California Environmental Protection Agency

Air Resources Board

Final Statement of Reasons for Rulemaking

FOR THE ADOPTION OF AMENDMENTS TO THE REGULATION TO REDUCE EMISSIONS FROM IN-USE ON-ROAD DIESEL VEHICLES MADE AS PART OF THE PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE REGULATION TO REDUCE EMISSIONS FROM IN-USE ON-ROAD DIESEL-FUELED VEHICLES THE HEAVY-DUTY VEHICLE GREENHOUSE GAS EMISSION REDUCTION MEASURE, AND THE REGULATION TO CONTROL EMISSIONS FROM IN-USE ON-ROAD DIESEL-FUELED HEAVY-DUTY DRAYAGE TRUCKS AT PORTS AND INTERMODAL RAIL YARD FACILITIES

Public Hearing Date: December 16 and 17, 2010
Agenda Item No.: 10-11-3

APPENDIX A

APPENDIX B

State of California
AIR RESOURCES BOARD

Final Statement of Reasons for Rulemaking
Including Summary of Comments and Agency Response

FOR AMENDMENTS TO THE REGULATION TO REDUCE EMISSIONS FROM IN USE ON-ROAD DIESEL VEHICLES MADE AS PART OF THE PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE REGULATION TO REDUCE EMISSIONS FROM IN-USE ON-ROAD DIESEL-FUELED VEHICLES, THE HEAVY-DUTY VEHICLE GREENHOUSE GAS EMISSION REDUCTION MEASURE, AND THE REGULATION TO CONTROL EMISSIONS FROM IN-USE ON-ROAD DIESEL-FUELED HEAVY-DUTY DRAYAGE TRUCKS AT PORTS AND INTERMODAL RAIL YARD FACILITIES

Public Hearing Date: December 17, 2010
Agenda Item No: 10-11-3

I. GENERAL

A. Action Taken During This Rulemaking

In this rulemaking, the Air Resources Board (ARB or Board) adopted amendments to the Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles (Truck and Bus regulation) California Code of Regulations (Cal. Code Regs.), section 2025; the Heavy-Duty Vehicle Greenhouse Gas (GHG) Emission Reduction Measure (Tractor-Trailer GHG regulation), title 17, Cal. Code Regs., sections 95301 to 95307, 95309, and 95311; and the regulation for In-Use On Road Heavy-Duty Diesel-Fueled Drayage Trucks at Ports and Intermodal Rail Yard Facilities (Drayage Truck regulation), title 13, Cal. Code Regs., section 2027. The amendments to the Truck and Bus regulation have been adopted independently of the amendments to the other two regulations, and this final statement of reasons (FSOR) includes only comments and responses pertinent to the Truck and Bus regulation

The notice of public hearing for this rulemaking was published in the Office of Administrative Law's Regulatory Notice Register on November 1, 2010 and posted on the ARB's website and made publicly available on October 27, 2010, at http://www.arb.ca.gov/regact/2010/truckbus10/truckbus10.htm.

A "Staff Report: Initial Statement of Reasons for Proposed Rulemaking" entitled: "Proposed Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation." (Staff Report) was

also released on October 27, 2010 and made available to the public upon request as required by Government Code § 11346.2.

The Staff Report which is incorporated by reference herein, describes the rationale for the amendments of section 2025 and the amendments to the other two regulations. The text of the originally-proposed amendments of section 2025 was included in Appendix A of the Staff Report. The hearing was held on December 17, 2010.

Among other things, staff's originally proposed amendments to the Truck and Bus regulation bifurcated the handling of trucks and buses by weight. Those vehicles that are 26,000 pounds or less would no longer be required to install diesel particulate matter (PM) filters. Trucks and buses over 26,000 pounds would still be required to install PM filter, but initial compliance phase-in would be delayed by one year to January 1, 2012. The amendments also deferred the initial engine replacement requirements for all trucks for two years, until January 1, 2015. Starting in 2015 and continuing through 2019, fleets will be required to replace trucks, regardless of weight, that are 20 year old or older that are not equipped with PM filters with trucks that are equipped with 2010 model year or emissions-equivalent engines. Between January 1, 2020 and January 1, 2023, fleets will be required to have all of their heavy-duty trucks, equipped with 2010 model year or emissions-equivalent engines.

At the December 17, 2010 hearing, the Board considered the proposed amendments to section 2025 and received written and oral comments. At the conclusion of the hearing, the Board adopted Resolution 10-44 in which it delegated to the Executive Officer final authority to approve the originally proposed amendments to the Truck and Bus regulation with modifications as set forth in the Resolution.

The additional modifications included: modifying the compliance dates for the 1996, 1997 and 2000 model year engines; adding credits for the early purchase of newer engines, delaying requirements for vehicles that operate exclusively in Oxides of Nitrogen (NOx) exempt areas; adding an extension for fleets that equip all engines in the fleet with PM filters by January 1, 2014; delaying the PM filter phase-in schedule for low mileage construction trucks; allowing fleets to exchange credits accrued in the Off-Road In-Use Diesel Vehicle regulation, title 13, Cal. Code Regs., Section 2449 or the Truck and Bus regulation by installing retrofits beyond what is required under the respective regulations to count towards compliance in the other regulation; expanding the definition of NOx exempt areas to include northern Sonoma County; providing additional compliance flexibility for fleets with low-mileage construction trucks fleets to the extent feasible without compromising emission reductions necessary to achieve attainment with NAAQS. The Board also directed staff to retain the provision in the initially adopted Truck and Bus regulation that requires school buses 26,000 pounds or less be equipped with PM filters.

The Resolution directed the Executive Officer to incorporate the modifications into the proposed regulatory text, with such other conforming modifications as may be appropriate. In accordance with section 11346.8 of the Government Code, the Board

directed the Executive Officer to adopt the amendments to title 13, Cal. Code Regs., section 2025, and the modified sections described above after making the modified text available to the public for comment for a period of at least 15 days. The Board conditioned this directive with the instruction that the Executive Officer shall consider the written comments regarding the modified text that may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if warranted. After the hearing, staff also identified additional conforming modifications.

The text of the modifications to the originally proposed regulatory amendments was made available for a supplemental 15-day comment period by issuance of a "Notice of Public Availability of Modified Text" on May 19, 2011. The 15-Day Notice described each modification to title 13, Cal. Code Regs., section 2025, and the rationale thereto. The changes to the initially proposed regulatory text were clearly identified by double strikeout and underline and attached to the 15-Day Notice. The 15-day Notice and attachment were mailed to all parties identified in section 44(a), title 1, Cal. Code Regs., and other interested parties. The 15-day Notice and attachment were also posted on the ARB's Internet site for the rulemaking on May 19, 2011 and made available for public comment through June 3, 2011. The 15-day Notice and attachments thereto are incorporated herein by reference.

After considering the comments submitted during the 15-day comment period, on September 19, 2011, the Executive Officer issued Executive Order R-11-009, adopting the amendments to title 13, Cal. Code Regs., section 2025.

B. Documents Incorporated by Reference

There are no documents incorporated by reference.

C. Fiscal Impacts

Fiscal Impact on State Government

No fiscal impact exists because the amended Truck and Bus regulation does not affect any State agency or program except for school bus transportation, and as described below, there will be no increased costs for school districts.

Fiscal Impact on Local Government

ARB has determined that the amendments to the Truck and Bus regulation will impose no mandate on local agencies or school districts that is reimbursable pursuant to Part 7 (commencing with section 17500) of Division 4 of the Government Code. No fiscal impact exists because the amended Truck and Bus regulation does not affect any local agency or program except for school bus transportation, and all school buses will still need PM filters by 2014 as currently required in the existing regulation. The amendments delay the initial requirements by one year and State funding is available for most of the retrofits needed. The retrofit requirements are applicable to all public and private schools. Staff estimates that the amendments will result in no increased

costs for school districts and that the savings from maintenance or operational cost savings from the one year deferral are de minimis.

D. Consideration of Alternatives

For reasons set forth in the Staff Report, in staff's comments and responses at the hearing, and in this FSOR, ARB has determined that no alternative considered by the agency, or that has otherwise been identified and brought to the attention of the agency, would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective or less burdensome to affected private persons than the adopted regulation.

II. NONSUBSTANTIVE CHANGES TO THE FINAL REGULATION ORDER

Staff has made minor nonsubstantive changes to the final regulation order to correct punctuation and typographical errors, fix incorrect references, and improve accuracy and clarity. The changes do not alter any requirement and reflect the original intent of the regulation. The modifications and the reason for each change are discussed below.

1. Sections 2025(d)(2) and 2025(d)(3)

   Staff included the word "or" at the end of (A) and (B). This clarifies the definition of "2007 Model Year Emissions Equivalent".

2. Section 2025(d)(23)

   The word "provide" was included in the definition of emergency support vehicle. This clarifies that emergency support vehicles are defined as vehicles dispatched by a local, state, or federal agency that are used to provide transport services or supplies in connection with an emergency operation.

3. 2025(d)(40)(A)

   "Truck" was changed to "dump truck" to clarify that the description of the vehicle in section 2025(d)(40)(A) refers to types of dump trucks.

4. Section 2025(d)(46)

   The reference that defines the Northern Sonoma area was incorrect in the definition of NOx Exempt Area in the regulation. The correct reference is title 17, CCR section 60100(e).

5. Section 2025(f)(3)

   Staff included the statement "except for the following sections that apply only to heavier trucks: 2025(p)(1)(B), 2025(p)(2), 2025(p)(8), 2025(p)(9), and 2025(p)(10)". This was added to clarify that vehicles with a GVWR of 26,000 pounds or less cannot use all of the exemptions, delays, and extensions of section 2025(p). The sections either specifically state that they do not apply to the lighter-weight trucks or entail requirements (i.e., installation of PM filters) that are not applicable to lighter weight trucks.

6. Section 2025(j)(1)(B)1.

   The wording in this section was changed from

   a. “Either a planned non-operation certificate that has been issued by the DMV or a certificate of non-operation” or
   b. An equivalent certificate has been filed with another state prior to the beginning of the compliance year; or

to:

   a. “Either a certificate of non-operation has been issued by the DMV or a request for a non-operation certificate has been filed with DMV prior to the beginning of the compliance year; or
   b. An equivalent certificate has been issued by another state or a request for such a certificate has been filed with the state prior to the beginning of the compliance year.

This change was made to clarify the regulation’s intent that the non-operational requirements for California and out-of-state vehicles are aligned.

7. Section 2025(k)(4)(A)

   The reference to 2025(k)(5)(B) is incorrect and was corrected to 2025(k)(4)(B).

8. Section 2025(k)(4)(C)

   An unnecessary comma was removed.

9. Section (m)(11)(C)

   A comma was added to correct the punctuation.

10. Section 2025(m)(12) Table 7

    The title of the table was changed from “Compliance Schedule for Reported Log Trucks” to “Compliance Schedule for the Log Truck Phase-In Option”. The title was changed for consistency in terminology and to more accurately describe the provision.

11. Section 2025(n)(2)

    A sentence was added to clarify fleet owners of the preexisting reporting requirement that they must meet the reporting requirements in 2025(r)(17) for two engine sweepers with Tier 0 auxiliary engines (50 horsepower or greater).

12. Section 2025(o)(2)

    Modifications were made to section 2025(o)(2) to clarify that a fleet does not have to report vehicles added to the fleet if they are 2007 model year or newer engines that meet PM BACT.

13. Section 2025(p)(1)

    This section was changed to include “when operating in California”, to clarify that the provision applies to vehicles used exclusively in NOx exempt areas when they are operating in California, and that vehicles that cross state lines are eligible for the NOx Exempt Area provision.

14. Section 2025(p)(1)(A)

    The statement “meet PM BACT but” was inserted after “used exclusively in NOx exempt areas.” This was added to emphasize that the use of the NOx exempt area provision does not excuse vehicles from meeting the PM BACT requirements. This addition does not change the original intent of the NOx exempt area provision, which only exempts vehicles from meeting the 2010 model year emissions equivalent requirements.

15. Section 2025(p)(2)(A)

    This section was modified to correct a grammatical error. The word “describe” was changed to “described”.

16. Section 2025(p)(2)(D)

    The word “Alternately” was deleted and the word “other” was added to the first sentence for clarity. Additionally, the word “may” was changed to “must” to emphasize that to use the option fleets are required to meet the minimum requirements specified in the phase-in schedule of Table 9. This is consistent with the existing language that conditions use of the option on meeting the requirements (i.e., “and, if so”). A reference to 2025(p)(1)(A) was in error and was corrected to read 2025(p)(2)(A).

17. Section 2025(p)(2)(G)

    Sections 2025(p)(2)(F) and 2025(p)(2)(G) were duplicative. Therefore, 2025(p)(2)(G) was deleted.

18. Section 2025(p)(2)(H)

    Section 2025(p)(2)(H) was renumbered to section 2025(p)(2)(G) since section 2025(p)(2)(G) was deleted.

19. Section 2025(p)(2)(I)

    Section 2025(p)(2)(I) was renumbered to section 2025(p)(2)(H) since section 2025(p)(2)(G) was deleted.

20. Section 2025(p)(2)(J)

    Section 2025(p)(2)(J) was renumbered to section 2025(p)(2)(I) since section 2025(p)(2)(G) was deleted.

21. Section 2025(p)(5)(A)

    The number of days required for a fleet owner to apply for a three-day pass exemption before operating the vehicle in California was changed from seven days to three days. This change was made to make the required reporting date consistent with the three day period in which the Executive Officer has to respond to the request.

22. Sections 2025(r)(12)(D), 2025(r)(12)(E), and 2025(r)(12)(F)

    The punctuation and grammar were corrected as follows:

    2025(r)(12)(D) – A period was replaced with a semicolon.
    2025(r)(12)(E) – A semicolon was added.

2025(r)(12)(F) – The word “and” was added.

23. Sections 2025(r)(17)1. and 2025(r)(17)2.

    Sections 2025(r)(17)1. and 2025(r)(17)2. were deleted because it was repeated in subsequent sections: 2025(r)(17)(A) and 2025(r)(17)(B).

24. Section 2025(r)(17)

    “Single-Engine and” was deleted from the title “Single-Engine and Two-Engine Sweepers” as the reporting requirements for the auxiliary engine only applies to sweepers with two engines (a propulsion and auxiliary engine).

25. Section 2025(r)(19)

    The reference to items “2025(r)(19)(A) to 2025(r)(19)(G)”erroneously identified sections that do not exist. The reference was replaced with a corrected reference to 2025(r)(8) items (A) to (G).

26. Section 2025(r)(19)

    The reference to items “2025(r)(19)(A) to 2025(r)(19)(G)”erroneously identified sections that do not exist. The reference was replaced with a corrected reference to 2025(r)(8) items (A) to (G).

27. Section 2025(s)(17)

    The term “Early PM Retrofit Credits -” was added at the beginning of that section as a heading and the format of the font was modified to remove italics to be consistent with the format used in the rest of section (s).

III. Summary of Public Comments and Agency Responses

The Board received numerous written and oral comments during the 45-day public comment period and at the December 2011 Board hearing. Set forth below is a summary of each objection or recommendation specifically directed to the proposed regulation for in-use on-road diesel vehicles or to the procedures followed by ARB in proposing or adopting the regulation. Each comment is followed by the agency response explaining how the proposed action was changed to accommodate each objection or recommendation, or the reasons for making no change. The comments have been grouped by topic whenever possible. Comments that do not involve objections or recommendations specifically directed towards the proposed regulation or to the procedures followed by ARB in this rulemaking are generally not summarized below.

A. Summary of Commenters

During the 45-day comment period, the Board received written comments from the persons or entities listed in Table 1. The reference code listed in the first column will be used to identify the person or entity submitting the comment in the summary of comments and responses. Oral testimony was presented at the Board Hearing by the persons or entities listed in Table 2.

Table 1

List of Persons and Entities Who Submitted Comments During the 45-Day Comment Period

Reference Code	*Commenter*	*Company or Affiliation*
AARMC	Mike Cook	A&A Ready Mixed Concrete Inc.
ACLOG1	Eric Carleson	Associated California Loggers
ACLOG2	Eric Carleson	Associated Califiornia Loggers
AKELL	Alan Kellogg	Alan Kellogg
ALAM	Ann Laman	Ann Laman
ALOG	Myles Anderson	Anderson Logging, Inc.
APTCO	Jim Bañuelos	Aptco, LLC Agricultural Packaging Inc.
ATA1	Michael Tunnell	American Trucking Associations
BAAQMD1	Anthony Fournier	Bay Area Air Quality Management District
BAAQMD2	Jack Broadbent	Bay Area Air Quality Management District
BGLID	Brian Glidden	Brian Glidden
BHULZ	Brian Hulz	Brian Hulz
BSAM	Barbara Samardich	Barbara Samardich
BWG1	Camille Kustin	Better World Group
BWG2	Camille Kustin	Better World Group
BYOUNG	Bill Young	Bill Young
CAEC1	Brad Edgar	Cleaire Advanced Emission Controls
CAPCOA	Mel Zeldin	California Air Pollution Control Officers Association
CASTO1	Michael Rea	California Association of School Transportation Officials
CASTO2	Michael Rea	California Association of School Transportation Officials
CCIMA1	Charles Rea	California Construction and Industrial Materials Association
CDT1	Kevin Brown	Clean Diesel Technologies, Inc.
CDTOA1	Lee Brown	California Dump Truck Owners Association
CEMEX1	Christine Jones	Cemex
CFA1	Steven Brink	California Forestry Association
CFCOAL1	Sean Edgar	Clean Fleets Coalition
CIAQC1	Michael Lewis	Construction Industry Air Quality Coalition
CIAQC2	Clayton Miller	Construction Industry Air Quality Coalition
CMSA1	Steve Weitekamp	California Moving and Storage Association
COEU	Eric Eisenhammer	Coalition of Energy Users
CRAND	Christy Randall	Christy Randall
CRIT	Cheryl Ritchie	Cheryl Ritchie
CSTRAT	Cindy Stratton	Cindy Stratton
CTA1	Matt Schrap	California Trucking Association

Reference Code	*Commenter*	*Company or Affiliation*
CTI1	Tim Fortier	Commercial Transfer Inc.
CTI2	Tim Fortier	Commercial Transfer Inc.
CTTA	Jeff Hunter	California Tow Truck Association
CUSD	Karen E. Frison	Compton Unified School District
CVWD	Gary Williams	Coachella Valley Water District
DCC1	Skip Brown	Delta Construction Company Inc.
DCCI	Andy Recalde	The Don Chapin Company Inc.
DFS1	Julian Imes	Donaldson Company, Inc.
DJER	Donald Jerome	Donald Jerome
DLOREN	Dyan Lorenzen	Dyan Lorenzen
DVON	David Vonasek	David Vonasek
DWILL	David Williamson	David Williamson
EBARBO	Eddie Barbosa	Eddie Barbosa
EDTOW	Ed Bruno	Ednic Towing
ENG	Assemblymember Mike Eng	Assembly California Legislature
ERIK	Erik K	Erik K
ES-OOIDA	Claire Shapiro	Eisen & Shapiro, Drivers Association, Inc.
EWILL	Ebbeling William	Fresno-Madera Medical Society
FLFT	Chris Torres	F & L Farms Trucking Inc.
FRMI	Kevin Brunnemer	Foothill Ready Mix Inc.
FUSD	Ralph Meza	Fresno Unified School District
GCI1	Dave Sbaffi	Granite Construction Inc.
GFLEM	George Fleming	George Fleming
GGIFF	Garry Gifford	Garry Gifford
GHILL	Gary Hill	Gary Hill
GIBBS	David Gibbs	Gibbs Law Firm, P.A.
GMEN	Greg Menna	Greg Menna
GPAY	Gary Pay	Gary Pay
GVUSD	Sarah Koligian	Golden Valley Unified School District
HBAB	Henry Babich	Henry Babich
HCHUN	Helena Chung	Helena Chung
HNAP	Heidi Napier	Heidi Napier
HNCA	Jenny Bard	Health Network for Clean Air
JBALL	John Ballesteros	John Ballesteros
JGRIF	Jim Griffith	Jim Griffith
JHOL	Jacque Holub	Jacque Holub
JMC1	Martin Lassen	Johnson Matthey Catalysts
JQUILT	John Quilter	John Quilter
JSERRE	John Serres	John Serres
JWOOD1	Jeff Wood	Jeff Wood
JWOOD2	Jeff Wood	Jeff Wood
JYOUNG	Justin Young	Justin Young

Reference Code	*Commenter*	*Company or Affiliation*
KBROWN	Kelly Browne	Kelly Browne
KCEAR	KC Earnshaw	KC Earnshaw
KCUT	John D. Clements	Kings County Unified Transportation
KDURK	Kay Durkee	Kay Durkee
KGRAV	Kay Graves	Kay Graves
KTRAV	Ken Travers	Ken Travers
LCL	Tina Olivari	Luna Custom Landscaping
LECK	Larry Eckman	Larry Eckman
LLNL	Anthony Wegrecki	Lawrence Livermore National Laboratory
LOWEN	Hon. Bonnie Lowenthal	California Legislature
LTECH	Donald Debelak	Liqtech NA
MCAQMD	Carre Brown	Mendocino County AQMD
MCOOP	Mark Cooper	Mark Cooper
MECA1	Rasto Brezny	Manufacturers of Emission Controls Association
MFIN	Myrtle Findley	Myrtle Findley
MIRE	Dwayne Fosseen	Mirenco Inc.
MMORT	Mark Morton	Mark Morton
MMURRY	Mike Murry	Mike Murry
MPAT	Mike Patton	Mike Patton
MPPSTA	Martin Ward	Mid-Placer Public Schools Transportation Agency
MSHENK	Madelaine Shenkel	Madelaine Shenkel
MVT	Glenn Tucker	Moreno Valley Tow
NAFA	Richard Battersby	NAFA CARB Advisory Council
NRDC1	Diane Bailey	Natural Resources Defense Council
NSCAPCD 1	Barbara Lee	Northern Sonoma County Air Pollution Control District
NWSC1	James Thomas	Nabors Well Services Co
OUSD	Pamela McDonald	Orange Unified School District Transportation Dept.
PCAR	Paulette Cary	Paulette Cary
PMAC	Patricia McDonald	Patricia McDonald
PPIN	Pam Pinkston	Pam Pinkston
PRMI	Ronald Biang	Puente Ready Mix, Inc.
PUESD	Diane Cox	Pioneer Union Elementary School District
RDIE1	Robert Dietrich	Robert Dietrich
RDIE2	Robert Dietrich	Robert Dietrich
RETURN	Dan Scanlan	AutoReturn
RMAR	Rudy Marin	Rudy Marin
RNUSS	Ron Nuss	Ron Nuss
ROSE1	Jill Ratner	Rose Foundation

Reference Code	*Commenter*	*Company or Affiliation*
ROTC	Alan Osofsky	Rodgers Trucking Co
RTOM	Rick Tomlinson	Rick Tomlinson
SCAQMD1	Barry Wallerstein	South Coast AQMD
SCAQMD2	Henry Hogo	South Coast AQMD
SCCA3	William Davis	Southern California Contractors Association
SCHAT	Scott Chatten	Scott Chatten
SFIN	Sandra Finch	Sandra Finch
SHALL	Steve Hall	Steve Hall
SJONES	Susan Jones	Susan Jones
SJV/SC1	Seyed Sadredim	San Joaquin Valley Air Pollution Control District
SLYNES	Steve Lynes	Steve Lynes
SNIETO	Stephen Nieto	Stephen Nieto
SRES1	Jim Lyons	Sierra Research
SSTAL	Susan Stalzer M.D.	Susan Stalzer M.D.
STANS	Steve Stansberry	Steve Stansberry
STC	Stephen Rhoads	School Transportation Coalition
SUHSD	Tom Carroll	Shasta Union High School District
SYAR	Steve Thomson	Syar Concrete
TGILD	Todd Gildersleeve	Todd Gildersleeve
TTC	Clyde Stires	Tom's Truck Center
TTOW	Ruben Ayala	Tippy's Tow Service
TWRIGH	Tracey Wright	Tracey Wright
UCLA	James Enstrom	University of California, Los Angeles
UPSD	David Merk	Unified Port of San Diego
VCOOT	Victoria Coots	Victoria Coots
WARD1	Corey Wardlaw	Wardlaw Trucking
WBENG	Wayne Bengston	Wayne Bengston
WCC	Neysa McLoughlin	West-Cal Concrete
WCDI	Paul DiGuiseppi	West Coast Drywall, Inc.
WCTA	Michael Rea	West County Transportation Agency
WEAT1	Robert Hassebrock	Weatheford
WGROW	Kelly McKechnie	Western Growers
WSKIN	Warren Skinner	Warren Skinner

Table 2

List of Individuals and Other Entities who Presented Oral Testimony

Reference Code	*Commenter*	*Affiliation*
ACLOG3	Eric Carleson	Associated California Loggers
AFTR	Allen Faris	Allen Faris Trucking
ALAC1	Bonnie Holmes-Gen	American Lung Association of California
ALAC2	Bonnie Holmes-Gen	American Lung Association of California
ARA	John McClelland, Ph.D.	American Rental Association
ATA2	Michael Tunnell	American Trucking Association
BAAQMD3	Anthony Fournier	Bay Area AQMD
BCA	Andy Katz	Breathe California
BCPG	Rod Michaelson	Bay Cities Paving and Grading, Inc.
BJSC	Doug Van Allen	BJ Services Company
BWG3	Camille Kustin	Better World Group
CAEC2	Bradley Edgar	Cleaire Advanced Emission Controls
CAFBF	Cynthia Cory	California Farm Bureau Federation
CAPC	Paul Moore	CalPortland Company
CASTO3	Michael Rea	CA Association of School Transportation Officials
CCAIR1	Nidia Bautista	Coalition for Clean Air
CCAIR2	Elizabeth Jonasson	Coaltion for Clean Air
CCAIR3	Nidia Bautista	Coalition for Clean Air
CCDS	Betsy Reifsnider	Catholic Charities
CCIMA2	Charles Rea	California Construction and Industrial Materials Association
CCM	Shirley Batchman	California Citrus Mutual
CCP1	Frank de Carbonel	California Concrete Pumpers
CCP2	Hank de Carbonel	California Concrete Pumpers
CDT2	Kevin Brown	Clean Diesel Technologies
CDTOA2	Betty Plowman	California Dump Truck Owners Association
CDTOA3	Betty Plowman	California Dump Truck Owners Association
CEMEX2	Chris Shrader	Cemex
CEOC	Craig Parker	CalEnergy Operating Corporation
CFA2	Steven Brink	California Forestry Association
CFCOAL2	Sean Edgar	Clean Fleets Coalition
CIAQC3	Clayton Miller	Construction Industry Air Quality Coalition

Reference Code	*Commenter*	*Affiliation*
CIOMA	Jay McKeeman	California Independent Oil Marketers Association
CMSA2	Steve Weitekamp	California Moving and Storage Association
CNGVC	Tim Carmichael	California Natural Gas Vehicle Coalition
CPASC	Bruce Wick	California Professional Association of Specialty Contractors
CRPE	Brent Newell	Center on Race, Poverty, and the Environment
CTA2	Matt Schrap	California Trucking Association
CTI3	Tim Fortier	Commercial Transfer Inc.
CVAQC	Catherine Garoupa	Central Valley Air Quality Coalition
DCC2	Skip Brown	Delta Construction Company Inc.
DFS2	Julian Imes	Donaldson Filtration Solutions
DSTR	Susan Jones	D&S Trucking, CDTOA
EHC	Joy Williams	Environmental Health Coalition
ELKG	Jill Gayaldo	Elk Grove Unified School District
ERAA	Kathy Turner	Enterprise Rent-A-Car
EYARD1	Isella Ramirez	East Yard Communities for Environmental Justice
EYARD2	Jocelyn Vivar	East Yard Communities for Environmental Justice
FHS1	Tomas Aire	Fremont High School
FHS2	Sheila Hong	Fremont High School
FMMS	Michelle Garcia	Fresno-Madera Medical Society
GCI2	Nick Pfeifer	Granite Construction
JCI	Jon Cloud	J. Cloud, Inc.
JMC2	Martin Lassen	Johnson Matthey Catalysts
JPT	John Pitta	John Pitta Trucking
KBAK	Kami Baker	Kami Baker
KUSD	Kyle Reams	Kelseyville Unified School District
LFS	Laura Fultz Stout	Laura Fultz Stout
LUSD	Dave Norris	Lakeport Unified School District
MAFEE	Reginal McAfee	Reginal McAfee
MALFA	Senator Doug LaMalfa	Senator Doug LaMalfa
MASBI	Daniel Massolo	Massolo Brothers, Inc.
MECA2	Dr. Joseph Kubsh	Manufacturers of Emission Controls Association
MEZG	Dan Mezger	Mezger Trucking
MHS1	Cecilia Ayala	Mandela High School
MHS2	Segun Balogun	Mandela High School
MHS3	Julian Fisher	Mandela High School
MHS4	Anabel Flores	Mandela High School

Reference Code	*Commenter*	*Affiliation*
MHS5	Salvador Matteo	Mandela High School SLWBP
MHS6	Marisol Rogue	Mandela High School
MVE	James Blevins	Mountain Valley Express
NCTP	Ed Duffek	NorCal Tea Party
NRDC2	Diane Bailey	Natural Resources Defense Council
NRDC3	Morgan Wyenn	Natural Resources Defense Council
NSCAPCD2	Barbara Lee	Northern Sonoma County APCD
NWSC2	James Thomas	Nabors Well Services Company
POLAN	Senator Richard Polanco (Ret.)	Senator Richard Polanco
RAMP	Brandon Kitigawa	Region Asthma Management and Prevention Project
REI	Edward G. Walker	Robinson Enterprises Inc.
RHS1	Neli Gutierrez	Richmond High School
RHS2	Jessica Orozco	Richmond High School
RHS3	Victoria Ramirez	Richmond High School
RLEE	Richard Lee	Richard Lee
ROSE2	Jill Ratner	Rose Foundation for Communities and the Environment
RTRU	Bob Ramorino	Roadstar Trucking
RYPOS	Peter Bransfield	Rypos
SCAQMD3	Henry Hogo	South Coast AQMD
SCAQMD4	Henry Hogo	South Coast AQMD
SCAQMD5	Dr. Barry Wallerstein	South Coast AQMD
SCC	Bill Magavern	Sierra Club California
SCCA1	William Davis	Southern California Contractors Association
SCCA2	William Davis	Southern California Contractors Association
SCRANE	Seth Hammond	Specialty Crane and Rigging
SES	Stephen Rhoads	Strategic Education Services
SJV/SC2	Seyed Sadredin	San Joaquin APCD/South Coast AQMD
SRES2	Jim Lyons	Sierra Research
STA	Kirk Hunter	Southwest Transportation Agency
TLT	Tony Luiz	T&L Trucking, L.L.C.
UCMC	John Spangler	U.S. Marine Corps, MCI West
USEPA	Elizabeth Adams	U.S. Environmental Protection Agency
USNSW	Randal Friedman	Navy Region Southwest
VPS	Susan Seivright	Valley Power Systems

Reference Code	*Commenter*	*Affiliation*
WAPA	Roger Isom	Western Agricultural Processors Association/ California Cotton Ginners and Growers Association
WARD2	Corey Wardlaw	Wardlaw Trucking
WATS	Don Watson	Don Watson
WEAT2	Robert Hassebrock	Weatherford
WMAN	Chuck White	Waste Management
YTI	John Yandell	Yandell Truckaway Inc.

B. Summary of Public Comments Presented Prior to or at the Hearing and Agency Responses

The 45-day comments refer to sections of the regulation that was made available with the October 2010 hearing notice. Some of these sections have since been renumbered and the responses to the comments will refer to the section of the current regulation released with the Notice of Availability of Modified Text.

1. Need for Emissions Reductions

a) Ambient Air Quality

1. **Comment:** As a state, it is vitally important that we act prudently when making adjustments to our clean air standards because the health and economic vitality of California depends on it. In the San Joaquin Valley, for example, emission inventory margins to meet our current Clean Air Act commitments are currently at zero. In the South Coast Air Basin, the margin is minimal. If we fail to meet these commitments as mandated by the Clean Air Act, we would not only jeopardize federal funding, but also endanger the health and wellbeing of millions of our residents. (ENG) (LOWEN)

Agency Response: As a result of State Implementation Plan (SIP) implementation efforts at the local and State level, air quality is improving in both the South Coast and San Joaquin Valley regions. These measurable improvements demonstrate that ARB is on track to meet our control strategy commitments.

The South Coast has seen dramatic improvement in PM2.5 air quality, with a 37 percent decrease in the basin-wide annual average design value over the last eight years. This decrease has occurred even with the inclusion of a new high site monitor in Mira Loma (Riverside County) in 2006. Based on data in 2009, sites outside the Riverside area already meet or are close to meeting the annual standard. Preliminary South Coast data for 2010 indicate that concentrations are continuing to decline, with only the Mira Loma site exceeding the annual standard.

PM2.5 air quality in the San Joaquin Valley has also improved, although the progress has not been as uniform across the region. The most significant air quality

improvement occurred in the northern and central part of the Valley where monitoring sites meet or are close to meeting the annual standard. Air quality in the southern San Joaquin Valley, which includes the Bakersfield area, has also improved, with annual design values decreasing 10 to 20 percent.

Air quality design values reflect a three-year average which is used for comparison to federal standards. However, evaluating multiple measures of air quality can provide a broader picture of overall air quality progress. For example, individual year annual PM2.5 values for 2009 and 2010 throughout the Valley show significant improvement. In 2010, only two of the twelve sites in the Valley (Corcoran and Bakersfield) recorded annual concentrations that exceed the federal air quality standard. Peak 24-hour PM2.5 concentrations have also declined significantly, dropping over 30 percent since 2001. The Air Quality Index (AQI) is another measure that is used to evaluate daily air quality conditions. Between 2001 and 2010, the number of days considered unhealthy under the AQI has been cut in half.

As the economy recovers, ARB will continue to track emission trends to ensure the 2014 emission targets are met. ARB Resolution 10-44[1] directs the Executive Officer to monitor the state's progress toward meeting its emission reduction commitment and to provide an update to the Board at its July 2012 meeting that includes an updated emissions trend including:

- the impact of economic conditions on the on-road and off-road source categories;
- the identification of any potential emission reduction shortfall in the expected emission reductions from these source categories; and
- proposed actions to remedy any identified shortfalls; these could include but are not limited to regulatory or other actions, such as more rapid and effective use of incentive grants to generate earlier reductions.

2. **Comment:** This comment letter is being provided to you jointly on behalf of the South Coast Air Quality Management District and the San Joaquin Valley Air Pollution Control District. Together, these two air basins comprise most of the geographical nonattainment area in California for health-based federal ozone and PM2.5 standards, and are also home to most of the population impacted by excessive levels of those pollutants. As you know, over 80% of the emissions that contribute to PM2.5 and ozone formation in these air basins are released from the on-road and off-road mobile sources of air pollution that are the subject of a public hearing during the regularly scheduled meeting of your governing board in December. It is impossible for the South Coast and San Joaquin Valley to meet the health-based federal ozone and PM2.5 standards without significant reductions in emissions from the in-use on-road diesel-fueled vehicles and the in-use off-road diesel-fueled fleets. In December, your Board is considering significant relaxations of the existing regulations covering these source categories.

[1] Resolution 10-44 can be found on ARB's website at: http://www.arb.ca.gov/regact/2010/truckbus10/res1044.pdf

The primary justification for the proposed relaxations is rooted at the adjustments to the current and projected emissions estimates for the affected source categories which show significantly lower emissions compared to the 2007 State Implementation Plan (SIP) for the San Joaquin Valley and the South Coast Air Basin. These adjustments reflect enhancements to the inventory from better quantification methodologies and better accounting for the impact from the economic recession. We have reviewed CARB's work on the new emissions estimates and believe that new inventory estimates reflect major improvements and are reasonable given the available data. We are also aware of the fact that the industry estimates show that the projected emissions may be even lower than the CARB's estimates. We are, however, concerned that the proposed relaxations leave little or no margin for error in relation to the reductions needed to reach attainment of the PM2.5 standards before the federally mandated deadline in 2015.

Our concern arises from the fact that failure to meet the standards in a timely fashion will subject the South Coast and the San Joaquin Valley regions to devastating sanctions under the federal Clean Air Act. Failure to get the necessary reductions from mobile sources under state's jurisdiction will unfairly shift the burden to stationary sources that have been heavily regulated already. Given the current high level of control on stationary sources and that fact that over 80 percent of the emissions come from mobile sources, any shortfalls cannot be rectified with more regulations on stationary sources. (SCAQMD1) (SJV/SC1)

Agency Response: State law[2] assigns ARB the primary responsibility to ensure California's compliance with the federal Clean Air Act. Traditionally, ARB shares that responsibility with local air districts through defined SIP commitments at both the State and local level.

When ARB adopted the 2007 State Strategy as a SIP revision, the State of California made a legal commitment, required by the Clean Air Act and enforceable in federal court, to reduce emissions to the levels necessary for 2014 attainment. ARB specifically identified several ways this emission reduction commitment could be achieved:

- New measures as described in the SIP;
- Other alternative measures that ARB had not considered at the time the SIP was adopted;
- Incentive programs that support the replacement or retrofit of aging, higher polluting pieces of equipment; and
- Actual emission decreases resulting from changes in economic activity.

ARB continues to fully implement the PM2.5 SIPs, even as the economic recession has resulted in substantial emission reductions for some source categories. As a result of the recession, actual emission decreases from reduced economic activity, most notably in the goods movement sector, moved California closer to the emissions levels needed

[2] California Health and Safety Code section 39003.

for attainment in 2014. This has allowed ARB to maintain the State's SIP commitments in the South Coast and San Joaquin Valley while also providing some additional time for affected industries to comply.

In the case of the PM2.5 SIP, there is also an expectation on the part of the State that the federal government provide additional emission reductions based on the U.S. EPA's authority to regulate locomotives and other national sources of air pollution. However, if there is a shortfall in a SIP due to lack of federal action, California will be required to achieve additional emission reductions. For example, the SIP for the South Coast calls for reductions of 10 tons per day of oxides of nitrogen (NOx) from sources U.S. EPA or other federal agencies regulate. The South Coast AQMD has already agreed to a 1 ton backstop in the event federal reductions fail to materialize. ARB would still have the overall obligation that the emissions targets specified in the SIP are met by the required deadline.

As the economy recovers, ARB will continue to track emission trends, as directed by the Board, to ensure the 2014 emission targets are met. See the response to Comment 1 for the directives issued by the Board in ARB Resolution 10-44.

3. **Comment:** We probably set a precedent having a co-signed letter between our Executive Officers asking for consideration of re-assurance that if there are any deficits or shortfalls with the proposed amendments relative to the SIP that they be made up. And we urge you to take our language and put some dates certain in there relative to time line. Because that time frame from 2012, 2014 is very short. We thought that similar to what you have done with the -- like the railroad commitment letter concept that we set a date certain they come back with some actions that could achieve further reductions in 2014. So we urge you to consider some of the recommendations in our resolution language as you move forward. [3] We do appreciate the language that you have provided. And we appreciate all the hard work staff has put in on the emissions inventory updates and look forward to continuing to work with staff and enhance the inventories. (SCAQMD3)

Agency Response: As the economy recovers, ARB will continue to track emission trends, as directed by the Board, to ensure the 2014 emission targets are met. See the response to Comment 1 for the directives issued by the Board in ARB Resolution 10-44.

Resolution 10-44 also incorporates the additional provisions requested in this comment.

4. **Comment:** Our coalition has actively engaged in the emission inventory update process. We appreciate the responsiveness of staff to new emissions data and the extensive efforts to make the necessary inventory adjustments in a short timeframe. We are concerned however, that the revised emissions inventory is

[3] The attachment to the comment letter, which sets forth the suggested resolution language, is not reproduced here. The SCAQMD's proposed language is attached to a comment letter submitted during the 45 day comment period and identified as Comment 91 of the comments posted on the comments log for this rulemaking at: http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10.

being used in lieu of committed emissions reductions. Therefore, use of the full "margin" created by the newly reduced inventory to allow for slower compliance timeframes in the proposed amendments directly conflicts with the 2007 State Strategy's aggregate tonnage State Implementation Plan commitments for 2014. Reliance on unenforceable inventory changes as "emissions reductions" does not comport with the Clean Air Act, which requires that the reductions necessary to demonstrate that attainment be enforceable. Even if ARB could use unenforceable changes in the inventory to satisfy its SIP commitment, in the event that economic growth is greater than ARB projections, or any other unforeseen vehicle or equipment usage patterns occur, failure to meet the 2014 aggregate tonnage targets would be all but inevitable. Further, current SIP commitments are based on air quality modeling done prior to significant changes in the off-road inventory. New air quality modeling needs to be performed to determine the actual impact of inventory changes, but changes are likely to show that additional reductions will be needed. For example, the 2008 Inventory in the South Coast estimates that off-road equipment accounts for more than twenty percent of total air basin NOx emissions. (BWG1)(BWG2)

Agency Response: In designing the regulatory amendments, staff were very careful in ensuring that the overall SIP commitment would be met. The staff analysis demonstrated that emissions from trucks, buses, and construction equipment were much lower by the end of 2010 than previously anticipated in the SIP. The updated forecasts strongly suggest that emissions would also be lower in 2014. The amended regulation will generate sufficient emissions reductions to meet federal SIP commitments while providing the time necessary for fleets to comply with the regulation.

The most significant change in emissions from trucks, buses, and off-road equipment was the impact of the recession. An emissions accounting that incorporates the impacts of the recession, future emission changes, and the benefits of the new SIP measures is the appropriate approach to assess the adequacy of the PM2.5 SIPs now close to final implementation. This accounting was performed as part of the PM2.5 SIP revision submitted to U.S. EPA in May 2011 for the South Coast and San Joaquin Valley air basins and demonstrates that ARB is on track to meet our control strategy commitments.

As the economy recovers, ARB will continue to track emission trends, as directed by the Board, to ensure the 2014 emission targets are met. See the response to Comment 1 for the directives issued by the Board in ARB Resolution 10-44.

There has been no significant change to the fundamental science and air quality modeling used to set the 2014 emission targets in the South Coast and San Joaquin Valley. The new emissions inventory data primarily impact current emissions and estimates of future emissions as the economy recovers and do not substantially change the total regional emissions in the base years. The recession does not impact the SIP base year modeling since both regions used base years prior to the recession. Small changes in the base year emissions due to methodology improvements would not substantially change the fundamental relationship between emissions and air quality in

the base year modeling. Therefore, the air quality modeling and the 2014 emission targets are still sound.

5. **Comment:** We write on behalf of the undersigned organizations [identified in Table 2 of Appendix A of this document] and our hundreds of thousands of California members in support of the regulations, with serious concern over the amendments proposed in October 2010 for the "truck and bus" and "off-road" regulations. We are cognizant of the need to provide some relief to diesel equipment and truck owners during the economic downturn. However, the rule changes as proposed go beyond what is necessary in the short term, and reduce near-term health benefits in the 2014-2017 timeframe. We therefore urge your consideration of the amendments recommended here in order to achieve the following:

1. Reduce localized impacts and retain the mid- and long-term benefits of the On- and Off-Road rules.
2. Eliminate loopholes to ensure all equipment is cleaned up by 2023.
3. Create at least a 20 percent SIP margin for 2014 and beyond due to uncertainty in economic projections, inventory uncertainties, and the absence of updated air quality modeling. (BWG1)(BWG2)

Agency Response: ARB's charge, under state law, in adopting regulations to improve air quality is to consider the need for regulations, their technological feasibility, costs to affected stakeholders and cost-effectiveness. The changes to these rules were made to achieve a better balance between the needed emissions reductions and the ability of fleets to comply. When the regulations for in-use and off-road vehicles were first adopted in 2007 and 2008 respectively, the economy was growing. The recession has reduced fleets' financial ability to make the needed investments to comply.

The mid-term and long-term benefits of the Truck and Bus regulation will be retained. For a discussion of the benefits of the Off-Road regulation, see the rulemaking documents for the Off-Road regulation at: http://www.arb.ca.gov/regact/2010/offroadlsi10/offroadlsi10.htm.

The response to Comment 1 discusses the improvements in air quality that will continue to 2014 and beyond and will reduce public exposures and related adverse health effects. Updating our emissions inventories for trucks and buses to account for recessionary impacts has shown that PM2.5 emissions from these sectors will be lower in 2012 than would have been achieved through implementation of the truck and bus rule as originally adopted. In 2014, PM2.5 emissions from trucks and buses will be equivalent under the revised SIP to those forecasted in the original SIP. Thus, we remain on track to meet the emission reduction commitments that are needed to reach the annual air quality goal in 2014. Measurable improvements in air quality also demonstrate the benefits of our overall program. This program will continue to reduce emissions into the future, beyond 2014. ARB will revisit implementation progress in 2012 and take action, as necessary, to offset any unforeseen emission increases.

