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Via electronic mail: mnichols@arb.ca.gov

Mary D. Nichols, Chairman
California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, California 95812

Comments on Proposed Amendments to the Truck and Bus Rule

Dear Ms. Nichols:

First Student, Inc. ("First Student") respectfully submits this letter commenting on and offering proposed revisions to the California Air Resources Board's ("ARB") On-Road Heavy-Duty Diesel Vehicles (In Use) Regulation (the "Truck and Bus Rule"), and the potential impacts of the current regulations on the bus industry in California. First Student makes these comments as the largest (by fleet size) private school bus contractor doing business in California. In this role, First Student prides itself in providing safe, reliable and cost-effective transportation services that help school districts focus on providing students with the best possible education.

Preliminarily, and so as to place these comments in context, First Student supports ARB's objectives of reducing air pollutants and protecting human health and the environment. There are many facets of the Truck and Bus Rule that advance these goals with which First Student agrees. Further, First Student supports ARB staff's proposed regulatory flexibility changes as they apply to the trucking industry.

Nevertheless, First Student also believes there are several components of the Truck and Bus Rule that can be improved upon further – components that will recognize the steps and investments taken by proactive businesses (such as First Student) to comply with the Rule *ahead of schedule* while furthering the goals and objectives of ARB's emissions reduction efforts. In sum, First Student merely requests that some of the proposed revisions for the trucking industry also be applied to the bus industry.

Providing equal flexibility to the relatively small bus industry, as ARB is proposing to do for the

significantly larger commercial truck industry, will allow ARB to meet the objectives of the Rule while also avoiding the technical challenges and the heavy economic impacts of the requirements currently imposed on bus fleets. When ARB released its proposed changes to the Rule, you stated that the revisions demonstrate that “*we will not have to sacrifice the state’s air quality goals to assist fleet owners*” and that the “*amendments, which include more flexible deadlines ... will further our emissions reduction goals by better ensuring that fleets can meet the requirements of the regulation.*”¹ First Student agrees, and feels strongly that the same flexibility should be extended to the bus industry for the same reasons.

Therefore, we request that the Board direct ARB staff to propose the following revisions to the Truck and Bus Rule:

- (1) extend the credit for bus fleets that have downsized to January 1, 2018; and
- (2) extend the credit for fuel-efficient hybrid school buses, alternative fuel school buses, electric school buses, or school buses with pilot ignition engines to January 1, 2018.

Additionally, First Student requests that the Board direct ARB staff to propose revisions to the Truck and Bus Rule that would extend the compliance period in the limited situation where a school district’s current multi-year contract with a bus service provider is close to expiring, making bus retrofits or the purchase of new buses impractical. As explained in more detail below, some private school bus contractors (including First Student) are locked into contracts with several school districts that were entered into before the three year compliance schedule for the Truck and Bus Rule went into effect. The terms of those contracts are based on pricing models that do not contemplate or accommodate the expense of installing filters or purchasing new buses once the contract is entered into. Moreover, the contracts are about to expire at the end of either the current school year or within the next two school years. As a result, purchasing filters or new vehicles is simply cost prohibitive, since there is no guarantee that these contracts will be renewed after they expire. First Student requests the opportunity to work with ARB staff to extend the compliance period in these limited situations.

Requirements for Bus Fleets under the Current Truck and Bus Rule

The current Truck and Bus Rule requires all school buses either to be retrofitted with diesel particulate matter (PM) filters or upgraded to 2010 (or newer) model year engines, as set forth in paragraph (k) of the regulations. All bus fleets, regardless of size, must meet the PM filter requirements by January 1, 2014. These requirements were phased in over a period of three years, as set forth in the table below.

<u>Compliance Date</u>	<u>Percent of School Bus Fleet</u>
January 1, 2012	33%

¹ California Air Resources Board, *ARB Unveils Proposed Changes to California’s Truck and Bus Regulation* (News Release), March 6, 2014 (quoting Chairman Nichols).

January 1, 2013	66%
January 2, 2014	100%

The regulations also provide opportunities for bus fleet owners to take advantage of two important credits. First, a bus fleet having fewer buses than it had in the 2006 baseline year may reduce the percentage requirement (in the table above) by the same percentage as the fleet has downsized. Second, a fleet that has employed fuel-efficient hybrid school buses, alternative fueled school buses, electric school buses, or school buses with pilot ignition engines receives a credit to treat as compliant a bus in its fleet that has not been retrofitted with a PM filter. Both of these credits expired on January 1, 2014, pursuant to the current Rule.

