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February 16, 2006

Dr. Robert F. Sawyer, Ph.D., Chair
California Air Resources Board
1001 I Street, 23rd Floor
Sacramento, CA 95814

RE: Inclusion of School Bus Replacement Projects in Fleet Modernization Component of the Carl Moyer Air Quality Standards Attainment Program
Discussion During 2/24/06 ARB Board Meeting Item 06-2-2

Dear Dr. Sawyer:

The San Joaquin Valley Air Pollution Control District (SJVAPCD) wishes to thank the California Air Resources Board (ARB) for the opportunity to comment on the inclusion of school bus replacement projects through the Fleet Modernization Component of the Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program).

At your Board's November 17, 2005 ARB Board meeting, there was discussion regarding the modification of the Fleet Modernization Component of the Moyer Program to include a mechanism for school bus replacement funding. You directed your staff to explore this issue and return to your Board with recommendations. In regards to this issue, the SJVAPCD offers the following comments and recommendations for your consideration:

Consideration of School Buses in Fleet Modernization

Under current Moyer Program Guidelines, using conservative annual mileage estimates, air districts are only able to provide approximately $20,000 towards the cost of a $140,000 new bus. This represents only about 15% of the total cost of a new school bus. This level of funding is inadequate and effectively prohibits a majority of the rural school districts from replacing old, high-polluting school buses.

In October 2003 the ARB published an alarming study on the effects of pollution coming from school buses. This study found that the pollution levels inside the school buses were actually higher than levels found outside. The term is known as self-pollution or, a condition in which PM contained in the bus exhaust, which has been designated as a Toxic Air Contaminant, is actually leaking back into the bus after leaving the tailpipe. In effect, one of our most sensitive receptors (children) are being adversely impacted by the vehicles charged with providing them safe passage to school. A principal recommendation of this study was very simple and clear: *Replace the oldest buses with new buses.* Many of these buses are in service in Environmental Justice communities with economically disadvantaged and ethnically diverse populations. ARB's Environmental Justice guidelines demand that proper weight be given to children's exposure to these toxic air contaminants in establishing cost effectiveness for Carl Moyer Program projects.

The Lower Emission School Bus Program was created to reduce school children's exposure to cancer causing and smog forming pollution. By reducing emissions from old diesel school buses, the risk to children will be greatly reduced. Unfortunately, the Lower Emission School Bus Program is severely under-funded and cannot adequately address the needs of school districts in the San Joaquin Valley, or the state. Likewise, the current and proposed Carl Moyer Program guidelines cannot provide enough funding per bus to make school bus replacement feasible for the financially strapped school districts. Simply stated, school districts have difficult financial choices to make: funding for classrooms or funding for transportation. Regrettably, almost universally, when faced with such a choice, funding for school transportation will lose out to funding for classrooms.

There are a disproportionate number of older school buses operated by school districts within the boundaries of the SJVAPCD when compared to any statewide averages. In contrast to statewide statistics, the average age of the Valley's school bus fleet population is over 16 years old, with the oldest 850 buses averaging over 26 years old. Even more alarming is the fact that, in the absence of substantial grant funding, a vast majority of school districts have no plans to replace those older high-polluting buses. The bottom line is that if school districts cannot replace the old high-polluting school buses, then they will be forced to piece together the older buses and continue operating them to the detriment to those in and around them or school districts will make the difficult decision of cutting transportation service, forcing more children to walk longer distances to school or be driven individually, increasing the number of motor vehicles on the road.

The SJVAPCD proposes to allocate a substantial amount of local funds towards school bus replacement projects during the next five years; however, additional state funding is imperative. It is estimated that there are over 200 pre-1977 school buses in the SJVAPCD that would cost approximately $28 million to replace. Additionally, it would cost approximately $88 million to replace the over 650 model

year 1977-1987 school buses in the SJVAPCD. Over 30% of the school buses in the SJVAPCD are model year 1987 and older. The allowance of Moyer Program funding for school bus replacement projects under the Fleet Modernization component will enable the early retirement of some of the oldest, dirtiest school buses not only in the SJVAPCD, but all of California. The Fleet Modernization component was developed without a comprehensive analysis for the inclusion of school bus replacement projects. This component will need several revisions to accommodate the special characteristics of school bus operations, including, but not limited to the following: adding school bus fleets as an acceptable targeted vocation, increasing allowable project life, increasing funding caps, relaxing requirements for certain aftermarket devices, and increasing the allowable fleet size.