The amendments to the regulation take advantage of the emission reductions produced by the economic downturn, some of which reduce localized impacts in residential areas that abut major roadways and areas prime for near-term development. In general, PM emissions along roadways will decline significantly because 90 percent of heavier trucks will have PM filters by 2014 and nearly all will have PM filters by 2017. In addition, by 2023, all trucks will have 2010 model year emissions equivalent engines except low-use trucks and those operating exclusively in NOx-exempt areas where there is no need for NOx emissions reductions. The NO-exempt trucks will all be equipped with PM filters. Therefore, staff does not believe there are loopholes to be closed. The response to Comment 19 includes a description of changes to the regulation since the Board Hearing to require additional cleanup of older trucks to help mitigate the health impacts in these communities. The Board also acted to mitigate the health impacts in environmental justice communities by maintaining the Phase 2 requirements of the Drayage Truck regulation and adopting amendments to address emissions from dray-off and Class 7 drayage trucks that operate in and around ports and intermodal rail yard facilities.

For more information on the SIP margin, please see the response to Comment 66 for a discussion of the updated emissions inventory and staff's goals for a revised regulation that would continue to generate sufficient emissions reductions to meet federal SIP commitments while providing the regulatory relief necessary to ensure that fleets could comply with the regulation. As the economy recovers, ARB will continue to track emission trends, as directed by the Board, to ensure the 2014 emission targets are met. See the response to Comment 1 for the directives issued by the Board in ARB Resolution 10-44.

6. **Comment:** The Air Quality Sub-Committee of the Fresno-Madera Medical Society would like to comment on the amendments proposed in October 2010 for the "truck and bus" and "off-road" regulations. We have always and continue to be appreciative of ARB board and staff commitment to cleaning up our air. We know that this is no easy task but still you remain committed to protecting the health of Californians.

The rule changes, which are being proposed, do a great job of identifying areas of relief for truck owners; however, in some areas they seem to go beyond what is necessary in the short term. As physicians we are always concerned with health protections. With the proposed changes, communities in the San Joaquin Valley living around the State's most important transit corridors will have to suffer longer from the impacts of diesel pollution. Our Valley will also have a ZERO SIP margin making us very susceptible to small changes in the economy. With some of the dirtiest air in the nation, the Valley needs to be on the fast track to meeting SIP requirements not delaying attainment or even failing to meet attainment. We therefore urge your consideration of the amendments recommended here in order to achieve the following:

1. Reduce localized impacts, especially for the San Joaquin Valley, and retain the mid- and long-term benefits of the On- and Off-Road rules.

2. Eliminate loopholes to ensure all off-road equipment is cleaned up by 2023.
3. Create a State Implementation Plan margin for 2014 and beyond, especially for the San Joaquin Valley.
4. Create or make available more incentives for truck drivers to encourage compliance.

In closing, we appreciate the hard work of staff, as well as board members to adjust these important regulations in these changing circumstances while making an effort to maintain health benefits. Your decisions to enforce a balanced yet aggressive plan bring us closer to a better California, a California that embodies good health and a good economy. (EWILL)

Agency Response: Please see the agency response to Comment 5 for responses to the first three points of this comment. Regarding incentives for truck owners, specific changes to ARB funding programs are considered separately from the regulatory process. As described in Chapter VII, Section D of the October 2010 Staff Report: Initial Statement of Reasons for Proposed Rulemaking, funding program changes were planned to occur after Board action and direction on the regulatory changes. In general, the extended compliance deadlines for many trucks enable greater potential funding opportunities by allowing more time for applicants to apply for funding before regulatory compliance dates. ARB Resolution 10-44 also includes Board's directives to modify funding programs to obtain near term health benefits from early emission reductions.

7. Comment: The Coalition for Clean Air is a statewide air quality advocacy organization with offices in Los Angeles, Fresno, and Sacramento, and we're committed to ensuring clean air for all Californians. I want to acknowledge the efforts of CARB staff and Board for, over the last few years, continuing to engage with us in dialogue and really spending time with us going over the inventory. I know it's a tough task before you in terms of getting things as best as we can with the latest data. So we do appreciate your efforts there. I also want to acknowledge the work of the [Truck Regulatory Advisory Committee] TRAC and the outreach that ARB has committed itself to do on diesel rules. I think these efforts want to continue to support those and ensure they continue.

Certainly in terms of the regulation, we appreciate the efforts to address the dray-off issue. That said, I think we have some major concerns with the proposal before us today. While we acknowledge certainly a need for and have consistently acknowledged with the downturn of the economy there would be a need for some modification to these rules, we are concerned by the level of the modifications both in terms of the fact that we are unfortunately trading off some of the near-term benefits that we would otherwise have experienced, particularly in localized communities, as well as our level of comfort with the SIP margin is just not at a place where we'd like to be. So as the joint coalition letter shared, we would really appreciate having a 20 percent margin there, particularly considering the South Coast emissions inventory analysis showed the potential for 20-to- 30 percent of the emissions being off. So we don't want to get to a place where we're at 2014 and actually short. And though I know that the staff is committed to reviewing this

rule, if the economy changes down the line, I'm concerned that's going to be too late to really make any fundamental changes we might need to do to shore up that SIP. That said, in [the joint-coalition] letter, we did include some -- those are the umbrella requests. We included some specific suggestions where staff can explore making these changes, and we really encourage the Board to ask staff directly about some of those changes, but also to ensure to see if they can explore any others that might be able to meet the request we're making today.

[The commenter referred to a "joint coalition letter" submitted by the Better World Group (BWG2) on the day of the Board Hearing. It is identified as Comment 16 in the table titled "Comments posted to on-offroad that were presented during the Hearing" posted on the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10] (CCAIR1)

Agency Response: See the response to Comment 1. Also, see the responses to Comments 4, 5, 20 and 363 for our responses to the joint coalition letter.

8. **Comment:** CAPCOA supports ARB's efforts to reduce public exposure to these air pollutants, and also recognizes the importance of basing control requirements on accurate emissions inventories and addressing the economic impacts on the regulated community. CAPCOA supports ARB's efforts to ensure that the underlying scientific, technical, and economic data for the rulemaking include the best available information.

We have several concerns that we request ARB consider as part of undertaking these rulemakings. CAPCOA members rely on the emission reductions from ARB's mobile source program as part of the State Implementation Plan (SIP) for attainment of the National Ambient Air Quality Standards (NAAQS), and several air districts are facing near-term attainment deadlines. Since mobile source emission inventories are vital to air quality improvement planning efforts throughout California, CAPCOA would like to see a firm commitment of resources by ARB to improve the mobile source emission inventories on both a regional and statewide basis. It is also critically important that ARB clearly identify shortfalls in the SIP, and alternative emission reduction strategies to cover any shortfalls. Further, ARB should take responsibility for addressing any concerns raised by USEPA (EPA) regarding the impact of these rulemaking efforts on the SIP and associated attainment demonstrations. We also request that affected districts be included in discussions with EPA regarding impacts on their SIPs. (CAPCOA)

Agency Response: ARB continues to commit significant resources to the improvement of mobile source emission inventories at the county, air district, air basin, and statewide levels. Also, ARB will address concerns raised by U.S. EPA regarding the impacts of these rule amendments and include affected districts in discussions with EPA regarding the impacts of these rule amendments.

b) State Implementation Plan Commitments

9. **Comment:** I want to thank the Board for advancing clean air and public health through cleaning up diesel equipment. I understand that taking reasonable efforts to relax the rule due to fewer emissions and slower economy is what the Board is prepared to do. But due to the absence of updated air quality monitoring and modeling and specific reasons for uncertainty, these proposed amendments risk missing the mark and falling short on SIP requirements and public health goals to prevent cancer, asthma, and other health effects due to diesel pollution. That SIP requirements and public health goals to -- some of the reasons for uncertainty, some of the specific reasons for uncertainty are, number one, the credit provisions for early PM retrofits. I think that those are good provisions that can help encourage early compliance and early health reductions. But there's some uncertainly in how they're going to progress. The trend in the economy indicating that truck miles could outpace expectations in the economy, that's an uncertainty. And the methodology changes to off-road equipment. While this adjustment to the inventory is reasonable, this does not mean there's a linear relationship with SIP requirements. This is because the 2007 SIP commitment were projected assuming 15 percent more tons of emissions than were actually occurring. So there is a lot of uncertainty in the modeling, and I do hope that ARB will follow through and make sure when the SIP occurs in April 2011 that there will be an adequate margin or contingency measures. I encourage the Board to have a 20 percent margin to make sure that there will not be falling short of the SIP commitments and there will be a compliance with the Clean Air Act. Thank you. (BCA)

Agency Response: See the responses to Comments 2 and 4.

10. **Comment:** We want to thank you for making the difficult decision a couple years ago to adopt these rules knowing the economic uncertainty ahead. So we want to thank you for adopting these rules, but also for showing reasonable flexibility to modify the rules given on their changing on-the-ground conditions. We want to remind people that what was true when these rules were adopted is still true today. Many of our asthma coalitions still deal with the effects of diesel pollution every day. They see kids forced indoors for recess, kids missing school, and parents missing work because of asthma attacks. And we see families spending money on preventable health care costs. These rules still represent the best opportunity for California to improve some of the dirtiest air in the country. We know diesel trucks and buses are the single largest source of diesel pollution in the state and account for some 40 percent of the diesel soot. Curbing these emissions is vital to meeting federal air quality standards and removing the health and economic burdens to many families. So RAMP and the COFA coalitions urge you to continue to protect the people's health by making key changes to the proposed amendments. They were outlined in the [joint coalition] letter submitted by Camille Kustin from public health, environmental, and communities groups. Those changes would provide near-term relief to impacted communities, eliminate loopholes, and create a margin of error for the SIP. (RAMP)

Agency Response: See the response. to Comment 2. Also, please see the responses to Comments 4, 5, 20 and 363 for our response to the joint coalition letter.

11. **Comment:** We are particularly concerned about how these amendments to both diesel rules will affect our home in the short and long term, as these sources represent a considerable amount of PM and NOx emissions. Even though we are, of course, sensitive to the economic situation and the current times that we are living in, of course, the localized impacts will continue. These especially affect low-income communities of color a lot, which are located in the San Joaquin Valley. These people will have little or no access to health care. And they will not be getting relief in their health or their health care bill. People don't feel the difference in the changes in modeling or inventory. They feel the changes in how they breathe and how well they can breathe. These rules play a significant role also in our SIP attainment. The economy, of course, is a very difficult thing to predict, and I know staff has spent tireless hours working on that. However, in terms of health, a slightly faster economic recovery would put us out of SIP compliance. And since we have no margin of error, as other people have mentioned, this is a serious concern. Some specific steps are mentioned in a comment letter [joint coalition letter] that we signed onto, but in sum, we respectfully ask some changes be made to these amendments to minimize the localized impacts and give us at least a 20 percent SIP margin. Thank you very much for your time. (CCAIR2)

Agency Response: See the responses to Comments 1, 2 and 6. Also, please see the responses to Comments 4, 5, 20 and 363 for our response to the joint coalition letter.

12. **Comment:** We commend ARB's efforts to reduce emissions from these in-use diesel fleets and believe that the implementation of these rules is a critical step towards achieving clean air and improving public health. As you know, California has submitted several State Implementation Plans, or SIPS, to EPA that rely heavily on reductions from these rules in order to reach attainment of the federal PM2.5 and ozone standards. We are currently discussing with ARB staff the scope of the SIP provisions that will be necessary for the South Coast and San Joaquin Valley SIPS due to the new emission estimates that form the basis for many of the changes to the rules being considered today. We plan to work with your staff on these SIPS in the next few months as we intend to finalize our action on the PM2.5 SIPS by September 2011 and the ozone SIPS by December 30th, 2011, to meet our consent decree deadlines. If the rules are adopted today, we request that you expedite their submittal to EPA so that we may have sufficient time to take action on them. (USEPA)

Agency Response: ARB will submit these amended rules to U.S. EPA as expeditiously as practicable, consistent with the administrative procedures rules governing the ARB regulatory process.

13. **Comment:** In 2003, this Board adopted a resolution that committed itself to adopting significant mobile source reductions, including diesel reductions, in order to meet the one-hour ozone standard. The deadline for which was just over a

month ago, November 15th of 2010. The South Coast air basin and the San Joaquin Valley have failed miserably to meet that one-hour ozone standard. The primary reason they failed to meet that one-hour ozone standard is because this Board, this agency, did not deliver on the reductions that it adopted and committed to in the 2003 resolution. Failure to meet that one-hour standard triggered Section 185 of the Clean Air Act, which imposed a fee -- $10,000 per ton fee on stationary sources. The Clean Air Act says it goes to stationary sources. Stationary sources are paying a penalty in the South Coast air basin and in the San Joaquin Valley primarily as a result of the Board not adopting the mobile source reductions as promised in 2003. Ironically, the San Joaquin Valley Air District, instead of charging the fee to the stationary sources, will charge passenger vehicle owners through their DMV registrations, as if they had anything to do with the not adopted rules. So my point is do not adopt these amendments. The San Joaquin Valley and the South Coast need these reductions, which you're going to backslide to meet the one-hour standard. You still have to meet the one-hour standard. We've been talking about the PM2.5 standard and the eight-hour ozone standard. You still need to meet the one-hour standard. (CRPE)

Agency Response: This comment is not pertinent to the Board action addressed in this rulemaking, which is to approve amendments to the Truck and Bus regulation to reduce NOx- and PM2.5-related emissions and attain the PM2.5 air quality standard in 2014 and the 8-hour ozone standard in 2023. These amendments will not affect the dates by which we meet the former 1-hour ozone standard in the San Joaquin or South Coast Air Basins.

14. Comment: We do understand that emissions inventory estimates are always a work in progress that can be enhanced over time. This is particularly true for complex sources categories such as the ones in question here. Another added variable here is the assumptions regarding the pace and timing of the economic recovery which is very difficult to forecast. Given that the proposed amendments rely heavily on CARB's new emissions estimates leaving no margin for error in the San Joaquin Valley and a small margin for error in the South Coast Air Basin, we urge your Board to consider the following in adopting the proposed relaxations to the existing regulations:

- Reaffirm CARB's commitment that mitigating any shortfall in emission reductions will be the responsibility of CARB from sources under the state's jurisdiction.
- Accept a commitment by CARB to regularly monitor and report on the actual emissions and related trends for the affected source categories, and take timely regulatory action to remedy shortfalls, if any;
- Partner with the South Coast AQMD and the San Joaquin Valley APCD to do additional work to improve the statewide and regional emissions inventory estimates for the affected source categories (which includes collection of additional in-use information such as load factor and activity data); and
- Take actions to facilitate more rapid and effective use of incentive grants in generating earlier reductions from the affected source categories to minimize

potential shortfalls such as a SOON type program or the San Joaquin's FAST (Fleet Accelerated Surplus Turnover) program for on-road diesel trucks funded by the state.

We have prepared draft resolution language containing commitments with date certain for actions by CARB to implement the above recommendations and the language is attached for your consideration. We urge your Board to add the attached language to the adopting resolution for the proposed amendment. (SCAQMD1) (SJV/SC1)

Agency Response: ARB Resolution 10-44 incorporates the additional provisions requested in this comment.

15. Comment: There is a zero margin of error for the San Joaquin Valley for our State Implementation Plans, and I wonder whether in those calculations there was consideration for the fact that when this rule was originally passed, there was a special exception given to short haul agricultural trucks, which are going to be disproportionately in our region. Again, minimizing the margin of error we have has already been zero. Delays ultimately mean prolonging public health impacts, and there are so many variables attached to this rule, including the economy and the inventory. The bottom line for us in the San Joaquin Valley is we need all of the reductions that we can get from wherever we can get them. The original rule saves more lives and money than it's ultimately going to cost industry. Research from U.S. EPA shows for a dollar in pollution cleanup targeted at diesel pollution, there's $13 in health savings. So today I'm here to urge you to stay the course on the on-road rule. (CVAQC)

Agency Response: Trucks serving the agricultural sector were characterized and included in the update of the emissions inventory. In addition to developing population and age distribution data and accrual rates, staff also collected information regarding where the trucks had traveled. The updated data were used in the calculation of the emissions benefits of the compliance requirements for agricultural vehicles that were included in the SIP margin estimate. Emissions with the amended regulation will remain about the same for the life of the regulation. See the response to Comment 1 for a summary of the Board's directive to monitor the progress of the economy and the projected emissions reductions from the regulation. See also the response to Comment 5.

16. Comment: Regarding the SIP, the current proposal leaves the San Joaquin Valley little or no margin for error to reach the federally mandated standards before 2015. We're keenly aware of the economic crisis in the Central Valley. Hundreds of families come to Catholic Charities every single week, and the number is growing. But bad air quality is also costly, financially and health wise. There were two headlines in this morning's paper that illustrate this point. The first, "Asthma Hits State's Poorest the Hardest. Asthma is on the rise in California, and low-income tend to bear the greatest burdens from the condition." And that is from the UCLA Center for Health Policy. Then in the L.A. Times this morning,

"Proximity to Freeways increases autism risks, study finds." On top of this, as you know, people are struggling to pay health insurance. Every day at Catholic Charities, we have many children and their families who come in to sign up for the Children's Health Initiative and Healthy Families. They are struggling. The last headline from today's Sacramento Bee, "Study finds 6.8 million Californians without health insurance. As the recession continues to grip the state, the number of Californians without health insurance, especially coverage provided by employers, has continued to decline." Diesel pollution is costly. So I'd ask that you please pass a strong diesel rule with a greater SIP margin. (CCDS)

Agency Response: See the responses to Comments 1 and 5.

17. **Comment**: We would like to express our appreciation for how you have helped to make the rule a little bit more feasible for truckers. We know that's not an easy task, especially in light of these hard economic times. We feel the rule is very important, especially as it related to the San Joaquin Valley. We have an incredible health burden as you very well know. And we are especially concerned with the zero margin that the San Joaquin Valley will face. So we just ask that you continue to look at that and maybe revisit it or talk about it a little bit more and figure out if there is some way to ensure that there will be come safeguards for us. (FMMS)

Agency Response: See the response to Comment 1

2. Health Effects

a) Public Health Impacts

18. **Comment**: I want to commend the ARB on its willingness to revisit the requirements of these regulations based on updated inventory information and the present economic downturn. The Air District believes that this represents an equitable approach to regulation and demonstrates ARB's willingness to consider flexible solutions to achieving emissions reductions goals. The Air District continues to be proud to be a partner with the ARB in delivering the emissions reductions necessary to protect public health, global climate and the environment. This partnership is exemplified by our recent successful efforts to decrease health risk from toxic diesel particulate matter (DPM) emitted by drayage trucks in the West Oakland community. It is in the spirit of that partnership, that the Air District offers the following analysis and recommendations regarding the proposed regulatory amendments.

The Air District is concerned about the proposed regulatory amendments based on the fact that the primary driver of health risk in Bay Area communities is DPM from on-road trucks. This fact is borne out by studies such as our joint health risk assessment (HRA) performed in West Oakland in December 2008. That HRA identified West Oakland as having a cancer health risk of three times greater any other location in the Bay Area and one of the highest in the State of California

(1,500 in I million). It also identifies on-road truck DPM emissions as being the cause of 70% of that health risk.

This impact is confirmed by the Air District's Community Air Risk Evaluation (CARE) Program which has identified DPM primarily from on-road trucks and secondarily from off-road construction equipment as being the main drivers of health risk in five additional communities (see Attachment I)[4] in the Bay Area. This evaluation utilized mobile source emissions inventories prepared by the ARB.

Based on ARB's new inventory numbers for off-road equipment emissions it appears there will be some reduction of that source's relative impacts on these communities. However, the new inventory also reveals a significant increase in the emissions from on-road sources and particularly their contribution to overall DPM. The Air District therefore believes that the health risk in its six most highly impacted communities and along Bay Area highways remains at the same or increased levels. (BAAQMD1) (BAAQMD2)

Agency Response: In general, PM emissions along roadways will decline significantly because of the recession and the impacts of the amended regulation. By 2014, 90 percent of heavier trucks will have PM filters and nearly all will by 2017. This will substantially reduce exposure along roadways. In addition, most drayage trucks are already equipped with PM filters and will have 2007 or better engines by 2014. As such, residents of these areas will reap considerable health benefits from the emission reductions that will be accrued due to the amended regulation.

19. **Comment**: I'm here today in very strong support of the diesel regulations that this agency has passed. We are deeply appreciative of all the efforts this agency has made to reduce toxic diesel emission over the years. And no doubt, tens of thousands of lives have been saved. We are concerned, however, with the latest proposal that sort of weakens the health protections of these diesel regulations. Before I comment further, I just want to thank staff for all of their hard work on these regulations. I know it's been a tough slug. We're very appreciative in particular for the effort in working with communities to address the dray-off problems that were undermining the port drayage truck regulation. So thank you for those fixes. While we understand that there is a strong need for economic relief and nearly everyone has been impacted by this recession, including my own family, at the same time, so many communities continue to suffer from truck pollution. And it really remains high, despite reduced activity of the recession. The current proposal will significantly delay diesel cleanup over the next few years.

We took a look at what the difference in health benefits would be considering the existing regulations as they are on the books versus the new proposal under

[4] The attachment is not reproduced here. It is a map titled “Bay Area Highly Impacted Communities.” that was submitted during the 45 day comment period as part of a comment letter identified as Comment 71 of the comments posted on the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10.

consideration today.[5] We used the latest U.S. EPA and CARB methods, and we accounted for the recession and the emissions inventory updates. And we found that there is actually a significant loss in health benefits, about 50 percent for the year 2014. So in the near term, we're looking at some pretty big differences, pretty large gap in health benefits. And on off-road, we see even bigger differences, a 90 percent loss of health benefits in 2014. And still, in 2017, we have a gap in health benefits. We're very concerned about these near-term losses in health protections. So we decided to take a look at who is most impacted. And the answer is obvious. I think you're all aware that families living near high-traffic roadways are the most impacted by diesel pollution. And we've heard a lot of very compelling testimony today. I thought the stories from the students were very compelling. And these maps that we put together just put the demographic data together to show what the disparities look like. They show a very striking disparity that supports the fact that the poorest, the lowest income communities, and those that are more likely to be minority are also the most like fully to live in the highest traffic areas. And that's true on average throughout the state. That's true even more so in southern California, and that's true in these three areas where we did some mapping. That was Commerce. This is Richmond, California, where a lot of the students came from. You can see a very striking disparity when it comes to who's living closest to the freeways. They are more likely to be minority and low income. And of those living near freeways, we found that there are a lot of children; 50,000 in southeast Los Angeles; 10,000 in this area right here, Richmond area. And in Fresno, the disparity persists as well. So we wanted to bring these disparities to your attention, and we're asking you to consider some amendments that would offer some relief to these impacted communities and move up some of the cleanup for the very oldest trucks that tend to operate in these communities the most. I thank you for your consideration. I thank staff for their hard work. (NRDC1) (NRDC2)

Agency Response: The recession has already resulted in lower emissions than anticipated when the on-road and off-road regulations were initially approved by the Board. Our estimates show that the combined statewide impact of the recession with the amendments to the Truck and Bus and Off-Road regulations will provide essentially the same cumulative reductions in emissions levels between 2011 and 2023 as was expected when originally approved before the recession. The health benefits for the years 2014 and 2017 from the rule alone are less than the predicted benefits under the previously adopted on-road and off-road diesel rules; however, when the effects of the recession are added to the amended rule from 2010 to 2025, the estimated health benefits are similar to the originally adopted rule.

If the effects of the recession are excluded, the health benefits over the course of the amended regulations, will still be substantial: approximately 3,900 premature deaths avoided as a result of full implementation of the amended on-road and off-road

[5] The commenter is summarizing a presentation that was submitted during the 45-day comment period. It is identified as Comment 13 of the comments presented during the December 17, 2010 Board Hearing and posted to the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10

regulations from 2010 to 2025. Changes in ARB and U.S. EPA methodology in obtaining health impact estimates, as well as effects of the recession, also led to downward revision of the original estimates of premature deaths associated with the previously adopted regulations.

The Board also acted to mitigate the health impacts in environmental justice communities, near busy ports and rail yards by maintaining the Phase 2 requirements of the Drayage Truck regulation and adopting amendments to address emissions from dray-off and Class 7 drayage trucks that operate in and around ports and intermodal rail yard facilities. The Board also acted to mitigate health impacts along roadways for the amended Truck and Bus regulation by adjusting the model year compliance schedule for heavier trucks. Since the Board hearing, the engine model year schedule of the Truck and Bus regulation has been modified to require heavier trucks with 1996 and 1997 model year engines to be retrofit by January 1, 2012. The modifications, which were made available for comment with the May 19, 2011 Notice of Availability of Modified Text, will provide additional PM emissions reductions between 2012 and 2017. In general, PM emissions along roadways will decline significantly because 90 percent of heavier trucks will have PM filters by 2014 and nearly all will have PM filters by 2017. In addition, by 2023, all trucks will have 2010 model year emissions equivalent engines. As such, residents of these areas will reap considerable health benefits from the emission reductions that will be accrued due to the amended regulation.

20. **Comment**: While the ARB analysis indicates that overall emission reductions from the rules with proposed changes combined with the economic downturn are similar to the original rules, the health impacts are most certainly not. Communities most impacted by diesel pollution from trucks will have to wait as many as seven years longer to see the types of emission reductions that were originally approved by the ARB. We are especially concerned that toxic hotspots of diesel pollution throughout the state will receive little relief in the short term. Compared to the existing regulations, for example, emissions of diesel soot under the new proposal would be fifty percent higher in 2014.

Many areas that are most impacted by truck pollution are the very environmental justice communities that we seek to protect, as they are already overburdened by pollution. Hundreds of thousands of Californians live within one quarter mile of a major freeway carrying diesel trucks; most of these communities are comprised of a much higher percentage of minorities and a greater percent of families that fall below the federal Department of Housing and Urban Development designation for Very Low Income. For example, in Richmond, families living near freeways are more than 70 percent more likely to be non-white and almost 50 percent more likely to be very low income compared to the average in Contra Costa County. Thus, it is of paramount importance to offer these areas immediate relief from the severe pollution levels that they experience. Please see the attached maps at the end of this letter.

In fact, after accounting for the adjustments to the emissions inventory due to the recession and other factors, the loss of near term health benefits from new proposals translate to roughly 380 fewer lives saved in 2014. That means that

compared to the existing regulation, the new proposals would result in a loss of health benefits in 2014 of more than 50% for trucks and 90% from off-road equipment. The loss of health benefits is also significant in 2017. (BWG1)

Agency Response: See response to Comment 19.

21. Comment: The proposal for modifications to On-Road Diesel are of concern, increasing the number of trucks exempted from PM filter retrofits from less than 10,000 to over 140,000. This potentially equates to over 240,000 non-filtered engines being allowed to pollute our skies with cancer-causing pollution. (ENG) (LOWEN)

Agency Response: The recession has already resulted in lower emissions than anticipated when the on-road and off-road regulations were initially approved by the Board. Our estimates show that the combined statewide impact of the recession with the amendments to the Truck and Bus and Off-Road regulations will provide essentially the same cumulative remaining emissions levels between 2011 and 2023 as was expected when originally approved before the recession. When the effects of the recession are included from 2010 to 2025, the estimated health benefits are similar to the originally adopted rule.

Nearly all of the vehicles that would not have PM filters after 2015 would be lighter trucks. These trucks represent a smaller portion of the emissions inventory in comparison to heavier trucks, because lighter vehicles generally are replaced in shorter cycles, they operate fairly low miles, and have smaller engines. Many of the lighter trucks will already have PM filters as original equipment. The additional near term emissions reductions achieved by requiring PM filters on the light trucks prior to 2015 are small – about 2 percent of the total benefit achieved for all trucks with the regulation as amended. Lighter trucks also don't tend to be concentrated in localized areas such as distribution centers and don't pose as much of a local PM exposure risk as heavier vehicles. Further, the amended regulation requires the replacement of all light trucks starting in 2015, ultimately providing the maximum PM benefits.

22. Comment: While we understand that CARB's proposed revisions are designed to address the downturn in the economy and inventory changes, we believe CARB must still move forward as quickly as possible to protect communities and ensure a transition to cleaner vehicles and equipment. A large body of scientific literature has clearly established the link between diesel pollution and premature death and illness. Diesel pollution sickens and kills thousands of residents annually in California, and disproportionately impacts our poorest and most vulnerable individuals including seniors, people with heart or lung disease, children and infants. The state's sensible rules to reduce toxic soot pollution over time will protect lives and save California far more than it will cost. Pollution from diesel buses and trucks comprises the largest source of cancer-causing emissions in California, making them the top air pollution-related cancer risk for state residents. In addition to aggravating a variety of respiratory and cardiovascular illnesses and contributing to thousands of hospitalizations each year, exposure to the toxic air contaminants contained in diesel exhaust has also been linked to developmental

harm to fetuses, decreased lung growth and development in children, and other serious health and reproductive problems. Diesel truck drivers are especially at risk, and are 1.5 to 2 times more likely to develop lung cancer, as compared to workers not exposed to diesel exhaust. Strong state regulations to control harmful emissions from trucks and buses are critical to saving lives and improving health. But more importantly, regulations on diesel emissions are critical to address health inequities in low income communities and communities of color who pay the highest price in terms of increased risk of death and illness caused by proximity to busy roads and freeways. We support the strongest possible California Air Resources Board's regulations to cut diesel pollution, protect vulnerable and impacted communities, and protect public health from the illnesses and deaths caused by diesel exposure. (HNCA)

Agency Response: Comment noted.

23. **Comment**: I'm here to present this letter on behalf of the undersigned 23 environmental, public health, and community groups.[6] These groups representing all parts of the state and hundreds of thousands of members support the diesel cleanup but have serious concerns -- health concerns regarding the proposed amendments to the on- and off-road rules. There will be other people after me to speak on the specifics. I just want to present the letter. (BWG3)

24. **Comment:** Our organizations have enthusiastically supported the slate of diesel clean up regulations adopted by CARB over the past decade. While it may be particularly difficult to enforce compliance with air quality regulations in the current recession, it is never a good time to be exposed to diesel pollution either. Every day, three times as many Californians die prematurely from the effects of particulate air pollution than in traffic accidents. Diesel pollution not only contains toxic particulates, but contains smog- forming nitrogen oxides and more than 40 other toxic chemicals. Hundreds of peer-reviewed studies from around the world have documented the health hazards of long-term exposure to diesel exhaust, particulate pollution and smog, including asthma and heart attacks, stunted lung growth in children, birth defects, more emergency room visits and higher death rates. At greatest risk are children, the elderly, people with asthma or other lung illnesses, and those who live in congested industrial areas including near ports or rail yards. (BWG1)

Agency Response: We agree that exposure to diesel PM presents a health hazard to California communities. The specific comments in the letter submitted by BWG3 and BWG1 (also referred to as the joint coalition letter by various commenters) are addressed in the responses to Comments 4, 5, 19, 20 and 363.

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[6] The signers are identified in a comment letter submitted by the Better World Group (BWG). It is identified as Comment 16 in the table titled "Comments posted to on-offroad10 that were presented during the Hearing" and posted on the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10.

25. **Comment:** I know these rules have been very difficult for a lot of people here and that we all sympathize both with people who are hurt by the recession and also people who are hurt by illnesses caused by air pollution. And I know that you as Board members are trying to strike a balance here, and it's not an easy thing to do. I think it's also essential that you operate with the best possible data that is up to date while taking into account the effects of the recession and also correcting the errors that have been made in the inventory. So clearly there does need to be a course correction. In doing that, we think it's important to also remember that diesel soot is not distributed evenly, as you've heard from the students. And the health impacts are also not distributed evenly. So we suggest some amendments that we think would particularly help to reduce some of the localized impacts as you've heard. (SCC)

Agency Response: Please see the response to Comment 18. Also, for the agency response to the amendments proposed by the commenter (SCC), see the response to Comment 364

26. **Comment**: We have a public health crisis in the San Joaquin Valley due to our chronic air pollution problem, which includes more than $6 million in public health costs and 2400 premature deaths in our region alone due to air pollution. We're particularly concerned about the delays for the on-road rule. Many of our environmental justice communities are living near roadways. These communities are already impacted by pollution, and a delay means more continued pollution in those areas and more health impacts. (CVAQC)

Agency Response: The figure of 2,400 premature deaths in the San Joaquin Valley Air Basin was presented in the December 2009 ARB Staff Report (http://www.arb.ca.gov/research/health/pm-mort/pm-mort_final.pdf, page 39, Table 4a). Due to revisions in methodology for calculating estimates of premature death (by the U.S. EPA and ARB), the estimated number of premature deaths for the San Joaquin Valley air basin was updated in August 2010 to 1,500 premature deaths due to cardiopulmonary causes. We agree with the concern for communities living near roadways. Please see the agency response to Comment 19 regarding the impact on environmental justice communities.

27. **Comment:** The American Lung Association and other health organizations have strongly supported the diesel on-road and off-road regulations because they are life saving regulations and they reduce asthma attacks, reduce respiratory and cardiac illnesses, and hospitalizations, and are very important from our public health perspective. We understand that the ARB needs to provide some additional flexibility in those regulations due to the economy and inventory changes. And we are asking that we do everything possible to maximize the public health protections and maintain the strongest possible regulations. And we have recommended some strengthening amendments to the staff proposal to increase the retrofits and upgrades in the early years and to increase the SIP margin, especially in the San Joaquin Valley.

    The American Lung Association is, of course, particularly concerned about the most vulnerable and disadvantaged communities and urge you to pay special

attention to pollution reduction in impacted areas and to consider measures to strengthen requirements in areas near warehouses, truck distribution centers, rail yards, ports, heavy traffic corridors. And finally, just a couple points. We believe it's extremely important to continue to monitor emission levels that are consistent with production we are looking at today to make sure we are reaching the emissions levels that we're expecting and achieving all benefits we're expecting today and to also monitor the pace of the economy. And we can all agree in closing that it will be important to do everything possible to use incentive funds to get early reductions in health impacted communities so we can all work together on that as we move forward. (ALAC1)

28. **Comment:** We continue to urge you to focus on the important overarching goal of health protection, especially making sure that we achieve both near-term and long-term goals to protect public health. And so along those lines, we would urge you, number one, to be cautious as you move forward and to avoid moving up the entire margin of emissions reductions that are estimated in the target update. And number two, we would urge you to look very carefully at the impacts of the regulatory changes on public health benefits, especially in the near term and make sure that in addition to achieve our SIP commitments we avoid giving up public health benefits, especially in vulnerable communities. And we hope you will look at ways that we can achieve all the near-term health benefits through both regulatory and incentive approaches to make sure that we are moving forward with our public health goals. (ALAC2)

29. **Comment:** I'm speaking today on behalf of myself, family, and friends in the San Joaquin Valley and those living near the transportation corridor areas - between 580 and 880 and 238 in the East Bay. My concern with the rule proposed today is that it does not safeguard with enough margin of certainty those most affected by PM and NOx pollution, especially those in the San Joaquin Valley and in the corridors of highway 101, I-5, 99, 880. I'm here today to urge the Board to include an early 2012 emission review to see if the tons of pollution reduced are on target and build in the 20 percent 2014 SIP margin on the emission reductions. Although I've moved to the East Bay where supposedly it's cleaner, my lungs of 30 years living in Fresno are damaged. But for my five nephews, it's not too late. They're relying on you and the staff to get it right. (LFS)

Agency Response: Residents of disadvantaged areas will reap considerable health benefits from the emission reductions that will accrue due to the regulation. Please see the response to Comment 19 for an account of these health benefits. The response to Comment 19 also discusses changes to the Truck and Bus regulation and to the Drayage truck regulation since the Board Hearing that would help to mitigate health impacts in environmental justice communities.

As the economy recovers, ARB will continue to track emission trends, as directed by the Board, to ensure the 2014 emission targets are met. See the response to Comment 1 for the directives issued by the Board in ARB Resolution 10-44.

Regarding incentives for truck owners, specific changes to ARB funding programs are considered separately from the regulatory process. As described in Chapter VII,

Section D of the October 2010 Staff Report: Initial Statement of Reasons for Proposed Rulemaking, funding program changes were planned to occur after Board action and direction on the regulatory changes. In general, the extended compliance deadlines for many trucks enable greater potential funding opportunities by allowing more time for applicants to apply for funding before regulatory compliance dates. ARB Resolution 10-44 also includes Board's directives to modify funding programs to obtain near term health benefits from early emission reductions.

30. **Comment**: I am concerned that the proposed modifications do not maintain the short and long-term health benefits of the original rule. They also go too far and can impact the public's health adversely. The health of businesses should not become a priority when the public's health can suffer. (HCHUN)

Agency Response: Please see agency response to Comment 19.

31. **Comment**: We are an environmental health and justice organization in the city of Commerce where our communities are heavily impacted by activity from the goods movement industry. There is a real impact in our communities because the place where they live and work is a diesel hot spot. With two major freeways, one of which is the I-710 super highway, a major arterial road, and four rail yards, they are suffering from asthma, cancer and other respiratory illnesses due to the cumulative impacts from all of these sources, of which some are mobile smoke stacks just driving by constantly through our community. It is really unfortunate that instead of children carrying backpacks full of toys, they are carrying backpacks with respiratory machines. And there are children whose backyard is rail yards or their backyard is the freeway or other highways where their quality of air is heavily impacted. We do appreciate the fact that the staff and the Board are working towards improving the quality of air, but we do recognize that the economy is not ideal right now. Not for some of the industry and not for our community. And these rules are important because they will cut down on costs, medications, and also health risk for the families that are heavily impacted. The human cost is heavy, and the proposed changes go beyond what is necessary. And the near-term health risks in 2014 and 2017 would be cut short. Our impacted communities need near-term relief now. We ask that staff provide near-term benefits through upgrades on the oldest dirtiest trucks beginning in 2014. So we would ask that the staff provide near-term benefits starting in 2012 from the dirtiest trucks, including a higher SIP margin and also a monitoring program. And thank you for the drayage rules that you are working on. (EYARD2)

Agency Response: The amendments to the regulation take into consideration the emission reductions resulting from the recession, some of which reduce localized impacts. These amendments were made carefully to reduce costs to the regulated community while maintaining the emissions reductions needed to protect public health. We believe the amendments achieves that balance. Please see agency response to Comments 19 regarding the impact on environmental justice communities and the changes to the Truck and Bus regulation and the Drayage Truck regulation since the Board Hearing. Also, see the response to Comment 1 for the Board's directive to staff

to monitor the State's progress toward meeting its emission reduction commitment and provide an update to the Board at its July 2012 meeting.

32. **Comment**: I live in the Richmond community two blocks from one truck route and two blocks from another truck route. I stand here today because I'm concerned in how diesel exhaust is becoming a harm to the children's health. The children who are exposed to diesel exhaust have a higher risk of having asthma because their defenses are not fully developed. As you all probably know, Richmond's asthma hospitalization rate is three times the state average. I, myself, suffered from asthma as a child. I once had to go to the emergency room because I was having trouble breathing. My seven-year-old sister has asthma now. She sometimes has to use a machine that helps her take the medicine she needs. This medicine helps her by opening the pores to her lungs. I have two cousins who also live in Richmond and also suffer from asthma. In your mission, you mention that you want to promote and protect the public health. And all of us who are suffering this diesel impact want to see you do as you say. (RHS1)

33. **Comment**: I'm currently attending Richmond High School and I'm a junior in the Health Academy. First of all, I would like to show you the map of where our school is. All the highlighted parts are the truck routes. As you can see, there's, a lot of them around our school. The reason I'm here today is because I wanted to talk to you about diesel exhaust and how it is affecting everyone around us. As you know, diesel exhaust is a problem because it contains more than 40 toxic air contaminants. Diesel is widely used throughout our society. It is used to power bus, agricultural equipment, back-up generators and, of course, trucks. Imagine trucks passing by your house every day leaving particles and gases in the air that are just waiting for the moment so you will breathe them in. At that moment, they may not affect you, but sooner or later they make you sick when you least expect it. Every time we breathe the toxic gases, they are drawn into our lungs. One truck route runs through 23rd Street, right in front of my school. Around my school there are two more trucks routes. And around Richmond, there are many more. Wouldn't you be worried if you and your family were breathing toxins that could be killing you slowly? I would like to ask you to not wait any longer to make the changes that we have known for so long that we need to make. It is difficult to start, but it's not impossible. Nothing should stop us from pursuing just this. (RHS2)

34. **Comment**: I've been living in Richmond since birth. I'm here to talk to you about the diesel problem in our community. There are more than four routes that pass near our school, especially the one that passes right in front of my school. There are two routes around my house. This problem is actually affecting us, the citizens. It is affecting our health. The percentage of kids from Richmond that are hospitalized for asthma is three times the percentage of kids in California. I understand that we have to be concerned about the jobs that are going to be affected by this rule. But on the other hand, the percentage of kids hospitalized is going to decrease by a lot. I know it's not easy finding a job now since the

economy has gone bad. But the delay that is being proposed means more kids are going to be affected and get sicker. (RHS3)

Agency Response: We share your concern for people living near roadways, especially children who live, learn, and play in communities in close proximity to truck routes. Residents of these areas will reap considerable health benefits from the emission reductions that will be accrued due to the on-road truck and bus regulation. Also, see the response to Comment 19 for a description of changes to the Truck and Bus regulation and the Drayage Truck regulation since the Board Hearing that would help to mitigate the health impacts in environmental justice communities.

35. Comment: Truck routes run right along one side of my school just outside the fence around our football field. My house is also close to the truck route, four blocks to the nearest one. But I'm really more concerned about the impact diesel pollution might have on my little sister than I am about the impact it's having on me. My little sister is 14-years-old. So her lungs are still growing. I know you understand that children who are exposed to diesel exhaust are more likely to have asthma, and they also have reduced lung function. I also know that you care about these things, because you have been working on this problem for a long time. When the Board adopted the California's Diesel Risk Reduction Plan in 2000, my little sister was four-years-old. The plan set a goal of reducing diesel pollution by 75 percent by 2010. Of course, we haven't yet reached that goal. Then in 2007 and 2008, the Board adopted some important rules for trucks and buses and construction equipment. Those rules were going to reduce diesel particulate pollution by 75 percent by 2014 and then the recession hit. I agree there have been some changes to help truckers and construction workers in these hard times, but the proposal in front of you won't get us to 75 percent reduction on diesel pollution until 2023. By that time, my little sister will be 25-years-old. Her lungs will have stopped growing. She will have lost any chance to grow up with clean air. I'm here to say respectfully, please don't wait that long. You need to fix the proposal so that all trucks, old or new, have diesel filters by 2017. And old equipment needs to be retired faster. All the loopholes need to be closed. (MHS5)

Agency Response: The amendments to the regulation take into consideration the emission reductions resulting from the recession, some of which reduce localized impacts. These amendments were made carefully to reduce costs to the regulated community while maintaining the emissions reductions needed to protect public health. Please see the response to Comment 19 for a discussion of the health benefits of the regulation for environmental justice communities. Also, staff does not believe there are loopholes to be closed as indicated by the cleanup goals listed in the response to Comment 19. Nearly all trucks will have PM filters by 2017. In addition, the response includes a description of changes to the regulation since the Board Hearing to require additional cleanup of older trucks that would help mitigate the health impacts in these communities. See also the response to Comment 5.

36. Comment: Policies should be made that benefit all people, and I believe that re-routing of trucks will help lower the asthma-related hospital visits for low-incomes

families that reside in those areas. The diesel filters should be mandatory on all trucks. I believe my community will benefit greatly from the diesel filter. There should be an earmark to the amendment that, like tax breaks for people who comply with the filter, they should be guaranteed grants, like mom and pop truck companies. And there should be just an earmark that helps the economy as well. (KBAK)

37. **Comment**: I'm here because there are truck routes close to my school and my community and, of course, my house. The asthma hospitalization rate for children in the zip code where I live is much higher than the rest for children in California in general. People in my community are affected by trucks diesel pollution, but they are not getting much of the economic benefit from the freight of those trucks coming through the neighborhoods. The people who make the most money from the trucks live someplace else. If the companies that make a lot of money from shipping and selling the products that come into the port of Oakland could pay a little bit of money for every container that comes to Port of Oakland, then that could help my community and they could clean up the diesel trucks. I know this is an idea that Board has heard before. I think this should recommended as an idea to the Governor and the Legislature. Also, I think it should be on the ballot for election of 2012. Suppose that for every container that comes through the Port of Oakland the shipping company paid something like $30, that money would be used to clean up the trucks. And this would really help my community because of less pollution and less asthma in my community. (MHS2)

Agency Response: ARB does not have authority to affect traffic patterns or develop any tax-based programs to help reduce emissions. Any tax-based programs would have to be developed and approved by the Legislature and Governor. Regardless, several funding sources have already been allocated through proposition or by the Legislature to address emission impacts from diesel engines. Also, please see the discussion of the benefits of the Truck and Bus regulation in the responses to the preceding comments 18 to 35 on the public health impacts of exposure to diesel exhaust.