Proposed Revisions of the Truck and Bus Rule for Truck Fleets

ARB staff has proposed several amendments to the current Truck and Bus Rule that are intended to ensure more successful compliance with the Rule by providing additional flexibility to vehicle owners. As explained in the Staff Report² for the proposed amendments, these amendments have been proposed to address concerns raised by industry about the severe economic impact of compliance with the regulation's requirements. The Staff Report also recognizes there are significant costs of compliance for some fleet owners. For these reasons, the staff found that additional flexibility is needed to ensure that the emissions reduction goals of the Rule will be realized. At the same time, the staff also identified the need to balance the interests of compliant fleets by recognizing fleet owners that made early investments to comply.

To accomplish these objectives, ARB staff has proposed, *inter alia*, to extend the use of compliance credits until 2018 or 2020. This includes credits for downsizing fleets, early PM retrofits, and the addition of newer vehicles. The credit for adding alternative fuel vehicles and advanced technology vehicles (*i.e.*, hybrid or zero-emission vehicles) is also extended. This last provision is intended to "continue to encourage owners to upgrade to alternative fueled or advanced technology vehicles," according to the Staff Report.³

Requested Revisions of the Truck and Bus Rule for Bus Fleets

First Student requests that the extensions of credits proposed for truck fleets be made available to bus fleets as well and that slight accommodations be made for buses that are close to the end of their useful life – where the cost of retrofitting a bus for the short remaining amount of its operating life is not practical.⁴

² California Air Resources Board, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking; Proposed Amendments to the Truck and Bus Regulation*, March 2014.

³ *Id.* at 24.

⁴ As background, there are numerous 2006 model engine buses on the road that are reaching the end of their operating life. Many of these buses are the smaller model "A" or "B" buses. Due to their smaller size and the limited space under A and B buses, there was a lag in the

The rationale for providing flexibility for truck fleets applies equally to bus fleets. Bus fleets will also experience significant negative economic impacts if forced to comply with the timing requirements of the current Truck and Bus Rule. For example, it is extremely expensive to retrofit a school bus with a PM filter. PM filter units for buses are similar in cost to many of the PM filters for trucks. However, installing a PM filter on a bus carrying passengers tends to be more expensive and more complicated than installation on a freight-carrying truck because of the following factors:

- bus exhaust runs need to cover relatively long horizontal distances under the cabin (carrying students), as opposed to truck runs that are shorter in length and can utilize vertical pipe chases directly behind the driver's cabin;
- due to the limited amount of space under the passenger floor of the smaller "A" and "B" style buses, there are more technical challenges and costs associated with installing a retrofit PM filter (particularly because of requirements regulating ground clearance). This is particularly troublesome where the PM filters are geometrically larger than the muffler system they are replacing. These issues are less likely to crop up with commercial freight vehicles;
- larger rear engine diesel buses require dual remote monitoring systems, with one monitoring system in the rear engine bay (for maintenance) and another at the driver's compartment – trucks would not have to incur these additional costs; and
- greater amount of thermal insulation and more robust vibration isolation is necessary for buses, again due to the passengers being carried, as opposed to freight.

Finally, there are multiple factors which increase the cost of operating and maintaining a PM filter on a bus that do not exist on many trucks:

- buses tend to have very different "duty cycles" than trucks. Most buses tend to operate shorter distances, with frequent stops (due to picking up and dropping off passengers) and primarily travelling at slower speeds than trucks. In First Student's experience, this is problematic from the standpoint of increased maintenance intervals for PM cleaning on some (but not all) buses. This makes for higher maintenance costs due to different buses running different routes, requiring different levels of maintenance. Conversely, trucks

technological development of viable retrofits for many A and B models as opposed to the larger "C" and "D" type buses, that have more space below their chassis to fit a PM filter. By the time viable PM filters were developed for the smaller buses, they were older and greatly depreciated in value. From an economic standpoint, it now makes virtually no economic sense to install filters on these buses when they are so close to their natural retirement. Rather, it would be better for all involved over the long run to replace these buses over the next few years with new compliant diesel or alternative fuel vehicles that will not only reduce diesel particulates but consume less fuel as well.

