2006 Lower-Emission School Bus Program Guidelines and Funding Allocation

February 23, 2006
Today’s Presentation

- Program overview
- 2005-06 funding
- Guideline revisions
- Issues
- Emission benefits
- Recommendations
Program Overview

• Goal:
  – Reduce school children’s exposure to PM and NOx

• Two components:
  – New school bus purchase
  – Retrofit of in-use diesel buses
Self-Pollution Study

- 2003 ARB sponsored study
  - Children's exposures to diesel pollutants during school bus commutes
- Self-pollution from bus’s own exhaust
  - Older (pre-1987) buses worse
  - CNG and DPF equipped diesel buses significantly better
Previous Funding

- $76M to date
- ~500 pre-1987 school buses replaced
- ~3,000 in-use diesel buses retrofit
California School Bus Population

- ~4,000 pre-1987 buses
- ~300 pre-1977 buses
- ~10,000 buses eligible for retrofit
Other Funding Sources

• AB 2766
  – $4 motor vehicle registration surcharge
• AB 923
  – Additional $2 motor vehicle registration surcharge
  – Requires adoption by air district board
• Carl Moyer Program
  – Must meet cost effectiveness requirement
• U.S. EPA Clean School Bus USA Program
  – Competitive cost-shared grant program
Cost Effectiveness of Retrofits

• 85% reduction in children’s exposure to diesel PM for ~10% of cost of new bus
2005-06 Fiscal Year Funding
2005-06 FY Appropriation

• $12.5M new school bus purchase
  – Replace pre-1977 buses
• $12.5M in-use diesel bus retrofit
  – Level 3 (≥85% PM reduction)
  – Produce lowest NO$_2$ across device
Proposed Allocation

• New school bus purchase funds
  – Oldest school buses first

• Retrofit funds
  – Per capita basis
  – Nearly 1,000 retrofits
School Bus Data

• Staff verified status of buses 1974 and older
• Estimate about 300 pre-1977 buses in public school bus fleet
### ~90 Buses Identified for Replacement
**All 1972 and Older Buses**

<table>
<thead>
<tr>
<th>Air District Administered Program</th>
<th>Approx. Funding ($ Million)*</th>
<th>Approx. # of New Buses</th>
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</thead>
<tbody>
<tr>
<td>San Joaquin Valley APCD</td>
<td>4.3</td>
<td>31</td>
</tr>
<tr>
<td>South Coast AQMD</td>
<td>2.1</td>
<td>15</td>
</tr>
<tr>
<td>Bay Area AQMD</td>
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<td>4</td>
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<tr>
<td>San Diego County APCD</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Sacramento Metropolitan AQMD</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>Total Air District Administered Program</strong></td>
<td><strong>7.0</strong></td>
<td><strong>50</strong></td>
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<table>
<thead>
<tr>
<th>CEC Administered Program</th>
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<tr>
<td><strong>Total CEC Administered Program</strong></td>
<td><strong>5.5</strong></td>
<td><strong>~40</strong></td>
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<tr>
<td>Total</td>
<td><strong>12.5</strong></td>
<td><strong>~90</strong></td>
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</table>

* Rounded allocations: actual values may differ
## Retrofit Funding Allocated on Per Capita Basis

<table>
<thead>
<tr>
<th>Air District</th>
<th>Approx. Funding ($ Million)*</th>
<th>Approximate # of Retrofits Fundable</th>
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</thead>
<tbody>
<tr>
<td>Bay Area</td>
<td>2.4</td>
<td>165</td>
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<tr>
<td>Mojave</td>
<td>0.15</td>
<td>10</td>
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<tr>
<td>Monterey</td>
<td>0.27</td>
<td>18</td>
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<tr>
<td>Sacramento</td>
<td>0.46</td>
<td>31</td>
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<tr>
<td>San Diego</td>
<td>1.1</td>
<td>72</td>
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<tr>
<td>San Joaquin</td>
<td>1.2</td>
<td>84</td>
</tr>
<tr>
<td>Santa Barbara</td>
<td>0.15</td>
<td>10</td>
</tr>
<tr>
<td>South Coast</td>
<td>5.4</td>
<td>375</td>
</tr>
<tr>
<td>Ventura</td>
<td>0.27</td>
<td>18</td>
</tr>
<tr>
<td>All Other Air Districts (26)</td>
<td>1.1</td>
<td>75</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>12.5</strong></td>
<td><strong>858</strong></td>
</tr>
</tbody>
</table>

* Rounded allocations: actual values may differ
Revisions to Guidelines
Changes Applicable to 2005-06 FY Only

Oldest bus first replacement

• Specific limitations on retrofit funding ($\geq 85\%$ PM reduction, lowest NO2 production)
• New program timetables
NO$_2$ Requirement

- State budget language:
  - Level 3 devices with lowest NO$_2$
    - First priority: fund uncatalyzed Level 3 active particulate filters
    - If funds remain unspent: other Level 3 devices may be funded
Changes Applicable to All New Bus Purchases

- Emission criteria for 2006 and 2007-09
- No match required
- Eliminate goal for 2/3 funding for alternative fueled buses
- AB 2766 funds may be used for in-use CNG school bus fuel tank replacement
Issues
Alternative-Fuel Goal

• Past ARB policy was 2/3 alt fuel, 1/3 diesel for new school buses
• Impractical with oldest bus first approach
• Should Board retain for future years?
Unmet Funding Needs

- ~$30 million to replace remaining pre-1977 MY buses
- ~$500 million required to replace all remaining pre-1987 MY buses
- ~$100 million to retrofit remaining eligible fleet
• Staff convened a working group
• Three main issues:
  – Emission factors
  – Remaining useful life
  – PM weighting factor (for exposure)
Results of Working Group

• Preliminary data indicate:
  – No change warranted to emission factors
  – A potential change in remaining life could be supported (from 5 to ~10 years)
  – An increase in PM weighting factor could be supported technically;
• Serious policy issues need to be considered – would need to include exposure weighting for all projects
  – Additional analysis and discussion are warranted
Emission Benefits
Emission Reductions

• Retrofits
  – 45 to 60 tons PM over 11 years
• Bus replacement
  – 135 pounds per day NOx and 5 pounds per day PM near term reduction
Staff Recommendation

• Approve revised Guidelines
• Approve funding allocation