38. **Comment:** The Environmental Health Coalition in San Diego did sign onto the Environmental Coalition letter [or joint coalition letter] and we're in agreement with those recommendations. We're especially concerned about the on-road rule deadline roll-backs in our region. For one thing, it's not that clear to me that our communities have gotten any reprieve in particulate pollution due to the recession. Looking at levels of PM2.5 at the air monitor that's located in one of our environmental justice communities, Barrio Logan, we have not seen any consistent decreases between 2006 and 2009 in the annual average levels. So questioning whether that highly-impacted community is really getting a break from pollution during the last three years. That community has also been working hard to finalize a new land use community plan which would allow water-front industries and residential communities to exist side-by-side in order to keep those jobs and make sure that air quality has improved for those residents. We need to make sure that every truck going through that truck or traveling through or visiting the

port is as clean as possible in its emissions. Looking further south, the cargo terminal in National City receives mostly car cargos, so the trucks visiting that terminal are car carriers, which are exempt from the drayage truck rule. The only relief that community will see from truck particulate matter is from the on-road rule. So again, we're looking to that rule to help air quality in that community. And then looking way down at the border area, the area of our region with the most consistently high particulate levels is the Otay Mesa area where the Mexico/U.S. border crossings are. And although those are ports of entry, they're not subject to the emission -- drayage truck rules. So we need the on-road rule to help that community. Finally, I want to remind you, you've gotten a letter from the Port of San Diego expressing level playing field concerns between the drayage truck rule and the on-road rule. (EHC)

Agency Response: Please see agency response to Comment 19. Regarding the commenter's statement about Barrio Logan air quality, while we are not sure which air quality monitors the commenter is referring to, the closest San Diego Air Pollution Control District (SDAPCD) monitors to Barrio Logan are the Downtown and Chula Vista monitors. While we agree that there has not been a consistent decrease in PM2.5 annual average concentrations at these two monitors from 2006 to 2009, there has been a steady decline in PM2.5 levels at these monitors and all other SDAPCD monitors since monitoring began in 1999.

b) PM Emissions and Mortality

39. **Comment**: My trust in CARB's ability to objectively present the facts regarding PM2.5 is waning rapidly. Starting with cherry picking data to support loss of life due to PM2.5, it seems that upon being questioned about the data to support the mortality rate, the data changes. The answer depends on whether the subject is diesel PM2.5 or background PM2.5. CARB conveniently combines the data when it supports their desired end game. CARB has ignored studies that show PM2.5 has no effects on premature deaths. So my suggestions:

(a) Hire a 3rd party scientific consultant with verifiable credentials to review all existing PM2.5 data (within CA and other states) and make conclusions/recommendations. This person should be vetted through the public arena to ensure true objectiveness and competency.

(b) Hire an economist similarly qualified as the 3rd party scientist above to give a true picture of the economic impact of PM2.5 regulations on the local/state economy should it be implemented.

(c) CARB should openly and honestly answer questions regarding this legislation that is presented in local newspapers.

Currently the public's confidence in CARB's ability to objectively make decisions on its behalf regarding health issues is falling. (RTOM)

Agency Response: We do not agree that we have "cherry picked the data" to support loss of life due to PM2.5 exposure. We have carefully reviewed all studies that have

been performed in the United States on the relationship between long-term PM2.5 exposure and mortality, as has the U.S. EPA in its recent review of the NAAQS for particulate matter. There are a few studies that do not find a relationship between long-term PM2.5 exposure and all-cause mortality, but the majority of studies do report a statistically significant relationship. In addition, U.S. EPA and we have also critically evaluated the methods used in each study so that we can place the most weight on the studies that have used the strongest methodologies. The effect estimate we have used from Krewski et al. (2009) comes from the largest and most rigorously and publically evaluated study in existence. The effect estimate for the relationship between long-term PM2.5 exposure and mortality from this study is being used by multiple agencies worldwide. The Krewski et al. (2009) estimate, though not the lowest in the literature, is toward the lower end of the range of results from American studies.

All-cause mortality is not the most appropriate endpoint to consider, because it includes many causes of death that have no plausible relationship with PM2.5 exposure, for example deaths due to complications of surgery, appendicitis, and systemic infections. Inclusion of these non-plausible deaths in effect dilutes the relationship between PM2.5 exposure and mortality. Moreover, the studies that have found no relationship between PM2.5 exposure and all-cause mortality have additional limitations that make it unlikely that they would be able to detect an effect. These limitations include the size of the study, particularly the number of communities included and the population distribution among those communities, population age, use of an indirect PM2.5 measurement method, and inadequate exposure assessment methodology.

Mortality from cardiopulmonary causes is supported by a large body of biological evidence, which is reflected in its stronger relationship with long-term PM2.5 exposure compared to all-cause mortality. There are no studies that have reported no effect for cardiopulmonary mortality. When analyses are limited to categories of deaths for which there is biological support, the relationship between long-term PM2.5 exposure and mortality is stronger than for all-cause mortality.

There are no established methods for routinely measuring DPM in ambient air. The ambient DPM concentration is estimated from an ambient air surrogate method developed using emission inventory data (and verified with ambient air monitoring results from research instruments), both for current conditions and with the regulation in place, to estimate the anticipated emissions reductions associated with the regulation. Due primarily to the lack of a routine monitoring method for DPM, there are no epidemiological studies that estimate population risk related to DPM emissions separate from other particle sources. DPM is less than 2.5 microns in diameter, and consequently falls into the PM2.5 size category. Because of the size fraction in which we find DPM, and also because the results of animal exposure studies suggest that DPM is at least as toxic as other species within PM2.5, we make estimates of the mortality impact of DPM using the relationship between long-term exposure to PM2.5 and mortality.

Our conclusions about the relationship between long-term exposure to PM2.5 and mortality are in alignment with those of the U.S. EPA, the World Health Organization, Health Canada, and the British government. These conclusions have been publicly peer

reviewed by multiple independent bodies worldwide. In addition, the methods used in ARB's economic analyses are comparable to those used by U.S. EPA and other regulatory agencies world-wide, and have also been extensively reviewed by multiple independent review groups. Consequently, there is no need for the additional reviews suggested by the commenter.

It is unclear from the comment what questions that have appeared in the local newspaper the commenter would have us answer.

40. Comment: While voicing our support for staff recommendations, we still question the science behind the finding of diesel as a Toxic Air Contaminant and further question the inclusion of NOx in the calculations for the PM2.5 as a basis for suggesting that there is not more harm to health from the regulation than from doing nothing. Rather, we contend that the costs in real terms to the availability of choices that will result from the economic harm cause by this rule. Passage and implementation will directly impact and influence decisions made by the most vulnerable members of our community resulting in greater harm than the pursuit of a standard for which there is so little epidemiological support.

Specific to PM2.5, we have particular concern over the lack of transparency in the 2.5 assessment; the combination of diesel PM and background PM and the apparent cherry picking of data to support loss of life due to PM2.5, CARB has ignored studies that show PM2.5 has no effects on premature deaths. To address this, we suggest a 3rd party engineering firm be vetted and hired to perform the subject assessment and further, that the report be subjected to rigorous peer review prior to acceptance, and lastly, that stakeholders are informed and allowed to provide input at critical junctures (i.e. selection, vetting and acceptance of peer review methodologies). (WEAT1)

Agency Response: First, the commenter questions the finding of diesel particulate matter (DPM) as a Toxic Air Contaminant (TAC). In 1983, the California Legislature established a process for risk identification and risk management to address the potential health effects from air toxic substances and to protect the health of Californians. TAC identification is done through a public process outlined in State law that solicits public comments at several points, and includes public workshops with interested constituents. Application of this process requires staff from ARB and the Office of Environmental Health Hazard Assessment (OEHHA) to draft a report that serves as the basis for the TAC determination. ARB staff assesses exposure to the substance under consideration, and OEHHA staff evaluates the substance's health effects. After the required public comment periods and workshops, the report is reviewed by the independent Scientific Review Panel (SRP) for scientific accuracy. SRP members are appointed by the Governor's office. If the SRP approves the report, its specific scientific findings are officially submitted to ARB, and are considered by the Board at a public hearing, followed by a vote by the Board on whether or not to identify the substance as a TAC. While we regret that the commenter does not agree with the listing of DPM as a TAC, the required process was followed in listing DPM as a TAC.

The second part of this comment concerns the relationship between NO_X and PM2.5. Diesel engines produce particulate matter through two processes: directly through the combustion process, and secondarily through atmospheric transformation of NO_X emissions. This secondary contribution is due to chemical reactions that occur in the atmosphere, which convert NO_X from the gas phase into particles. Estimation of the total PM2.5 emissions attributable to diesel engines requires consideration of both primary and secondary PM2.5 contributions.

ARB recognizes that the regulations under discussion will result in costs to truck and bus owners, and that the costs of the control strategies included in the regulation are readily apparent. The ARB must balance the cost of regulations against the adverse health impacts associated with elevated PM2.5 levels. For example, the scientific literature indicates that there is a greater incidence of adverse health effects in areas with higher vs. lower PM2.5 concentrations. These health effects include mortality, hospitalizations, and emergency room visits, among others. Each excess incidence of these health effects imposes a cost either to individual health insurance, to the public which pays for healthcare for people without insurance, or to income. Air pollution also reduces agricultural productivity, and thus increases the cost of food. PM2.5 influences visibility, and reduced visibility tends to reduce tourism to scenic locations, thereby reducing employment in and enjoyment of these locations. In short, air pollution has many more adverse effects than are generally appreciated.

The second paragraph of this comment covers much the same material as Comment 39. The reader is referred to the Agency response to Comment 39 for our response to this paragraph of the comment.

41. **Comment**: Hien Tran was the lead scientist on the study of "Premature Mortalities from the exposure of PM2.5", which is the basis for the PM2.5 regulations. He claimed to have a PhD from UC Davis, when in fact, he had a mail-order, fraudulent PhD from a fake university that lists a UPS store as its address. We demand that CARB suspend the implementation and rule-making processes of all PM2.5 regulations until a new study can be completed, peer-reviewed, and is made available for public comment.

Furthermore, there is discussion within the scientific community regarding whether or not diesel is the largest emitter of PM2.5. Frederick W. Lipfert, in the Symposium on PM2.5 and Mortality presented on the 26th of February 2010 that no single source emits PM2.5, but rather PM2.5 particles come from many sources, which cannot be identified directly. In the same presentation, Lipfert also held the conclusion that national studies cannot be applied to California where pollutants and populations differ from states in the nation. CARB does not have accurate data regarding how much PM2.5 is emitted in California. CARB does not have any conclusive study linking health risks to exposure of PM2.5. CARB does not have any conclusive study that suggests diesel emissions are responsible for the majority of PM2.5 pollution. CARB has misused public money during the course of its writing and implementation of diesel PM2.5 regulations through fraudulent actions of its employees and possibly some board members. CARB has

misused tax-payer money by creating regulations before it has obtained accurate data. (JYOUNG)

Agency Response: ARB adopted the Truck and Bus Rule, in part, to meet California's legal obligations under federal law to achieve attainment with the NAAQS for PM2.5 by 2014. The emission reductions in the rule are critical to attaining federally mandated air quality standards. Primary diesel PM emissions are a significant contributor to overall PM2.5. In 2008, 20,600 tons of diesel PM were emitted in California. The amended regulation has been approved to accommodate the economic hardship of affected small businesses while still meeting the legal requirements and protecting the public health of all Californians.

ARB develops PM2.5 emissions inventories which cover all of the sources of PM2.5 emissions in California, whether generated from combustion of diesel and gasoline fuels or from other types of dust and particulate sources. These sources range from stationary sources like power plants and refineries; to mobile sources including cars, trucks, and off-road equipment; and to other sources like road dusts and wildfires. These inventories are developed using California-specific data reported directly by regulated facilities, obtained by research and testing programs, and developed using comprehensive emissions inventory methods like those used in the Statewide Truck and Bus Rule. The inventories are based on decades of research, reporting, and experience. In addition, the ARB and local districts maintain a comprehensive monitoring network consisting of more than 250 air monitoring stations in California. Data from this monitoring network is routinely used by ARB staff and others to help assure the quality of the PM2.5 emissions inventories. In general there is good agreement between PM2.5 observed in the ambient monitoring network, and in PM2.5 emissions estimates. Decreases in measured PM2.5 levels in the atmosphere track well with decreases in estimated PM2.5 emissions over the years, providing further validation of the emissions inventory

Please see the responses to comments 39, 40 and 59 for information on the scientific evidence that supports relationships between PM2.5 and diesel emissions exposures and premature mortality.

Regarding Mr. Tran, because he falsified his credentials he has been demoted, disciplined, and removed from all regulatory support work. The Board also directed staff to withdraw the original PM health report and prepare a new version, without input from Mr. Tran, which was completed in August, 2010. The report can be found at: http://www.arb.ca.gov/research/health/pm-mort/pm-report_2010.pdf.

The new PM health report updates ARB methods for quantifying premature death associated with long-term public exposure to PM2.5 air pollution. The method relies on a peer-reviewed risk assessment document developed by U.S. EPA as part of its current review of the NAAQS for PM2.5. The federal Clean Air Act gives the U.S. EPA the responsibility to research and assess the health impacts of air pollution at the national level. California law gives the ARB similar responsibilities as part of the state's comprehensive program to reduce air pollution. The national studies reviewed by the U.S. EPA for the NAAQS assessment apply to California as well. In fact, as part of the federal standards review process, U.S. EPA estimated the premature deaths associated

with PM2.5 in two California cities – Los Angeles and Fresno. The new report expands on that work by estimating mortality impacts of PM2.5 air pollution statewide.

42. **Comment:** The original report upon which you base your proposed regulations was later exposed to be written by a total fraud who received his PhD by mail order. Isn't that enough reason to completely throw out his recommendations? (PPIN)

43. **Comment:** You are working off of information provided by a bogus "expert." Please just stop. You are killing California. (GPAY)

44. **Comment:** CARB's regulations which have so devastated the trucking industry were based on a discredited report by a "Dr." Hien Tran, a CARB researcher who mail ordered his PhD from a phony university. However, even when it was discovered that Hien Tran had falsified his qualifications, CARB refused to fire him and stood by his study – a study that now even CARB itself admits overestimated pollution by more than 300%. (VCOOT)

45. **Comment:** Based on the improperly done study by Dr. Tran, I believe it is truly in your best interest to back off the restrictions until a new study can be conducted and affirmed by a separate (non CARB) affiliated source. (BHULZ)

46. **Comment**: I do not understand how a government for the people could impose job killing regulations on their own public based on phony statistics by a phony scientist. This agency is part of what has made California a laughing stock to the rest of the States. (JHOL)

47. **Comment**: I am writing in regards to the (now widely known) fraudulent study on diesel emissions. How can a government agency act so irresponsibly? You can't enact regulations that will potentially destroy the entire economy of California, based on junk science. The only chance you have to regain credibility with the public is to admit your mistakes, and retract these ridiculous studies. (EBARBO)

48. **Comment**: While we all want clean air, destroying our already unsound economy based upon faulty data is ludicrous. Basing decisions upon the rantings of "Dr." Hien Tran who mail ordered his PhD and overestimated pollution by 300% is so absurd that even the far-left San Francisco Chronicle disagrees. Please stop this madness and give California a chance to once again be the economic land of golden opportunity it once was before it's too late. (DVON)

49. **Comment:** The new regulations are based on bogus information. (SCHAT)

50. **Comment:** These new regulations are based on phony research by phony Hien Tran, and you all know it. (HNAP)

51. **Comment:** Aside from the very serious impact diesel regulations will have on our jobs and economy, they are based on a study by a researcher who both falsified his credentials and overestimated pollution by up to 300%. This is not a sound basis for policies which harm the livelihoods of California citizens. (COEU)

52. Comment: Your studies appear to be flawed. Please do not pass any new laws. (AKELL)

53. Comment: I understand that you are basing your actions on fraudulent data from a bogus researcher who purchased a false degree documenting him as a PHD. (SFIN)

54. Comment: I can't believe you guys are going to help further destroy the state's economy by giving credence to a bogus "study" by a fake PhD. (SSTAL)

Agency Response: Please see the response to Comment 41

55. Comment: Where is that pesky Tran report that was supposed to be done on California specific environment, not national? (DCC2)

Agency Response: The report that the commenter is referring to was released in August of 2010. It can be found at: http://www.arb.ca.gov/research/health/pm-mort/pm-report_2010.pdf.

56. Comment: I attended a CARB talk given where we were told we are living in a pollution hot spot. And I quote; we are living in a "pollution hot spot, one of the worst in the U.S." We got a real guilt trip on that one laid on us. I'm not alone in my concern about this intimidation. I belong to a group of like-minded experts and scientists in the Nor Cal Tea Party where our purpose is to explore untruthful statements. I'm afraid that the gross costly error committed by the MTBE, well water contamination that went on for years and years, and the fraudulent PM2.5 report resulting in millions of dollars of fines will be repeated today. Because of this, businesses will close. By the way, these fines that were imposed on these eleven companies back in March have not been returned, over millions of dollars. As a California resident, the senior resident by the way, forever 50 years, I have seen the lifestyle enjoyment disappear completely. Please consider the decisions you make today carefully. (NCTP)

Agency Response: Please see response to Comment 41 regarding "fraudulent PM2.5 report." We cannot respond to the "living in a pollution hot spot" reference because we do not know where or when this occurred or the context in which it was presented. We also cannot respond to the comment regarding fines to eleven companies without more specific detail about the fines.

57. Comment: The last time I was up here in 2008, there were staff members and Board members that knew that that researcher you had didn't have any certificates like he said he did. And you guys held it back from the rest of your Board members. And you did not let them know. In my opinion, that's corruption, because you, as Board members, are supposed to take care of the people of the state of California to do the best for the state of California for the population of the state of California, not to do your own agendas. And this Board has costs millions -- actually billions of dollars of companies that have already retrofitted, updated for garbage information that you guys took into consideration knowing that you have professors from UCLA and other universities saying that the information you guys

have are incorrect. And you guys do not look at that. To me, that's corruption. (TLT)

58. Comment: There is ample evidence in the record for you, as Board members, to question the public health benefit of this program. And that's been entered several times over the last year-and-a-half. There was a question of whether there is a correlation between fine particulates and adverse health benefits when you use California-only data. We believe that, with all this new information, the right thing to do is to step back from the regulation and make sure you have the best information available. We urge you to take that step. (CIOMA)

Agency Response: Please see the responses to Comments 41 and 59.

59. Comment: The attached table[7] on the relationship between PM2.5 and total mortality in California is directly related to the calculation of premature deaths associated with diesel particulate matter in California. These premature deaths provide the primary public health justification for the CARB on-road and off-road diesel regulations. (ENSTR)

[7] The table was submitted as an attachment to the commenter's letter that was submitted during the 45 day comment period. It is identified as Comment 146 of the 45-day written comments posted to the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10.

Major Epidemiologic Studies of $PM_{2.5}$ and Total Mortality in California
(http://scientificintegrityinstitute.org/PM25RRs121510.pdf)

Relative risk of death from all causes (RR and 95% CI) associated with increase of 10 $\mu g/m^3$ in $PM_{2.5}$

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December 15, 2010

McDonnell 2000	CA AHSMOG Cohort (N~3,800 [1,347 M + 2,422 F]; Adventists in 9 airsheds, used to estimate $PM_{2.5}$)	RR ~ 1.03 (0.95 – 1.12) during 1976-1992
Krewski 2000 (from Krewski 2010)	CA CPS II Cohort (N=40,408 [18,000 M + 22,408 F]; 4 MSAs; 1979-1983 $PM_{2.5}$; 44 covariates)	RR = 0.872 (0.805-0.944) during 1982-1989
Enstrom 2005	CA CPS I Cohort (N=35,783 [15,573 M + 20,210 F]; 11 counties; 1979-1983 $PM_{2.5}$)	RR = 1.039 (1.010-1.069) during 1973-1982 RR = 0.997 (0.978-1.016) during 1983-2002
Enstrom 2006	CA CPS I Cohort (N=35,783 [15,573 M + 20,210 F]; 11 counties; 1979-1983 & 1999-2001 $PM_{2.5}$)	RR = 1.061 (1.017-1.106) during 1973-1982 RR = 0.995 (0.968-1.024) during 1983-2002
Zeger 2008	"West" portion of MCAPS Cohort (3.1 M [1.5 M M + 1.6 M F]; Medicare enrollees in CA+OR+WA; 2000-2005 $PM_{2.5}$)	RR = 0.989 (0.970-1.008) during 2000-2005
Jerrett 2010	CA CPS II Cohort (N~95,000 [42,000 M + 53,000 F]; ~50 counties; 1999-2000 $PM_{2.5}$)	RR ~ 0.994 (0.965-1.025) during 1982-2000
Krewski 2010	CA CPS II Cohort (N=40,408; 4 MSAs; 1979-1983 $PM_{2.5}$) 44 covariates (N=50,930; 7 MSAs; 1999-2000 $PM_{2.5}$)	RR = 0.960 (0.920-1.002) during 1982-2000 RR = 0.968 (0.916-1.022) during 1982-2000
Ostro 2010	CA Teachers Cohort (N~45,000 [45,000 F]; 2002-2007 $PM_{2.5}$)	RR ~ 1.8 (1.6 – 2.0) during 2002-2007

Agency Response: ARB adopted the Truck and Bus Rule, in part, to meet California's legal obligations under federal law to achieve attainment with the NAAQS for PM2.5 by 2024. The emission reductions in the rule are critical to attaining federally mandated air quality standards. The present amendments to the Truck and Bus Rule have been adopted to accommodate the economic hardship of affected businesses while still meeting the legal requirements and protecting the public health of all Californians.

The federal Clean Air Act requires U.S. EPA to promulgate NAAQS for six criteria pollutants, including particulate matter (both PM10 and PM2.5), which are based solely on public health considerations. The Clean Air Act also requires that all states meet the federally established NAAQS by designated target dates.

The California Legislature assigned ARB the State's responsibilities under the federal Clean Air Act. These federally mandated responsibilities include development of plans and regulations that will bring California into compliance with the health-based NAAQS by the required target date. Much of California does not currently meet the NAAQS for PM2.5. Because of this, ARB is required under federal law to develop regulations to

reduce statewide emissions of PM2.5 to the extent necessary to achieve attainment of the PM2.5 NAAQS in all parts of the State. The particulate matter that is emitted by diesel engines is in the PM2.5 fraction of particulate matter, and reductions in DPM emissions are necessary for the state to attain the PM2.5 NAAQS, in addition to reductions in emissions of PM2.5 from other sources.

The goal of regulations is to protect public health by reducing emissions to the extent necessary to attain the health-based NAAQS. In adopting such regulations in California, the Board must find that the regulations are necessary, technologically feasible, and cost effective.

Mortality and other health endpoint count estimates come into the regulatory process only at the point of estimating the costs vs. the benefits of a regulation. We have chosen to use the same concentration-response function from the same study that U.S. EPA used to estimate the relationship between long-term exposure to PM2.5 and mortality (Krewski et al. 2009). Use of the same study as used by U.S. EPA puts cost-benefits analyses of California's regulations on a level scale with those of other states, and the federal government. The sole point at which the concentration-response function selected enters into the regulatory process is for the cost-benefit analysis.

Specifically, we used the estimates in Krewski et al. (2009) from Table 33, which were adjusted for 44 individual level covariates, and for seven ecological factors. These estimates are the most appropriately modeled of those presented to take into account both individual and ecological confounders. We recognize that the estimated number of deaths depends on the effect estimate used. As will be seen from the following discussion, the estimate we have chosen is conservative, and we believe that it is the most defensible estimate available.

The table submitted by the commenter shows a selection of alternative effect estimates for the relationship between long-term exposure to PM2.5 and mortality that he proposes ARB use in benefits analyses instead of Krewski et al. (2009). There are strong technical reasons for not selecting any of the alternatives proposed by the commenter. A key consideration in making estimates of premature mortality is to recognize who the at-risk population is. Collectively, the health science literature on PM2.5 indicates that the population most at risk of premature death with exposure to PM2.5 has chronic heart or lung disease and is between about 55 and 75 years of age.

Starting at the top of the table, the McDonnell et al. (2000) study has a small number of subjects, many of whom were not old enough to be in the at-risk population. PM2.5 exposure was estimated based on airport visibility, not measured, and some of the participants lived as much as 35 miles from the airport used to estimate their exposure, both of which would introduce considerable exposure misclassification. Subjects were stratified into three groups: over and under 65 years of age, and over 85 years of age. Preliminary analyses indicated that the hazard functions were not the same for the three groups. Ultimately, the over 85 years of age group was not included in the analysis because the coefficients for the model variables for this age group were dissimilar from those of the other two groups, and the number of subjects in this age group was small. The two exposure misclassification issues, coupled with the small number of subjects and deaths, led to effect estimates with very large confidence intervals. In short, the

study has insufficient statistical power to demonstrate whether or not there is a significant effect of long-term PM2.5 exposure on mortality.

Table entries two and seven are analyses of the four and seven metropolitan statistical areas where the California portion of the ACS study reside. The data are derived from Krewski et al. (2000) and Krewski et al. (2009). These analyses have too few data points (four and seven, respectively), and thus insufficient statistical power, to allow meaningful conclusions. It should be noted that these results are not published, and Dr. Krewski and the Health Effects Institute released them only reluctantly, and neither is willing to stand behind them.

The study by Enstrom (2005) also has a relatively small number of data points (11), and much of the population is beyond the at-risk age group. It does not make sense to talk about premature death in people who are over 75 years of age (the few currently surviving members of the cohort are in their 90's). Enstrom (2005) also reported that when the subjects were split into two groups based on whether they were above or below 65 years of age in 1973, the beginning of the follow-up period, there was a statistically significant effect in the younger group throughout the full exposure period that was of similar magnitude to that reported by Krewski et al. (2000, 2009) for people of similar age, but no effect in the older group. This result is in agreement with other literature that has investigated the influence of age on risk of PM2.5-related mortality.

The regional analysis in Zeger et al. (2008) is difficult to interpret. The highest effect was observed in the central U.S., which also had the lowest PM2.5 levels. In addition, the statistical power of the western analysis was considerably less than that for the east. Moreover, the considerably larger counties in the west probably lead to greater exposure misclassification in the west, in that the investigators used only one monitor per county, regardless of its geographical size. Zeger et al. (2008) also found that the influence of PM2.5 exposure on mortality was greatest in people between 65 and 75 years of age, less in people between 75 and 85 years of age, and not detectable in people over 85 years of age.

The Jerrett (2010) analysis referred to was a preliminary analysis presented at a symposium. The study had not been completed at the time of the symposium. While the final report did not find a significant risk for all-cause mortality, there was a risk for cardiopulmonary mortality that was similar to that reported for the U.S. by Krewski et al. (2009). The study has not yet been published.

The estimate presented for Ostro et al. (2010) is incorrect. The authors determined that there was a calculation error in the results published, and they have issued errata for this paper. The correct risk estimate is 1.05 (95% CI: 0.96 – 1.16), which although not statistically significant is similar to that of Krewski et al. (2009).

The effect estimates in the commenter's table from the Krewski et al. (2009) study are from table 33, as is the estimate we are using, but they have not been adjusted for ecological confounders, and are thus not the most appropriate to select. The commenter cites incorrect years for both RR estimates presented. The correct years are 1979-1983 for the 1.028 estimate, and 1999-2000 for the 1.036 estimate

In summary, the commenter presents a table of effect estimates from studies that either have insufficient statistical power to show whether or not there is an effect, that are not peer reviewed and published, or that are based on populations in which one would not expect to see an effect due to subject age. In addition, the table omits more studies than it includes. The table omits the majority of published, peer reviewed studies that have been performed in the U.S. Virtually all of the omitted studies report a statistically significant association between long-term exposure to PM2.5 and all-cause mortality, often larger than the ~5% effect estimate we have applied in our cost-benefit analyses. While the commenter's table focuses on the lowest estimates available (published or not), the ones left off of the table range up to several times the estimate we have used.

3. Inventory

a) Emissions Inventory Methodology - General

60. **Comment:** We believe the changes to the inventory are reasonable and directionally correct, given the available data we have today. However, we need to be cautious since these inventories are being used to propose regulatory relief. And when we are asked to look at the proposals, we need to look at if the inventories are technically sound. [These comments summarize an overhead presentation that is not reproduced here. The presentation was submitted during the 45 day comment period as part of a comment letter identified as Comment 2 of the comments presented during the November 18, 2010 Board Hearing and posted to the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10].

What we've done is take a look at some of the parameters that went into it and the uncertainty balance associated with the parameters that staff provided in the staff report. So we looked at the range of uncertainties that are associated with each of these parameters. What we found is that doing some of these sensitivity tests and stress testing that the inventory potentially could be as much as 20 to 30 percent higher, especially on the off-road side. We believe the on-road emissions inventory are very reasonable given the amount of data -- much more data that's available on the on-road side compared to the off-road side. What the implications of this would be in terms of the margin that Todd mentioned, the 62 tons per day margin in the South Coast, (this is Table 37 from Appendix G of the on-road regulation ISOR). And what we've done is increased the off-road emissions by 20 percent and most of the numbers that you see in red on the far right column. When you add up those numbers, and with the proposed amendments that you'll be considering in December, there really is no margin left. And so we have to be cautious on the inventory numbers. We know that staff has done their best at the estimates at this time. But we need more adequate review of the inventory, more long-term review of the data, especially when we started using this data for the next Air Quality Management Plan update. We believe that staff should be encouraged to conduct additional analysis of the parameters just to ensure that you know the implications of the inventory relative to the proposed amendments. Even though the reductions are not meeting 2015, we believe they will be met

after 2015. And given these uncertainties and these estimates, we believe we still have to clean up vehicles as early as possible and incentivize that. (SCAQMD2) (SCAQMD4)

61. **Comment:** I have two requests of the Board. One is that as you prepare your budget for the upcoming year -- and I know this is a tough budget time for the entire state and all of us even at the regional levels -- that there be additional resources put to this issue of emissions inventory, because this is so fundamental to our ability to demonstrate attainment for the particulate standards as well as the ozone standards. And the decision you'll have in December naturally isn't just about 2015, which is the annual average PM2.5 standard for South Coast and San Joaquin, but also in 2019 when we address the 24-hour standard. And we haven't prepared the plan for that. So inventory numbers are always a snapshot in time, but historically we've seen them bounce around. Your staff has done leading work in this area, but it's important now that the ambient air quality standards are being tightened that we put more resources to this. And not just your staff, but we will commit to do so at South Coast as well. My second request is in reference to a comment or a notation that the Chair made at the outset about the fact the State has received notification from EPA on our PM2.5 plans in South Coast and San Joaquin that they are proposing partial disapproval. I would recommend -- and I mentioned this to James earlier today -- that before you act on these two critical regulations in December, because of the changes in the inventory that we seek to have a conversation between CARB, EPA, and the two associated air districts to make sure they're going to be okay with these inventory changes. As you heard in your staff presentation, there are departures from the standard EPA methodology. We're agreeing with your staff that these are improvements. But if the three of us agree – San Joaquin, South Coast, and CARB, but we don't have EPA's approval, we've got big problems. So we would just request your consideration of these two actions. I think this is maybe something we need to talk about, because if these are new inventories just being completed now, I'm not quite sure how EPA has approved them. (SCAQMD5)

62. **Comment:** We acknowledge that emission inventories are always a work in progress, and we understand that the inventory and emission reductions estimates being proposed today are based on the best available information. In light of this, we encourage the tracking of future emissions to ensure that the emission rates in today's proposal continue as expected since these reductions are an important component in the attainment of the PM2.5 and ozone standard in the San Joaquin Valley and South Coast. Thank you again for this opportunity to support the adoption these important rules. We share ARB's goal to protect public health and recognize ARB's national leadership in reducing emissions from mobiles sources.(USEPA)

63. **Comment:** We are extremely concerned with the fact that there is zero margin for compliance in San Joaquin Valley and very little margin of compliance in South Coast. What gives us some comfort to move forward today is the fact that we've looked at the work that your staff has done on the inventory, we scrutinize it with EPA, with South Coast, and our district, and we're comfortable that today's

inventory before you and the projected emissions reflect a major improvement in inventory and the assumptions methodology is reasonable. But as you know, inventories are always a living document, a work in progress that will improve over time and. If there is the shortfall, our concern is that given that more than 80 percent of air pollution in San Joaquin Valley and South Coast come from mobile sources and our stationary sources are already well regulated, it is impossible for us to make any shortfall, should there be any. So we want you to reaffirm your commitment that your Board will be responsible for that shortfall and we want regular and ongoing monitoring and tracking. (SJV/SC2)

Agency Response: Staff designed proposed regulatory amendments across both the Statewide Truck and Bus and In-Use Off-Road Rules to provide the maximum amount of regulatory relief possible while still preserving as much of the originally envisioned benefits as possible. We developed the Truck and Bus regulation emissions inventory through a public process that was initiated in 2007 and continued with public meetings in 2008, 2009, and 2010. The emissions inventory model and documentation of all assumptions in the model is available on our web site. We believe there was adequate opportunity for review of inventory assumptions. The Truck and Bus rulemaking documentation for the 2010 rulemaking is available at: http://www.arb.ca.gov/msprog/onrdiesel/ab1085compliance.htm.

The emissions inventory for the Off-Road regulation was developed and updated in a similar fashion. We presented both the Statewide Truck and Bus and In-Use Off-Road rule inventories at the November 2010 Board Hearing. The inventories account for the impact of recession and represent all the most accurate and current data available to the Air Resources Board. We spent so much time on these emissions inventories, and especially on our assessment of the impact of the recession on emissions because of the very important role the inventory played in determining how much relief could be provided in the regulation while ensuring SIP commitments would be met.

In April 2011 staff presented our accounting of the impact of the recession, revised future emissions, and benefits of SIP measures related to SIP commitments. Our analysis demonstrated that both the South Coast and San Joaquin Valley are on track to achieve the PM2.5 standard in 2014. Since May 2011 staff has been in contact with both air districts and the US EPA on our accounting. As required by the Clean Air Act, the South Coast and San Joaquin Valley PM2.5 SIPs show how California plans to attain the annual PM2.5 standard by the 2014 deadline, with specific emissions targets for each region. With three years remaining until the attainment deadline, California is meeting the commitments identified in the PM2.5 SIPs, and air quality continues to improve. The targeted revisions to the South Coast and San Joaquin Valley PM2.5 SIPs should provide what U.S. EPA needs to fully approve the PM2.5 plans for the South Coast and San Joaquin Valley.

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Since the Board Hearing, staff has continued to evaluate new information about economic trends to see how those trends would impact forecasted emissions. To date updated economic data support the emissions forecasting assumptions developed for the Truck and Bus rule and the Off-Road rule. As the economy continues to recover, ARB will continue to track emission trends to ensure the 2014 emission targets are met. If future emissions were to exceed the SIP target, ARB would still have the overall obligation that the emissions targets specified in the SIP will be met. ARB Resolution10-44 directs the Executive Officer to monitor the state's progress toward meeting its emissions reduction commitment and to provide an update to the Board in 2012. ARB will identify any potential emission reduction shortfall and take action, if necessary.

64. Comment: The American Lung Association has been very committed to the goal of reducing diesel pollution and diesel public health impacts in California. We first want to thank you for your hard work over the years to addressing the health impacts of diesel pollution and important regulations that you've adopted. We applaud you for that. And we have worked hard alongside you to support the on-road rules and keep it moving forward to addressing the dangerous impacts of diesel emissions. As you're looking for this inventory data today, I want to say, first of all, that we appreciate the work that you've done to review and update the diesel inventory and we support this work. But given the huge implications of the changes in the inventory, we also want to make sure that this data is as accurate as possible. And we do hope that as you are looking at how you're moving forward that you will continue to look at this data on the fuel use factors, the hours of use, and these estimates, and make sure these estimates are matched by the actual experience in California and make sure that we're not underestimating inventory. We are concerned and we don't want to swing in the opposite direction. We want to be accurate of course and not underestimate as you move forward to update the regulations. (ALAC2)

Agency Response: As described in response to Comment 63 we developed the emissions inventory in a multiple year public process where we evaluated all of the data available to us in order to develop sound assumptions on which the emissions inventory is based. We will also be continuing to evaluate new information as it comes in to determine how our emissions forecasts will compare with actual emissions in the future.

In developing regulatory amendments we tried to ensure that we continue to meet SIP obligations while providing more time for fleets to comply in light of the recession. While the amended rule does delay compliance requirements for some trucks, we expect that

by 2014 more than 85% of all truck miles driven in California will be with engines equipped with a PM filter.

65. Comment: We appreciate the responsiveness of the staff to the new emissions data and the extensive efforts to make the necessary inventory adjustments in the short time frame. However, we are concerned the sudden drop in diesel emissions gives a false sense that we can back off reduction commitment in the SIP. The latest round of amendments to the diesel rules for trucks, buses, and off-road equipment goes much too far in dialing back the health protective requirements of the original measures. The proposals utilize the full margin created by the inventory adjustment, making SIP compliance somewhat uncertain. Of most concern is that our lungs do not benefit from inventory adjustments. While the diesel emissions inventory may now be much smaller due mainly to technical accounting changes, that doesn't change the fact that communities throughout the state suffer from the ills of diesel pollution from trucks and heavy equipment. We urge you to use the newly created margin of emissions cautiously. Please preserve more of the health protection of your regional diesel rules. (NRDC3)

66. Comment: The changes in the emission inventory are quite dramatic from our perspective and we were certainly quite surprised by the changes. Clearly, the success of these lifesaving regulations is largely hinged on this emissions inventory particularly because I know this Board is so very mindful of its SIP commitments and our federal clean air commitment. So in that regard, we do applaud your efforts to ensure that. But we also second the comments about ensuring that we're erring on the side of caution so we are protecting the lives and that we're meeting our SIP commitments and not find ourselves short and not be able to get past that goal line. We are also concerned that -- or actually would like to have better understanding to what extent ARB sees the need to do air quality modeling now that the emission inventories for off-road has changed since a lot of the modeling was done prior to the inventory changes. We want to ensure the real experience that's happening in California this -- isn't just an accounting situation but really about trying to improve the air quality in our communities. And I also just want to second the comments about working with EPA to ensure that we have accurate inventories and in fact they are going to be -- again, be mindful of our federal SIP commitments, wanting to ensure it is something we can submit. We don't want to be at a place either through the mid-course review or particularly when 2014 comes that we are falling short because the emissions inventory is not acceptable to EPA. (CCAIR3)

Agency Response: In designing the regulatory amendments, staff was very careful to provide regulatory relief while ensuring that our overall SIP commitment was met. Our analysis clearly demonstrated that emissions from trucks, buses, and construction equipment were much lower by the end of 2010 than previously anticipated in the SIP. Our forecasts strongly suggested that emissions would also be lower in 2014 under the originally adopted regulation. The regulatory amendments ensured that the revised regulation will generate sufficient emissions reductions to meet federal SIP

commitments while providing the regulatory relief necessary to ensure that fleets could comply with the regulation.

The most significant change in emissions from trucks, buses, and off-road equipment was the impact of the recession. An emissions accounting that incorporates the impacts of the recession, future emission changes, and the benefits of the new SIP measures is the appropriate approach to assess the adequacy of the PM2.5 SIPs now close to final implementation. This accounting was performed as part of the PM2.5 SIP revision submitted to U.S. EPA in May 2011 for the South Coast and San Joaquin Valley air basins. As a result of this accounting, ARB found that these air basins remain on target to achieve the PM2.5 standard in 2014. ARB resolution 10-44 directs the Executive Officer to monitor the state's progress toward meeting its emissions reduction commitment and to provide an update to the Board in 2012. ARB will identify any potential emission reduction shortfall and take action, if necessary.

There has been no significant change to the fundamental science and air quality modeling used to set the 2014 emission targets in the South Coast and San Joaquin Valley. The new emissions inventory data primarily impact current emissions and estimates of future emissions as the economy recovers and do not substantially change the total regional emissions in the base years. The recession does not impact the SIP base year modeling since both regions used base years prior to the recession. Small changes in the base year emissions due to methodology improvements would not substantially change the fundamental relationship between emissions and air quality in the base year modeling. Therefore, the air quality modeling and the 2014 emission targets are still sound.

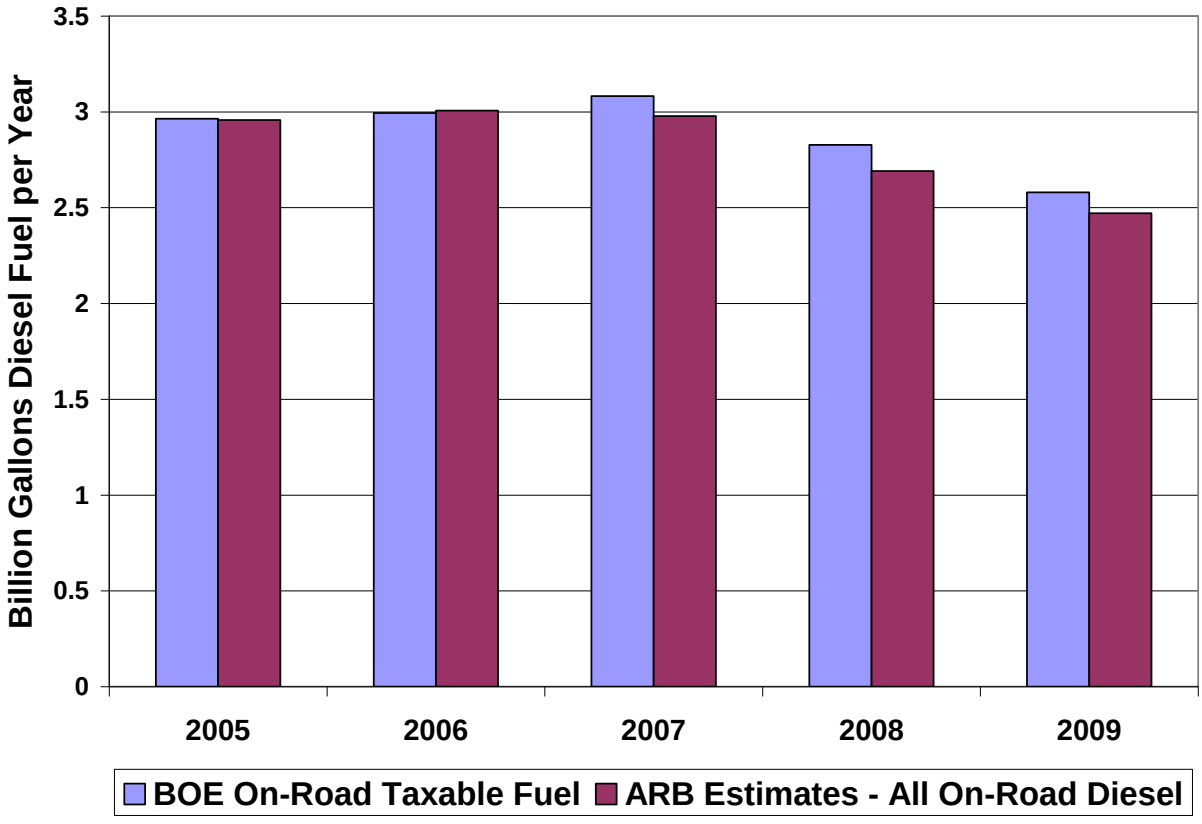
67. **Comment:** We still think you guys are overestimating the construction industry's emissions impacts. And we think that's the case for several reasons, one of which is -- and you found it out in the off-road rule. When you got real data, the numbers changed dramatically. You still don't have real data on the truck rule. And you could get it. You're building in a little time to do some things like actually acquire real data from DMV. If they currently don't have a check box for vocational trucks, for example, or mileage, I'm sure they could be induced to provide you with that information either as an agreement between agencies or we can go to the Legislature and ask for it. And real data would satisfy us and I think you and our friends at the environmental community instead of estimates and models. (SCCA2)

68. **Comment:** As I am sure your staff will tell you, nobody actually knows how many trucks traveling California roads actually belong to the construction industry. We have seen staff estimates that the number may be as high as 20 percent of in-state trucks, but we believe that to be a substantial over-estimate. What we can tell you is, that regardless of the estimate, the emissions from the construction industry are way, way down from what they were estimated to be when this rule was originally drafted and they are going to stay that way for a very, very long time. (SCCA3)

Agency Response: As described in response to Comment 63 we developed the Truck and Bus emissions inventory in a multiple year public process where we evaluated all of the data available to us in order to develop sound assumptions on which the emissions inventory is based. The inventory is based upon population data from the Department of Motor Vehicles, travel miles data from the U.S. Census Bureau, emission factors from testing programs, economic trend and forecast information, academic studies and other sources. All of these sources are described in the Technical Appendix to the emissions inventory; all of our assumptions are fully documented, and our emissions inventory models are available to the public.