have a higher likelihood of operating at higher speeds (on highways) for longer time periods, allowing their PM filters to burn exhaust gases more efficiently. Also, truck engines are frequently hauling much greater cargo weights, forcing them to work harder at higher temperatures –creates greater efficiencies for their PM filters. Based in part on the above, First Student has found that bus PM filters can require more maintenance than similar filters used on trucks. In sum, it has been First Student’s experience that the buses that have the better PM filter operation and maintenance records tend to be the ones where the PM filter was installed by the original equipment manufacturer (“OEM”) for the entire bus, as it was designed and tested in conjunction with the engine and exhaust component manufacturers.⁵

Therefore, the economic impact of the current Rule on the bus industry warrants revising the Rule to provide the same flexibility as that afforded to the trucking industry by the proposed revisions. Just as with the trucking industry, this flexibility will ultimately ensure more successful compliance with the Rule without jeopardizing ARB’s emissions reduction goals. These proposed revisions for bus fleets would also recognize bus fleet owners that made early investments to comply.

Allowing truck fleets to benefit from the flexibility provided by the proposed revisions without also allowing bus fleets to benefit is unwarranted given that emissions from bus engines are generally very similar to emissions from truck engines. If anything, truck engines typically produce more NO_x emissions than bus engines because they burn more fuel on average compared to bus engines (due to the heavier cargos being carried by trucks). Thus, when considering the amount and type of emissions, there is no basis for excluding bus fleets from the proposed credits and extensions provided to truck fleets.

For these reasons, we request that ARB extend the credit for bus fleets that have downsized and the credit for fuel-efficient hybrid school buses, alternative fueled school buses, electric school buses, or school buses with pilot ignition engines to January 1, 2018. We also request that ARB allow buses to qualify for the longer phase-in period provided to low-mileage work trucks.

1. *Extend the Credit for Downsized Fleets*

First, ARB should extend the credit for school bus fleets that have downsized until January 1, 2018.

The current Section 2025(k)(2) provides that a bus fleet having fewer buses on January 1 of the compliance year than it had in the 2006 baseline year may reduce the applicable fleet compliance percentage by the same percentage that the fleet has downsized. This credit expired on January 1, 2014.

⁵ On a related note, the OEM-installed PM filters present a lower risk that buses could break down en route, leaving students temporarily stranded while a replacement bus is sent.

ARB staff has proposed to extend a similar credit for the trucking industry so that credit would expire in 2018. According to ARB staff, extending the downsizing credit furthers ARB's air quality goals by increasing the likelihood that fleet owners will upgrade to newer vehicles earlier than under the existing regulation.⁶

Moreover, downsizing by removing older vehicles also helps achieve ARB's emissions reduction goals by dramatically reducing the fleet's carbon footprint. First Student has been advised that every gallon of diesel burned results in approximately 22.2 pounds of carbon dioxide emitted to the atmosphere. Taking these vehicles off the road therefore achieves reductions of greenhouse gases that do not occur when a PM filter is installed on a bus that continues burning fuel. Downsizing also results in NOx reductions compared to installing PM filters.

As an example First Student has decreased the number of buses in its fleet by approximately 33 percent compared to the 2006 baseline. The resulting reduction in emissions of PM, NOx, CO2, other pollutants is enormous, and would not have been achievable through the installation of PM filters on buses that would continue operating. First Student therefore requests that ARB allow it to continue to receive credit for this sizeable reduction in the number of vehicles in its fleet, just as truck fleet owners will continue to receive credit for similar reductions they have made. Extending the credit period fleet downsizing would promote ARB's emission reduction goals by incentivizing bus fleets to upgrade to newer vehicles earlier than under the existing regulations, just as the proposed revisions would advance the use of newer vehicles by truck fleets.

2. *Extend Credits for Hybrid and Alternative Fuel Vehicles*

Second, ARB should extend the credit for hybrid school buses, alternative fuel school buses, electric school buses, and buses with pilot ignition engines until January 1, 2018.

The current Section 2025(k)(2) provides that a fleet that has employed fuel-efficient hybrid school buses, alternative fuel school buses, electric school buses, or school buses with pilot ignition engines will receive a credit to treat as compliant a bus in its fleet that has not been retrofitted with a PM filter. This credit expired on January 1, 2014.

ARB staff has proposed to extend similar credits for the trucking industry so that they expire in 2018 or 2020, depending on the type of credit. Credits for adding alternative fuel vehicles would be extended until 2018 and credits for adding fuel-efficient hybrids or other advanced technology vehicles would be extended until 2020. According to the Staff Report, extending these early action credits recognizes fleet owners that made early investments to comply. The extension also provides an additional incentive to encourage fleet owners to upgrade by replacing older vehicles with cleaner vehicles. According to ARB staff, "[s]upporting the commercialization of advanced technology vehicles is a key part of achieving future air quality improvements and a sustainable transportation future."⁷

⁶ *Id.* at 66.