The SJVAPCD is requesting that your Board incorporate the following changes to the Fleet Modernization component after analyzing the following issues:

1. The remaining project life for school buses should be 12 years or longer. The proposed 3-5 year project life allowed under the Fleet Modernization component does not accurately reflect the special operating characteristics of school bus fleets. In general, school districts will only replace their school buses when grant funding is available for almost the entire purchase price of the bus. The average age of pre-1987 school buses operating in the San Joaquin Valley is 26 years. Without available grant funding, school districts will continue to repair and maintain their old school buses, or purchase older, used school buses as replacements.

2. The weighting factors in determining particulate matter (PM) reductions for cost-effectiveness purposes should be substantially increased to account for children's exposure to toxic air contaminants from diesel exhaust while traveling inside the school bus. Under the new Carl Moyer Program (CMP) guidelines, a combustion particulate matter (PM10) multiplier has been incorporated into the project calculations. This multiplier is intended to account for the increased potential for harm to human health from combustion PM10. The multiplier is incorporated into the weighted cost-effectiveness calculations. The current CMP guidelines suggest that the twenty (20) times combustion PM10 multiplier is derived from technology and health based cost data.

   CMP guidelines (pgs. I-5, I-6) describe the reasoning used to derive the multiplier as follows:

   - According to ARB, it would cost fifteen (15) times as much to control PM10 as it would to control an equal amount of NOx.
   - According to ARB, the health based monetary values associated with controlling combustion PM10 outweighs NOx control by thirty (30) times.

Exposure risks were not considered by ARB due to potential difficulties in assessing the location, timing, and duration of emissions from each individual project type. An appropriate multiplier needs to properly consider the health impacts to the children from exposure to toxic air contaminants. If the multiplier is not at a level that would provide incentives for projects with the greatest reduction of DPM exposure risk, the goals of risk reduction cannot be achieved.
An SJVAPCD analysis shows the cancer risk associated with a child riding in a school bus is 6,746 times higher than ambient levels (comparing a 10 in a million cancer risk to ambient levels of PM10 at concentrations near the NAAQS threshold level), and 750 times higher than ambient levels for a child standing outside near an idling bus.

The SJVAPCD recommends that diesel exhaust exposure and risk assessments should be used to develop a unique multiplier for school buses, considering recent studies that demonstrate increased health risk and a higher cancer risk from school bus transportation. The weighting factor should account for the high number of students that are exposed to combustion PM10 from school bus transportation. Children are more susceptible to the health impacts from combustion PM10, and the number of children who are directly impacted by school bus exhaust show a more significant health risk compared to the risk associated with ambient levels of PM10. Based on analyses performed by the SJVAPCD, it is recommended that this weighting factor be established between 750 and 6,700 to accurately reflect the increased exposure risk to schoolchildren outside school buses and riding on school buses.

3. ARB must allow the establishment of more suitable emission factors for school buses. ARB staff is proposing to utilize Medium Heavy-Duty emission factors for school bus projects. School buses with urban routes have similar operating characteristics with urban transit vehicles. With the Urban Bus emission factors used for the baseline (old school bus), the emission reductions and corresponding cost-effectiveness are more accurately estimated while providing school bus projects with a greater incentive amount. ARB should consider all available data to establish a more accurate quantification methodology for school bus projects.

4. The requirement of providing a one-year or 100,000 mile major component engine warranty is an unnecessary burden to school districts. Due to the fact that most schools either have a maintenance department or contract for maintenance on their buses, this would be a needless cost and burden on the schools.

5. The 80% maximum funding percentage is prohibitive for financially strapped school districts. According to Fleet Modernization criteria, the maximum reimbursement, based on NADA adjusted loans, cannot exceed the NADA

commercial value of a used vehicle, or 80 percent of the invoice price of a new vehicle. However, for the school bus application, only district-governed minimum rebuild costs should be used in determining maximum incentive. These will be in accordance with pre-established internal policy and procedures for determining the maximum incentive amount.

I would like to thank your Board for their willingness to address the SJVAPCD's issues regarding the inclusion of school bus replacement through the Fleet Modernization Component of the Moyer Program. Should you have any questions, please call me at (559) 230-6036.

Sincerely,

Seyed Sadredin
Deputy Executive Director/Deputy APCO

cc: California Air Resources Board Members
Catherine Witherspoon, ARB Executive Director