Our emissions inventory can be used to estimate historical on-road diesel fuel sales in California. As can be seen in Figure 1, our results compare within a few percent to actual historical on-road diesel sales in California. This suggests our emissions inventory is accurate with regard to overall truck and bus activity in California.

Figure 1. ARB Diesel Fuel Usage Estimates vs. On-Road Diesel Fuel Sales in California from the State Board of Equalization



69. Comment: We insist that you, Board Members, and staff personally read and understand Sierra Research's November 15, 2010 report Review of CARB On-Road Heavy-Duty Diesel Emissions Inventory. As you will note, the report concludes that CARB grossly overestimated emissions by about 40% as well as

notes that a number of CARB's assumptions and data are either questionable or not publicly available. Blindly ignoring such independent findings would be deplorable given the massive financial implications and job losses the Truck and Bus Rule has inflicted, and will continue to inflict, upon our state's businesses and citizens. Once again, we urge you to delay the Truck and Bus Rule until California's economy fully recovers, or provide further concessions to unjustly impacted industries, such as the dump truck industry. (CDTOA1)

70. **Comment**: It is absolutely vital that ARB staff thoroughly evaluate the November 15, 2010 report "Review of CARB On-Road Heavy-Duty Diesel Emissions Inventory" prepared by Sierra Research as accurate information is critical when considering a rule with such expansive consequences." (CTTA).

71. **Comment:** At the request of a group of Diesel truck owners and organizations representing a variety of commercial interests known as the Ad Hoc Working Group, Sierra Research attempted to perform an independent review of the current CARB on-road heavy-duty Diesel vehicle inventory. That review was unfortunately restricted by the fact that little documentation is currently available regarding the current CARB inventory and that data from key sources used by CARB are not publicly available. Also not publicly available at the time of this writing is a complete and functioning version of the CARB inventory model. However, it must be acknowledged that although key information related to the current CARB inventory has not been released publicly, CARB did agree to meet with Sierra Research on several occasions to discuss this information in general terms and did provide additional insight into the inventory methodology.

Despite the aforementioned limitations imposed by the lack of publicly available data and the lack of a functioning version of the CARB inventory model, Sierra was able to review two important areas of the CARB inventory related to annual vehicle mileage accrual rates (MAR) and maximum assumed average odometer values. With respect to MARs, Sierra found substantial differences between CARB's assumed values, which are based on a 2002 survey that includes data from approximately 50 California-registered heavy- heavy-duty Diesel trucks, and the values reported as part of a Sierra survey of Ad Hoc Working Group members conducted during the summer of 2010, which included usable data for approximately 950 California-registered heavy-duty Diesel trucks. In particular, Sierra found that the CARB assumptions regarding MARs for older trucks were substantially higher than those observed in the survey data, leading to an overstatement of baseline emissions. Similarly, Sierra's review of available data regarding maximum average odometer values found that CARB's current assumptions overstate the observed values by about 25%, again resulting in an overstatement of baseline emissions. (SRES1)

72. **Comment:** With respect to the inventory, it's based on an enormous amount of data and a multitude of assumptions. These data and assumptions have not been thoroughly reviewed and, in fact, have pretty much been in the state of flux for the course of this summer as well as since the time the rule was originally developed. In addition, all of the data that underlies the inventory is not publicly available for a

number of reasons. Given this, the potential exists for mistakes, inappropriate use of data, and assumptions, and other factors impact the accuracy of the inventory. In addition, there are areas where simply using the upper and lower end of the range of assumptions can lead to substantial differences in the inventory. Unfortunately, the truck and bus inventory have not, to the best of my knowledge, been subjected to a comprehensive peer review at any point in time since it was developed back around 1970 -- or 2007, 2008. I believe that a peer review of the inventory should be conducted. This isn't a new thought on my part. I urged this back in December of 2008 when I testified at the hearing where the truck and bus rule was originally adopted. Presumably, a peer review could be structured also to eliminate some of the problems with confidential data and other data that's not publicly available for review. I'd like to close my testimony with a quote from Section 39607.3 of the California Health and Safety Code, which I believe was enacted in 1996. This section requires the Board to hold periodic public hearings to approve emissions inventories. I don't there's happened with respect to this inventory. The Legislature hereby finds and declares it is in the interest of the State that air quality plans be based on accurate emission inventories, inaccurate inventories that do not reflect actual emissions into the air can lead to misdirected air quality control measures, resulting in delayed attainment of standards and unnecessary and significant costs. Again, I don't believe that the truck and bus rule inventory can be deemed to be accurate without a peer review and would urge the Board to direct such a review occur.(SRES2)

73. **Comment:** To analyze the inventory impact of substituting the MAR values for 17 year old and older vehicles from the 2010 survey for the MAR values assumed by CARB, a “hybrid” approach was used that melded CARB’s assumptions for newer trucks (less than 17 years old) with the results of the 2010 survey for vehicles 17 years old and older. In addition, Sierra used the 600,000-mile maximum average odometer value discussed above in this assessment. The results are shown in Figure 2, along with the original 2008 CARB baseline and the with-regulation inventories.

As shown, these substitutions reduce the baseline inventories even further and result in an estimate that is closer to the original emission targets of the regulation. It must be stressed that the changes in MARs made by Sierra based on the survey data, which are reflected in Figure 4, are conservative in that they apply only to 17-year-old and older vehicles, and CARB’s assumed mileage rates for newer vehicles have not been adjusted despite the discrepancies between those rates and the rates observed in the 2010 survey data.

Finally, Sierra combined the MAR and maximum odometer assumptions noted above with CARB Slow economic recovery scenario data, rather than the average of the Fast and Slow scenarios used by CARB, in order to investigate the impacts of the current economy on the baseline inventory. Although Sierra does not perform economic forecasting, there is little evidence available to suggest that a “fast” economic recovery is underway in the California trucking sector and more evidence, including California Diesel fuel sales data and discussions with Ad Hoc Working Group members, indicating that a slow recovery is more likely.

The results of this plausible combination of Sierra's modifications are shown in Figure 3, again for PM and NOx, respectively, along with the original CARB baseline and CARB's original regulatory emission targets. In this case, the original CARB baseline is 1.61 and 1.45 times higher than the Sierra-estimated baseline in 2009 for PM and NOx emissions, respectively. Further, in 2014, which CARB has indicated to be a key year with respect to the need for the regulation, the original CARB baseline is 1.41 and 1.28 times greater for PM and NOx, respectively, than the Sierra estimated baseline.

It is also important to note, as shown in Figure 3, that the combination of the slow recovery scenario and the other Sierra revisions results in a baseline NOx emission inventory that achieves the original targets of the In-Use On-Road Diesel Regulation and further reduces the difference between the baseline and the original with-regulation inventory for PM emissions. This is an important finding because it brings into question the need for the NOx provisions of the regulation and suggests that the reductions in PM emissions needed to reach CARB's regulatory goals are smaller than those envisioned at the time the regulation was adopted. To view the graphs in color, please see the Sierra Research Report[8]. (SRES1)

[8] Sierra Research Report, "Review of CARB On-Road Heavy-Duty Diesel Emissions Inventory." Comment 14 of 2010 Staff Report comments available at: http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10

Figure 2. Comparison of Current CARB Baseline Inventory Modified Based on Sierra Findings to Original (2008) Baseline and With-Regulation Inventories

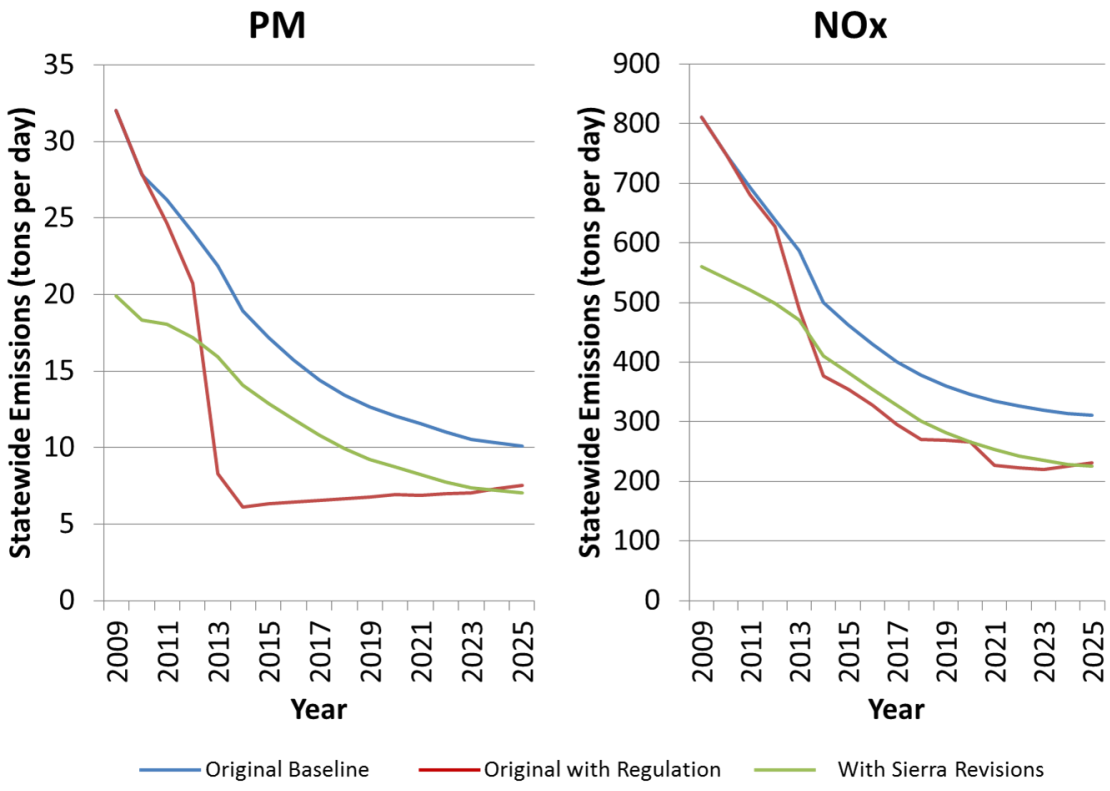
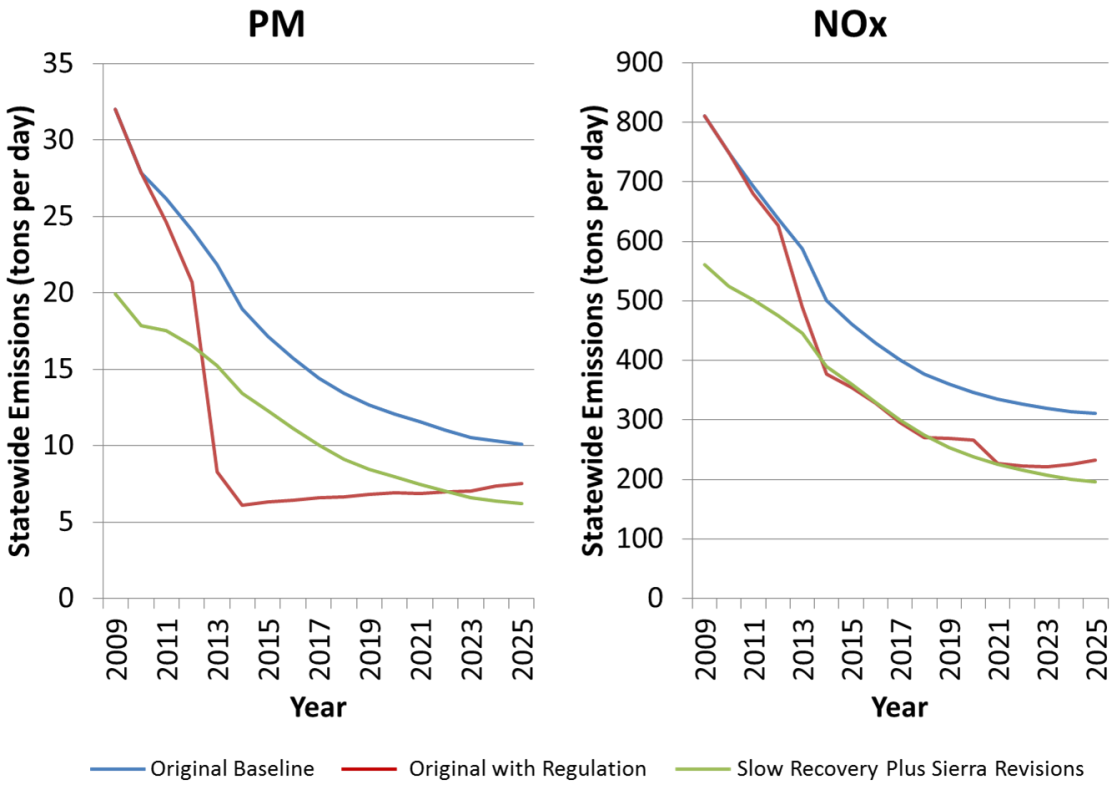


Figure 3. Comparison of Current CARB Baseline Inventory Modified Based on Sierra Findings and Slow Recovery to Original (2008) Baseline and With-Regulation Inventories



Agency Response: In developing proposed regulatory amendments and updating the technical analyses including emissions inventory, staff followed public process as required by law. Staff applied the same basic emissions calculation methods as in the EMFAC2007 model but used updated data for more detailed and current activity assumptions.These assumptions and methodologies were documented and shared with shareholders throughout the regulatory development process, both at public workshops and at meetings with industry stakeholders as documented in 2008 Supplement to the Final Statement of Reasons available at http://www.arb.ca.gov/regact/2008/truckbus08/fsorsupp.pdf. After the 2008 Board Hearing, staff held public workshops in December 2009, May 2010, and September 2010 to discuss the emissions inventory. Staff also reported to the Board with updates to the inventory in December 2009 and November 2010. During 2010, staff released the 2008 rulemaking and 2009 Board updates on inventory for review. Many interest groups such as the representatives of the California Trucking Association, American Truck Association, and their consultants received a copy of inventory files, and these files are now part of AB 1085 compliance package available at: http://www.arb.ca.gov/msprog/onrdiesel/ab1085compliance.htm. While there was no formal peer review process, the development of the inventory was a public process with many opportunities for all interested parties to comment.

The claims made by industry rely upon their assertion that ARB mileage accrual was overstated, that ARB overstated emission factors for older vehicles by overestimated lifetime odometer, and that a slower recovery emissions forecast should be used. ARB staff reviewed the industry report that is the subject of these comments and conducted additional analyses that are described in response to comments 77 through 87. The results from these analyses do not substantiate the claims made by industry. Since our review and the data supports our estimates on lifetime mileage, annual mileage and recession estimates, staff believes the current emissions estimates and forecasts are reasonable, and regulation continues to be needed to meet the state's emission reduction commitment.

b) Basic Inventory Calculation

74. Comment: Because resources available for this review were limited and much of the data incorporated into the CARB inventory are not publicly available, a comprehensive review was not possible.

In the simplest terms, the CARB on-road heavy-duty Diesel emissions inventory is based on the mathematical calculation shown below in Equation 1.

Equation 1. Emissions = POP*MAR*EF

The variables in the equation are as follows:

1. "POP" is an estimate of the number of vehicles that constitute a "population" of heavy-duty Diesel trucks of a given vocation, weight rating, and model year that are assumed to be operating in California on a given day or in a given year;
2. "MAR" is an estimate of the "mileage accrual rate" or number of miles vehicles in that population will operate on average in California on that given day or year; and
3. "EF" is an estimate of the average "emission factor" for a given pollutant from the population in units of grams of pollutant emitted per mile of operation.

When using the variables described above in Equation 1, the result is the estimated emissions of a given pollutant for a given population in units of grams of pollutant per day or year. In order to estimate the entire on-road Diesel inventory, the same calculation must be performed for each type of vehicle and each of the 46 model years of vehicles that are assumed by CARB to be in operation in the California fleet during any given calendar year.

Estimating the emissions of a population of on-road heavy-duty Diesel vehicles is based on a relatively simple calculation involving three basic variables. However, the reality of calculating an emission inventory is far more complicated. (SRES1)

Agency Response: We agree that calculating an emissions inventory representing trucks and buses is more complex than the simplified equation offered in this comment.

More information about the methods used to calculate the inventory is available through the Technical Appendix on emissions inventory, and through the rulemaking web site.

c) Heavy Duty Vehicle Populations

75. Comment: The data used to develop the population estimates are generally derived by CARB from historic registration information obtained from the California Department of Motor Vehicles (DMV). These data are supplemented in some cases with data from a variety of surveys and other sources.[9,10] (SRES1)

76. Comment: As indicated in Equation 1, the assumed population of heavy-duty Diesel vehicles operating in California is directly proportional to the emissions of those vehicles and therefore of critical importance. CARB has indicated that it uses data obtained twice yearly from the California Department of Motor Vehicles as "the primary source for vehicle population and model-year by category." However, these data, which are necessary to confirm CARB's vehicle population and age distributions (e.g., model year by category), are not publicly available because CARB and apparently the Department of Motor Vehicles believe it contains confidential information.

While this may be accurate, the fact that the data are not publicly available makes it impossible to verify in general the accuracy of the vehicle populations and age distributions use by CARB in the on-road diesel inventory. (SRES1)

Agency Response: We did develop truck population estimates using data from the Department of Motor Vehicles, and additional information including surveys, forecasted economic trends, and other data sources. DMV records that contain legally confidential vehicle owner name and/or address information are protected under California law and cannot be released. The emissions inventory posted to our website in advance of rulemaking does provide estimated populations by model year and vehicle category which can be analyzed and compared to many other data sources to check if the assumed populations are reasonable.

d) Mileage Accrual Rates

77. Comment: Separate MARs exist for each of the different vehicle population categories and for each model year of vehicle.[9,10] However, the same MAR values are used for certain population categories. In addition, the same MAR value applies to a given model year and population type (e.g., ten-year-old heavy-heavy-duty California tractors), regardless of calendar year. In general, estimated

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[9] Technical Support Document for In-Use On-Road Diesel Vehicles, California Air Resources Board, Mobile Source Control Division, Heavy-Duty Diesel In-Use Strategies Branch, Appendix G, October 2008.

[10] Initial Statement of Reasons for Proposed Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation, California Air Resources Board, Mobile Source Control Division, Heavy-Duty Diesel Implementation Branch, Appendix G, October 2010.

MAR values tend to be highest for new vehicles and then decline steadily with age. The MAR values represent total annual mileage accumulation by these vehicles as a function of age (model year) and adjustments made by CARB to account for out-of-state travel by California vehicles registered under the International Registration Plan (IRP). CARB assumes that the average new truck will accumulate over 105,000 miles in its first year of operation, and mileage will then decline to about 20,000 miles per year by 34 years of age and ultimately down to 15,500 miles per year at the end of the truck's useful life.

In order to estimate MARs, CARB indicates that it has used data collected in the Vehicle Inventory and Use Survey (VIUS). VIUS was conducted as a part of the economic census performed every five years by the U.S. Census Bureau; however, that the survey has been discontinued,* and the most recent report dates back to calendar year 2002.[11] (SRES1)

78. Comment: CARB's MAR values are largely based on the VIUS data that date all the way back to calendar year 2002 and include information derived from 136,000 surveys nationwide, of which 3,200 were specific to California.[11] VIUS was a paper-based survey in which owners were asked to provide estimates of usage for a single identified vehicle. It is important to note that the 2002 VIUS included information for both gasoline- and Diesel-powered vehicles ranging from light-duty pick-up trucks to cranes and tankers. The subset of California-registered heavy-heavy-duty Diesel trucks included in the 2002 VIUS was limited to about 50 vehicles that spanned only 17 model years. CARB indicates that the MAR values it used for older vehicles were based on survey data it collected but those data are not documented or publicly available. (SRES1)

79. Comment: CARB has abandoned its previous practice of linking maximum odometer values to its assumed MAR values. However, despite the logical existence of a linkage between average maximum odometer and MAR values, CARB has not reexamined in anyway its assumed MAR values. As noted in the previous section, such a reexamination is warranted based on the age of the VIUS data as well as the fact that the data used to estimate MAR values for older vehicles are not, to the best of Sierra's knowledge, publicly available.

Given the limitations and age of the VIUS information, Sierra Research, in combination with the Ad Hoc Working Group, conducted a survey of heavy-duty-vehicle fleet owners to collect data that could be used to assess CARB's assumed MAR values. This survey was conducted during the summer of 2010. It involved asking fleet operators to provide information on the operation of their vehicles, including historic and current odometer readings and estimates of fuel consumption. Some 20 fleets responded, providing operating data for close to 1,200 vehicles covering calendar years 2005 through 2010.

The initial dataset was screened to remove from the analysis those vehicles that were reported as weighing less than 33,001 pounds gross vehicle weight and/or

[11] See http://www.census.gov/svsd/www/vius/2002.html

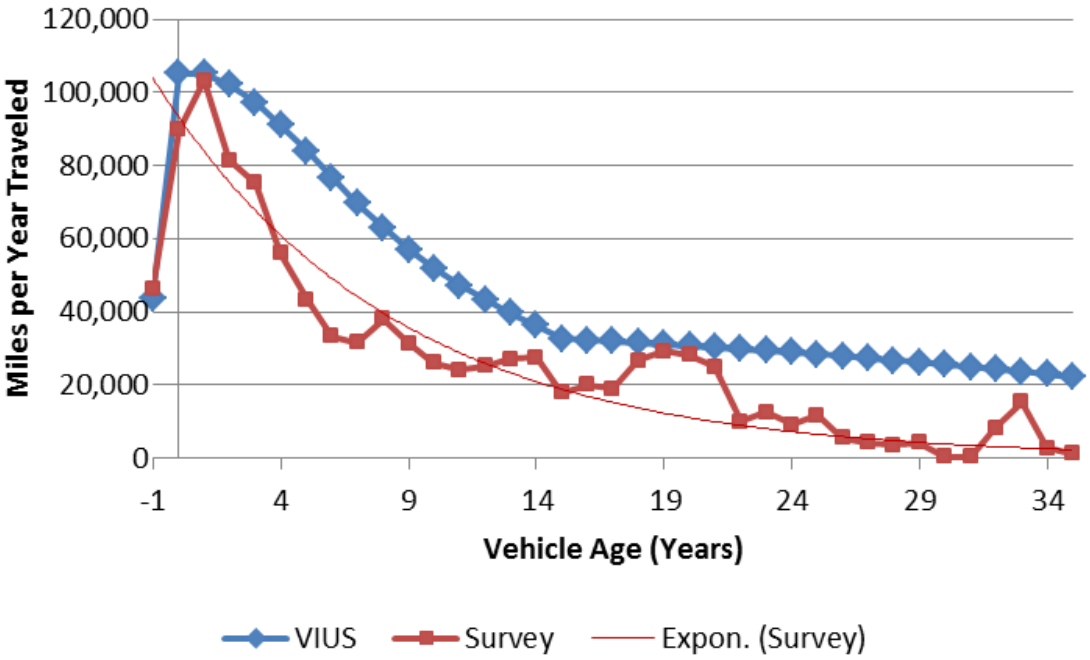
those records missing the information necessary to determine MAR values. Sierra Research computed MARs by subtracting the reported odometer reading for one year from the odometer reading recorded for the same vehicle in the prior year. In some instances, odometer readings in a subsequent year were lower than the previous, yielding a negative estimate of mileage accrual. Reasons for these occurrences include mis-entry of the information, odometer rollover, and/or odometer replacement. Rather than speculate on the cause or implement some erroneous adjustment, these negative values were also eliminated from the analysis.

The resulting dataset included some 950 trucks with a model-year range from 1974 to 2010. Because vehicles were either introduced or retired from the fleet from one calendar year to the next, and as a result of the data screening described above, the fleet sizes used to determine the age-specific MARs ranged from 343 to 587 trucks. Table 3 summarizes the vehicle count and average MAR for each calendar and vehicle age and provides the VIUS and CARB survey information that CARB assumes to be accurate. It is important to note that 2010 data were not included in this analysis because they represented activity for only a partial year.

Figure 4 compares the results of the analysis of the 2010 survey data to the MARs assumed by CARB to be applicable to California vehicles. The figure includes an exponential fit of the survey data. As can be seen, the MAR values used by CARB are generally higher than those from the 2010 survey, particularly for older vehicles.

Table 3. Survey MARs by Vehicle Age and Calendar Year										
Age	2005 to 2006		2006 to 2007		2007 to 2008		2008 to 2009		Weighted Average	VIUS
	Count	Average	Count	Average	Count	Average	Count	Average		
-1	0	-	12	58,167	19	38,356	0	-	46,025	43,847
0	10	106,543	8	34,401	17	89,056	27	100,183	89,670	105,234
1	16	79,158	61	126,530	33	82,402	31	91,676	103,164	105,141
2	36	48,764	47	65,648	78	103,579	37	86,850	81,483	102,228
3	42	50,246	71	92,801	48	55,512	82	84,424	75,253	97,292
4	35	30,686	71	65,836	73	64,426	49	47,183	55,980	91,028
5	37	43,540	47	37,665	61	40,776	56	50,416	43,243	84,030
6	38	42,514	42	35,881	40	24,574	55	31,537	33,371	76,791
7	17	49,438	40	31,339	41	24,992	32	31,085	31,641	69,707
8	18	30,013	15	63,494	41	41,119	36	27,464	37,884	63,069
9	38	21,396	16	53,219	14	46,204	43	27,264	31,385	57,069
10	6	23,515	34	17,221	19	38,725	14	31,380	26,050	51,799
11	12	19,847	6	23,126	17	19,676	14	33,627	24,126	47,251
12	8	17,848	12	33,796	5	28,629	6	15,044	25,218	43,315
13	9	43,940	8	14,282	12	32,078	6	8,828	27,075	39,780
14	7	20,507	5	25,406	7	21,317	7	42,102	27,481	36,336
15	12	15,588	3	13,856	9	22,722	5	16,696	17,814	32,572
16	25	19,465	9	12,240	4	35,913	4	25,956	20,101	32,241
17	20	24,336	19	17,373	4	12,507	4	4,722	18,845	31,891
18	11	23,717	10	37,214	11	23,295	2	6,319	26,527	31,521
19	6	22,199	6	28,680	6	36,689	9	29,166	29,182	31,131
20	2	12,504	6	18,144	10	28,191	7	40,836	28,065	30,722
21	2	10,515	3	16,190	6	14,451	8	39,579	24,892	30,292
22	1	5,973	2	7,907	3	10,232	6	11,095	9,921	29,843
23	1	15,000	1	12,880	2	8,962	3	13,723	12,424	29,374
24	0	-	1	11,000	1	12,865	2	6,012	8,972	28,885
25	1	5,690	0	-	1	8,000	1	21,073	11,588	28,377
26	2	4,288	1	7,089	0	-	1	6,000	5,416	27,848
27	0	-	2	2,099	1	8,575	0	-	4,258	27,300
28	0	-	0	-	2	3,459	0	-	3,459	26,732
29	0	-	0	-	0	-	2	4,168	4,168	26,144
30	1	380	0	-	0	-	0	-	380	25,537
31	0	-	1	233	0	-	0	-	233	24,909
32	1	16,315	0	-	1	185	0	-	8,250	24,262
33			1	30,208	0	-	1	227	15,218	23,595
34					1	2,640	0	-	2,640	22,899
35							1	1,149	1,149	22,202
Total	414		560		587		551			

Figure 4. Comparison of Survey Results and CARB MARs



Because CARB uses different MAR values for different vehicle categories and the survey data were not sufficiently detailed to resolve those vehicle categories, a direct comparison of the survey and CARB MAR values for newer vehicles is not appropriate. It is appropriate, however, for vehicles 17 years old and older where CARB uses the same MAR values for a number of different vehicle categories. This issue is of importance because older vehicles in the fleet are assumed to be the highest emitting. To view the graphs in color, please see the Sierra Research Report[8]. (SRES1)

Agency Response: Mileage accrual estimates in the truck and bus rule emissions inventory are based on data from the U.S. Census Bureau in VIUS 2002, and supplemental surveys conducted by ARB staff. The analysis to estimate accrual rates (MAR) is included in the AB1085 package for the Truck and Bus rulemaking: http://www.arb.ca.gov/msprog/onrdiesel/ab1085compliance.htm. .

The survey database discussed in this comment included roughly 950 trucks from 20 fleets over a four year period, for a total of roughly 2000 data points. Based on the survey, industry claimed that ARB mileage accrual estimates overstate mileage accrual in all but the earliest years of the vehicles' life. To evaluate this claim, ARB staff evaluated the analysis conducted by industry, and collected additional information.

In their memo, industry compares their survey data derived from California-based fleets to ARB modeled mileage accrual rates for interstate vehicles driving across the United States. Interstate trucks drive more than California-registered non-interstate trucks, and the interstate mileage accrual schedule to which industry compared their survey results included miles traveled across the United States, not just in California.

Figure 5 provides a comparison between industry survey data and ARB accrual rates representing California-registered non-interstate tractors and construction trucks. ARB accrual rate schedules shown on Figure 5 are not adjusted to reflect the recession. Results show that with the exception of the newest vehicles and the oldest vehicles, industry survey results generally fall between the two ARB estimated accrual schedules. Because mileage accrual rates are a function of vehicle vocation, it would be useful to evaluate industry survey results based on the different types of vocations represented in the survey. That information was not included in the survey.

Figure 5. Comparison of Relevant ARB Accrual Schedules to Industry Survey Data

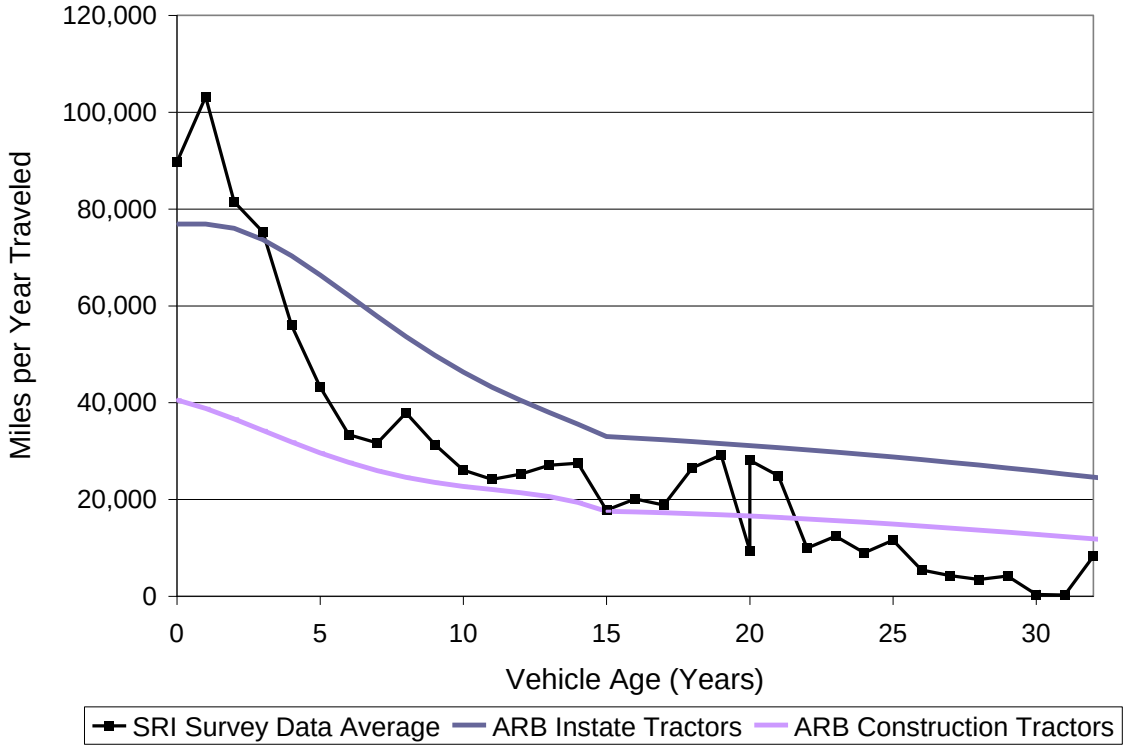
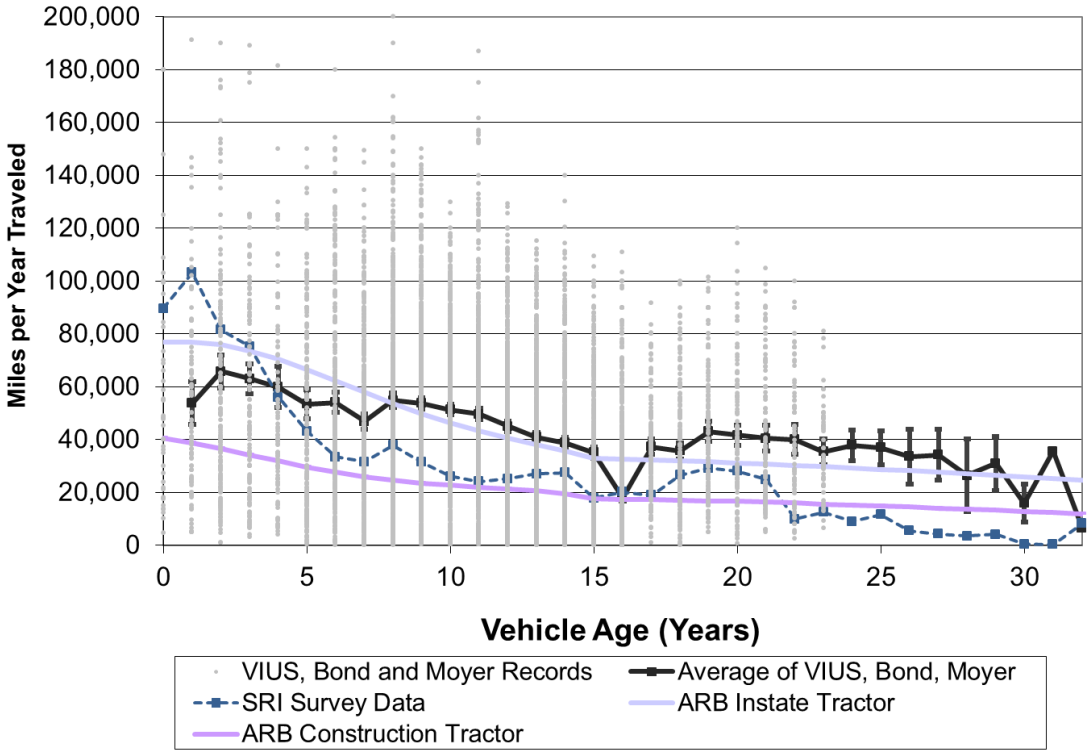


Figure 5 initially suggests that after age 22 ARB accrual schedules may overestimate annual miles traveled. However, the industry survey contains only 33 data points representing trucks older than age 22. Those data represent less than half a sample per vehicle age and less than 2% of all industry survey data.

To further evaluate the industry analysis, staff collected and analyzed additional information representing California registered tractors (drayage trucks are excluded). In addition to VIUS and the 2008 on-line survey data, staff collected mileage accrual data reported by applicants to the ARB Bond and Carl Moyer funding programs. Data from the funding programs included both funded and non-funded applicants in order to minimize bias in the comparison. Results are shown in Figure 6.

Figure 6. ARB and Industry Accrual Schedules vs. VIUS, Bond, Moyer and On-Line Survey Accrual Data Representing California Registered Non-Drayage Tractors



In Figure 6 mileage accrual records from the VIUS, Bond, Moyer, and on-line survey sources are represented as gray dots. More than 11,000 data points, each representing an annual mileage accrual point for a specific truck, are represented. Data representing age 17 and older come primarily from the Bond Moyer programs with some additional information provided by the on-line survey; 1400 data points are represented (12 percent of data). In contrast the industry survey contained roughly 2000 data points with 200 representing trucks age 17 and older. Results show wide variability in annual mileage accrual by age. Some of this variability could be decreased if the vocation of the trucks were known and accounted for in the data. However, because those attributes are not available in the data sources other than VIUS, that analysis cannot be conducted. There is a high degree of variability in how trucks are used; mileage accrual estimates represent the average of a diverse data set.

In Figure 6, the average of the 11,000 data points is represented by a dark solid line, with error bars representing the 95 percent confidence interval of the data in each age. The data show good agreement with the ARB California-registered non-interstate tractor mileage accrual schedule. At age 16 the data average dips from 40,000 miles per year to 20,000 miles per year. This occurs because age 16 VIUS data represent trucks aged 16 and older. Age 17 and older vehicles represent about 4 percent of the population of trucks operating in California in any given year.

The industry survey data do not compare as well to the overall data set but this is probably because of the particular mix of trucks represented by the their survey, and the more limited sample size of their survey. Their data do compare reasonably well to ARB in-state tractor and construction truck accrual schedules.

Given the wide variability in trucking operations larger sample sizes are helpful for evaluating mileage accrual estimates. In this analysis staff has combined all known available mileage accrual data sets, and the results support ARB estimates. Fleets surveyed by industry appear to fall towards the lower end of the mileage accrual estimates, but given the relatively small sample size the data do not suggest ARB mileage accrual estimates are incorrect.

e) Emission Factors

80. **Comment**: Of the three variables used in Equation 1, the EF or emission factor term is the most complicated. The heart of the EF is the basic emission rate (BER), the grams per mile assumption of emissions, which is estimated according to Equation 2, shown below.

Equation 2. BER = ZM+DR*ODO/10,000

The variables in the BER for a given pollutant are as follows:

1. "ZM" represents the estimated average emissions of a given pollutant expressed in terms of grams per mile from a vehicle when the vehicle is new, e.g., at the "zero mile level" and free of emissions-related defects and emission control system related tampering;

2. "DR" is the deterioration rate, or the rate of increase in emissions as a function of engine operation, expressed in terms of grams per mile per 10,000 miles of operation resulting from engine wear, defective and/or failed emissions control system components, and/or emission control system tampering; and

3. "ODO" is the average odometer reading of the vehicle or fleet of vehicles, expressed in terms of miles

81. **Comment:** Current CARB emission factor estimates for heavy-duty Diesel trucks are based upon dynamometer testing of a limited number of randomly selected vehicles operating in California. The most recent emission factor test program was Coordinating Research Council Project E55-59,4 conducted between September 2001 and June 2005—in this program, emissions testing was performed on fifty-seven 1975 to 2003 model-year heavy-heavy-duty Diesel trucks. The data used by CARB in establishing BERs were all obtained using a loaded vehicle weight of 56,000 pounds and were not adjusted to reflect a distribution of in-use loaded vehicle weights, despite the fact that other data from E55-59 show that vehicle weight does affect emissions. Also, despite the significant changes in the design and use of emission control technologies on newer Diesel vehicles, CARB's current emission estimates for trucks newer than the 2003 model year are not based on any actual emissions test data.

CARB currently assumes for heavy-duty diesel vehicles that emissions will remain constant over time in the absence of defective, failed, or tampered emission control system components, which is referred to as “tampering and mal-maintenance” (T&M). In order to assess the impacts of T&M on emissions, CARB utilizes a model originally developed by the Radian Corporation in the 1980s that estimates the impact of 19 specific T&M acts within the heavy-heavy-duty Diesel fleet. The incidence or frequency of T&M is estimated by CARB based on a limited number of dated field observations and engineering judgment. Similarly, the emissions impacts of T&M are based on engineering judgment and limited test emissions test data from engines where T&M problems were found or induced.

The process described above by Equation 2 establishes BERs that reflect laboratory emission test conditions. These BERs are adjusted by CARB to account for, among other things, differences in fuel composition using “fuel correction factors” (FCF), and for the effects of vehicle speed using “speed correction factors” (SCF). The final fully adjusted BER is the EF specified in Equation 1.

Diesel FCFs attempt to account for variation in the sulfur and aromatic hydrocarbon content of commercially dispensed fuel compared to the fuels used to perform emissions testing. These factors are different for California fuel and for fuel assumed by CARB to be purchased in other states.

Diesel SCFs were developed by CARB based on data collected during the CRC E55-59 project obtained using four different driving cycles each with a different average speed and one of which was the standard test cycle used for emissions testing. SCFs were developed by CARB for emissions from vehicles of different ages. (SRES1)

82. **Comment:** CARB indicates[9] that the emission factors used in the heavy-duty on-road diesel inventory were derived from the EMFAC2007 model and the CRC E55-59 project, and that adjustments were made to the penetration rates for advanced technology vehicles (e.g., those meeting 2010 model-year emission standards) used in EMFAC2007.

There are a number of issues associated with the EMFAC2007 emission factors used in the inventory. First, as noted above, the CRC E55-59 emission factors are linked to a specific loaded vehicle weight; no analysis has been performed, however, to determine whether vehicle weight is representative of in-use heavy-duty Diesel trucks operating in California, despite the fact that there appears to be a linkage between vehicle weight and emissions in the CRC E55-59 data.

Next, it should be noted that the EMFAC2007 emission factors for all 2003 and later model-year heavy-duty trucks are based on emissions testing of four 2003 model-year vehicles as part of the E55-59 project. These data were used to create emission factors for 2007 to 2009 model-year vehicles and 2010 and later model-year trucks by applying the ratio of the emission standards to the average emissions of these 2003 model-year trucks (i.e., 2007 emissions = 2007 standard / 2003 standard * 2003 average emissions). This means that the CARB inventory does not reflect any actual emissions test data from vehicles older than the 2003

model year and that the assumed emissions from trucks with advanced emission control systems are directly related to those of older trucks that are not equipped with such systems. More specifically, this means that CARB assumed that emissions from trucks with emission control after-treatment systems like particulate filters and selective catalytic reduction systems are directly related to the emissions from trucks that are not equipped without any such systems.

This assumption, which is questionable at best, warrants careful investigation as the actual emission levels of trucks with advanced emission control technologies are critical to the need for the In-Use On-Road Diesel Regulation. For example, if actual emissions from advanced technology trucks are lower than CARB estimates, normal vehicle attrition will lead to a faster decline in the baseline inventory and could potentially obviate the need for the regulation. In contrast, if the emissions performance of advanced technology vehicles is worse than CARB assumes, the implementation of the regulation—which generally requires that all trucks have 2010 or later model-year engines by 2023—will lead to far lower emission reductions than estimated by CARB.

Another related issue is CARB's assumptions regarding T&M for advanced technology vehicles. As noted previously, CARB uses a dated model developed in the 1980s and later updated to address T&M from all heavy-duty Diesel on-road vehicles. In 2009, CARB initiated a research project to develop an assessment of T&M impacts for advanced technology vehicles.[12] In soliciting proposals to perform the work, CARB stated:

> *The application of diesel particulate filters (DPFs) and selective catalytic reduction (SCR) as aftertreatment devices starting in the 2007 model year to meet the new truck emission standards is expected to reduce emissions from HDDTs to very low levels. However, because of the reduction potentials of aftertreatment devices, failures of the systems or system components will lead to a dramatic increase in the tailpipe emissions. Therefore, it is critical to understand the failure rates of aftertreatment systems and their key components as well as the T&M frequency of these systems in order to better estimate the emission deterioration rates of HDDTs*.

This research project was cancelled, however, and, to the best of Sierra's knowledge, the work was never performed. As a result, the T&M impacts used by CARB in the on-road Diesel inventory for advanced technology vehicles have not been updated to reflect actual data from vehicles equipped with such technologies. This is again important with respect to the emission impacts on the In-Use On-Road Diesel Regulation, for the reasons stated above. (SRES1)

Agency Response: Emission factors used in the truck and bus rule emissions inventory are based fundamentally upon the CRC E55/59 testing project. That project, based on in-use testing of more than 60 vehicles, is the most comprehensive study of

[12] CARB Request for Proposal (RFP) No. 08-764, "Study of Performance of Emission Control Systems on 2007 and Later Model Year Heavy-Duty Diesel Trucks." April 30, 2009.

its kind conducted. Clearly truck emissions are a function of test weight and this was acknowledged in the E55/59 study. The 56,000 pound test weight was set based on an analysis that suggested the average weight of a heavy heavy-duty truck in operation in California is 56,000 pounds when miles traveled by empty, partially laden, and fully laden trucks are considered.

