfur standard at production or import facilities. This requirement is imposed on retail facilities three months later. Therefore, beginning September 1, 2006, conventional California diesel at the pump will be required to be the ULSD fuel necessary for catalyzed aftertreatment technologies. With the widespread availability of ULSD fuel, fuel availability should not be a limiting factor for participation in the retrofit program component. As such, the ARB will no longer provide the \$500 fuel subsidy to fleets participating in the retrofit program that was offered at the program's inception in 2000.

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<sup>1</sup> MECA, Diesel Retrofit< [http://www.meca.org/galleries/default-file/retrofitFAQ\\_\(revised\).pdf](http://www.meca.org/galleries/default-file/retrofitFAQ_(revised).pdf), accessed November 2, 2005.