⁷ *Id.*

Additionally, adding hybrid and alternative fuel vehicles to fleets also helps achieve ARB's air quality goals by reducing the fleet's carbon footprint. These vehicles produce far lower amounts of carbon dioxide than conventional buses with PM filters, which do not lower greenhouse gas emissions. Taking these vehicles off the road therefore reduces emissions of greenhouse gases – reductions that do not result from the installation of PM filters on buses that continue to use diesel as fuel.

First Student has already added many alternative fuel school buses to its fleet - often in areas with significant air pollution problems. Given the superiority of this technology, we request that ARB recognize the significant early investment of First Student and other bus fleet owners by extending the credit to January 1, 2018, as has been proposed for the trucking industry. As with the trucking industry, extending this credit would encourage bus fleet owners to continue to purchase cleaner vehicles, thereby sustaining the market for advanced technology vehicles, which will do more to achieve air quality improvements and reduce greenhouse gas emissions than the installation of PM filters on older vehicles.

3. *Extend the Compliance Period for School Buses Used for Limited School District Contracts That Will Expire Soon*

Finally, First Student requests that the Board direct ARB staff to propose revisions to the Truck and Bus Rule that would extend the compliance period in a limited number of situations - where a school district has already entered into a multi-year contract for bus services, the service provider is providing bus services pursuant to the contract, and the contract is about to expire soon such that retrofitting buses or purchasing new buses was not contemplated by the parties and is now cost prohibitive.

As background, school districts tend to contract out school bus services with multi-year contracts (typically five years, but sometimes longer). Consequently, there are a number of contracts that are about to expire – either at the end of the current school year (circa June 2014) or at the end of the next two school years. Because those contracts were entered into before the three year phase-out period went into effect, the terms of those contracts are based on pricing models that do not contemplate the expense of complying with the requirement to install PM filters or purchase new buses. Moreover, private contractors have no ability to predict, let alone guarantee, that their contract will be extended. As explained above, the cost of complying with the Rule is significant – whether installing and maintaining a new PM filter or incurring significantly more to purchase a new bus. Consequently, the significant expense makes purchasing and installing PM filters or purchasing new vehicles for contracts that will last only for a few months or a year financially impractical.

Forcing a relatively small number of buses used in the above types of contracts will likely result in one of two problems occurring:

- First, school districts might be required to install relatively expensive retrofits on buses that will likely not be operated more than two years. This is not a good use of scarce educational resources, considering that when the contracts expire, new buses (whether diesel or increasingly

alternative fuel) would likely replace these aging fleets.

- Second, given the substantial cost of compliance, it is possible that private contractors could be forced to consider terminating the contracts rather than incur such substantial costs with no ability to recoup the capital expenditures in the short time remaining on the contract. If that were to occur, students in these school districts would be left without transportation to and from school each day. As a result, parents would have to drive their children to school, replacing each individual bus with dozens of cars (per bus) on the road. This would lead to increased vehicle traffic and vehicle emissions. Those students whose parents cannot take them to school would either have to walk to school or find an alternate for of transportation.

Neither of the above circumstances is optimal, whether for the school districts or the contractors, but ultimately, for the students and their parents.

For these reasons, First Student respectfully but urgently requests that the Board direct Staff to work with First Student and other contractors to make reasonable accommodations for these very limited contract expiration situations. Given the relatively small number of buses involved, the current Rule can be revised to address this limited situation in a way that does not adversely affect ARB's overall emissions reduction objectives.

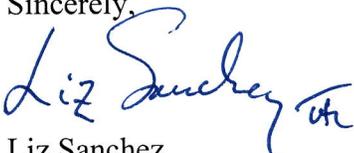
Conclusion

First Student thanks you for this opportunity to comment on the proposed revisions to the Truck and Bus Rule, and we look forward to working closely with the Board and ARB staff to develop workable amendments to the Rule that will achieve ARB's air quality goals while also avoiding adverse economic impacts on the bus industry.

We look forward to discussing our comments and proposed revisions at the Board's meeting on April 24 and 25, 2014.

Please let me know if you have any questions. Thank you.

Sincerely,



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First Student

cc: Todd Sax – tsax@arb.ca.gov
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