Prior to sale, truck engines go through a certification process to prove that each engine family offered for sale meets the emissions standards to which it is built. Both ARB and U.S. EPA monitor and evaluate certification tests to ensure trucks offered for sale meet emissions standards. The ratio of standards method used in EMFAC2007 is based on the principle that emission levels when the engine is new directly reflect the emission standards. Historically, the application of this method has been shown to provide a satisfactory estimate of vehicle emission rates when the vehicle is new and offered for sale. The argument that emission factors are not based upon testing for 2007 and later standard trucks is not correct, as certification testing data was used to develop the ratio of standards method to estimate emission factors for 2007 and 2010 standard engines. In using the ratio of standards method for 2007 and 2010 engines, staff assume that when the vehicle is new the emissions control technologies will provide the benefits of the emissions standards to which those engines were legally certified, which is a well-founded assumption.

We do estimate that across the fleet of trucks, emissions increase over time as trucks age. This emissions increase, called deterioration, is a function of the estimated impact of tampering and mal-maintenance of engine components over time. In 2007 and 2010 standard engines, we make assumptions about the frequency and impact specific types of tampering, especially with emissions control equipment, which can lead to increases in emissions. This is important for after-treatment controlled engines because if the control fails, emissions can increase dramatically.

In developing tampering and mal-maintenance assumptions for heavy duty trucks in EMFAC2007, staff conducted a comprehensive review of available data and a detailed engineering analysis. The details behind this analysis and assumptions have been available on ARB's web site since 2007. Although in-use data from vehicles with advanced emission control technology has not been obtained (largely because these vehicles have not been on the road long enough to study in detail) the assumptions behind deterioration estimates in EMFAC2007 were well founded, and informed by years of similar experience in after-treatment impacts on other types of vehicles including automobiles. It is worth noting that U.S. EPA, in implementing truck emission deterioration for the Motor Vehicle Emission Simulator (MOVES) model, examined the EMFAC2007 truck tampering and mal-maintenance calculations and adopted the methodology with a few adjustments to some values.

f) Estimated Odometer Values

83. CARB utilizes information collected in VIUS, formerly known as TIUS, which was conducted every five years by the U.S. Census Bureau and contains estimates of vehicle population by type, average fuel economy, and average annual miles

driven. As noted previously, the most recent VIUS report available is for calendar year 2002.[13]

CARB uses the estimates of average odometer reading to determine the impact of deterioration, increases in emissions attributable to mal-maintenance, and usage-related wear on the engine and/or emissions control system. DR [deterioration rate] values are expressed as incremental increases in the base emission rate per every 10,000 miles of driving. Until recently, the fleet average odometer readings in CARB's model ranged from zero to over 1.8 million miles at age 45; however, CARB is now generally assuming average maximum odometer readings of 800,000 miles for heavy-heavy-duty Diesel vehicles and 400,000 miles for medium-heavy-duty Diesel vehicles.

In investigating the accuracy of CARB's assumptions, Sierra Research staff analyzed several datasets in which the odometer readings of heavy-duty trucks were recorded. These datasets were the Coordinating Research Council's (CRC) E55-59 test program, a California Trucking Association (CTA) survey of member activities, and a heavy-duty truck origin/destination survey conducted by CARB.

CRC E55-59 - Project E55-59 was conducted between September 2001 and June 2005 with the objective of acquiring regulated emissions measurements for the test fleet and non-regulated emissions measurements on a subset of in-use trucks in order to improve the emissions inventory in California.[14] The various phases of the E55-59 project involved a total of 57 heavy-heavy-duty trucks. Odometer readings of these trucks were recorded at the time of testing and the readings by model year are plotted in Figure 7. Also shown are lines representing the previous and current CARB assumptions regarding MAR values as a function of vehicle age as well as a statistical fit of the data. With respect to the statistical fit of the data, although odometer readings appear to decline after reaching a peak at 600,000 miles, it was assumed—in order to reduce the influence of the sparse sample sizes at advanced vehicle ages—that average odometer readings reached a "cap" and remained at that level. Therefore, an exponential fit of the odometer data was used with the Equation 3:

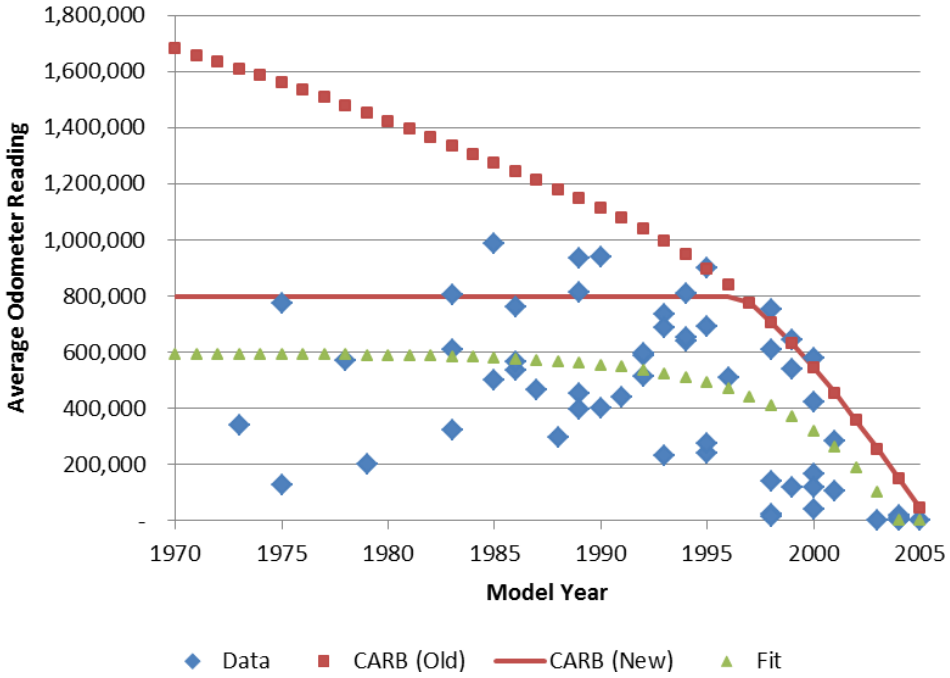
Equation 3. $y = y_0 + A_1 e^{(x-x0)/t1}$

As can be seen in Figure 7, the average odometer readings appear to peak around 600,000 miles and then decline, rather than continuing to increase as CARB assumed previously. The 600,000-mile peak is also considerably below the 800,000-mile peak currently assumed by CARB and is achieved later in the life of the vehicle.

[13] http://www.census.gov/prod/ec02/ec02tv-ca.pdf

[14] http://www.crcao.com/reports/recentstudies2007/E-55-59/E-55_59_Final_Report_23AUG2007.pdf

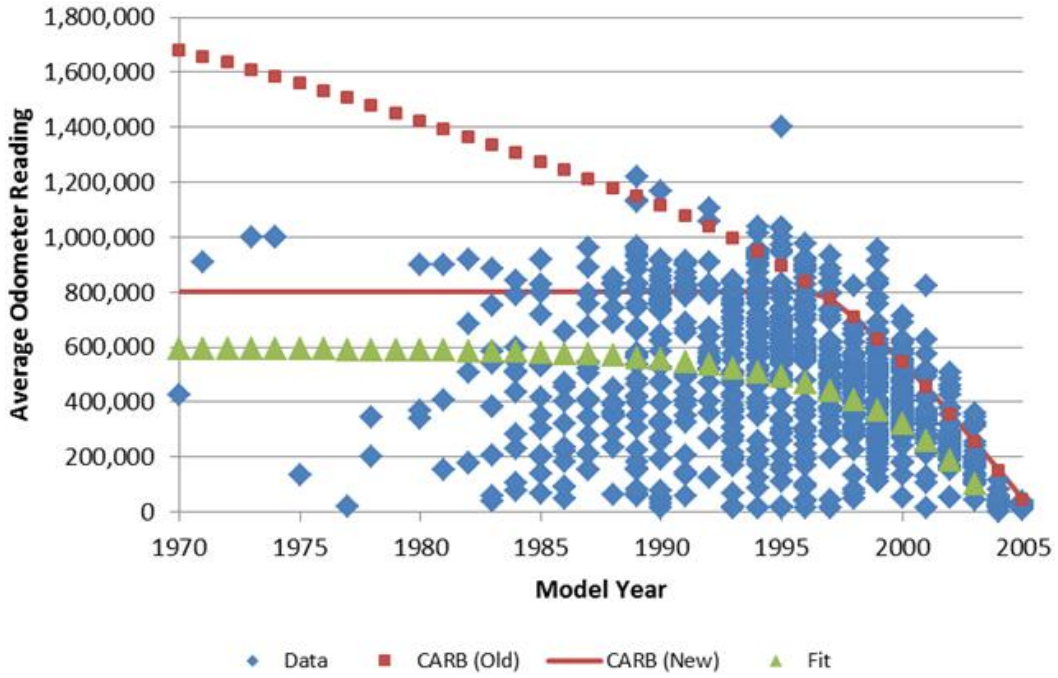
Figure 7. CRC E55-59 Average Odometer Data



CTA Member Survey - In 2005, in an effort to better quantify the emissions benefits of CARB's clean Diesel fuel, CTA conducted a survey of member trucking companies to obtain mileage accumulation data for heavy-duty Diesel trucks in California. Twenty seven companies responded, providing odometer readings and model-year information for nearly 1,100 trucks.[15] As shown in Figure 8, the odometer readings again appear to rise to an average of just over 600,000 miles before declining. Also shown again for reference are CARB's current and previous assumptions regarding MAR values. The results of the CTA survey are quite similar to those observed from the CRC E55-59 project.

[15] January 6, 2005 memorandum to Michael Jackson, Staci Heaton, and Mark Carlock from Jenny Pont entitled "CTA Survey Odometer Data vs. Emfac2002 Defaults."

Figure 8. CTA Survey Odometer Data



CARB Origin/Destination Study - In an attempt to improve its activity estimates for on-road heavy-duty vehicles, CARB conducted a massive origin/destination (O/D) survey of trucks traveling on state highways and interstates. During this effort, information was collected on over 5,000 vehicles, including their odometer readings and model-year information. As with most datasets, CARB's O/D survey contained data gaps, entry errors, and other issues that made some records unusable for this analysis and some data screening was required. As a first step, the records of all vehicles with a recorded GVWR of less than 33,001 pounds were eliminated from the analysis, leaving only heavy-heavy-duty vehicles. Next, all records were eliminated that were lacking odometer readings, model year data, and/or GVWR entries. The remaining records were then analyzed to derive the minimum, maximum, and average odometer readings by model year along with the standard deviation of the data about the mean. Table 4 displays the statistics mentioned above (model-year groups with fewer than two vehicles will have no statistics for standard deviation).

Table 4. CARB Origin/Destination Survey Odometer Statistics

Model Year	Count	Minimum	Average	Maximum	Std. Dev.
2009	2	9,628	39,905	70,182	42,818
2008	52	1,289	53,099	478,723	73,003
2007	248	1,123	128,623	821,593	122,990
2006	522	4,001	195,082	3,816,193	280,267

Table 4. CARB Origin/Destination Survey Odometer Statistics					
Model Year	Count	Minimum	Average	Maximum	Std. Dev.
2005	501	1,001	260,378	2,295,711	208,219
2004	380	10,073	346,370	4,386,599	361,766
2003	261	3,101	401,246	5,003,124	368,332
2002	257	11,883	737,146	64,100,517	4,000,920
2001	237	4,072	547,539	6,690,417	626,036
2000	367	13,092	607,646	8,107,174	645,286
1999	461	11,147	625,086	10,957,774	737,894
1998	332	568	676,736	10,962,196	770,485
1997	254	7,279	686,326	6,632,255	542,564
1996	243	1,735	635,679	4,658,990	505,876
1995	222	1,754	806,420	37,553,317	2,589,393
1994	181	8,365	741,965	10,998,626	1,223,885
1993	115	48,498	1,047,259	29,160,499	2,806,473
1992	75	8,057	561,573	1,617,995	372,296
1991	60	46,773	736,192	8,867,164	1,185,226
1990	46	29,849	583,153	1,910,446	395,497
1989	45	17,269	599,266	2,386,807	491,168
1988	38	55,359	844,145	9,000,341	1,409,969
1987	23	13,574	965,337	8,990,380	1,786,665
1986	16	34,767	985,149	9,738,778	2,353,277
1985	28	64,884	608,657	2,408,771	484,437
1984	16	0	1,198,918	10,011,134	2,386,969
1983	10	68,338	539,021	1,400,350	397,339
1982	3	272,004	508,242	870,400	318,451
1981	2	298,960	538,090	777,219	338,180
1980	2	828,646	918,288	1,007,929	126,772
1979	3	176,535	595,131	880,889	370,490
1978	2	100,220	629,611	1,159,001	748,671
1977	2	918,462	1,147,577	1,376,692	324,018
1974	1	168,000	168,000	168,000	
1972	1	386,659	386,659	386,659	
1970	1	4,812	4,812	4,812	
1967	1	749,973	749,973	749,973	
1964	1	230,493	230,493	230,493	
Total	**5,011**				

Because of the variability displayed in some of the model-year groups, the data were again screened to remove readings that were found to be beyond three standard deviations in either direction of the mean. The three-sigma, or empirical, rule in statistics states that for a normal distribution, nearly all values (99.7%) lie within three standard deviations of the mean. This process was repeated until no statistical outliers remained. The resulting data are displayed in Table 5 and Figure 9.

Table 5. CARB Origin/Destination Survey Statistics (Cleaned)

Model Year	Count	Minimum	Average	Maximum	Std. Dev.
2009	2	9,628	39,905	70,182	42,818
2008	49	1,289	38,848	127,524	29,889
2007	237	1,123	113,991	384,794	93,031
2006	498	4,001	165,319	507,265	114,409
2005	488	1,001	244,401	660,105	150,159
2004	361	10,073	316,454	875,311	191,728
2003	249	3,101	391,465	1,039,282	232,751
2002	249	11,883	446,823	1,101,563	231,267
2001	230	4,072	478,838	1,107,828	281,274
2000	361	13,092	559,826	1,371,382	301,421
1999	456	11,147	571,971	1,482,852	329,394
1998	327	568	609,109	1,553,134	371,615
1997	252	7,279	652,113	1,490,952	355,202
1996	238	1,735	596,428	1,534,151	370,346
1995	217	1,754	594,121	1,663,932	371,338
1994	172	8,365	540,457	1,409,871	357,904
1993	110	48,498	675,660	1,853,838	408,970
1992	73	8,057	569,697	1,617,995	373,682
1991	53	46,773	536,927	1,625,885	362,411
1990	41	29,849	518,741	1,060,326	280,714
1989	42	17,269	574,792	1,434,021	416,222
1988	36	55,359	620,610	1,557,007	386,274
1987	22	13,574	600,563	1,591,870	371,555
1986	15	34,767	401,574	875,432	308,712
1985	27	64,884	541,986	1,104,452	338,317
1984	15	0	611,437	1,377,562	433,601
1983	10	68,338	539,021	1,400,350	397,339
1982	3	272,004	508,242	870,400	318,451
1981	1	298,960	298,960	298,960	

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Model Year	Count	Minimum	Average	Maximum	Std. Dev.
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1979	3	176,535	595,131	880,889	370,490
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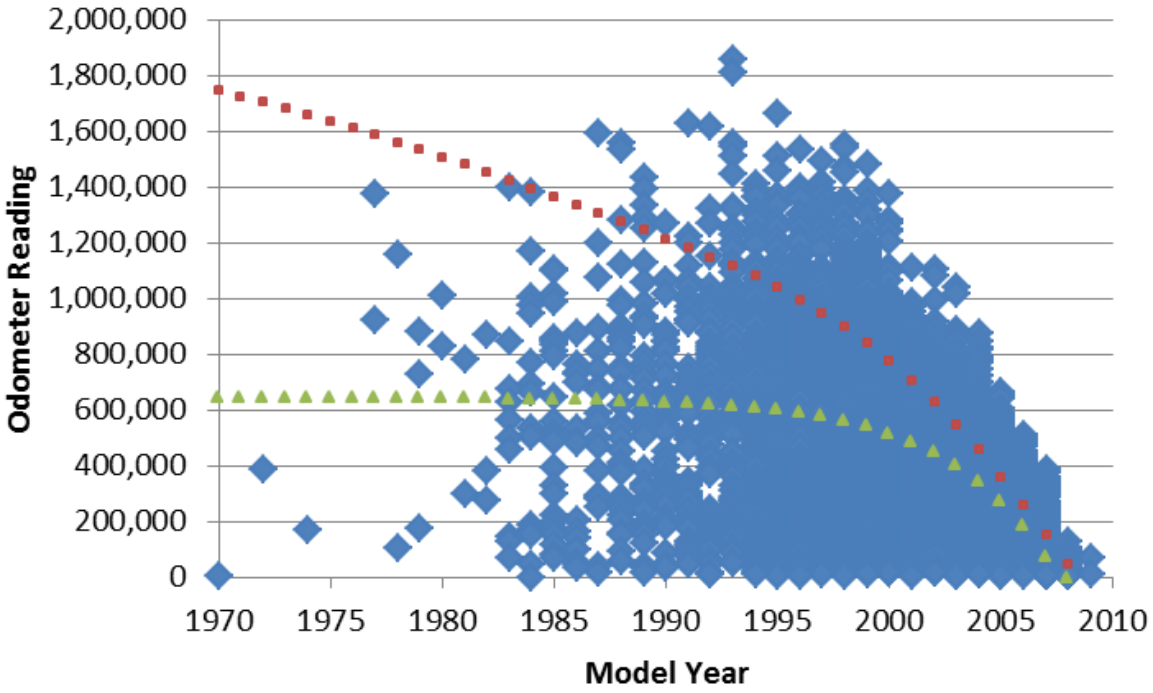
1977	2	918,462	1,147,577	1,376,692	324,018
1974	1	168,000	168,000	168,000	
1972	1	386,659	386,659	386,659	
1970	1	4,812	4,812	4,812	
1967	1	749,973	749,973	749,973	
1964	1	230,493	230,493	230,493	
Total	4,848				

Figure 9. CARB O/D Study Average Odometer Data



As with the other two data sets, the fit of the data suggests a maximum average odometer value of 600,000 miles as opposed to the 800,000 assumed by CARB, and demonstrates that the previous CARB methodology greatly overstated maximum average odometer values.

Based on the data presented here, Sierra believes that the 600,000-mile value for heavy-heavy-duty Diesel vehicles is more appropriate than CARB's assumed

800,000-mile value, as CARB has presented only a qualitative analysis[10] to support its assumed value. Given that Sierra did not examine maximum odometer data for medium-heavy duty Diesel vehicles, CARB's assumed value of 400,000 miles is not questioned here. To view the graphs in color, please see the Sierra Research Report[8]. (SRES1)

Agency Response: In the 2008 rulemaking for the Truck and Bus regulation, staff assumed that lifetime mileage increases annually as a function of the annual mileage driven by the vehicle. The oldest trucks were assumed to travel more than 1,000,000 miles during their lifetime depending on the truck category. After the 2008 rulemaking staff reviewed lifetime mileage estimates, and reduced the maximum lifetime mileage estimate for HHDDT to 800,000 miles and for MHDDT to 400,000. This change led to a 5 percent reduction in estimated emissions, which is included in current inventory estimates. The change is generated because tampering and mal-maintenance assumptions increase in frequency and severity with odometer estimates, and so a reduction in estimated odometer levels has a marginal effect in reducing the impact of deterioration on emission rates, especially in older vehicles.

The revised estimates are appropriate because engines are manufactured to achieve a certain level of durability and will not last forever. In theory, trucks that accrue higher mileage earlier in their lives are more likely to be scrapped as they reach their maximum engine durability. Trucks that accrue fewer miles earlier in their lives are likely to last longer than higher mileage trucks, so that the population of older trucks predominantly represents trucks that accrued fewer miles earlier in their useful life. Ultimately this means that on average older truck lifetime mileage accrual should converge towards a single value.

In a memo provided to ARB, industry claimed a more appropriate lifetime mileage cap for HHDDT would be 600,000 miles rather than the 800,000 miles estimated by ARB. They based this claim on an evaluation of roughly 60 data points from the Coordinating Research Council's Project E55/59 and ARB field study data. To evaluate this claim, staff reviewed the industry memo and collected/analyzed additional information.

There are several different ways to estimate lifetime mileage. One way is to use information on a vehicle's useful life as defined in the emissions standard, and assume several rebuilds. For example, a HHDDT manufactured prior to 2003 was manufactured to a useful life of 290,000 miles. If that truck were rebuilt once in its life it might have accrued around 600,000 miles, and if that truck were rebuilt twice in its life it might have accrued 900,000 miles.

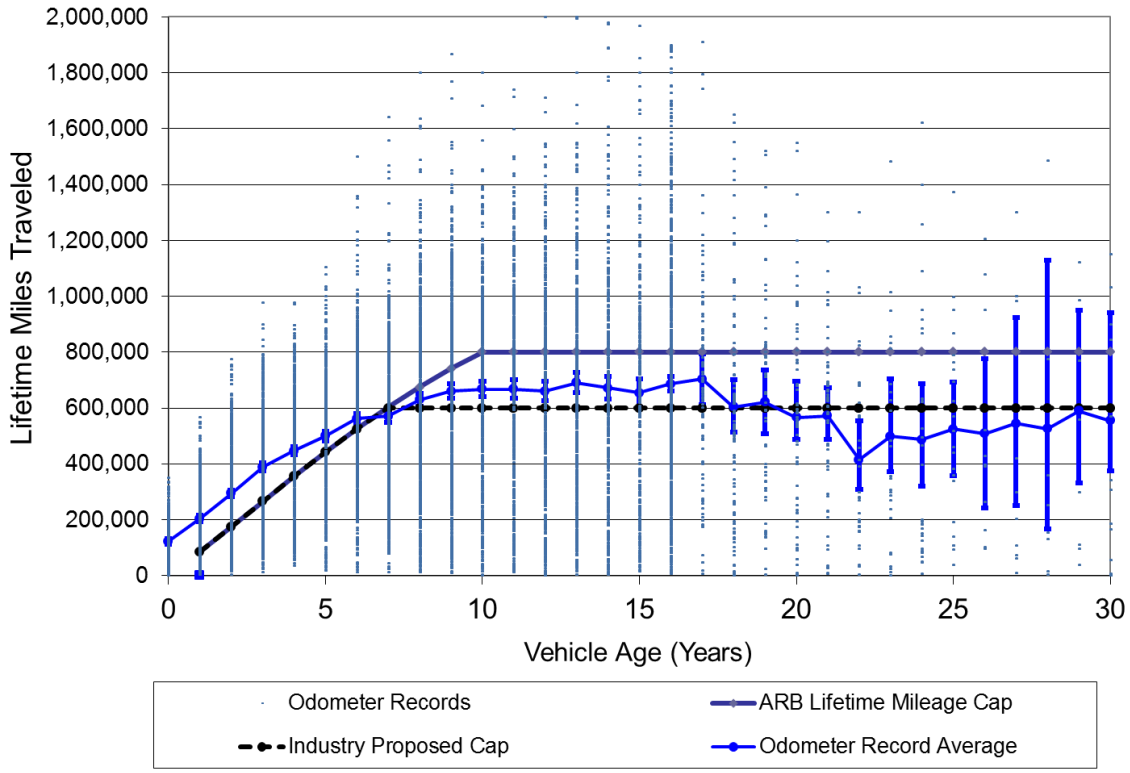
A quantitative approach to estimating lifetime mileage was developed by Greenspan and Cohen in 1996. That approach, adopted by both the US Department of Transportation and the US Environmental Protection Agency, calculates population average lifetime mileage as a function of vehicle survivability rates and mileage accrual schedules. The approach is designed to account for the idea discussed above that higher mileage vehicles are more likely to be scrapped (because they cannot be repaired cost-effectively) than lower mileage vehicles of the same type. Using this

approach and ARB mileage accrual schedules, a lifetime mileage cap on the order of 1,000,000 miles is estimated.

Another quantitative approach to estimate lifetime mileage is a survey approach. In this approach odometer readings from a sample of vehicles are used to estimate lifetime mileage in a population of vehicles. The accuracy of the method depends on the degree to which the sample represents the population, and the degree to which the data are accurate. The accuracy of odometer readings is somewhat questionable, because of odometer rollover, tampering, and other data quality issues. The odometer estimates also represent a snapshot of operating trucks, and do not represent the final odometer reading of each vehicle at the end of its life.

To evaluate the industry analysis ARB staff collected available lifetime mileage accrual data representing HHDDT from a variety of sources including the Bond and Moyer funding programs , truck "for-sale" records , the 2008-2009 field study , CRC E55/59, and VIUS. To reduce the potential for data quality or input errors affecting analysis results, staff evaluated the data statistically. Staff found the data to be normally distributed and removed outliers that were more than 3 standard deviations greater than the mean. Odometer records of zero, less than annual mileage accrual when those data were reported in funding programs, and unreasonably small odometer readings (generally less than 40,000 miles in older vehicles) were removed from the analysis. Results are shown in Figure 10, and compared to the ARB lifetime mileage schedule for a California registered non-interstate HHDDT.

Figure 10. HHDDT Lifetime Mileage Data and Comparison to Estimates



In Figure 10, each HHDDT odometer record is represented as a gray dot. More than 11,400 records are shown on the chart. As with mileage accrual, lifetime mileage data show a wide range of variability, with some trucks reporting a lifetime mileage approaching two million miles, and others less than 100,000 miles. Because of the variability, a wide range of data is necessary to properly characterize the average of the population.

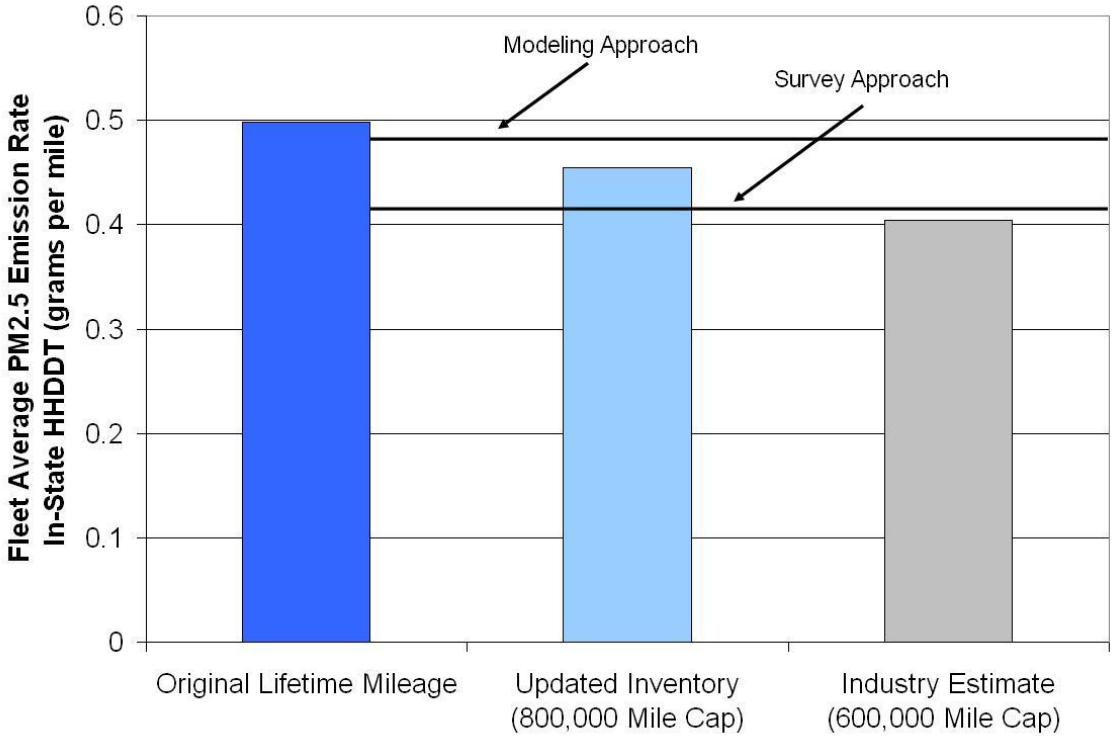
In Figure 10 the average of the odometer data in each year is represented as a blue line, with a 95 percent confidence interval represented as blue bars about the blue line. In ages 0-5, the data appear to be statistically higher than the lifetime mileage schedule assumed by ARB for California-registered in-state trucks. This implies the data set in those age vehicles contains a sizeable fraction of higher mileage, probably interstate operating trucks. In ages 9-16, the data appear to fall between the current ARB lifetime mileage cap and the industry suggested lifetime mileage cap. The average of the data seems to fall between 650,000 and 750,000 miles. After age 16, the standard deviation in the data increases substantially because the sample size is more limited. While the average of the data appears to decrease, the standard deviation is large enough that the apparent decrease is not significant.

The impact of a change in lifetime mileage is relatively small, because the most important determining factor on emission rates is the standard to which the vehicle was certified. Deterioration has a relatively small impact. Changes in assumed lifetime mileage only affect deteriorated emission rates in a relatively small portion of trucks in higher mileage truck categories.

Figure 11 compares the estimated fleet average emission rate for California-registered non-interstate traveling HHDDT. This category is the largest category that would be impacted by any change to lifetime mileage assumptions. Results show fleet average $PM_{2.5}$ emissions could be 5 percent higher or 8 percent lower in the category depending on which lifetime mileage cap is assumed. Staff estimated emissions assuming a 600,000 cap as industry requested. In 2014 total $PM_{2.5}$ emissions were reduced by 5 percent by that assumption.

The current ARB lifetime mileage estimate for HHDDT is capped at 800,000 miles. If the approach used by USDOT and USEPA is applied, a lifetime mileage cap of 1,000,000 miles is estimated. If the snapshot approach is applied to all available data, a lifetime mileage cap of around 700,000 miles is estimated. The current ARB estimate falls between these two alternative estimates. The industry suggested cap of 600,000 miles falls outside of this estimate. Even if the lifetime mileage were adjusted, the impact on the inventory would be negligible.

Figure 11. HHDDT Fleet Average $PM_{2.5}$ Emission Rates Under Several Lifetime Mileage Cap Assumptions



g) Assessment of Recession Impacts

84. Comment: CARB has made adjustments to the heavy-duty on-road Diesel inventory to account for the impacts of the recent economic recession. The CARB analysis adjusts current emission estimates to reflect decreased truck operation activity using data from a variety of sources. However, the adjustment made by CARB is based on the assumption that the activity of all trucks in a given population should be decreased by the same percentage. For example, if a 20% decrease in VMT is assumed for International Registration Plan trucks, the VMT levels for both the oldest (highest emitting) and newest (lowest emitting) vehicles in that category are reduced by 20%. This is a relatively simplistic assumption—it is equally as likely that trucking fleets may park older, less reliable trucks and rely more heavily on newer trucks in order to maximize the economic viability of their operations. Unfortunately, no data are readily available that can be used to examine this assumption.

CARB also assumes that there will be changes due to the economy in the age distribution of trucks within a given population category, resulting in an older, higher-emitting fleet. That is, CARB assumes that the benefits of natural attrition within the fleet will be delayed as older trucks are not being replaced by newer, lower-emitting vehicles. The assumption of a static registration distribution ignores the fact that attrition is not completely voluntary as, in reality, it may become

economically infeasible to keep old trucks indefinitely and many vehicles are retired from the fleet due to accidents or other unforeseen events. Again, the key issue is the validity of CARB's assumption regarding uniform percentage changes in population and activity for trucks as a function of age. Alternatively, if the fleet were assumed to be getting older on the basis of population but most of the trucks operating were newer, fleet emissions as the result of the recession could be far lower than CARB's estimates. Given these uncertainties, CARB needs to validate the assumptions used in its analysis. (SRES1)

Agency Response: The recession is expected to have two impacts on trucking operations in California. First, overall activity is reduced by the recession. In the absence of any data suggesting otherwise, staff assumed that activity across all vehicles will decline equally as a result of the recession. Second, during the recession new vehicle sales have declined dramatically, making the age distribution of trucks on the road older than they otherwise would have been both now and in the future. This assumption, presented in workshops in 2009 and 2010, is based on actual sales data, both in California (DMV data) and nation-wide (Ward's database).

85. **Comment:** In addition to addressing the current impacts of the recession, CARB has developed emission forecasts for future years using two economic recovery scenarios, which it refers to as the "Fast" and "Slow" growth scenarios. Under the Fast growth scenario, new truck sales are assumed to begin increasing again in 2010, such that truck operations return in eight years to the level assumed by CARB for its long-term trend. Under the Slow growth scenario, new truck sales are assumed to remain depressed until 2011 and then begin to increase such that truck operations rebound to reflect only the average historic growth rate thereafter.

These scenarios define both revised future year age distributions as well as activity levels for heavy-duty trucks operating in California. Under the Fast growth scenario, fleet average emission rates are lower owing to the greater percentage of new trucks but are offset by higher activity levels. For the Slow growth scenario, fleet average emission rates are higher but are offset somewhat by lower activity levels.

The relative impact of the scenarios is that the fleet-average emission factor is lower for the Fast growth scenario than for the Slow growth scenario. In both scenarios, however, the fleet average emission factors are higher in future years than they were in the baseline used during the rulemaking.

In assessing the impact of the recession on the emissions inventory, CARB uses the average of the Fast and Slow growth scenarios. There is no technical rationale for this choice other than it leads to the use of the middle of the range of potential values, and there has not been any economic analysis that supports the validity of either the Fast and Slow growth scenarios. (SRES1)

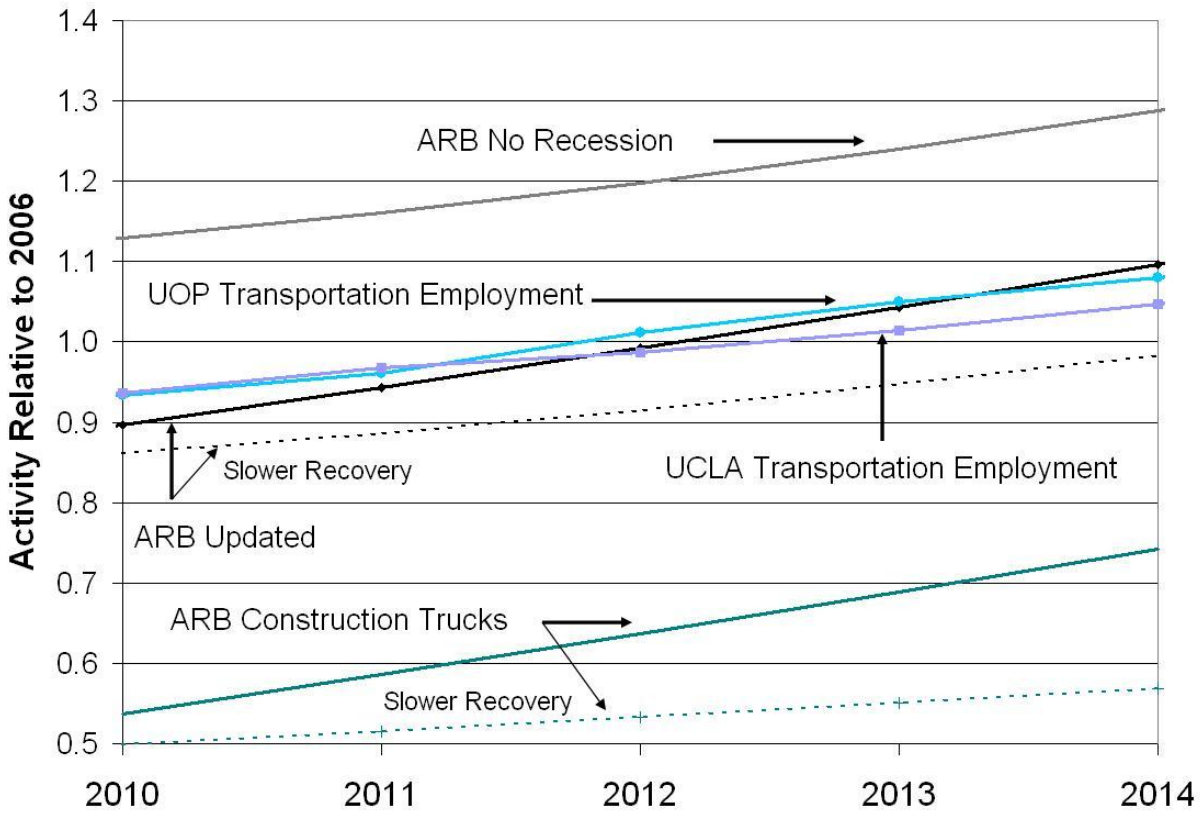
86. **Comment:** Under the Board's direction, CARB staff has reexamined the level of activity and resulting emissions from the affected vehicles. As a result, emissions from on-road vehicles are estimated to be 35 percent less in 2010 than originally projected. Future year emissions are projected to be lower as well. Through this

process, CARB staff has determined that an emissions margin exists that allows for economic relief from the existing requirements while still allowing California to meet federal air quality standards in 2014 and beyond. Some suggest this margin may be even larger than staff has projected. (ATA1)

Agency Response: At the November 2009 Board Hearing, staff presented the fast and slow recovery scenarios to show the potential range of forecast. As historical truck sales data would show, the truck sales usually drop during recession resulting in less new and better emission controlled trucks entering fleets. Therefore, the reduction in emissions during recession will be less than the level of reduction in activity. The reduction in activity ranges from 20 to 50% depending on trucking sector and the overall emissions have been reduced by 25% in 2009 from what we had previously estimated.

The average recovery as the commenter describes was used in the 2010 truck and bus rule emission inventory. The average recovery rate compares well to transportation and warehousing employment forecasts developed by UCLA and UOP as shown in Figure 12. The slow recovery was designed to be a worst-case forecast where the economy would not recover from the recession in the foreseeable future and is not consistent with forecasted metrics like employment in the transportation industry. By planning for a reasonable, modest recovery, we can provide economic relief while also ensuring that public health will be protected and legal obligations under the Clean Air Act will be met.

Figure 12. ARB Activity Forecasts in Truck and Bus Rule Emissions Inventory



h) Emission Reductions from the Regulation

87. Comment: CARB estimated the emission reductions due to the regulation by assuming that there would be accelerated turnover of the truck fleet, which increases the number of 2010 and later model-year trucks in the fleet and retrofit of particulate matter (PM) control devices on some older vehicles. In addition, even though CARB assumed that newer trucks are driven more than older trucks, the agency also assumed that the accelerated turnover of the fleet would not lead to an overall increase in truck travel in the state. Retrofit PM control devices were assumed by CARB to be 85% effective in reducing PM emissions and to be immune from the types of T&M impacts assumed by CARB to occur on trucks equipped with these devices by the manufacturer. (SRES1)

Agency Response: The overall truck activity is driven by demand for goods movement and service needs. Since turning over to newer model year trucks would not affect the demand of goods movement or service, it would not impact the overall truck activity, and so no adjustment to the inventory is necessary. The commenter is correct that staff did not assess the impact of tampering and mal-maintenance on retrofit diesel particulate filters. However, the impact of deterioration on PM emission rates in DPF equipped vehicles is relatively small and including this impact on retrofits would not have materially impacted staff's analysis of regulatory amendments.

i) Peer Review of the Inventory

88. Comment: There are several important areas where the assumptions and data associated with CARB's on-road Diesel inventory are either questionable or not publicly available. The same situation existed in 2008 when the In-Use On-Road Diesel Regulation was adopted. At that time, Sierra urged that CARB conduct a peer-review of the inventory[16] – a request that was ignored by CARB as evidenced by the fact that Sierra's recommendation is not addressed in the Final Statement of Reasons published by CARB.[17] Sierra again urges that CARB conduct a peer review of the inventory to ensure that the need for and the emission benefits of the In-Use On-Road Diesel Regulation are accurately quantified.

Sierra also believes that peer review of the inventory is consistent with California Health and Safety Code Section 39607.3, which requires the following:

> *(a) The state board shall, not later than January 1, 1998, and triennially thereafter, approve, following a public hearing, an update to the emission inventory required by subdivision (b) of Section 39607.*
>
> *(b) Each inventory update shall include all of the following:*

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[16] *See* http://www.arb.ca.gov/lists/truckbus08/875-sierra_research_comments.pdf

[17] *See* http://www.arb.ca.gov/regact/2008/truckbus08/pt2revfsor.pdf

(1) The state board's and each district's best estimates of emissions from all sources, including, but not limited to, motor vehicles, nonroad mobile sources, stationary sources, area wide sources, and biogenic sources.

(2) A detailed verification of source category emission rate data with available scientific data, including, but not limited to, actual measurements of pollutants in the atmosphere, and an explanation of any discrepancies.

(3) An update to a mobile source emission inventory for any air quality attainment plan required by the federal Clean Air Act (42 U.S.C.A. Sec. 7401 et seq.) or this division, that considers all available information regarding current and projected vehicle miles traveled, vehicle trips, demographics, and other nontechnological factors affecting the mobile source emission inventory, and bases the mobile source emission inventory upon the best information available to achieve compliance.

(c) Any emission inventory update approved on or after January 1, 1997, shall comply with this section.

(d) The Legislature hereby finds and declares that it is in the interests of the state that air quality plans be based on accurate emission inventories. Inaccurate inventories that do not reflect the actual emissions into the air can lead to misdirected air quality control measures, resulting in delayed attainment of standards and unnecessary and significant costs. (SRES1)

Agency Response: ARB's response to the commenter's 2008 comment is in the "Supplement to the Final Statement of Reasons for Rulemaking" and is available at http://www.arb.ca.gov/regact/2008/truckbus08/fsorsupp.pdf.
As described in response to Comment 73, we developed and will continue to update the Truck and Bus emissions inventory through public process including public workshops and meetings with stakeholders.

j) General

89. **Comment:** These draconian regulations are based on false information that over estimated diesel pollution by 300%. Stop the over regulation of commerce in this State so we can go about the business of bringing a vital economy back to California. (TGILD)

Agency Response: In light of the economic recession and comments from stakeholders, staff re-evaluated emissions inventory representing trucks, buses, and off-road equipment. Staff found that the recession had a major impact on current emissions estimates, and that updated economic forecasts suggested that future year growth in emissions from these vehicles and equipment would be much lower than originally anticipated. Overall estimated truck and bus emissions were down about 30% due largely to the recession, with a small reduction in emissions due to updated inventory methods derived from new data and analysis. The methods used to develop truck and bus emissions estimates are sound.

Staff conducted a similar analysis on off-road equipment, taking advantage of the substantial amount of new information made available through reporting provisions of the regulatory process. Staff found the recession had a profound effect on the construction industry, with activity levels 50% lower than estimated due to the recession alone. In addition, new California fleet-specific reporting data demonstrated that previous estimates for how much and how hard off-road equipment works were substantially overestimated, and the off-road inventory was adjusted accordingly. Overall, the off-road emissions inventory was reduced by 80 percent, about half of which was caused by the recession.

Due to the major change in off-road emissions estimates, staff re-evaluated the emissions inventory against the Statewide Implementation Plan commitment for compliance with Clean Air Act requirements. Staff found that economic relief for both rules could be provided while continuing to meet emissions targets in the future. The amendments that were considered by the Board in December 2010 provide economic relief while ensuring our air quality commitments will continue to be met.

90. **Comment**: I am astonished that nobody at your board or SCAQMD is able to figure out and convey to the public that the reason the inland empire has poor air quality and high amounts of particulate matter is because of the hydrologic cycle, you need to explain this to the public. They are under the impression that they have more trucks than south bay and the Los Angeles area and that's why the poorer air quality. if you need more detail about this please write back (DWILL)

Agency Response: While the Inland Empire has more dust than the coastal areas because of less precipitation and drier conditions, the poor PM2.5 air quality is not driven by dust. Rather, ammonium nitrate and motor vehicle exhaust our significant contributors to the poor PM2.5 air quality in the Inland Empire. Diesel trucks contribute to both of these components of PM2.5.

4. Technology

a) Availability of Verified DECS

91. **Comment:** There is strong uncertainty about the availability of remaining filters for the massive number of trucks that will require them – and about the availability of enough technicians to service those filters when they break down, which happens with great frequency.(ACLOG1)(ACLOG2)

Agency Response: Staff believes that the PM filters market and installation network will be sufficient to meet the compliance requirements on time. During the development of the original regulation, staff contacted several PM filter manufacturers to inquire about their manufacturing capacities, and they indicated that their manufacturing facilities are capable of producing over one million diesel particulate filters for original equipment and retrofit applications on an annual basis.

However, if there are disruptions in the ability of the fleet to install PM filters, fleet owners that plan ahead will not be penalized. Section 2025(p)(8) specifies that fleet

owners will not be penalized if manufacturing delays prevent them from acquiring the equipment or vehicles they need to comply if the equipment is ordered 4 months prior to the compliance deadline. Fleet owners will be able to continue to operate the vehicle that was planned to be replaced or retrofit until the replacement vehicle, engine or PM filter retrofit is delivered.

As described in response to Comment 96, the use of PM retrofit filters on on-road trucks have proven to be reliable and will not result in frequent break downs or a strain on the existing dealer network.

b) Performance of Verified DECS and OEM Technology

92. Comment: I am not in disagreement with the goals or end of what we are all trying to do. Why I am here today is this technology has had a profound history of mechanical failure from the beginning. The diesel users have experienced numerous breakdowns from the premature failures of the added pollution control devices placed on diesel engines since 2004 through 2009 (Current 2010 engine statistics are not readily available however recent field test results are showing the continued service failure pattern). As has been testified before this Board in December 2009, the Tow Truck Association stated they were towing more new trucks than old trucks which are counter to the historical norm. Our own history shows in the last 2 years versus the previous 20 years combined, our tow bills were exceedingly more. In September of this year alone, for our fleet of 33 trucks, there was $5,400.00 in towing costs due to EGR pollution control devices. All of the manufacturers have been involved, some having more issues than others. In the case of Caterpillar, they have stopped producing engines for trucks.

These problems have resulted from the dispute between the EPA and the diesel manufacturers over the engines testing criteria used for the 2004 year models. The result of this dispute was a rush to market to meet further government mandated requirements without the prudent historical testing of past practices we have experienced from the diesel manufacturers. Our repairs to EGR pollution control devices were more than $25,000.00 in September. The average truck age of this repair history has been between 2 1/2 and 4 years. The average mileage bracket for the start of the failure rates has been between 200,000 and 370,000 miles. To help you relate to this; that would be similar to you having to do similar repairs to your personal vehicle at 50,000 miles at your expense. In the automobile industry there is a standard that pollution control devices must last a minimum of 5 years, or they are replaced at the manufacturers' cost. Our industry has become the guinea pigs for the real world test results. I believe we deserve better than what we have been forced to accept! This history is not acceptable. Why are we subjected to this continued abuse? With this terrible record of dubious diesel technology, by ignoring the real life performance feedback is bad public policy! This Board needs to remember the disastrous consequences suffered by California's experiment with the diesel reformulation project several years ago. (CTI1) (CTI2) (CTI3)

93. Comment: We went out and bought 07-08 technology trucks. They are the most frequently towed vehicle in our fleet. My 1998 trucks, they run all day long. They run all day long without all the emission standards that are required of the new technology. There are a lot of issues on durability and dependability with retrofit devices, new OEM equipment. We are pursuing a lemon law through the State Legislature to apply to heavy-duty diesels, OEM to put some burden back on the manufacturer for dependability of the technology. You folks need to recognize that and hopefully address that as well. (MVE)

Agency Response: ARB receives warranty records from new engine manufacturers, and the data does not show a widespread pattern of failures or high warranty claims for engines with enhanced exhaust gas recirculation or 2007 model year or new engines that are originally equipped with PM filters. We understand that periodic failures occur, but they are mostly not related to PM filters. In most cases, these failures are covered under warranty, and in some cases, design changes have been made to correct issues. If there is an emissions related problem ARB can issue a recall.

See response to Comment 96 that explains how PM retrofit filters have been proven to be reliable.

94. Comment: We need to trust that the technology is viable and durable to do what it is intended to do. A different course of action to correct these known shortfalls needs to be implemented before it is allowed to continue to go on. (CTI1)

Agency Response: New engine technology and PM retrofits are widely available and are performing as expected. See response to Comment 96 that explains how PM retrofit filters have been proven to be reliable and response to Comment 92 on the durability and dependability of newer engines with OEM emission control system.

95. Comment: CalPortland owns about 300 ready-mix trucks in the California area, but only operate about half of those due to the downturn in the economy. The trucks that used to be able to operate 14, 15 hours a day can now only operate about 11 hours a day because the diesel particulate filters have to be regenerated and therefore have to park that truck and bring out another truck out of the fleet to continue our business. I just believe that more time is needed not only for the economy to improve, but the technology of the diesel particulate filters to improve as well. (CAPC)

Agency Response: See response to Comment 268 regarding how the compliance options in the regulation can delay compliance and lower costs.

Fleet owners need to identify which PM filters are most appropriate for their application. Passive systems require the exhaust temperature to be in a suitable range and no interaction by the driver is needed; however, for applications where the exhaust temperature is not high enough (cold duty cycle) an active device may be required. Active PM filters use an external heat source to regenerate the PM filter, typically when the engine is off. The regeneration time and frequency depends on many factors, such as the engine size, how the vehicle is used, and the condition of the vehicle on which the retrofit is installed. Retrofit manufacturers are required to inform the customer about

the regeneration times and how long the vehicle is expected to operate. Active PM filters that have a regeneration time less than an hour are commonly available and can be used during lunch or other down periods to ensure a full shift can be completed.

96. Comment: These diesel particulate filters, as I've really come to understand this, they really don't work well on short haul vehicles. Engines in short haul vehicles do don't really come up to temperature. (RLEE)

Agency Response: Diesel particulate filters have been proven to work well on both short haul and long-haul vehicles, and they are widely available today. Experience to date has demonstrated that PM filters are reliable and durable for most engines in a wide range of uses and industries. In California, thousands of verified PM filters (or VDECS) have been installed to comply with other regulations affecting urban buses, transit fleet vehicles, solid waste collection vehicles, vehicles owned by public agencies, and drayage trucks. Most of these vehicles have similar duty cycles to short-haul vehicles.

Fleet owners need to identify which PM filters are most appropriate for their application. Passive systems require the exhaust temperature to be in a suitable range and no interaction by the driver is needed; however, for applications where the exhaust temperature is not high enough (cold duty cycle) an active device may be required.

In the unlikely event that no verified device is suitable for a specific engine, the regulation does not require fleets to use retrofit PM filter technology. PM filters are only required to be installed when that are proven to work for a specific engine family and can be safely installed. In the event that a VDECS is unavailable for a particular engine class, the amended regulation allows for annual extensions from the PM filter requirement until January 1, 2018, as specified in (section 2025 (p)(9)).

97. Comment: The existing rule and its proposed amendments offer diesel particulate filters (DPFs) as much-needed relief as an alternative to the purchase of new trucks, but does so in a marketplace in which many filters have been de-verified on the basis of being unable to meet CARB requirements.

We believe that the accelerated pace of diesel rule enactment has “gotten the rules ahead of the technology,” but that with the existing delays until 2014 for certain aspects of the rule, there is time for the technology to catch up with the rule. This should be a goal for all of us to pursue with the filter manufacturers. (ACLOG1) (ACLOG2)

Agency Response: There are currently 16 different PM retrofits verified for use in on-road applications in California. These systems include both active and passive systems, whereby nearly all on-road trucks in nearly any application have an available retrofit solution. As such, staff believes that there are adequate technology options available to fleets to meet the requirements of the amended regulation.

The regulation also has provision so that fleets are not penalized because of manufacturers’ delays as described in response to Comment 91 .

98. Comment: You're seeing an additional three to four to even eleven percent lower fuel mileage. So we're talking about reducing the particulate. Now we're increasing the CO2 for technology that is not here yet. We have major engine manufacturers that are dropping out of the California market. We need to allow them time to catch up. I go back to the mandate CARB had I think in 1990 or so to have the certain amount of cars sold in California be zero emission vehicles. And so the big three at the time had to spend much effort trying to make battery powered cars work at the time battery technology was nowhere near accommodating a real life automobile that people would drive. So that mandate finally after about a decade had to be relieved, because there was no such thing as a zero emission car that was a practical thing somebody would buy. So it isn't always because of mandates that are made by governments that is going to drive technology to come out of thin air. We still don't have battery technology that truly works for the average driver. It's okay for commuters or in town, but if we apply the same logic thinking, it's forcing a mandate upon an industry to develop technology that doesn't meet the goal. We're not necessarily going to see that. We're seeing major engine manufacturers not wanting to be in California applying the needs. So let's take a little longer term look at this and find practical solutions that -- I know the people involved here. They want to help. They want to come forward. They want to be part of a solution here. But when they feel it's so hopeless they can't afford it -- please help me to help you to get them that hope. (MALFA)

Agency Response: In the ISOR, staff acknowledged the fuel economy penalty from the use of retrofit PM filters. This impact was considered by staff in both their economic and emission impact analyses. Even after considering this, staff's emission impact analysis showed a significant benefit in NOx, PM, and GHG emission from the amended regulation.

Staff appreciates the comments relative to technology forcing standards. However, as described in response to Comment 97, there are adequate technologies available in the marketplace for fleets to meet the requirements of the amended regulation. In addition, the amended regulation significantly extends clean-up requirements of the regulation, and significantly lowers the cost of compliance as described in response to Comment 268.

Lastly, the certification standards for on-road heavy-duty diesel engines are the same in California as the rest of the United States. Therefore, the Truck and Bus regulation will no impact on engine manufacturer's decision to supply engines in California.

5. Regulatory Provisions

a) General

99. Comment: The CARB staff proposal for compliance is far too complicated to meet, much less to understand and more complicated to enforce. (CTI1)

Agency Response: Staff designed the amended model year schedules to be straight forward and easy to understand. Fleets that meet the model year schedules require no

further action. The model year schedules specify when each engine model year must be retrofit and replaced. The schedule for lighter trucks and buses with a GVWR of 14,001 to 26,000 pounds has no PM filter requirements and specifies the engine model year that must be replaced each calendar year starting January 1, 2015. The schedule for heavier trucks and buses starts January 1, 2012, and specifies the engine model years that must be equipped with the best available PM filters and when engines need to be replaced. Both schedules end in 2023 when all trucks and buses must have 2010 model year engines with few exceptions.

Staff also realized that model year schedules might not be suitable for all fleets and added more flexible alternatives such as the phase-in option and a number of special provisions, and credits. The phase-in option allows fleets to decide which vehicles to retrofit or replace, regardless of engine model year. The phase-in option requires fleets to install PM filters from 2012 to 2016 and delays replacements until 2020 or later. Owners that comply with the phase-in option can also take advantage of other provisions that can delay compliance. These provisions include credits to reward fleets that have taken early actions to comply, delay compliance for certain business sectors, and lower compliance costs more for fleets that have been adversely affected by the recession. Small business with less than four diesel vehicles can also delay compliance with the PM filter requirements until 2014. These alternative compliance options allow fleets to determine the best compliance strategy for their business, lowers compliance cost, and achieves the needed emissions reductions. Fleets that use the more flexible options must report information about the fleet.

In the field, enforcement will check that trucks and buses meet the requirements of the model year schedule. Vehicles that do not meet the requirements of the model year schedule will be in violation unless the fleet owner has reported to the ARB to document that the fleet has met other more flexible compliance options.

ARB staff is also committing significant resources for outreach and education about the regulation to assist fleets in understanding their options and meeting the requirements. These include expansion of training and outreach efforts and materials to give stakeholders more opportunities to receive compliance assistance on the Truck and Bus regulation as well as other diesel vehicle regulations.

100. Comment: If you can find a way to gradually phase in new standards that would not force us out of business, we would be willing to comply. You may think that the current proposed requirements are just that, but they are not. (TTOW)

Agency Response: ARB staff believes that the amended regulation does phase-in its requirements. The amended regulation simplifies the compliance requirements while retaining flexibility for fleets to determine which vehicles to retrofit or modernize. Overall, the amended regulation would exempt about 150,000 lighter trucks with a GVWR of 26,000 pounds or less from meeting the PM filter requirements, and would delay any truck replacement requirements until 2015. Beginning in 2015, these lighter trucks would be required to be modernized (replaced, but not necessarily with new vehicles), but not until the trucks are 20 years old or older.

Additionally, larger, heavier trucks (with a GVWR greater than 26,000 pounds) would have two primary compliance options. Fleets could comply with the compliance schedule by engine model year or could use a PM filter phase-in option from 2012 to 2016 that is more flexible. The PM filter phase-in option allows fleets to decide which vehicles to retrofit or replace, regardless of engine model year. This option counts 2007 model year and newer engines originally equipped with PM filters toward compliance and would reduce the overall number of retrofit PM filters needed. Any engine with a PM filter regardless of model year would be compliant until at least 2020. From 2020 to 2023 all engines will need to be replaced with 2010 model year engines or newer according to the model year schedule. Fleets must report information about all of their heavier trucks starting January 31, 2012, to use the PM filter phase-in option.

In addition to the PM filter phase-in option, there are a number of provisions or credits that may delay compliance requirements such as for low use vehicles or fleets that have downsized.

101. Comment: I am all for clean air and the environment, but implement this over the next ten to fifteen years, not within the next couple of years. As new automobiles come out with new standards the same should apply to the trucks, so as we buy new trucks the emissions standards will meet the new requirements. We need more time. (GMEN)

102. Comment: Please amend this regulation so that it does not affect any vehicles purchased before the law was put into place. (LCL)

103. Comment: How can we be made to install smog equipment the manufacturer was not required to install? Just like our cars we should be required to maintain them to the standard for the year they were produced. Smog tests are ok. (MVT)

Agency Response: Emission reductions from all trucks, except those driven very few miles annually, are necessary for California to meet state implementation plan (SIP) commitments needed to meet national ambient air quality standards (NAAQS) and diesel PM health risk reduction and other health protective goals. California is mandated to meet these standards for PM composed of particles less than 2.5 microns (PM2.5) and ozone by 2014 and 2023 respectively. If California fails to meet these attainment targets, it would be subject to federal penalties (e.g., loss of national highway funds.)

Even after considering the reduced trucking activity resulting from the recession, heavy duty diesel trucks and buses subject to the regulation remain the largest contributor to emissions from all mobile sources. See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

b) Engine Model Year Compliance Schedule and Phase in Option

104. Comment: Whether or not you gave any consideration to moving the 2005 and 2006 model year trucks out to 2016 to give us a couple more years of relief --

because our ultimate date has changed in 2014. We still have to be 100 percent at least PM trapped. And we thank you for that consideration -- not NOx, the way I understand it -- but PM. And there is a different big cost in investment that has to occur between 2012 and 2014. Those two years is still a major hit for us. I would just ask if there is any consideration that's been given to moving the BACT compliance date to 2016 for the 2005 and 2006 model year trucks. (MVE)

Agency Response: Allowing 2005 and 2006 model year engines to operate without a PM filter until 2016 would impair the State's ability to meet NAAQS and put the public at unnecessary risk of exposure to diesel PM. A high percentage of the vehicles in the statewide fleet have 2004 to 2006 model year engines, tend to have higher miles travelled than older trucks, and represent a significant fraction of the emissions inventory. Therefore, it is not feasible to postpone the PM BACT requirements for 2005 and 2006 model year engines, as the commenter requests.

Fleets that have a high percentage of vehicles in a narrow model year range may use the PM filter phase-in option to spread out compliance requirements. The PM filter phase-in schedule requires 30 percent of the vehicles in a fleet to have PM filters by January 1, 2012, 60 percent by January 1, 2013, 90 percent January 1, 2014 and 100 percent by January 1, 2016. Therefore, a fleet owner that uses the Phase-in option can delay installing PM filters on 10 percent of the fleet until 2016.

105. Comment: We also suggested some additional opportunities for generating additional reductions of PM through the application of retrofits on segments not covered by the proposal, including older trucks like '94 to '97. But I am glad to hear that there is a conclusion on the '96 to '97 trucks in the 15-day changes. (MECA2)

Agency Response: As the commenter indicates, there have been changes to the engine model year schedule that affect heavier trucks with 1996 and 1997 model year engines. The amended regulation now requires heavier trucks with 1996 and 1997 model year engines to be retrofit by January 1, 2012. The modifications, which were made available for comment with the May 19, 2011 Notice of Availability of Modified Text (15-day changes), will provide additional PM emissions reductions between 2012 and 2017. These emissions reductions will offset emissions increases from additional provisions for low-mileage construction trucks and additional credits for the early purchase of newer engines without increasing emissions in 2014 such that there is no net change in benefits.

While there is no PM retrofit requirement for trucks with 1994 and 1995 model year engines, these engines must be replaced by 2016. Trucks with 1994 and 1995 model year engines represent a smaller part of the emissions inventory because they are near the end of their useful lives and typically operate fewer miles than trucks with newer engines. Under the commenter's proposal, they would not be replaced by 2016 as required by the amended regulation. This means that although there would be more PM reductions from 2012 to 2016 from these engines, the benefits would be partially offset from higher NOx emissions from 2016 to 2020. As such, staff does not believe the proposed alternative would not be as health protective as it would initially appear, and is not needed to meet the SIP.

106. Comment: The optional phase-in provision is great. The proposed amendment provides a one year delay for heavier trucks. NWSC is suggesting that staff increase the period of time one additional year to a two year delay for heavier trucks. (NWSC1)

Agency Response: The PM filter phase in option and the engine model year compliance schedules were both developed to bring most of the heavy duty diesel vehicle into compliance before 2014 to help meet the NAAQS for PM2.5 by the required target date in 2014. Delaying compliance dates would mean the State would not meet its SIP commitments nor diesel PM health risk reduction goals.

c) Changing Compliance Options

107. Comment: An explicit statement is needed to indicate that a fleet with four or more vehicles may switch compliance paths in any compliance year provided compliance with one path is achieved. (CFCOAL1) (CFCOAL2)

108. Comment: As long as the fleet is in compliance in one schedule, it would be compliant on the other schedule and that's [not] intuitive but not explicit. (CFCOAL1)

Agency Response: We believe it is clear from section 2025(e)(1)(B) that a fleet may switch between the model year schedule and the PM filter phase-in option so as long as they report by January 31, 2012 to opt-in to the phase-in option.

d) Requirements for a New Fleet and Changes to an Existing Fleet

109. Comment: The proposed regulation changed the new fleet requirements stating, "Owner of new fleets must meet the requirements of section 2025 (e) immediately upon bringing such vehicles into the State of California for the first time after ~~January 1, 2011~~ January 1, 2012." In addition, the proposed regulation states, "New fleets must report vehicles subject to the regulation to ARB within 30 days of bringing such vehicles into the State. NWSC is suggesting that staff keeps the January 1, 2011 date, and require the new fleet to report before starting operation in California." (NWSC1)

Agency Response: The regulation was amended to extend the initial general requirements compliance date to January 1, 2012. Therefore, there is no need for new fleets to report prior to that date.

110. Comment: The proposed regulation has a provision for adding vehicles to an existing fleet and states, "Before a fleet may operate a newly added vehicle in service, or operate a vehicle that was previously reported as non-operational, in California, it must file a report with the Executive Officer that it has added a new vehicle, and the Executive Officer shall approve the vehicle for service operation upon the fleet demonstrating that the fleet, as newly constituted, complies with the requirement section 2025." The existing fleet must gain approval from the Executive Officer before operating the vehicle, but a new fleet has 30 days. As

fleets move toward compliance in the future, the fleets will be adding and moving vehicles within the fleets. Large fleets will have to file reports all the time before operating their vehicles. NWSC is suggesting that staff changes the proposed regulation to allow fleets to change vehicles and if the vehicles are new or used vehicles with PM filters, the fleets do not have to demonstrate that they are in compliance until the annual reporting." (NWSC1)

111. Comment: The proposed regulation has a provision for removing vehicles from an existing fleet. If an existing fleet is not in compliance, the owner must file a report with the Executive Officer to demonstrate compliance. Fleets will be removing vehicles all the time to meet the requirements of the regulation. Filing the report and gaining approval from the Executive Officer will restrict fleet owners during their normal operations. NWSC is suggesting that staff changes the requirement to have fleet owners only report to the Executive Officer during the annual report period." (NWSC1)

Agency Response: Fleets owners that comply with the model year schedules do not need to report, and if the added vehicle is equipped with a PM filter and meets the requirements of the model year schedule the added vehicle will not need to be reported. The reporting requirements apply to fleets owners that use the flexibility provisions in the regulation. Reporting is required because compliance is determined based on the entire California fleet; therefore, having accurate fleet information is necessary to determine compliance and provides the explanation to enforcement, in the field, as to why a given vehicle does not need comply with the model year schedule requirements.

The commenter may have misinterpreted the compliance and reporting requirements for fleets that use the flexibility provisions in the regulation. An existing fleet or a newly constituted fleet may not operate the added vehicle or vehicles unless the fleet can demonstrate compliance; however, the fleet will have 30 days to report the change and will not be prohibited from operating the vehicle provided the fleet continues to comply with the beginning of the year requirements. Also, consistent with the suggestion by the commenter, fleet owners will not need to report if the added vehicle has a 2007 or newer engine that meets PM BACT because these engines already comply with the model year schedule until 2023 or meet the final requirements. The regulation language was modified during the 15-day comment period to make this clear.

However, other changes to the fleet must be reported, including when vehicles are removed from the fleet, because various credits and provisions require complete fleet information to determine compliance. Also the information is necessary so that enforcement will have the appropriate information to confirm that the fleet still complies and to avoid issues with apparent misreporting.

Staff previously considered whether reporting could be avoided during the middle of the year when changes were made; however, staff concluded that enforcement efforts would be compromised without accurate information. For instance, if a fleet misreported information at the beginning of the year, but fleets were allowed to make changes in the middle of the year, enforcement would have no practical way to verify, in the field, whether the initial report was accurate. This would also mean that out of state

fleets could report compliance at the beginning of the year, but could bring non-compliant vehicles into the state. This would effectively make enforcement ineffective.

A change that keeps the fleet in compliance would simply need to be reported and would not need approval from the Executive Officer. In most cases, the fleet owner would simply need to report the date the vehicle is removed from the fleet, and for vehicles that are using a mileage based provision would also need to report the odometer reading. As such we do not believe this is an onerous requirement and will reduce uncertainty in determining compliance in the field and for fleet audits as approval from the Executive Officer would be required only in cases where the change to the fleet would make the fleet go out of compliance with the beginning of the year requirements.

e) Credit for Early PM Retrofit

112. Comment: Our organization made the mistake of trying to pay for compliance early. Our mistake was retrofitting early some of our important trucks that are below 26,001 GVWR. Then the rules were changed. We would like to ask the staff to propose that a fleet be allowed to pair a heavy fleet truck over 26,000 GVWR with a early retrofitted light fleet truck below 26,001 GVWR for exemption until 2017 for at least the first year of BACT requirements in 2012 to allow relief so a fleet can benefit from its early compliance spending efforts. The economy is still very tough and this would help us and some other fleets through 2012. (JWOOD1)

Agency Response: The original staff proposal allowed the early retrofit of a lighter truck to count towards compliance with a heavier truck in the fleet. The language was further modified in sections 2025(j)(2) and (j)(2)(A) of the amended regulation, and was made available for comment with the 15-day changes made available on May 19, 2011.

Specifically, the early PM retrofit credit will be granted for each vehicle, with a GVWR greater than 14,000 lbs that is equipped with the highest level VDECS for PM by July 1, 2011. The credit counts towards compliance with the phase-in option for heavier trucks, with a GVWR greater than 26,000 lbs, and delays compliance for another heavier vehicle in the fleet until January 1, 2017. In addition, any vehicle that is equipped with a PM filter prior to January 1, 2014, including those that are retrofitted to earn the early PM credit, would also be exempt from meeting the 2010 model year emissions equivalent requirement until January 1, 2020.

113. Comment: The Clean Fleets Coalition wishes the Board to consider the following technical revisions to the Proposed Regulation Order before you today:

Early Action - the “prepayment” requirement by May 1, 2011 to claim early credit for VDECS installed by September 1, 2011 should be amended to allow a purchase order or deposit by the fleet owner. It is not a standard business practice to pay for vehicle service prior to completion** [ref. Section 2025 (j)(I)(A), p. A-23 (CFCOAL1)

114. Comment: There is early action -- there is currently a pre-payment requirement -- I use that terminology, because Board staff has a requirement that filters will need

to be paid for prior to completion of the work. And that's something that we have concern about and should be the same language as the items that correspond to the VDECS manufacturer delay in terms of having deposit or contractual obligation. (CFCOAL2).

Agency Response: Staff modified the early PM retrofit credit during the 15-day comment period from May 19, 2011 to June 3, 2011. In section 2025(j)(2)(A) of the amended regulation, the option to make a 20 percent deposit was added so fleets would not need to pay in full to qualify for the credit. The PM filter must have been ordered by May 1, 2011 and the date by which the VDECS must have been installed was extended one month, to October 1, 2011, to ensure that fleets have sufficient time to install the VDECS. The installation date was moved to as late in the year as practicable without losing the original intent of the provision, which is to reward fleets for taking action early and achieving early emissions reductions. In addition, language was added to clarify that fleets must report by January 31, 2012 to claim the credit and must meet the record keeping requirements.

115. **Comment:** Due to the uncertainty and constant changes of the diesel regulations many fleets are hesitant to spend money for early compliance. It would be a benefit to see the July 1st 2011 incentive be extended until the end of 2011 to help fleets determine whether or not the regulation will assume its current form. We have been penalized for our early efforts in the past. Please consider extending the July 1st 2011 early credit until the end of 2011 to help give fleets more time to decide whether or not to spend early retrofit $. (JWOOD2)

Agency Response: The credit provision was introduced to reward fleets that had taken action to comply with the regulation as originally adopted. The July 1, 2011 deadline assures that PM filters will be installed six months before the compliance deadline and appropriately gives extra credits for fleet that have already taken action. Extending the early credit period beyond July would give extra credit for meeting the basic compliance requirements and will not result in early emissions reductions the credit is intended to achieve.

116. **Comment:** The provisions regarding early compliance credit, which is available for particulate matter retrofits, sounds good but has very little practical applicability because, as I explained in the beginning of this letter, there are no PM retrofit devices available. How can we get early compliance credit? (APTCO)

Agency Response: Most engines have at least one PM filter option that could be installed to take advantage of the early credit provision. At least 16 verified PM filters are available for on-road applications that are suitable for a wide variety of engines.

f) Credit for Early Addition of Newer Vehicles

117. **Comment:** Some companies purchased new model on-road vehicles and engines based upon-or in advance of--the requirements of the current law. This means they purchased either 2007 or 2010 model year engines. These purchases have come at a time of great financial stress for the companies, but were done to

spread out compliance costs over the long-term. These purchases have often required lead times of 8 to 9 months, due to the lack of a developed market. Finally, these purchases are very important in developing a market for these newer engines as well as a market for used equipment in years to come. However, this proposal gives no credit for early replacement of vehicles, even though there is provision for early retrofits.

Proposed Solution: We are encouraged that the ARB notice indicates a provision will be added in this regard. (CEMEX1) (CCIMA1) (PRMI) (SYAR) (AARMC)

118. Comment: The proposed changes allow for a credit to treat another vehicle with a GVWR greater than 26,000 lbs as compliant until January 1, 2017 for each vehicle the fleet has equipped with the highest level VDECS for PM by July 1, 2011. A fleet may also receive the same credit if the highest level VDECS is ordered and paid for by May 1, 2011 and installed by September 1, 2011. Staff did not include credit if a truck is simply replaced with a new truck even though we asked repeatedly. The rationale is beyond the understanding of stakeholders. We would rather have a compliant new truck than a compliant old truck and the former choice is a greater stimulus to the economy than the latter. The end result of this lack of credit means that our company will run our usable equipment till the end and replace versus repower as the deadlines near. The lack of incentive will mean easily captured early efforts will not occur. Staff should be directed to submit an amendment that allows replacement as a strategy that qualifies for credit in the rule. (WEAT1) (WEAT2)

119. Comment: The first item that you've heard from Trucking Association as well as others that the 2007 to 2009 engine credit is something that is very important to them. The Board allows that for VDECS or aftermarket installation. So we'd like to give equal consideration to folks that actually put down -- give money to buy new equipment, because recognizing you also get a NOx benefit with that decision. I know folks have been gearing up to be prepared for the rule. That's first item we'd like to ask, equity with regard to early action. (CFCOAL2).

120. Comment: We realize that some companies stepped up to the plate early and invested in newer technologies. For this they must be commended. Although we were not able to invest as they did, we feel it is only fair that they be rewarded for their efforts. Perhaps some State tax benefits can be offered to them to help even out the competitive playing field over the next 10 years. We realize that these changes allow many of us to continue to use older technology for a while longer, and that may or may not give us a competitive advantage. We know that advantage is only temporary and at some point we will need to step up to the plate and invest in newer cleaner emission technology. Please consider some advantage to those carriers that complied ahead of schedule. (ROTC)

Agency Response: We introduced a method to allow fleets to earn credits for purchasing newer engines earlier than they normally would in modifications to the amended regulation. A new credit was added in a new section (2025(j)(3)) in the modified regulation that was made available for comment with the May 19, 2011 15-day changes. The credit is available to fleets that have added vehicles with GVWR greater

than 26,000 pounds and equipped with an OEM diesel particulate filter. The amended language includes a method to estimate what proportion of the fleet was replaced earlier than normal business. Fleets with a newer average age in the compliance year than in their 2006 baseline fleet can receive a credit that may be used to reduce the PM filter requirement of the phase-in option of section 2025(i) of the amended regulation. As long as the average age of the fleet remains the same or becomes newer, the credit may be used each year until exhausted. The credit will exclude vehicles that were purchased with public funds if the funding contract is still in place, and the credit cannot exceed the percentage of the fleet with 2007 or newer model year engines that meet PM BACT.

The credit is calculated by multiplying the difference between the average age of the 2006 baseline fleet and the average age of the fleet in the compliance year by five percent but it cannot be higher than the percentage of the fleet that has original equipment PM filters. For example, take a fleet with 40 heavier trucks with an average age of 12 years old in 2006. If the fleet average age is 10 years old on January 1, 2012, the fleet is two years newer than it was in 2006; therefore, the fleet could receive a credit up to 10 percent (2*5=10) for 2012. The maximum allowable credit will be the least of the 10 percent or the percentage of the fleet that has original equipment PM filters. If by January 1, 2012 the fleet has six trucks with 2007 model year or newer engines that were originally equipped with PM filters, the percentage of the fleet that has original equipment PM filters would be 15 percent (6/40=15). For this example, the credit earned is 10 percent, since that is the lower amount. In future years the credit could decline if the average fleet age of the fleet becomes older, but could not increase above the 10 percent established for 2012.

While it's clear that a PM filter is installed to comply with the regulation, it is more difficult to separate business as usual truck replacements from actions taken to comply with the regulation. Vehicle replacement practices vary widely among fleets and business types. Giving extra credit for vehicle replacements that would occur in the normal course of business would result in little to no emissions reductions for fleets that operate higher annual miles and normally replace their vehicles in shorter cycles, and in turn, would require still more emissions reductions from fleets that keep their vehicles longer because they typically operate fewer annual miles.

In several workshops prior to the December 2011 Board Hearing, staff sought ideas on developing a mechanism for determining how early replacements could be distinguished from replacements that would normally occur. No practical methods were proposed. New language to introduce a method was presented by staff to the Board at the hearing in Attachment B to ARB Resolution 10-44; however, the method could result in fractional truck credits or would require rounding that could result in no credits if the calculation rounded down or higher than appropriate credits if rounding up. Subsequent changes were made as part of the 15-day changes after consulting with industry representatives on how to simplify the calculation further. The changes still represent the proportion of the fleet that is replaced earlier than normal with vehicles that are equipped with original equipment PM filters. The early replacement credit is now calculated as the difference in the fleet average age for the compliance year compared

to the 2006 baseline fleet multiplied by 5. The extra credit is equivalent to a percentage of the fleet and counts towards the PM filter phase-in option requirement.

The multiplier in the prior method varied with the initial fleet age. The amended multiplier was fixed at 5 to simplify the calculation and represents the factor calculated for a fleet with an average age of 10. An average fleet age of 10 is very common and represents a fleet that purchases new vehicles and keeps them for 20 years.

Staff acknowledges that no calculation method can perfectly address every situation, but we believe the method gives a fair outcome for most fleets. The maximum credit is established January 1, 2012 and is limited to the number of 2007 model year or newer engines that are in the fleet.

121. Comment: While Granite agrees that economic relief from the CARB rules is necessary and appropriate in today's economy, the mechanics of the relief that are being proposed are of great concern. Proactive fleets like Granite that exhausted cash and disposed of older equipment are now paying a huge price for compliance. In a nutshell, the rule changes penalize leaders and reward laggards in today's ultra-competitive, low-bid construction market. (GCI1)

Agency Response: We believe the credits included in the amended regulation reward fleets that have taken early action so that early investments to comply would not put most fleets that have complied early at a competitive disadvantage compared to fleets that have taken no action. These include extra compliance credits for fleets that have installed PM retrofit filters early, for those that have added newer trucks that have OEM PM filters earlier than normal, and for fleets that have added fuel efficient hybrids or alternative fueled engines. In addition, fleets that have installed PM filters on off-road equipment may use credits accrued in the off-road rule to delay compliance for trucks. Finally, fleets that cannot use credits, but have taken action to comply with the original regulation, have an option to use an alternative model year schedule that is based on the original regulation until January 1, 2014. We believe all of these provisions adequately reward fleets for taking action early.

122. Comment: My company, as with many others, spent a great deal of capital to upgrade our equipment knowing that the rule was coming into play. We would have continued to operate our older equipment if we knew that there would be more time to comply. Now we are being penalized for our early action. We will now have to add filters to our equipment that should be paid off and realizing some additional capital recovery.

By giving the older equipment a longer period to comply CARB will be giving a competitive advantage to those people who did not do anything and continue to emit higher emissions. Whereas the people (me, us) who have taken early action and reduced emissions with cleaner equipment, have to suffer with lower rates that the non-compliant operators can survive on. These people have not spent any capital, while the CARB makes their mind up on the rule. I like many others did and are doing our part to clean the air. We would not have purchased equipment as the normal course of business, especially now, in this horrible

economic environment. We have struggled to make our payments, pay our payroll etc. We are the group who needs to be helped. We are the ones who risked our capital/livelihood to bring cleaner air to the state. I would like to see the rule stay the same as originally posted by the board in 2009. This would keep the economics even for all involved. (FLFT)

123. **Comment:** NAFA's Council recommends that in order to provide equity if implementation is delayed, CARB should identify and provide preferential incentives to fleets that have already made efforts to comply with CARB regulations. Fleets that committed to early or as scheduled compliance made significant financial investments in vehicles and other capital assets. These fleets will be at a severe competitive disadvantage against other similar businesses with fleets that did not take any compliance actions. Some possible options include establishing a preferential priority for grant funding for these fleets, establishing tax credits or incentives for these fleets, or providing additional equipment "grandfathering" opportunities for those fleets that may take advantage of them. NAFA looks forward to working with CARB staff to develop a plan to ensure equity for those fleets that made good faith efforts to comply with CARB regulations. (NAFA)

124. **Comment:** Section 6A, Credits for Early PM Retrofits, states: "Fleets that have already installed a PM filter or install them prior to July 2011 would be able to treat another vehicle as compliant until 2017". It is my suggestion that fleets that purchase a new or used vehicle equipped with a PM filter should also be eligible for this early PM credit and treat another vehicle as compliant until 2017, assuming the vehicle being replaced will be retired and removed from service. In essence, a vehicle will be put into service with PM reduction. Whether this PM reduction is achieved with a Retrofit PM filter or a replacement vehicle should have no bearing on the fleet receiving the early retrofit credit. (TTC)

125. **Comment:** Many fleets allocated significant resources to purchasing 2007 and newer technology prior to the latest round of changes. In doing so, fleets put themselves at a competitive disadvantage, simply because many other carriers who "waited it out" are benefitting from lower operational costs associated with running older equipment. At a minimum, fleets should receive the same one to one credit that the proposed early retrofitting incentive allows for if the fleet purchased 2007 or newer technology. This will help spread out some of the costs and ensure that those who acted early do not get punished for their proactive compliance steps.

    CTA recommends that fleets receive a one to one credit until 2017 for purchase of 2007 and newer technology prior to December 31, 2011." (CTA1)

126. **Comment:** ATA asks the Board to adopt additional revision that will help align operational practices with the emission benefits being sought:

    Provide one for one credit for 2007 and newer vehicle purchases. Under the Truck and Bus regulation, fleets that have already installed a particulate matter (PM) filter or install them prior to July 2011 would be able to treat another vehicle

as compliant until 2017. While retrofitting existing vehicles is one compliance option, this option may not be available for certain vehicles due to age, duty-cycle, economics, etc. As an alternative, many fleets have purchased 2007 or newer vehicles in order to comply. Both compliance options result in the use of PM filters, yet credit is only provided when a vehicle is retrofit. CARB staff has indicated that one of the barriers to providing credit for vehicle purchases is differentiating between normal turnover and regulatory compliance. Fleets have indicated a willingness to provide the necessary data to demonstrate to CARB staff which purchases are beyond normal turnover and, therefore, represent regulatory compliance. We believe this credit should be made available to enable compliance through new purchases to be treated equal to retrofits. (ATA1)

Agency Response: The amended regulation allows for extra credits to be earned for the early purchase of 2007 or newer engines. The method included in the amended regulation is based on the fleet age and number of vehicles that have OEM PM filters. The credit compares the fleet age in the 2006 baseline fleet to that of the fleet in the compliance year. This approach does not require additional information to be reported than was already expected for fleets that have downsized. The method is straightforward, and we believe that it provides equivalent PM filter credit for most fleets as the early retrofit credit would. See response to Comment 120 for a summary of the provision.

ATA's comment recognizes the need to identify "which purchases are beyond normal turnover". However, the suggestion that this identification be made on a case-by-case evaluation of individual fleet data would create a compliance option that is impractical to implement. CTA suggests that a credit be given until 2017 for the purchase of every 2007 and newer engine purchase prior to December 31, 2011. This would give extra credit for actions that would be made in the normal course of business for higher mileage fleets that normally replace their vehicles on a short replacement cycle and whose cost of compliance is already lower than most other fleets. We do not believe this is appropriate. Such an option would result in little or no emissions reductions from high mileage fleets and would require more emissions reductions from low-mileage trucks. The proposal also would not achieve the emissions reductions needed to meet the State Implementation Plan obligations.

g) Downsizing Credit

127. Comment: Our on road vehicles have either been parked in great numbers due to the recession, or spend most of their time on jobsites, so they are a very small part of diesel emissions. (DLOREN)

128. Comment: Many on-road vehicles have either been parked in great numbers due to the recession, or spend most of their time on jobsites, so they are a very small part of diesel emissions. (WCDI)

Agency Response: Fleets that have fewer heavier vehicles in the compliance year compared to 2006 can claim a credit towards the PM filter phase-in option. The credit delays compliance for other vehicles in the fleet until January 1, 2016. In this example, there are 25% fewer heavier trucks in the compliance year than were registered on

October 1, 2006. The fleet owner can subtract 25% from the annual PM filter requirement to determine what portion of the fleet needs to have PM filters. The table below shows the standard PM filter phase-in requirement in the second column. The fleet size reduction in this example is 25% and is shown in the third column. The adjusted compliance requirement for the remaining fleet is on the right. The provision expires by January 1, 2016 and all trucks must have PM filters. The credit is calculated each year and can change.

January 1 Compliance	PM Filter Phase-in Option Requirements	Fleet Size Reduction	Adjusted Requirement
2012	30%	25%	5%
2013	60%	25%	35%
2014	90%	25%	65%
2015	90%	25%	65%
2016	100%	---	100%

h) Excess PM VDECS Credit

129. Comment: Many companies with Off and On- road fleets had taken early action to comply with the Off-Road rule and received credit for doing so. However, due to the changes proposed in the Off-Road rule, they will be unable to utilize those credits. At the same time, the lack of current revenue greatly reduces their financial ability to address the On-road rule. In recognition of their efforts to assist with diesel emissions reduction and by placing filters on and modernizing their off-road fleets, they should be granted opportunity to transfer credits among the two rules.

Proposed Solution: Develop a retrofit credit transfer program based on a ratio of Off- road to On-road credits. We are encouraged that ARB's notice for the rule indicates this is under consideration. (AARMC) (CCIMA1) (CEMEX1) (PRMI) (SYAR)

130. Comment: Granite is in favor of general economic relief for Offroad and Onroad diesel fleets but asks that the following changes be included to establish an equitable regulatory environment where environmental leadership is still encouraged.

Emission reductions achieved by complying with the current Offroad Rule that are no longer required under the proposed rule should be transferable to the Onroad Rule.

Granite installed over 50 DPF retrofits on offroad equipment and made substantial changes to its offroad fleet in preparation for the initial compliance dates in the offroad rule. These steps will create excess emission reductions in Granite's offroad fleet while the company struggles to comply with the much more aggressive compliance schedule proposed for heavy trucks in the onroad rule.

Granite has provided Staff with multiple exchange concepts that we feel are viable, and some type of mechanism must be given to allow this exchange of emissions credit. At a minimum, the amendments should allow fleet owners to apply to the Board for a transfer of emission credit. (GCI1)

131. **Comment:** Granite Construction currently owns a fleet of approximately 800 pieces of off-road diesel equipment and 800 diesel trucks in California. Since 2006, Granite's business is off more than 50 percent in the state of California. And we actually did the math, and our emissions are off more than 75 percent. That reduction in emissions is obviously for two reasons. The economy is one driver, but we also took a number of proactive steps to comply primarily with the Off-Road rule, and there are reductions to show for that. So I'm here for the most part in support of the amendments and do appreciate staff working with us. The light truck relief provision is particularly helpful. But I would like to stress the importance of one of the 15-day changes that was mentioned, and that's the bubble or credit exchange concept. For proactive fleets, this concept, especially to be able to move credit from the Off-Road rule to the on-road rule, is very helpful. It allows us to "cash in" some of our actions that we took early. And it really does give us some breathing room on the on-road rules for things that we did to comply with the Off-Road rule early. (GCI2)

Agency Response: Staff agree the Truck and Bus regulation and the Off-Road regulations have both been modified to include a method to exchange credits earned in either the Truck and Bus regulation or the Off-Road regulation to count toward compliance with the other regulation. The credits are determined and exchanged each compliance year, until January 1, 2017.

The Truck and Bus regulation was modified to describe how credits earned from actions on off-road equipment can be applied towards compliance for trucks and how credits for actions taken on trucks are determined. The language is in a new section (2025(j)(2)(C)) of the modified regulation that was made available with the May 19, 2011 15-day changes. Fleets can earn excess PM filter credits if the number of PM filters in the truck fleet exceeds the minimum number required to meet the PM BACT percentage of the phase-in option of section 2025(i) of the modified Truck and Bus regulation. PM filter credits include Level 3 PM VDECS and OEM filters. In addition, section (2025(j)(2)(C)) describes how excess PM VDECS credits earned in the Off-Road regulation can be applied as a credit towards meeting the requirements of the phase-in option of section 2025(i) in the Truck and Bus regulation. A credit would count the same as if a truck with a GVWR greater than 26,000 lbs were equipped with a PM filter.

The Off-Road regulation (section 2449) was also modified to describe how credits earned from actions on trucks can be applied towards compliance for the Off-Road regulation and how credits for actions taken on off-road equipment are determined. The amended Off-Road regulation (title 13, CCR, section 2449) is available at http://www.arb.ca.gov/regact/2010/offroadlsi10/lsi15dayatt3.pdf.

132. **Comment:** Staff is allowing for credit transfer between a fleet and the Off-Road and On-Road regulation, and we think that's great. But what they talked about in

the concept was retrofit credit. They did not mention anything about fleet reduction credits or early engine replacement credits, and we believe that those two should also be included in that credit transfer. (NWSC2)

Agency Response: As directed by the Board, the excess credit transfer concept was integrated into new compliance options in the Truck and Bus regulation and the Off-Road regulation. The response to Comment 129 summarizes the provision in the Truck and Bus regulation. The off-road compliance option is described in the Off-Road regulation available on ARB's website for the Off Road rulemaking: http://www.arb.ca.gov/regact/2010/offroadlsi10/offroadlsi10.htm.

Fleet reduction credits and early replacement credits were not included for a number of reasons. The Board's goal in adding a credit transfer mechanism between the two regulations is to preserve emission benefits in a manner that is practical to implement and enforce. It is difficult to separate business as usual truck or off-road equipment replacements from actions taken to comply with a regulation and the variety of engine sizes, emissions rates, and usage patterns between off-road equipment and trucks would be impractical to predict, assess and monitor. It is clear that a retrofit PM filter is installed to comply with a regulation and that it would not typically be installed if not otherwise required. We believe the Board's goal is met by limiting the credit transfer to excess PM filters since quantifying excess PM filters is straightforward to determine and enforce.

i) Use of Incentive Funds for Credit Towards Compliance

133. Comment: Regarding this bubble concept that was introduced today, we'd like - to the extent that we want to use these grant moneys - to actually create a margin of safety. I think your resolution should make it clear that any early reductions, cross-source category that one wants to take credit for towards compliance could not come from any retrofits that are paid for by public funds. I believe that is probably the intent of your staff to maintain those reductions that are paid by grants to be surplus, but I think it would be good to clarify that so there are no false expectations. That would be a question I have. Was the intent that if the public pays for those reductions, you cannot use those towards compliance in getting credit from one source category to another? That is our request. And if that is the case, make that clear in the resolution. (SJV/SC2)

Agency Response: Both the Truck and Bus and the Off-Road regulations restrict the use of publicly funded vehicles engines or retrofits for demonstrating compliance during the funding contract period and consequently restrict the use of these vehicles, engines or retrofits for determining the excess credits for transfer between regulations.

j) Verified Emissions Control Strategies

134. Comment: We understand that the rule as drafted allows companies to obtain exemptions from the rule when filters are unavailable, or unsafe for use with their trucks. We strongly urge the Board to direct CARB staff to make these exemptions readily available for use by companies during the life of the rule. Staff must be ready to approve these exemptions on presentation of proof.

We are told that while CARB staff will give consideration to exemptions being granted when filters are unavailable or unsafe, such exemptions will not be granted on the basis of cost. This remains of concern to us, particularly given that, in some cases, an older truck may require two filters, rather than one, to properly filter exhaust. Thus the owner of an older truck of $13,000 value would be forced to purchase two filters at a cost of $45,000 or higher. We must deal with this problem. (ACLOG1) (ACLOG2)

Agency Response: Staff recognizes that not every vehicle subject to the regulation can be retrofitted; therefore we have included a provision in the regulation that would allow a fleet owner to receive a one year extension of the compliance deadline for the PM BACT requirement if the highest level VDECS is not available or cannot be installed on a particular vehicle. The fleet owner would have to apply to the Executive Officer for an extension each year that the owner is claiming the extension until January 1, 2017. The Executive Officer may grant a one-year extension of the compliance deadline based on evaluation of required documentation submitted by the fleet owner to support the application and provided all other vehicles in the fleet are in compliance with the PM BACT requirements of the compliance year.

This provision was subsequently modified in the 15-day changes made available on May 19, 2011. A four months filing requirement has been added in section 2025(p)(9) of the modified regulation. This is to provide ample time for the fleet owner to react in case the request is not justified and is denied by the Executive officer.

The regulation also does not require a PM retrofit if it cannot be safely installed. A fleet owner is allowed to request an annual exemption from complying with the PM requirement if the owner can document that a VDECS cannot be safely installed. The regulation describes a process for a fleet owner to obtain an exemption based on safety concerns. Upon finding that a retrofit device cannot be installed safely, the Executive Officer will issue a determination that the device will not be considered to be available to meet PM BACT for the vehicle.

Any vehicle that cannot be equipped with the highest level VDECS for PM (either because of availability, incompatibility or safety) by January 1, 2018, must be replaced, or have its engine replaced, with an engine that can be equipped with the highest level VDECS for PM. We do not believe it is appropriate to extend this provision past 2018 because older vehicles produce far more toxic diesel emissions than newer model vehicles and older-used vehicles that have PM filters installed will be widely available and may be the lowest cost option by that time.

135. Comment: A majority of the trucks operating in rural California are pre 1994 mechanical engines; no current filter will bring them into compliance. (ALOG)

Agency Response: The engine model year schedule delays compliance for pre-1994 model year engines until 2015 at which time they must be replaced. Fleets that use the phase-in option can delay compliance for up to 10 percent of the fleet until 2016.

136. Comment: APTCO, LLC operates a fleet of eight trucks, including five with 2003 model year engines, two with 2006 model year engines and one with a 2010

model year engine. I have communicated frequently with the suppliers of engine parts for our fleet of eight trucks. Consistently, the suppliers have advised me that they are unable to provide particulate matter filters as provided for in your truck and bus regulation. APTCO, LLC is a small business and our fleet of trucks is a relatively small fleet, but our trucks are very serviceable and have a long life remaining. APTCO, LLC is concerned about the ARB truck and bus regulation, not only because particulate matter filters that are contemplated for the proposed regulation are not commercially available, but also because our relatively new fleet of trucks has a long, useful life remaining. APTCO should not be forced to replace these trucks in the future, only part way through their useful life. (APTCO)

Agency Response: The PM filter phase in option can be met with the use of retrofit PM filters, and does not require any replacements until 2020 unless the engine cannot be equipped with a PM filter. Exhaust PM retrofits are available for most engines, including the MY engines identified by the commenter. Each retrofit PM filter is verified for use on a specific group of engine families operating under specific conditions. Currently, there are 16 verified Level 3 systems that reduce PM emissions by at least 85 percent and they work on a wide range of engine families under most operating conditions. The regulation contains provisions that address the issue of availability of PM filters. Until January 1, 2018, no action is required to reduce PM emissions if a suitable exhaust PM retrofit is not available as described in the response to Comment 134.

During the development of the original regulation, staff contacted several diesel particulate filter manufacturers inquiring about their manufacturing capacities, and they indicated that their manufacturing facilities are capable of producing over a million diesel particulate filters on an annual basis. However, in the event that there is an unanticipated disruption in the manufacturing, distribution and supply for diesel particulate filters, the regulation contains a provision so that fleets are not penalized if manufacturing delays prevent them from acquiring the equipment or vehicles they need. An owner who has purchased, but has not received, a VDECS, a replacement engine, or vehicle in order to comply with this regulation will be excused from immediate compliance if the VDECS or vehicles have not been received due to manufacturing delays. Section 2025(p)(8) of the regulation specifies the conditions the fleets must meet to qualify for this extension.

The amended regulation allows retrofitted trucks to operate for a longer period of time compared to the existing regulation before requiring upgrades to a 2010 model year engine or equivalent. If all of APTCO's trucks are over 26,000 lbs GVWR and the fleet has no PM retrofit credits, the Phase-in option would require retrofits to be installed from January 2012 to January 2016, but replacements would not start until 2020.

k) Alternative Fuel and Hybrid Vehicles

137. Comment: We noted that the current version of the on-road regulation seems to eliminate compliance credits for alternative fuels and HDPI vehicles after January 1. We've been told this is a typographical error and this is going to be fixed in the 15-day notice change. (WMAN)

Agency Response: The description of the credit for alternative-fueled vehicles and heavy-duty pilot ignition engines was corrected in section 2025(j)(2)(B) of 15-day changes that were made available for comment on May 19, 2011. For each fuel efficient hybrid vehicle, alternative fueled vehicle, or vehicle powered by a heavy-duty pilot ignition engine having a GVWR greater than 26,000 lbs that is added to the fleet any time before January 1, 2017, a fleet can earn a credit to delay compliance for another vehicle in the fleet until January 1, 2017. To earn credits for such vehicles with a GVWR between 14,000 and 26,000 lbs, the fleet must have added the cleaner vehicle to the fleet prior to July 1, 2011 and report the information by January 31, 2012.

138. Comment: Fleets that implement hybrid heavy duty vehicles, regardless of fuel type, should be eligible for the Credits for Early PM Retrofits, Hybrid Vehicles, Alternative Fueled Vehicles** [Section 2025 (j) p. A-23]. In an atmosphere where the Board is encouraging vehicle efficiency, work trucks or vans that incorporate the 20% increased fuel economy should be treated equally whether they are diesel, natural gas, or gasoline powered. (CFCOAL1)

139. Comment: You should allow gasoline hybrid electric vehicles (CFCOAL2)

Agency Response: The credit is available for any heavy-duty hybrid vehicle that achieves the required 20 percent fuel economy improvements and meets the other specifications of the definition of a fuel efficient hybrid vehicle given in section 2025(d)(31).. The definition does not specify the fuel to be used in the hybrid vehicle. Therefore, the credit is available to heavy-duty vehicles that use fuels other than diesel such as an alternative fuel or gasoline. By being silent on the fuel type, the definition is consistent with the intent of the hybrid credit, which provides an incentive to facilitate early expansion of the hybrid heavy-duty vehicle market.

This credit is the same as it is for alternative-fueled vehicles, pilot ignition engines and alternative fueled hybrid vehicles.

l) Rural Fleets

140. Comment: Equipment in Mendocino County tends to be used less than equipment elsewhere in the state. This is a result of

- A local economy dependent on struggling resource industries.
- Regional Water Board regulations which limit the off-road work season to 155 days – a restriction only present on the North Coast.
- The geographic remoteness of the County from most of the economic drivers of the modern California economy.

As a result of the above, equipment in Mendocino County has much lower usage than other areas of the state. This lower usage results in longer equipment lifespans due to economic factors. This lower usage equipment is –

- More subject to ARB regulations which target the older equipment first (irrespective of usage).

- Not competitive or even eligible for grant dollars because of low usage or regulatory requirements (grants cannot fund compliance). (MCAQMD)

Agency Response: ARB recognized the need for delayed requirements for rural areas and low-mileage construction trucks while balancing the goal of protecting public health. However, reducing diesel PM emissions in rural areas is still necessary because diesel PM is toxic and exposure occurs wherever diesel vehicles are used.

The amended regulation has special provisions for vehicles that operate exclusively within certain designated attainment area counties because accelerated NOx reductions from trucks are not needed to meet federal air quality standards. These areas, termed NOx Exempt Areas, have attained the federal air quality standards for NOx and PM and do not contribute pollution to downwind areas that violate the standards. Any fleet with vehicles that operate exclusively in these areas can take advantage of a delayed PM filter schedule from 2014 and 2016 for heavier trucks, and can take advantage of the exemption from the replacement requirements for any vehicle with a GVWR greater than 14,000 lbs. if equipped with a PM filter.

In addition, construction trucks that do not stay exclusively in the designated NOx exempt areas or operate anywhere in the state can take advantage of the delayed PM filter phase-in schedule for low-mileage construction trucks. This provision provides more time for construction trucks that operate fewer than 15,000 miles per year and for dump trucks that operate less than 20,000 miles per year. These thresholds are more likely to be used by rural fleets because of the shorter operating season.

Finally, for fleets that cannot use these provisions, they may be able to use the engine model year schedule for heavier trucks that requires the use of PM filters on newer trucks starting January 1, 2012 but delays compliance for 1995 model year and older engines until 2015 or 2016 when they would need to be replaced. Additionally, the optional PM filter phase-in schedule will provide fleet owners with more flexibility to determine their best compliance strategy by reporting. With this provision, a fleet owner will be able to determine which vehicles to retrofit first and which ones to replace. Fleets that report starting January 2012 can comply with either option each year.

The Carl Moyer Program, which is allocated statewide based on statutory requirements, and several other programs exist to provide funding statewide or specifically to rural areas. For additional information on availability of funding for rural areas, see response to Comment 362.

m) NOx Exempt Areas

141. Comment: In March of 2010, the ARB designated the Northern Sonoma County Air Pollution Control District (NSCAPCD, or District) as attainment for all federal and state ambient air quality standards. With this recognition of our clean air, we are writing to respectfully request that ARB also extend the exemption from NOx control requirements in your regulations for in-use (retrofit) on-road and off-road diesel vehicles (CCR title 13, article 4.5, chapter I, section 2025; and CCR title 13, article 4.8, chapter 9, sections 2449,2449.1,2449.2, 24493)

In CCR Section 2025(d)(55), the on-road diesel rule defines a NOx-exempt area as the following counties: "Alpine, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Monterey, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Trinity, Tehama, and Yuba."

Recognizing that the District comprises only a portion of a County, we recommend that the list [of NOx exempt areas] be amended to include "the portion of Sonoma County that lies within the boundaries of the North Coast Air Basin" consistent with the description of the District in your formal designation on March 25, 2010.

As one of only two air districts that attain all of the federal and state ambient standards, and with typical maximum 1-hr ozone levels of 0.06 ppm, the NSCAPCD is certainly one of the cleanest air quality regions of the state. As such, it should be granted the same exemption as other clean air areas. NOx-exempt status would provide expanded compliance options for owners of Captive Attainment Area Fleets. While many of the fleets in the NSCAPCD would not qualify for this provision, the District anticipates that some fleets would. The District has worked hard to provide incentive funding in advance of the compliance dates in ARB's diesel regulations. Based on our understanding of the fleets in the District, and the very low levels of ozone that we are recording, we believe NOx-exempt status would not have any impact on our ability to maintain our clean air designation. (NSCAPCD1)

142. Comment: I would like to ask your consideration for adding the Northern Sonoma Air District area to the NOx exempt area list in Section 2449(c)(6) and 2449.1(a) of your rules. As you know, last March, ARB classified Northern Sonoma as attainment for all federal and state ambient air quality standards. Only one other area in the state has achieved this status. And in northern Sonoma, we will maintain, regardless of the level at which the EPA sets its new ozone standard. Our highest ozone level in 2010 was .036 PPM, which is I think below background for most of the state. I'm giving you that information by way of underscoring that allowing NOx-exempt status in northern Sonoma would have no adverse impact on our air quality, but it would provide some really important relief and compliance alternatives for the regulated community there. (NSCAPCD2)

143. Comment: The NOx exempt boundaries leave a lot to be desired. Boundaries should coincide with impaired air districts not county lines. A perfect example is the Northern Sonoma air quality district where the air is not impaired, however NE trucks cannot operate there because of a line on a Map. Southern Sonoma air district is the impaired district where the air quality problem exists and that is where the exclusion to NOx-exempt trucks should take place. If lines are to be drawn restricting access it should be done by actual air quality conditions not abstract boundaries set up over 100 years ago for a different purpose. In order to minimize the impact on jobs in rural California this rule must be as flexible as possible; otherwise it is an all out recipe for disaster. (ALOG)

144. Comment: While ARB staff has created specific language that creates exemptions for equipment that operates exclusively in areas like Mendocino

County, there is some uncertainty about how this will function in cases where out-of-county travel is incidental:

There are multiple parts of Mendocino County which are only accessible by entering into neighboring Counties. One of the largest local destinations for logging trucks is the Empire Sawmill in Cloverdale, less than one mile across the Sonoma County line. One reading of the rule is that trucks that go to this destination would be required to be upgraded or replaced because of this one mile of travel. (MCAQMD)

145. Comment: Access to Cloverdale from the north is important to the forestry sector and likely other economic sectors. The forestry sector has many trucks that we could put the NOx exempt "NE" label on the doors (as could many other small in-state fleet owners in the rural coastal counties to the north of Cloverdale) if the small wedge of northern Sonoma county was included (using Hwy 101 and Hwy 128 as the NOx boundary instead of the county line). We are only 4 percent of the truck traffic at the Hwy 128/Hwy 101 intersection but we have lots of wood fiber that goes to the mill in Cloverdale.

We can't believe that the NOx emissions in and around Cloverdale are what causes Sonoma County to be NOx non-attainment. We think a small wedge (bounded by Hwy 128 and Hwy 101) at Cloverdale added to the NOx Exempt Area in northern Sonoma County makes good common sense. (CFA1)

Agency Response: The list of counties defining the NOx exempt areas has been expanded in section 2025(d)(46) of the amended regulation to include the Sonoma County portion of the North Coast Air Basin. The revised Truck and Bus regulation designating Northern Sonoma as a "NOx Exempt Area" was made available as part of the 15-day changes that were made available for comment on May 19, 2011. The reference that defined the North Sonoma area was incorrect in the definition in the proposed amended language released for 15 day comment. It has since been corrected to refer to title 17, CCR, section 60100(e).

With the new designation for Northern Sonoma, vehicles operating within the area would now be eligible for the NOx Exempt Area provision and trucks with a NOx exempt "NE" label may now operate in Cloverdale without affecting their "NE" status.

146. Comment: There is substantial local in-state fleet owners that could put the "NE" label on their truck doors if Butte County were a NOx Exempt Area. The reason is there is substantial freight movement and redistribution particularly at Oroville (including a log reload yard to send logs north). What we don't understand is what is driving Butte County to be NOx non-attainment? Colusa, Glenn, Tehama, Plumas, Yuba, and Sierra are all NOx Exempt (counties that surround Butte County). It is not intuitively obvious why Butte County is non-attainment. You would think the 1-5 traffic in Colusa, Glenn, and Tehama Counties would be a bigger NOx producer than the Hwy 99 corridor through Chico and Oroville. What causes Butte Co. to be NOx non-attainment? (CFA1)

147. Comment: In an effort to fine-tune the Diesel Truck Rule so as to make the 17 NOx exempt areas of the state more practical in their boundaries, we have been working with Air Board staff in suggesting that consideration be given to using boundaries other than strict county administrative boundaries to "mark" those NOx exempt areas. We have submitted suggested map lines for the Cloverdale area (following state highways 128 and 101); Butte County(currently, an "island" is created which should be absorbed into the NOx exempt area) and Lincoln, where a boundary other than the Placer County line should be considered – we would suggest using state highways 65 and 193 for the boundaries. The timber industry will continue to work with staff on these refinements. (ACLOG1) (ACLOG2)

Agency Response: The NOx exempt area boundaries are consistent with the boundaries of the geographic areas designated by law for Federal and State standards for the specified criteria pollutants – whether the designation is made by air basin, county, or other geographic area. The NOx exempt area provision of the Truck and Bus regulation does not introduce new geographic designation criteria. Butte County and Northern Sonoma were not included in the list of NOx exempt areas when the regulation was adopted because the areas had been designated by the U.S. EPA as violating the federal 8-hour ozone standard.

The Health and Safety Code requires ARB to annually review area designations for State standards. During the annual review, ARB determines whether changes to the existing area designations are warranted, based on an evaluation of recent air quality data. Based on a review in 2010[18], the Board approved the re-designation of the Sonoma County portion of the North Coast Air Basin as attainment. The geographic area is defined in title 17, Cal. Code Regs., section 60100(e) of the Health and Safety Code. The definition of NOx exempt area counties in the amended regulation now includes northern Sonoma county as described in response to Comment 145.

Butte County is still classified as non-attainment for ozone and it cannot be added to the list of NOx exempt areas in the amended regulation. Federal law mandates the development of SIPs documenting the actions the State will take to attain the ambient air quality standard. Therefore areas like Butte County are already required to mitigate their emissions. Staff does not believe it is appropriate to grant exemptions in the Truck and Bus regulation that allow local NOx contributions that could add to the severity of the area's ozone problem.

148. Comment: A final complicating factor is the lack of local truck dealers. If a newer truck needs warranty service, it must be taken out of the County for repair. In most cases these dealers are located in "non-attainment" areas. In theory, a truck taken in for service may result in enforcement action being taken by ARB. (MCAQMD)

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[18] Initial Statement of Reasons for Proposed Rulemaking. Proposed 2010 Amendments to the State Area Designations Criteria, Area Designations, and Maps. Staff Report. Release Date: February 4, 2010. http://www.arb.ca.gov/regact/2010/area10/areaisor.pdf

Agency Response: Vehicles that use the NOx exempt areas exemptions may travel outside of the designated NOx exempt areas for repairs or other services to the vehicle such as installation of a PM filter. The vehicle owner must obtain a work order from the facility that describes the service and it must show the date of the service and the location of the facility. If these conditions are met, no enforcement action would be taken by ARB staff against the owner of a NOx exempt area vehicle that travels outside the designated NOx exempt areas.

n) Low-Use Vehicles

149. Comment: LLNL recommends that the hour use limit for vehicles with power take-off be increased from 100 hours per year to 200 hours per year. This would harmonize the low use definition in this regulation with the proposed low use definitions in CARB's other vehicle regulations such as the Large Spark Ignition Engine Regulation and the In-Use Off-Road Diesel Vehicle Regulation. (LLNL)

Agency Response: Truck engines are larger than most off-road engines, generally have higher emission than off-road equipment and are more likely to be operated in or near populated areas. The 100 hour limit is consistent with all other existing on-road diesel vehicle regulations and staff does not see a sufficient rationale for harmonizing the low use provisions for trucks and buses with those for off-road equipment.

o) Low-Mileage Construction Trucks

150. Comment: Vocational trucks should have separate and distinct provisions in the Onroad Rule. Vocational trucks range from mechanics truck's and fuel/lube trucks to water trucks and dump trucks. These trucks log fewer miles per year than over-the-road trucks, so they have a longer service life. They also tend to have much lighter duty cycles than over-the-road trucks, and thus are generally poor DPF retrofit candidates. In many cases, these trucks spend a significant amount of their operating time running a power take-off unit consuming only a small fraction of the engine's rated power capacity (and emitting only a fraction of the engine's rated emissions output).

The inability to retrofit makes vehicle turnover the preferred compliance method for vocational trucks. Unfortunately, the current compliance schedule for trucks over 26,000 pounds creates a situation where heavy vocational trucks would need to begin being turned over when they have not even reached half of their expected service life. A provision is needed to allow vocational trucks traveling less than 15,000 miles per year and operating less than 1000 hours per year to operate for a period of time beyond 2015 without requiring retrofit or retirement. (GCI1)

151. Comment: The construction industry has developed a proposal that it sent to your staff for consideration, which is a 15,000 mile lower use exemption for construction trucks or the trucks that are used to support the construction industry. We certainly hope that this is something your staff can consider during the 15-day changes. We think there might be two ways to look at developing how it would apply. One could be to come up with a prescriptive list of trucks limiting who could participate. The other would be maybe to take a look at an overall number of

trucks and allow the industry to, through reporting, participate in that. So I would just hope or I ask that you could direct your staff to take a look at those two options today and move forward through the process. And hopefully we can come up with something that's workable and helps everybody on both sides. (CIAQC3)

152. Comment: We'd like for you (Chairman Nichols) to direct staff to work with us on this question of vocational trucks. It's something that was talked about during all the workshops. But that's as far as it's gone. And it's not in the rule. (SCCA2)

153. Comment: Increase Low Use Exemption Threshold for Construction Trucks to 15,000 miles per year. CIAQC1) (CIAQC2)

154. Comment: We need to have you to increase the low-use mileage exemption for construction to at least 15,000 miles per year. Our on-road and off-road vehicles & equipment spend the majority of their time sitting at a job site or in our yard. We hope you can help the construction industry. (WCC)

155. Comment: I'm asking the Board to please consider raising the low miles exemption for both P.M. and NOx for trucks to at least 15,000 miles per year. A truck that operates less than 15,000 miles annually not only emits less emissions but also uses less fuel, oil, tires, brakes, and filters. That contributes to less emissions not only in the manufacturing but also in the transportation and delivery of those products to the supply house. Raising the low miles use to 15,000 annually would help our company, especially during these tough economic times in the construction industry. (RNUSS)

156. Comment: If we could get any kind of an exemption for our low mileage [construction trucks], being that we don't have any, 20,000 miles may sound like a lot. It would immensely help folks. We want to comply. (CDTOA3)

157. Comment: We operate about 500 ready-mix trucks in the state of California. And we operated a fleet of 18 tankers in Southern California. If staff passes the new regulation, it will save my company a million and a half dollars on January 1st, 2012. My trucks become non-compliant on that date. And it's a very critical important move if the staff passed the amendment today giving us until 2014 to replace our equipment. (CEMEX2)

Agency Response: The low-mileage construction truck provision was expanded at the direction of the Board to provide additional flexibility while preserving the emission benefits of the amended rule and meeting the SIP commitment. At the Board hearing, staff proposed a compliance option that would delay the PM phase-in requirements for low-mileage construction trucks with GVWR greater than 26,000 lbs. In response to comments from stakeholders, the Board directed staff to provide additional flexibility for fleets with low-mileage construction trucks to the extent feasible without compromising the emissions reductions necessary to achieve attainment with NAAQS. The new compliance option for low-mileage construction trucks is described in a new section (2025(p)(2)) of the modified regulation that was made available as part of the 15-day changes made available for public comment on May 19, 2011.

The changes raised the mileage limit to 20,000 miles per year for dump trucks and greatly expanded eligible truck types that can operate up to 15,000 miles per year. The definition of “low-mileage construction truck” in section 2025(d)(40) divides low-mileage construction trucks into two categories. The first category is for dump trucks, which operate less than 20,000 miles per calendar year, and covers trucks that transport construction materials such as dirt, asphalt, rock or construction debris including a transfer truck, or a tractor trailer combination used exclusively to pull bottom dump, end dump, or side dump trailers. The second category is for all other eligible trucks, which operate less than 15,000 miles per calendar year, and covers concrete mixer trucks, trucks with a concrete placing boom, water tank truck, single engine cranes with a load rating of 35 tons or more, tractors that exclusively pull low-boy trailers, or trucks owned by a company that holds a valid license issued by the California Contractors State License Board.

Fleet owners must report by January 31, 2012 to be eligible for the low-mileage construction provision and must label the trucks and report business and vehicle information annually. With the new compliance option, fleet owners are required to meet a minimum PM BACT requirement for the fleet that is phased in at the rate of 33 percent per year starting January 1, 2014 so that all vehicles must meet PM BACT by January 1, 2016. Until 2014 the low-mileage construction trucks would be exempt. By January 1, 2014 the fleet will need to demonstrate that a minimum of 33 percent of the entire fleet (except low-mileage vehicles) meets PM BACT. This allows the fleet owner to count other trucks in the fleet, that will already have PM filters, towards meeting the minimum criteria and allows the low-mileage construction trucks to delay compliance further. By January 1, 2014, most fleets will have PM filters on about 90 percent of the heavier trucks (that do not qualify for the low-mileage construction truck provision) as required by the model year schedule or the PM filter phase-in option. Because the minimum percentage required to use the low-mileage construction truck extension is based on the entire fleet, other trucks in the fleet that have PM filters will be counted towards meeting the minimum percentage requirement. Similarly, by January 1, 2015, most fleets will already meet the minimum of 66 percent PM BACT required for the fleet to use the low-mileage construction truck extension. This approach could delay compliance for many low-mileage construction trucks until January 2016 if low-mileage construction trucks represent a small portion of the fleet. A single truck owner with a low-mileage construction truck will be able to delay compliance with PM BACT until January 1, 2016. Any truck that is equipped with a PM filter no longer needs to operate below the mileage limits. Starting January 1, 2020, all construction trucks must be upgraded to a 2010 model year engine on the same engine model year schedule (section 2025(g)) as other fleets so that by January 1, 2023, all trucks will have 2010 model year engines or equivalent.

For all low-mileage construction trucks, if a suitable exhaust PM retrofit is not available in advance of an annual PM emissions reduction compliance date, no action is required on that low-mileage construction truck until January 2018, at which time the engine or vehicle would need to be replaced.

Staff was able to include the low-mileage construction truck option while remaining emissions neutral and meeting the SIP commitments by setting limits on annual mileage

of 20,000 miles for dump trucks and 15,000 miles for other vehicle types and by setting the initial limits on the number of vehicles that are eligible to ten in any fleet. Staff also established a threshold to identify how many more could be approved for individual fleets such that the overall number of approved vehicles does not exceed 9,000.

158. Comment: We have consistently been asking for a designation within this rule for "vocational trucks" and from time to time, at workshops and other public discussions, staff has said they are "working on it." We think now is the time for them to produce their work. For this reason, we once again ask the Board to direct staff to create a category of vocational truck within the on-road regulation that gives special recognition to both the already existing reduction in emissions due to the over-estimate of the size of the fleet and to the crushing economic conditions that seem to be without end. We believe that the conditions offered to the agricultural industry within this rule would meet the needs of our industry and a few other small fleet operators within the state who could also be recognized under a definition of vocational trucking. The numbers represented by these vocational trucks would be small – far smaller than the original estimate of the size of the construction fleet alone. (SCCA3)

159. Comment: Proposal for Air Resources Board re: Construction Industry Low- Use Exemption: Definition of construction trucks may include but are not limited to vehicles over 14,000 gross vehicle weight rating (GVWR) that are:

- Bucket lift truck, Drill rigs, Dual engine street sweepers (construction cleanup only), Dump trucks Single Body, Dump trucks Tractor Units, Support Trucks - Single Body (mechanics, fuel, lube, tire, welding, etc.), Water trucks, Low-boy heavy transport, Ready mix concrete, Concrete pumps, Single-engine mobile cranes and
- Trucks equipped with a Power Take-Off (PTO) unit – i.e. ready mixed concrete mixer, concrete pumping trucks, single-engine cranes, etc. (PTO usage would be reported separately and allowed to not exceed 500 hours)
- Trucks outfitted with a service body (i.e. non-payload carrying) or specialized equipment—i.e. welding equipment mounted on the truck body, etc.
- Trucks operated in a fleet that includes off-road equipment—(i.e. trucks carrying counterweights and other components of an offroad crane; low-bed trucks used to deliver heavy equipment to a job site, etc.)
- Additional Miscellaneous Construction Truck Types (typically small populations of specialty trucks): Asphalt; Bridge inspection; Chip spreader; Digger derrick; Flatbed; Flusher; Highway specialty (cone, paint-stripper, sign, etc.); Knuckleboom; Hot Oil; Hydro Seeder; Platform lift; Reel carrier; Stone ejector; Sewer rodder; Sheet rock/wallboard; Snowplow; Spreader; Stake bed; Telebelt; Vacuum.

Additional requirements to claim the exemption could include a contractor license or have equipment registered in the D.O.O.R.S. program; additional registration, reporting, for the vehicles in the low use exemption category including vehicle

model, age, horsepower and annual mileage. Among the considerations regarding this request would be the number, type and annual mileage of trucks qualifying for this exemption.

We propose that the ARB grant a two year compliance extension for fleets operating under this provision to allow time for complete registration and reporting by the regulated industry. This would settle the questions surrounding the potential emissions, size of the fleet, requirements of the rule and allow time for additional amendment if necessary. We believe that ARB and the regulated industries should continue to work in a formally established group, based on mutual cooperation and collegial manner to implement and refine the provisions of this amendment to the on-road heavy-duty diesel truck rule. (CIAQC1) (CIAQC2)

160. Comment: We have provided staff with a simple one-page proposal providing a small bit of additional relief through increasing low use exemption for construction trucks. We believe this exemption will actually not affect your emissions in any significant way. Today, we and your staff find ourselves in substantial agreement on the size of the construction fleet. We, however, have differing estimates of potential low-use activity. We propose we use the two-year relief in the amendments through registration and reporting, substitute real data for estimates, models, and inventories. At that point, we'll all know if additional relief from our low-use proposal will add to your environmental emissions envelope, subtract from it, or as we believe, be emissions neutral. Please direct staff to implement this request. (SCCA1)

Agency Response: Staff has made changes to the regulation that provide more time for all fleets and for the construction industry without compromising the emissions reductions necessary to achieve attainment with NAAQS. The low-mileage construction truck provision was expanded at the direction of the Board to provide additional flexibility while preserving the emission benefits of the amended rule and meeting the SIP commitment. Because the emission margin had already been utilized for the amendments to the regulation, any emissions increases resulting from the increased flexibility for construction trucks had to be offset. This change was made in conjunction with changes to the engine model year schedule to require heavier trucks with 1996 and 1997 model year engines to be retrofitted by January 1, 2012. Information about the methods used to calculate the inventory is available in Appendix G of the Staff Report[19] and on the AB 1085 compliance website for the Truck and Bus rulemaking: http://www.arb.ca.gov/msprog/onrdiesel/ab1085compliance.htm.

The mileage limits and the 9000 truck threshold that determines how many trucks could be approved were necessary for the modification to remain emissions neutral and could not be higher whether it is for construction trucks or any other group of trucks. No additional trucks could be approved regardless of the number of construction trucks

[19] See Appendix G to the Initial Statement of Reasons for Proposed Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation, California Air Resources Board, Mobile Source Control Division, Heavy-Duty Diesel Implementation Branch. October 2010.

identified in the inventory data. The inventory was used to estimate emissions, but the 9,000 truck limit applies regardless of the industry type eligible for the extension, which includes nearly all trucks owned by contractors and six truck body types owned by any business. The provision, however, is not intended to cover every vehicle in companies that support the construction industry. That would require an increase in the overall limit of eligible vehicles or would reduce the number of trucks that contractors could include in the provision.

The emissions increases from delaying compliance for low-mileage construction trucks and adding the new credit for the early addition of newer vehicles is offset by the change to require 1996 and 1997 model year engines to have PM filters starting January 1, 2012. The original staff proposal would have delayed compliance for 1996 and 1997 model years engines until 2016. Therefore, staff set January 1, 2016 as the expiration date to remain emission neutral.

161. Comment: The rule will present challenges and hardship, particularly given the reduced capital available and dim forecasts for future growth in the construction sector. The biggest difficulty for most fleets is the bunching of PM filter requirements between 2012 and 2014. Essentially, this is one area where the rule has not changed. It still presents a huge cost burden within a relatively short time, particularly given that it impacts all vehicles in a fleet. Proposed solutions:

Additional delay or expanded low-use mileage exemption for vocational trucks in the construction and construction supply industries. These include concrete mixer trucks that deliver a product, and water, fuel/lube, and mechanics trucks that serve plant and construction sites. These are vehicles that travel 15,000-20,000 miles or less in a year. The cost of compliance is far greater relative to the PM impact of these low-mileage trucks.

- Increase the threshold for the lower weight class to 33,000 lbs.
- Provide an early retirement credit in the regular BACT compliance path.
- Spread out the initial PM filter compliance dates to 2017. (AARMC)(CCIMA1)(CEMEX1)(PRMI)(SYAR)

Agency Response: Staff has made changes to the regulation that provide more time for all fleets and for the construction industry without compromising the emissions reductions necessary to achieve attainment with NAAQS. The low-mileage construction truck provision was expanded at the direction of the Board to provide additional flexibility while preserving the emission benefits of the amended rule and meeting the SIP commitment. The response to Comment 160 provides the rationale for the limits on the number of eligible vehicles and on the miles they can operate to qualify for the provision.

Staff cannot accommodate the commenters request to expand the weight rating threshold for lighter vehicles from the current limit of 26,000 pounds (the GVWR of Class 6 trucks) to 33,000 pounds (the GVWR of Class 8 trucks). The amendments that removed the PM filter requirements for these lighter vehicles use a GVWR cutoff of 26,000 pounds because they represent a smaller portion of the emissions inventory.

Furthermore, because commercial licensing requirements do not apply to lighter trucks, it makes sense to set the weight rating the same so that they could be easily identified. The PM emissions impact of the Class 7 and Class 8 trucks is much greater because they transport heavier loads and operate more miles than the lighter trucks. Class 7 trucks are usually part of fleets with heavier trucks and they normally compete with heavier truck fleets that operate in the same industry. They are expected to have similar compliance costs because the effect of the regulation would be similar for businesses that compete with each other in providing the same service.

The downsizing credit, referred by the commenter as early retirement credit, was designed to be used only in the phase-in option, which requires a percentage of the entire fleet to meet compliance each year. However, the model year schedule requires the installation of PM retrofit filters for 1996 to 2006 model year engines between 2012 and 2014 and requires pre-1996 model year engines to be replaced in 2015 and 2016. If the downsizing credit is allowed to be used in the model year schedule option, a number of fleets would be able to defer cleanup of the model year that is supposed to have PM filters and would postpone all cleanup until 2015 or 2016. This would result in zero emission benefits to meet the 2014 SIP and would back load all compliance requirements in one or two years, which is counter to the goal expressed by the commenter. This also results in an unfair competitive advantage for fleets that happen to have a different model year distribution. Therefore, the downsizing credit is limited to the phase-in option.

The PM filter phase in option and the engine model year schedule were both developed to bring most of the heavy duty diesel vehicles into compliance before 2014 to meet the federal air quality standards. Delaying compliance dates would delay emission reductions needed to protect public health and would jeopardize meeting the SIP commitments.

162. Comment: I ask that you seriously take into consideration the fact that not all trucks are created equal. Our diverse fleet of construction (vocational) trucks experience very low use compared to those drive all day long or even around the clock. The vocational trucks I am referring to usually drive from our office/yard to job sites within a 50 mile radius and are parked on the job all day with the engine off. These specialized trucks are essential to our operation and can last more than 20 years due to the low mileage they are driven. Many of these specialized trucks are equipped with bodies or attachments that are very expensive to transfer to a new replacement chassis which adds to the total replacement cost that your staff does not understand. Trucks that are equipped with just a fifth wheel hitch are very economical to replace, unfortunately we only have one of these trucks. We simply cannot afford to replace or even retrofit our trucks unless business improves drastically before we are faced with compliance deadline. (DCCI)

Agency Response: Staff recognizes the cost of transferring a body to a replacement chassis and included this cost as part of the economic analysis in the 2008 staff report and in the cost estimates for the amended rule in 2010. The first replacement requirements are delayed until 2015 and if using the PM filter phase-in option, no replacements are required until 2020. With the PM filter phase-in option, fleets have the

flexibility to determine which vehicles to equip with PM filters or whether replacements should be part of the compliance strategy. Until 2020, neither compliance option requires replacements of engines that are less than 20 years old, which is around the typical useful life cited by the commenter. Also, both compliance options allow for used truck replacements to meet the final requirements.

Fleet owners can delay compliance for low-mileage construction trucks and can phase-in PM filters from 2014 to 2016 and delay replacements until 2020 or later if operated less than 15,000 to 20,000 miles per year, as described in response to Comment 157,

163. Comment: The recession in construction has taken a severe toll on our company. Since this recession began, we have gone from 390 employees to 24 employees. The changes to the on-road and off-road diesel emission regulations will be a step in the right direction towards recovery in construction. It is our hope to secure more help in construction for On-Road Diesel. It is imperative that you increase the low-use mileage exemption for construction to 15,000 miles per year. With the onset of the recession and the decline in work, many of our on road vehicles have remained in our yard and many more are often stationary at the job sites, so they are a very small part of diesel emissions. (MCOOP)

164. Comment: The recession in the construction industry has greatly hurt our company. We have seen our payroll dwindle from over 150 employees to fewer than 50 employees. The changes to the on-road and off-road diesel emission regulations are a big step needed to keep us in business, but they are not enough. I urge you to increase the low-use mileage exemption for construction to 15,000 miles per year. (WCDI)

165. Comment: Our company has been greatly hurt by the recession in construction. We are a small company trying to survive. The changes to the on-road and off-road diesel emission regulations are the minimum needed to keep us in business. We hope for more help in construction for On-Road Diesel. We need you to increase the low-use mileage exemption for construction to 15,000 miles per year. (DLOREN)

Agency Response: See the response to Comment 157 for a detailed description of the low-mileage construction provision. These changes were incorporated as part of the 15-day changes where an extension is provided for dump trucks that operate less than 20,000 miles per year and other eligible construction trucks operate up to 15,000 miles per year.

Several commenters had indicated that their businesses had declined due to recession, and many of their vehicles were not being used. Staff expanded the retirement credit, now referred to as downsizing credit, by extending the delay until 2016 instead of 2014 and modified the credit to allow vehicles that are not being used and are registered as non-operational to be treated as if they are no longer in the fleet in determining the credit. Fleets that downsize either by retiring their vehicles or by not operating their vehicles registered as non-operational can now reduce their percent requirement by the same percentage they downsize. Using this credit, fleets can delay their compliance requirements and conserve capital.

166. Comment: We are 100% supportive of concepts for additional relief for vocational trucks submitted by the Construction Industry Air Quality Coalition (CIAQC) and others, particularly further reprieve for "low-use construction trucks." We feel this relief is consistent with the direction previously provided by the Board, and strongly urge its adoption now. Evidence brought forth time and time again has shown that the construction industry is truly experiencing unprecedented economic struggles and relief is necessary for compliance.

Based on recent 2010 estimates by CIAQC (based upon the 2002 Vehicle Inventory and Use Survey), the entire universe of dump trucks (both single body and dedicated-use tractors) in California is approximately 34,000. A "low-use construction truck exemption" set at 20,000 miles/year would include 8,500 of these dump trucks. This leaves approximately 25,500 dump trucks that will be not be directly aided under such an exemption. As a supplement to a "low-use construction truck exemption", we also submit the following dump truck- specific concept for the Board's consideration:

> An exemption from the Truck and Bus Rule until 2020 for no more than 25,500 "Dump Trucks." "Dump Truck" means "a truck with a GVWR greater than 33,000 GVWR with a dump body that is owned by a private company whose primary business is the hauling of aggregate construction materials (i.e. sand, gravel, rock, dirt, etc.) to, from, or at a construction site."

It is our belief that this supplemental dump truck concept is both warranted and necessary for several reasons. First, while a low-use construction truck concept may be of significant value to a number of contractors who also utilize dump trucks for incidental use, the bulk of CDTOA's membership solely operate dump trucks and typically operate these trucks at a slightly higher annual mileage. In general, a dump truck must be operated 30,000 miles at a bare minimum to maintain solvency. (CDTOA1)

Agency Response: As we explained in the response to Comment 160 the compliance extension for construction trucks had to conform with the Board's directive to staff to ensure that our overall SIP commitment was met. Staff could not make the compliance extension available to 25,500 dump trucks as suggested by the commenter and still meet the State's SIP commitment. For the same reason, the mileage threshold could not be increased to 30,000 miles and dump trucks between 26,000 and 33,000 lbs GVWR could not be granted the extension as suggested by the commenter. A higher mileage threshold would require that the compliance extension be restricted to fewer trucks to meet the SIP commitment.

167. Comment: For construction, two really important concepts are the bubble concept because dual regulations are hurting construction a lot. And the low mileage on-road regulations for construction, because we do have a lot of equipment that do have very little mileage, but go over the thousand miles a year. (CPASC)

Agency Response: The “bubble concept” refers to a method that allows credits earned from action taken to reduce emissions from off-road to be used toward compliance with trucks and vice versa. See the response to Comment 131 for a summary of the excess PM VDECS credit provision in the Truck and Bus regulation. The off-road compliance option is described in the Off-Road regulation available on ARB’s website for the Off Road rulemaking http://www.arb.ca.gov/regact/2010/offroadlsi10/offroadlsi10.htm.

The new compliance extension for low-mileage construction trucks was modified to address stakeholder’s comment and is described in the response to Comment 157. Also, see the response to Comment 160 for the rationale for the usage limits and limits on eligible vehicles included in the compliance extension.

168. **Comment:** I'm with the Concrete Pumpers of California. In our industry, five, six years ago, over 1,000 new concrete pump boom trucks were sold in the United States of America. One year ago, for which the accurate records exist, there were less than 35 for the United States. And in California, that's probably down to about two or three trucks as far as I could find out. So, yeah, we've had a little bit of a downturn in our economy. The California Legislative Analysts Office says the overall California economy won't recover start to recover until 2013. And as some of the previous people have mentioned, construction in homes won't probably go for another -- until another five or six years. So our guys are going to stay busy doing nothing.

    Your amended rules to give us 15,000 miles of travel does nothing for us should business come back. And I base that on taking 12,000 miles or 15,000 divided by each month. Divide each month by 20 working days, and you get a working radius of about 30 miles. Or that means we could travel maybe from Oakland to San Francisco should there be a job. The numbers just don't work out for us. (CCP1)

Agency Response: The low-mileage construction trucks provision provides compliance extension for many vocational trucks including concrete pump boom trucks. See the response to Comment 157 for a summary of the compliance extension for low-mileage construction trucks. Staff designed the provision with the intention to assist fleets that run lower miles and probably have reduced income. If the truck usage increases, the business income more than likely would have increased also, and fleet owner would then be in a better position to comply without assistance.

169. **Comment:** In our case, with concrete pumps, we use a transfer case so we are classified as only incidentally traveling on the highway. When we get to the job site, we go into a transfer case mode, and we cannot move until we're finished placing the concrete. And then placing of the concrete, we use about a third of the horsepower that we use for motion of the truck on a highway because our hydraulic systems are rated at that. Our odometer turns and shows mileage while we're standing still. I think it's very important that -- and there is a number of vehicles that fit this category, whether they're moving and storage, ready mix trucks, trains, all sorts of equipment that has a very unique application. And the truck is only a small part of the thing. And basically the truck is moving -- the sole

source of income is not the trucking; it's moving the item that's involved. In our case, the truck is incidental. It's maybe 20 percent of a total value of a million dollar piece of equipment. We have a $100,000 truck in there. So I think that we really should have a vocational category. It makes more sense. It cleans up a lot of problems. And, you know, just because we're not off highway, we're not truly highway, and I think that a lot of the considerations for mileage and emissions and all of that would change considerably. And also the average life expectancy of these vehicles changes dramatically due to technology plus usage. In our case, in the construction industry, we know we are off by 65 percent. So getting a 30 percent reduction is incidental when we're down 65 percent. And of that 65 percent, we're only using about 30 percent of our horsepower probably 80 are 90 percent of the time. We travel very little. We spend a lot of our time hopefully when things get better on a job site performing a function. That's how we make money, not going down the highway. (CCP2)

Agency Response: Trucks with concrete placing booms, or concrete pump trucks as they are more commonly known, are included in the list of vehicles that could qualify for the new compliance extension for low-mileage construction trucks. See the response to Comment 157 for a summary of the compliance extension for low-mileage construction trucks.

The annual mileage limit for concrete pump trucks is 15,000 miles. If an owner is concerned that the mileage limit could be exceeded due to the odometer continuing to record miles while the truck is stationary, mileage readings taken from a properly functioning hubodometer on January 1 and December 31 of the compliance year may be used to demonstrate compliance with the mileage requirement. As defined in the regulation in section 2025(d)(37), the hubodometer must be non-resettable, have a serial number, and a lock-out feature that permanently prevents tampering. If a hubodometer is used in lieu of an odometer, the fleet owner must also report the serial number for each hubodometer used or replaced.

170. Comment: I've spoken to you in the past about the mobile crane, and you've actually given us some help. And we appreciate staff's effort and the things that you have done for us. There are a couple of things, however, that need to be addressed, and the on-road rule is one of them. These endangered species that I speak about, the mobile crane, which is very imperative to keep our society moving because we need it not only for building new buildings but we need it for maintaining and for emergency services when we have things like the tanker truck that exploded on the Oakland Bridge. These mobile cranes require trucks to haul auxiliary equipment, counterweights, boom sections and jigs. So it's very imperative that we be able to carry that stuff. And these trucks get very low use. We have submitted a letter to the workshop down in El Monte. I think it was in May of last year. I think I talked to Tony about it. And we would like to ask your consideration for including low use equipment of these trucks that haul these counterweights into a low use equipment. Currently, the letter that I submitted asked for a 20,000 mile use for low equipment. There are other pieces of low use equipment that should be considered in that request. But for our main source of

work is the equipment that hauls these auxiliary parts for our cranes. So if you could help us with that, we think that would be a big help. (SCRANE)

Agency Response: Single engine cranes with a load rating of 35 tons or more as well as tractors exclusively pull low-boys trailers are included in the list of vehicles that could qualify for the new compliance extension for low-mileage construction trucks. The list is not meant to be comprehensive and does not cover every type of vehicle.

The definition allows for the eligibility of many specialized vehicles that perform specific functions related to the construction industry provided the truck is owned by a company that holds a valid license issued by the California Contractors State License Board. So trucks that haul auxiliary equipment such as counter weights, boom section or jigs could qualify as low-mileage construction trucks if the business is licensed under the California Contractors State License Board.

Mobile cranes used in emergency operations could exclude the usage accrued in an emergency event from the annual vehicle usage when determining compliance with the low-mileage threshold for the low-mileage construction truck provision. Mileage and hours of operation may also be excluded in determining eligibility for the low use vehicle exemption. The response to Comment 186 describes the provision for emergency support vehicles for more detail.

171. Comment: Our members' fleets are primarily local use vocational trucks. These include concrete mixer fleets that deliver within a 15 mile radius, drive less than 14,000 miles in a year, and operate about 1,400 hours per year (national averages). They also include water, fuel/lube, and mechanics trucks that operate primarily at a plant or construction site. These trucks are used for local supply of materials and support local business and construction. They typically have longer service lives than over-the-road long haul trucks, can be difficult to retrofit, and don't have the engine revolutions to make retrofits effective. (CCIMA1) (AARMC) (CEMEX1) (PRMI) (SYAR)

Agency Response: At the December 2010 hearing, the Board directed staff to develop an additional compliance option for construction trucks to provide additional flexibility. In response, staff developed a low-use construction truck provision to allow a delayed phase-in of PM filters from 2014 to 2016. The response to Comment 157 summarizes the provisions for low-use construction trucks. With respect to retrofit performance for short-haul vehicles, see the response to Comment 96. The construction truck provision is not intended to cover every vehicle in companies that support the construction industry. That would require an increase in the overall limit of eligible vehicles or would reduce the number of trucks that contractors could include in the provision. The rationale for setting the limits on construction truck provision is explained in the response to Comment 160.

p) Tow Trucks

172. Comment: On behalf of the membership of the California Tow Truck Association (CTTA) we are writing to express our continued reservations with the California Air Resources Board (ARB)'s Truck and Bus Regulation.

Founded in 1969, the California Tow Truck Association represents over 1,000 towing companies within the state of California, providing vital services to the state's motoring public. Our members employ approximately 15,000 people across the state. Unfortunately, the current poor economy continues to wreak havoc on our members' companies.

While the recent proposed amendments may provide some much needed relief for our membership, without even further delay or modifications the regulation will have dire financial implications upon our industry, at a time when our industry can least afford it. The economic reality will be a shortage of tow trucks being able to respond to minor and major traffic incidents throughout the state. Tow Truck response times to these incidents will increase causing increases in the amount of time thousands of vehicles will sit idling in traffic gridlock. As a result, health considerations will be compounded and the safety of our state's motoring public will be jeopardized. (CTTA1)

173. Comment: As we have discussed on many occasions with ARB Staff, heavy-duty tow trucks of 33,001 GVWR and above continue to be particularly impacted by the regulation, as they tend to be traditionally driven for only a low number of miles each year (thus tend to be long-lasting, yet older model trucks) and, as specialty trucks, are extremely expensive to replace. Replacement costs for these specialty trucks range between $325K to $750K, very similar to the replacement costs for emergency vehicles such as firefighting apparatus. Unfortunately the rule does not differentiate between a long-haul truck driving 200K miles/year and such a heavy-duty tow truck driven only 30K miles/year; the schedule for replacing both trucks is based solely on its model engine year. Furthermore, retrofit devices are oftentimes impractical as modification to these trucks would cost far more than just the retrofit device installation. Bodies would have to be modified to create space to physically enable installation. This process would be both costly and time consuming resulting in excessive out of service time.

It has always been our argument that these heavy-duty low-mileage vehicles are utilized to clean-up the most disastrous accidents on our roadways as part of the CHP and local law enforcement tow rotation lists. With so few miles driven and such a huge cost of replacement (hundreds of thousands of dollars in specialty equipment), these trucks understandably tend to be replaced at a slower pace than smaller tow trucks. Our members have mortgages on these trucks, and their business model is based on the assumption that they can get decades of service out of the vehicles. Requiring them to replace these trucks ahead of schedule will have one of two direct consequences – get out of heavy-duty towing completely or take a massive financial risk in an unstable economy by purchasing a new heavy-duty tow truck to meet the rule requirements. Either way there's a strong likelihood there will be less heavy-duty tow truck operators in California. As such, roads will remain uncleared, traffic will back up, vehicle emissions will increase, and our economy and environment will be further harmed. It is ironic that the very air the rule is designed to clean will actually become even more polluted. We urge you to strongly consider concessions for these heavy-duty tow trucks, as well as delaying the rule until California's economy fully recovers. (CTTA1)

Agency Response: We acknowledge the significant impact of the recession on California's economy and on companies that rely on diesel engines – whether it is trucking and transportation businesses, construction companies, or airlines. Overall, businesses' revenues and employment are down, and this has reduced the ability of many fleets to make the investments needed to comply with the regulation. In consideration of the economy, the regulation was amended to provide more time and to lower compliance costs for affected fleets while preserving emissions benefits and protecting public health.

The amendments reduce the compliance costs of the existing regulation for all affected fleets by reducing the number of required PM filters, providing a longer period of time for retrofitted trucks to operate before having to upgrade to a 2010 MY engine or equivalent, delaying truck replacements and extending various credits. Changes to the credits and other special provisions provide further flexibility and reduce the annual compliance requirements. Further delays of the regulation could not be provided without impairing the State's ability to meet national ambient air quality standards (NAAQS) and diesel PM health risk reduction goals.

The actions an individual company would have to take to comply with the regulation would depend on factors such as the size of the fleet, the vehicle types, vehicle age, and normal vehicle replacement practices. From discussions with tow truck companies and CTTA representatives, staff obtained some information about the characteristics of tow truck fleets. We understand that on average, tow truck fleets have more light duty vehicles (those with a GVWR less than 26,001 lbs) than heavier tow trucks. The amended regulation eliminates PM filter requirements for this lighter class of vehicles, delays the start of the replacement requirement to 2015, and limits the replacements to engines 20 years old or older until 2020. From 2020 to 2023 all engines need to be upgraded to 2010 model year engines or equivalent. We also understand that although most tow trucks travel relatively few miles, most tow truck companies replace these lighter tow trucks at a rate ahead of what the amended regulation would require. Therefore, the amended regulation is not expected to result in changes to the normal vehicle replacement practice for nearly all lighter tow trucks and there will not be a reduction of the numbers of lighter tow trucks available to respond to traffic incidents throughout the state.

For heavier vehicles, fleets can defer all replacements until January 1, 2020 by using the PM filter phase-in option. Most tow truck fleets would have no early replacements until 2020 and at that time could upgrade to 10 year old replacements to comply. In addition, if a suitable PM retrofit is not available, no other action is required to meet the PM reduction requirements until 2018.

Small fleets with heavier trucks with a GVWR greater than 26,000 pounds also have the option to delay the initial PM filter requirements until 2014 and can defer engine replacements until January 1, 2020 or later based on the engine model year.

Staff believes that the flexibility provided in the regulation and the reduced requirements of the amended regulation significantly lowers the compliance costs for all fleets and are not expected to have a negative effect on the level of tow truck support on our roadways.

q) Agricultural Fleets

174. Comment: The Clean Fleets Coalition appreciates this opportunity to submit this information concerning specialty equipment used in lettuce harvesting in California. In support of this request to add the lettuce harvesting truck (LHT) as a "specialty agricultural vehicle", we offer:

Unique function: As documented in the attachment to this letter, the LHT is very similar to the cotton module movers, which is currently defined as a "specialty agricultural vehicle."

Small inventory: We believe that there are less than 100 LHT's in the state and the only truck manufacturer (FABCO, formerly of San Leandro) is no longer in business, making near-term replacement unlikely.

Geographic considerations: This harvesting equipment operates almost entirely within the Central Coast. The Board has recognized that this "NOx Exempt Area" does not typically have the same localized health risk and also merits a less aggressive compliance schedule.

TRUCRS reporting data: We understand from Board staff that the 2010 reporting reveals that the expected statewide limit of 2,200 specialty agricultural vehicles has not been exceeded. It appears that there remains room within the current cap to accommodate our request. (CFCOAL1)

175. Comment: We have a vehicle that we are requesting that you would place in the specialty agriculture category. Our vehicle is a vehicle that can't be bought. They're not made anymore. They're a short wheel base for sharp turning in the field. They have 80-inch track. They're wider than a regular truck so that the tire doesn't fit in the lettuce furrow. They also have a self-loading bed on them that they pack up to the harvesting machine, the load is transferred off the harvesting machine onto our truck and taken to a processing plant. We are a family business. We can't find a truck to replace this in a short amount of time that you're giving us. If you can get into the specialty ag category, they will give us the time to start either manufacturing our own trucks or finding a manufacturer that would do it for us. (MASBI)

Agency Response: Lettuce harvesting trucks have been added to the list of agricultural vehicles identified in section 2025(d)(54) as eligible for the specialty agricultural vehicle exemption. This revision was made available for comment with the May 19, 2011 15-day changes. Expanding the types of trucks that can quality for the specialty vehicle definition to include lettuce harvesting trucks does not result in increased emissions because the number of specialty truck exemptions is capped by the regulation. Therefore, the total number of specialty truck exemptions cannot increase as a result of the change.

176. Comment: We request for agricultural vehicles that the out-of-state miles not count against the limits established in "Table 5: Agricultural Vehicle Mileage

Limits." We request that the same proof of operation deemed acceptable by your staff for the phase-in option be allowed (i.e. "Records could include IRP records, GPS tracking records, or DMV or law enforcement permits.") (CFCOAL1)

Agency Response: Staff does not believe it is appropriate to change the method of determining compliance with the agricultural vehicle mileage limits. The total annual mileage accrued by an agricultural vehicle other than a specialty agricultural vehicle should continue to be based on the January 1 odometer readings reported for each calendar year as required by section 2025(r)(14)(h). The mileage limits were introduced for agricultural vehicles that are driven infrequently, are needed for peak periods such as during harvest, and are kept a long time because of their low use.

Agricultural vehicles that operate more than the allowable agricultural vehicle mileage limits are more likely to be replaced more frequently as a normal course of business than trucks that are used periodically. Agricultural fleets that operate in and out of California have the same opportunity to use the agricultural vehicle provisions and have a comparable business model. Applying the mileage limits to California miles alone would create an unfair economic advantage for out of state fleets that use their trucks in the same way as fleets that operate exclusively in California. In addition, out of state fleets could easily operate multiple trucks in California to stay below the mileage limits to avoid clean-up. This would result in an unfair competitive advantage for out of state fleets compared to in-state fleets.

The regulation's low use exemption (which is distinct from the agricultural low-mileage exemption) applies to all trucks that operate fewer than 1,000 miles inside of California and does not consider miles driven outside of the State. Fleets that operate low-use vehicles inside and outside of California must provide records, upon request, from an electronic tracking system or some other documentation of the vehicle's operation and location.

177. Comment: Despite the time, effort and, for some of our most active members, personal cost involved in travelling to meetings, and preparing data for CARB staff, we believe that the amendments before you for vote on December 17 will likely require future meetings, further amendment, and, during the implementation period, a great deal more work on all of our parts to make the Diesel Truck Rule work efficiently and cost-effectively in future years.

Proposed changes to the Diesel Truck Rule are indeed making the rule more workable, and indeed – specifically in the area of the proposed "Log Truck Provision" and certain of the agriculture vehicle provisions -- reflect concerns expressed by our industry about the specific seasonal restraints, physical environment, and cost factors faced by our industry (see below for a review of these factors).

It is the position of Associated California Loggers that while these amendments will indeed offer our membership (logging companies, log truckers, log road builders) more time, more options, and more flexibility with regard to the Diesel Truck Rule, we remain hamstrung by economic problems in the California logging economy that look to take years to resolve. The Diesel Truck Rule, however improved by

these amendments, must continue to be considered in terms of its workability and its cost. This is the beginning, and not the end, of that implementation process.

Associated California Loggers appreciates the work done by CARB staff in developing this specific provision, particularly with regard to the option being reportable starting in January 2012 (thus allowing all of 2011 for our members to receive education and training on how to use that provision and others within the rule); with regard to the requirement not beginning until 2014; and with regard to the "10%" turnover rate contemplated by the provision, starting in 2014." (ACLOG1) (ACLOG2) (ACLOG3)

Agency Response: Staff has made every effort to meet with affected stakeholders throughout the state and country during the rulemaking process. Staff will continue to outreach to members of the affected public through public speaking engagements, the Internet, informational flyers, media interviews, association meetings, and a variety of other sources of communication.

Staff will continue to work with industry representatives and associations on additional methods to educate stakeholders and will continue to work with industry groups to inform their members about the regulation. Staff has created a Truck Regulations Advisory Committee comprised of industry members to address rule implementation issues and to get feedback on how to improve future outreach efforts. This effort will include holding public workshops, seminars, and individual meetings throughout the state. Staff is creating an online reporting system, as well as other tools, to assist fleets in determining what compliance options are available and to develop their own compliance plans.

178. Comment: Forestry vehicles have already been given recognition in the rule as "unique vehicles" which cannot be readily replaced in the new or used-truck market, and which have specific use requirements – heavy duty frame rails, rear suspension, 18-speed transmission, rear differential axle set, and severe service cab. These unique vehicles are used at different altitudes, bearing different weight loads, often on steep or twisting roads.

To some extent, these matters specific to the timber industry are now being addressed in Diesel Truck Rule amendments, and again, we thank you. At the same time, we must all continue to understand how these specific requirements must be addressed in the actual implementation of the rule, for instance, in terms of the workability of filters given different weight loads and uphill/downhill driving conditions, or our need to put on more miles than the "low mileage" range designated by the Diesel Truck Rule, but within a shorter driving season. (ACLOG1) (ACLOG2)

Agency Response: The Log Truck Phase-in Option allows dedicated log trucks with a GVWR over 33,000 lbs that exclusively transport logs and have permanently attached log bunks to follow a separate replacement schedule. Such trucks need to be replaced with trucks with 2010 model year engines at a rate of ten percent per year beginning in 2014, and no retrofit PM filters are required.

The regulation continues to contain several provisions that allow flexibility and opportunities to delay compliance should retrofit PM filters not be available or unable to work on various vehicles, including log trucks that do not use the log truck phase-in option. Vehicles that cannot be retrofit can receive annual extensions until 2018 as described in response to Comment 134 about the unavailability of a suitable VDECS.

r) Two Engine Street Sweepers

179. Comment: Section 2025(n)(2), Requirements for Two-Engine Sweepers. LLNL recommends that Tier 0 auxiliary engines (greater than 50 horsepower) on two engine sweepers be allowed to operate up to 200 hours per year after January 1, 2014. This limit would be consistent with the low use limits for engines covered in the Large Spark Ignition Engine Regulation and in the In-Use Off-Road Diesel Vehicle Regulation. (LLNL)

Agency Response: The amended regulation continues to limit operation of any tier 0 engine in a two engine sweeper after January 1, 2014 to no more than 100 hours per year. This aspect of the regulation was not changed. Tier 0 engines have no emissions controls and have significantly higher emissions than newer engines that were certified to an emissions standard.

Prior to the initial adoption of the Truck and Bus regulation, the auxiliary engine of street sweepers (portable engines) were subject to the portable engine air toxic control measure that required Tier 0 engines to be retired before January 1, 2010. The low-use exemption for portable engines is 80 hours per year. With the adoption of the Truck and Bus regulation in 2008-2009, the Board moved coverage of both the propulsion and auxiliary engines of two-engine sweepers into the regulation so that owners would be subject to the requirements of just one ARB regulation. At that time, the Board decided that the auxiliary Tier 0 engines would be permitted to operate no more than 450 hours per year starting January 1, 2010 until January 1, 2014 and no more than 100 hours per year thereafter. The initial 450-hour limit was provided to allow owners time to meet the fleet requirements for both the propulsion and auxiliary engines. The Truck and Bus regulation and the Off-road regulation affect different equipment, and the costs and other emissions considerations were part of the Board's decision increasing the hours for off-road equipment and not for trucks.

s) Yard Trucks

180. Comment: The proposed regulation states that yard trucks (yard goats) with on-road and off-road engines are affected by this regulation. During the workshops, staff made the statement that yard trucks can be in the Truck and Bus Regulation or the Off-Road Regulation. NWSC is suggesting that staff clarify the fact that yard trucks can be in both regulations." (NWSC1)

181. Comment: Staff should clarify that yard goats can be operated in both the off- and on-road reg. (NWSC2)

Agency Response: Staff provided clarification in the revised statement of scope and applicability in the modified language made available during the 15 day comment

period. The revised text in section 2025(b) of the regulation states that yard trucks with off-road engines used for agricultural operations are subject to the requirements of the Truck and Bus Regulation. This category of yard trucks are the only ones that are not already subject to an in-use regulation. All on-road yard trucks, except those that are subject to the cargo handling equipment regulation, that are originally designed to be registered to be operated on public highways regardless where they operate, are subject to the Truck and Bus regulation and are not subject to the Off-Road regulation. Off-road yard trucks with off-road engines that are not used for agricultural operations are subject to the requirements of the Off-Road regulation, and if operated at ports, could be subject to the cargo handling regulation.

182. Comment: We especially note improvements made to rule with respect to delayed implementation dates of the Best Available Control Schedule and the addition of "yard dogs" to the agricultural vehicle provisions. (WGROW)

Agency Response: The definition of an agricultural vehicle is modified in section 2025(d)(E) of the amended regulation to clarify that a yard truck operated at agricultural processing faculties that are not owned by a farming business will qualify as an agricultural vehicle. This was appropriate because many yard trucks used in agricultural operations are often operated at processing facilities. Specific language was also added to clarify that yard trucks that meet the definition of a vehicle that transports a load of unprocessed crops between the farm and the location of the first processing would be eligible to use the agricultural vehicle provision. The amended regulation also clarified that trucks making interim movements between the farm and the first-processor, including yard trucks, would be eligible for the provision.

t) Motor Home & Personal Use Exemption

183. Comment: I own a 2003 Freightliner Specialty Vehicle that I purchased from an RV dealer for pulling my personal 5th Wheel RV trailer. It was sold as a 4 door heavy duty pickup with a single rear axle and GVWR of 31,000 lbs. This truck is labeled "Not For Hire" and is only used for personal use and not commercial use. My standard pickup truck was not able to safely haul my family and RV trailer so I upgraded to this truck 6+ years ago. I drive it 4 to 5,000 miles a year for RV purposes. It is like new with 32,000 miles. I have no other trucks and would be considered a single truck fleet by CARB as I understand it. To sell the truck or spend $10,000 for DPF on seems extreme and very costly considering the economy and the fragileness of my job right now. Please reconsider the definition of personal use or a reasonable mileage exception, or RV use exception. The vehicle is built by Sportchassis Specialty Vehicles and is used to tow horses or heavy 5th wheel trailers." (BGLID)

Agency Response: The regulation includes an exemption in section 2025(c)(10) for motor homes used for non-commercial private activities. These vehicles are exempt from the requirements of the regulation including any reporting requirements or mileage limitations. The definition of a motor home includes vehicles that exclusively tow a trailer designed for human habitation for recreational or emergency occupancy.

184. Comment: We have a Ford F550 Diesel truck with a GVWR of 17,500 lbs that is used for personal use but because this truck has a flatbed, not a pickup bed, we are subject to these new regulations even though it is used for personal use. We use this truck for our hobby, taking our large model steam engine and cars to local model railroad clubs.

We are very confused by the ARB's logic that makes us subject to these new regulations. The engine in our Ford F550 flatbed truck is the same engine that Ford uses to put the pickup bed on to make their heavy duty pickup trucks that this exemption talks about. This is also the same Ford power stroke engine Ford uses in their F150, F250 and F350 pickup trucks that are exempt from these regulations. Why is there some sort of difference perceived by the ARB because it has a flatbed on it? Because it is a personal use vehicle with a GVWR under 19,500 lbs, it should be exempt under Section 2025, C exemptions, number 13 regardless of the bed type.

We just wanted to comment on this and bring this to the ARB's attention. The exemptions for personal use vehicles with a GVWR under 19,500 lbs need to be redone to allow the same exemption for our personal use flatbed truck that you allow for the oversize pickup trucks that have a GVWR under 19,500 lbs. (PCAR)

Agency Response: The intent of the exemption was to exclude pick-up trucks because they are typically used for non-commercial purposes. Pick-up trucks generally have a GVWR less than 14,000 lbs, and these lighter trucks are not in the scope of the regulation. In some cases, larger trucks are equipped with a pick-up bed and are more commonly used for private or non-commercial use. Trucks that have a service bed or a flatbed are most commonly used as commercial vehicles and not for personal use. Staff chose to use the vehicle configuration to define the exemption for clarity and to simplify enforcement. Allowing an exemption based on the use of the truck rather than its configuration creates substantial uncertainty and makes enforcement more difficult for vehicles that are primarily used for commercial purposes.

The requirements for lighter trucks do not begin until 2015. There is no PM filter requirement and, until 2020, no engine less than 20 years old is affected. It is likely that many truck owners will replace their lighter trucks before the compliance date for the vehicles.

u) Reporting Requirements

185. Comment: Fleets required to report should be relieved of the requirement to report the "engine family" or "engine family name" unless the engine has had a VDECS installed. Where a VDECS is installed, the engine family name is mandatory and fleet owners are encouraged to consult the ARB guidance on proper VDECS selection. [ref. Section 2025 (r)(9) p. A-58] (CFCOAL1)

Agency Response: The engine family identifier and the engine family number is important because it identifies the emissions standard that the engine meets. Engines are certified independent of the vehicles chassis, therefore, the model year of the engine may be different from the model year of the vehicle. For example, it is common

for a 2007 model year truck to be powered by a 2006 model year engine. The only way to verify which engine has been installed in a vehicle is to record the engine family identifier. The engine family is also necessary to determine whether there is a VDEC available for the engine family and it serves to verify the engine model year. Fleets that report can use either the model year schedule or the phase-in option. The engine model year is needed to verify compliance with the model year schedule, and to determine compliance with the agricultural vehicle provisions and the low-mileage construction truck provisions.

In addition, title 13, Cal. Code Regs., Division 3 states that no 1974 or newer diesel power truck may operate in California without an emissions control label affixed to the engine. The emission control label contains the engine family identifier so reporting this information should be readily available.

v) Emergency Support Vehicles

186. Comment: The District is also concerned about the potential side effects of the on-road regulations on the availability of water trucks for dust suppression and wild land firefighting. Frequently, water trucks are the oldest vehicles in trucking and construction fleets. The regulation may result in the retirement of a large number of these vehicles statewide, which in turn will limit dust suppression and firefighting capabilities. (MCAQMD)

Agency Response: Vehicles operating in non-emergency management situations need to comply with the rule like any other vehicle. Many water trucks used for dust suppression support agricultural and construction activities, which may qualify them to use the compliance extension for low-mileage construction trucks and the provisions for agricultural vehicles. Given these compliance options, the emergency support vehicle option and others available to water trucks to reduce their compliance requirements, staff does not believe that a large number of these vehicles will be retired due to the regulation.

The regulation allows the mileage and hours of operation accrued as an emergency support vehicle to be subtracted from the annual vehicle usage when determining compliance with any usage thresholds. This exclusion of accrued mileage and hours applies to usage at the emergency event and during travel to and from the event. It is not applicable to vehicle usage for activities that do not meet the definition of emergency operation in section 2025(d)(22) of the regulation or to vehicles that do not meet the definition of an emergency support vehicle in section 2025(d)(23). The regulation also specifies the documentation – including usage and dispatch records – required to qualify a vehicle's usage as emergency support.

Water trucks used in emergency operations like firefighting could qualify for the provision for emergency support vehicles summarized above. For example, if a water truck is operated a total of 3,000 miles in a compliance year and 2,500 miles were accrued during an emergency event or during travel to and from the emergency event, then the total eligible miles counted towards any usage threshold would be 500, placing the truck in the low-use category with no clean-up requirements. A water truck that is dedicated to emergency support use would have no other usage and would remain

below the thresholds for a low use vehicle. It would therefore be exempt from the PM filter requirements and the 2010 engine replacement requirements.

187. Comment: Loggers also contribute to the prevention of forest fires and the carbon emissions they generate, practicing prevention through thinning and harvesting practices. We fight the fires side by side with CALFIRE when they occur, and our trucks and equipment are required for use in the clean-up of fires after they occur. (ACLOG1)

Agency Response: Logging trucks used in emergency operations like firefighting may qualify for the provision for emergency support vehicles summarized in response to Comment 186. If the logging trucks are used for forest management or other non-emergency activities, they would need to comply with the regulation like any other log truck or other vehicle subject to the regulation.

6. School Bus Requirements

a) School District Budget Limitations

188. Comment: California's funding for school transportation prior to the recent economic downturn only covered 45% of our costs, and in the past two years our funding has been cut an additional 20%. School districts throughout California are reducing school transportation, and in some cases completely eliminating this service. (CASTO1)(WCTA)(CASTO2)

189. Comment: As everyone knows, the state's fiscal condition is in terrible shape. The latest estimate from the Governor Elect is a deficit of $28 billion. We believe the potential action of this board could increase this deficit by over $650 million because the proposed requirements will impose a reimbursable state-mandated program on our school districts.

It should be noted that K-12 education (Proposition 98) has been cut by $6.6 billion since 2007-08. This is an absolute reduction of 13 percent in state and local dollars for education. This is equivalent to cutting the funding for every child in the state by $1,100. The LAO is estimating that K-12 education will not reach its 2007-08 level until 2014-15, the final year that school districts must have installed retrofits on all their school buses.

School transportation state aid has been cut by 20 percent. We do know that there may be additional cuts this year. School districts will be cut by somewhere in the vicinity of 4 percent next year 2011-12. This will be the worse year for school districts. It will be the same year that the ARB regulations go into effect. ARB could not have picked a worse year. The impact of ARB's action will cause school districts to make even deeper cuts in school transportation. You only need to look locally at San Juan school district, which is considering eliminating regular home-to-school transportation. (STC)

190. Comment: We oppose the proposed school bus regulations. Our school district has made devastating cuts. It looks like it is going to get worse in 2011-12 with additional cuts of at least 4% below this year's level, after last year's 20% cut. These regulations will cost us another $2 million. We simply do not have any money to pay that. (SUHSD)(OUSD)(PUESD)(GVUSD).

191. Comment: Our school district has made dramatic cuts. It appears that 2011-12 budget year will be worse with additional cuts of at least 4% below this year's level. Your regulations will cost our school district another $4 million to replace 25 remaining non-compliant 1979 to 1993 school buses that are not able to be repowered or retrofitted by 2018. (KCUT)

192. Comment: Our agency and its member districts have made devastating cuts. It looks like it is going to get worse in 2011-12 with additional cuts of at least 4% below this year's level. Your regulations will cost us another $2.9 million. We simply do not have any money to pay that. (MPPSTA)

193. Comment: Although these amendments do delay the rules for school transportation, they're still overly burdensome on school transportation. As you know, school transportation has been poorly funded. Before the economic downturn, school transportation received only about 45 percent of what it took to operate school buses in California. The remaining amount the State required us to take out of our school district general funds, more impacting the classroom. In the last couple of years, the State has further reduced our funding by 20 percent. So now the State funding only covers about 35 percent of what it takes to operate school transportation in California. All over the state of California, the impact of that is that school districts are making decisions to severely reduce, restrict, or eliminate school transportation. (CAST03)

194. Comment: We are in agreement with you that we need to update our school bus fleet with new modern buses. Our parents want their children to ride in school buses that have seat belts. However, this is the worst time to impose new mandates on school districts without additional funds. (CASTO1)(WCTA) (MPPSTA)(OUSD)(PUESD)(CASTO2)(KCUT)(GVUSD)

195. Comment: School districts have and will continue to undergo tremendous reductions in funding. This has been especially true of school transportation. The program has been eliminated and scaled back in many school districts. (STC)

Agency Response: Staff recognizes school transportation budgets are being cut as a result of the economic downturn. As such, the regulation was restructured to allow additional time to utilize the most cost-effective compliance option, DPFs, and reduce administrative burdon. The Board delayed the initial compliance date by one year and provided an optional three year delay until 2014 for school buses with engine model years 1988-1993 to allow time for existing retrofit technology to advance. Additionally, the board added credits for electric, hybrid, alternative fuel, and pilot ignition engine school buses and they also reduced the reporting requirements.

Staff continues to educate school districts on the compliance requirements, including the most cost-effective option of retrofitting. Retrofiting a school bus costs $11,000-$15,000, while new school buses can cost at least seven times that amount. School bus fleets can meet compliance requirements at one-seventh of the cost by retrofitting their school buses with PM filters instead of replacing them.

In addition to the regulatory amendment relief, at the December 17, 2010 Board Hearing, staff were directed by the Board to identify potential opportunities for additional funding that will help complete the school bus clean-up. Several actions have occurred to help meet that direction. Assembly Bill (AB) 470 has been recently chaptered and allows local air districts additional flexibility with local AB 923 funds (a motor vehicle fee) to purchase PM retrofits for school buses. ARB has recently received a grant for federal funds to provide retrofits for some school bus fleets and a Supplemental Environmental Project option to assist school bus fleets install PM filters is now available. These changes along with existing funding will help to clean up public school buses in California that still need to become compliant, and staff continues to pursue other avenues of funding for the clean-up of the remaining public school bus fleet.

b) Delay Regulation

196. Comment: ARB's regulations may not improve the health of our children. It may even have the opposite impact. It would be a wiser strategy to wait on the regulations and to work together to obtain additional funds to replace the oldest school buses. (STC)

197. Comment: Our agency and our community urge you to either postpone your hearings until after the Governor Elect has presented his budget proposal, or to postpone your regulations until K-12 education and the state gets back on its feet, or to make all your regulations contingent on available funds. If the funds are not available then we do not want to have to fire teachers or eliminate transportation in order to pay for your regulations. (MPPSTA)(KCUT)(SUHSD)(OUSD) (PUESD)(GVUSD)

198. Comment: We respectfully request that the Board delay the implementation of these rules altogether for school transportation until funding is available for us to be able to afford bus replacements -- fully funded bus replacements and trap replacements. (CAST03)

199. Comment: We oppose the proposed amendments to the school bus regulations. We respectfully request that these regulations are suspended until adequate resources to fund them are attained. (CASTO1)(WCTA)(CASTO2)

200. Comment: Do not pass any regulations impacting school districts unless funds are available. At a minimum, these regulations should be postponed to when our school districts have a level of funding that is at least equal to their funding level in 2007-08. (STC)

201. Comment: We were very appreciative of the Proposition 1B funds, but those funds are no longer available to us. We would urge to wait. We know of no other

state program that has been cut as much as education. We cannot afford to take additional funds out of the classroom or to eliminate or reduce school transportation any more. (SUHSD)(CASTO1)(WCTA)(MPPSTA)(OUSD)(PUESD)(CASTO2)(GVUSD)

Agency Response: The commenter speculates as to potential generalized health impacts that could occur from implementation of the amended regulation with no specific evidence to support the claims. In contrast, the rulemaking record clearly shows that postponing or excluding regulation of diesel exhaust PM from school buses would result in the loss of significant emission benefits, increased exposure of children to toxic contaminants, with consequential detrimental health impacts, and increased health care costs.

The Children's Health Study, which began in 1992, was a large, long-term study of the health effects of children's chronic exposures to air pollution. About 5,500 children in twelve communities were enrolled in the study; two-thirds of them were enrolled as fourth-graders. Data on the children's health, their exposures to air pollution, and many factors that affected their responses to air pollution were gathered annually until they graduated from high school. One of the most consistent results of the study is a reduction of lung development with exposure to higher concentrations of particulate matter, nitrogen dioxide, acid vapor, and elemental carbon. Children living in communities with higher concentrations of these pollutants had lungs that developed and grew more slowly and were less able to move air through them. Decreases in lung development were seen at age 18 in polluted communities. By age 18 the lungs are nearly mature and the decreases in lung development are unlikely to be reversed. Therefore, the children may have permanent adverse respiratory health effects in later life.

In order to protect children's health while recognizing the financial constraints faced by school districts, ARB agrees that it is important to work together with school districts and other stakeholders to identify new funding opportunities to complete the school bus clean-up. At the December 17, 2010 hearing, the Board directed staff to identify potential opportunities for additional funding that will help to complete the school bus clean-up, and work is currently underway to carry out that direction.

Please see Agency Response to Comment 195 for response to comments on school district budget limitations.

202. Comment: We believe it would be prudent to study the impact of the active filters both from an economic and health perspective. We would urge ARB to postpone the regulations until that study is done. (STC)

Agency Response: Installation of an active PM filter is only one option that school districts can choose to comply with the regulation. Other compliance options include installation of a passive PM filter, engine repower, or bus replacement depending on the age, maintenance history, and usage characteristics of the school bus engine and chassis.

ARB, school districts, and other stakeholders have extensive experience with the operation and performance of active diesel particulate filters (DPF) or PM filters on school buses, therefore further study is not required. Thousands of PM filters have been installed on school buses throughout the state and have proven to be successful. Approximately 4,000 school bus PM filters have been funded by the Lower Emission School Bus Program alone, and the majority of those are active PM filters. Retrofits are also the least expensive compliance option. The cost of an active filter is about $17,900 including installation. Based on data from end users and retrofit manufacturers, the cost of electricity needed to power the routine PM filter cleaning procedure is about $11,000 over a 20 year life. By comparison, the cost of a new diesel school bus is approximately $156,000. Even when the lifetime costs of retrofits are compared to the lifetime cost of a new bus, retrofits are still 3 to 5 times less expensive.

Please see the Agency Responses to Comments 196 and 215 for information on detailed studies that document the health benefits of reducing exposure to diesel particulate matter.

203. Comment: I understand you gave an extension to the private fleets for retrofits yet did not give the same consideration to public fleets. In an era of drastic revenue cuts the public fleets should be afforded the same consideration. I work for a Unified School district and the additional $40,000 expense to achieve compliance is a burden. (MPAT)

Agency Response: The requirements for public and private school buses are the same. Although lighter trucks with a GVWR from 14,001 lbs to 26,000 lbs are no longer required to have PM retrofit filters, they will need to be replaced over the course of the regulation whereas school buses do not face the same replacement requirements. Also, all heavier trucks will need PM filters by 2014-2016.

c) Exemption for Smaller School Buses and Extension for Private Fleets

204. Comment: Preserve the original clean up requirements for all school buses, large and small (less than 26,000 pounds), with a commitment to ensure funding where necessary: We are concerned that there is pressure to delay or relax clean up requirements for school buses despite the fact that millions of dollars of funding has been made available to school districts across the state. According to numerous studies, including one from this agency, children can be exposed to very hazardous levels of diesel pollution on uncontrolled school buses, increasing cancer risks, and incidence of other health impacts such as asthma. The amendments proposing delayed compliance for short buses (those under 26,000 pounds) should not be considered on the simple grounds that all children should be provided safe transportation to school, whether they ride large or small buses. (BWG1)(BWG2)

205. Comment: A number of ideas have been suggested by my industry to try to close some of what we believe to be gaps, for example…school buses under 26,000 pound. (JMC1)

206. Comment: Add mandatory PM retrofits for school buses under 26,000 pounds and prioritize incentive funding to cover the costs. (DFS1)

207. Comment: We believe that children riding on school buses less than 26,000 lbs GVWR should be given the same opportunity of cleaner air as those riding on the larger buses and therefore these lighter school buses should also be required to install Level 3 PM retrofit devices. (MECA1) (MECA2)

208. Comment: We also especially want you to preserve the school bus cleanup provisions, since that's where our kids are very frequently exposed. (SCC)

209. Comment: We ask that you preserve the school bus cleanup provisions for all sizes of school buses. We know that children are particularly vulnerable. The soot pollution effects the growth and development of their lungs, and we know there's funding out there. We need to work together and get additional funding, but we do believe there should be equal protection for all children riding on school buses. (ALAC1)

Agency Response: Staff originally proposed to exempt diesel-fueled school buses under 26,001 lbs. GVWR from the amended regulation. However, the Board chose to include school buses greater than 14,000 lbs. GVWR in the amended regulation and directed staff to make necessary changes to preserve the requirements for smaller school buses. As such, the amended regulation requires owners of all diesel-fueled school buses greater than 14,000 lbs. GVWR to be equipped with Best Available Control Technology (BACT) which requires engines equipped with the highest level verified diesel emission control for PM that is available. The amended regulation requires both publicly owned and privately owned school buses to meet the same compliance schedule, affording all school children similar health benefits.

In order to protect children's health while recognizing the financial constraints faced by school districts, ARB agrees that it is important to work together with school districts and other stakeholders to identify new funding opportunities to complete the school bus clean-up. At the December 17, 2010 hearing, the Board directed staff to identify potential opportunities for additional funding that will help to complete the school bus clean-up, and work is currently underway to carry out that direction.

d) Replace Not Retrofit School Buses

210. Comment: There is one recommendation that you have that we actually kind of agree with. And that is the one that says in 2018 if a bus does not have a trap, then it has to be replaced. Now, we don't agree with the part about the trap. But we do agree that in 2018 buses like pre-'87s should be replaced. In fact, we would actually -- and the reason you have it there is because it's 30 years. And we would actually urge you to continue that type of regulation to say that maybe all buses, as time goes when we reach the age of 30, they should be replaced. In fact, we would ask you to move it down to 25 over time. CDE says buses should be replaced when they're 15. If you can get those old buses off the road, you'll do more to children's health than anything. (SES)

211. Comment: At a minimum, these regulations should be changed to say that all pre-1987 school buses should be replaced by 2018. (STC)

212. Comment: I have 25 buses that are 25 years and older. I want them to be clean and I want them replaced. Help us get there. I can't put a trap on a 25-year-old bus that's going to be reliable. Let's not spend $15,000 to put [a retrofit device] on a bus that's worth five. (ELKG)

213. Comment: And also in regards to maintenance, the newer buses that come with the devices have been far more successful than applying retrofits. Many of my school buses to be retrofitted are 20 years old. And to put a $15,000 retrofit on a 20-year-old bus, like some of the other guys were saying, is extending the buses out beyond their useful years. (LUSD)

214. Comment: Why does ARB want to take a post 1986 school bus that is worth less than $20,000 and is probably leaking air pollution into the bus cabin and place a $15,000 retrofit device on that bus which will end up costing well over cost of the filter and force those students to ride in those school buses for the next 15 years instead of focusing the limited dollars on replacing those old school buses with modern school buses that contain seat belts, are fuel efficient – saves fuel, will uses alternative fuels in many cases, and will result in lower pollution and in lower greenhouse gases? (STC)

215. Comment: We have always argued for the replacement of the pre-1987 schools buses as the best strategy for the state and the children. We believe that PM savings would increase under this strategy. We did a very preliminary cost/benefit analysis. We were handicapped by not knowing precisely the emissions from a pre-1987 school bus and a 2006 school bus that had an active filter. We "borrowed" school emission data from a report done by the Union of Concerned Scientists. In this analysis, we found the cost per pound of PM emissions to be $329 for the replacement bus and $382 per pound for the active filter. In addition, the replacement school bus saved 6,000 lbs of NOx during the 15 years, reduced green house emissions, was far more fuel efficient, addressed the environmental justice issue and was safer because it contained seat belts. All these factors, with the exception of the fuel savings, were not part of the analysis.

The ARB staff was insistent that the active filter method was more efficient because the cost of seven filters equaled the cost of a new bus. When we asked to see the cost analysis, we were presented with data that showed that the total ARB strategy was cost/effective, not an analysis comparing the cost benefit of a new school bus compared to the installation of an active filter.

As far as we know, ARB staff has never done any pilot studies on the service cost of filters. We do not know if they have observed the "burning" off or the five-hour cleaning of an active filter usually done right next to a school facility. They have never kept records of the total cost or performance of the active filter nor examined the impact of the filter on the emissions of the school bus. An active filter was used to study the impact of exhaust gas on the children riding a bus, but the pollutants from the trap-outfitted bus appeared higher than expected and it was

decided that the filter was not working properly. No follow-up study was performed. (STC)

Agency Response: PM filters are one option for meeting BACT on post-1986 model year school buses and are effective at reducing harmful diesel exhaust emissions exposure, particularly to vulnerable school children. Several studies[20] conclude that installing retrofits improves the indoor air quality on a school bus as it reduces exhaust emissions. As described below, school bus owners have the choice to use available funding for the purchase of a new school bus which arrives from the manufacturer equipped with a PM filter or for the purchase of a retrofit PM filter.

As previously discussed, school bus owners may choose to replace buses instead of utilizing retrofit PM filters and are not prohibited from replacing their oldest and most polluting school buses prior to 2018. Typically, school buses with 1987 and newer model year engines can be successfully retrofitted or will be originally equipped with PM filters, while 1986 and older model year engines cannot be equipped with PM filters and will need to be replaced by a newer model year engine that can be equipped with a PM filter.

Thirty year lifetime costs for a passive PM filter, an active PM filter, and a new school bus are $29,200, $50,750, and $172,200, respectively. The lifetime cost of an active PM filter includes electricity costs for filter regeneration, cleaning and de-ashing, and potentially a replacement filter to extend the life of the system. Even when considering the life time costs of retrofit PM filters, they are still three to five times less expensive than a new bus.

In compliance with AB 1085, all emission data was made available for public review prior to the regulatory comment period. Emissions data and emission support documents, including school bus data, were included in the background materials available at http://www.arb.ca.gov/msprog/onrdiesel/ab1085compliance.htm.
As explained during the staff presentation at the December, 2010 Board hearing, an investment of $140,000 can be used to purchase one replacement bus or retrofit seven buses with PM filters.

[20] Solomon, G. M., Campbell, T. R., Ruderman Feuer, G., Masters, J., Samkian, A., Paul, K. A. 2001. No breathing in the aisles. Diesel Exhaust Inside School Buses. Natural Resources Defense Council. Coalition for Clean Air.

Fitz, D. R., Winer, A. M., Kozawa, K., Pandratz, D., Bumiller, K., Gemmill, D., Smith, M. 2003. Characterizing the range of children's pollutant exposure during school bus commutes. Final Report to California Air Resources Board, Research Division, Sacramento, CA.

Fitz, D. R., Winer, A. M., Kozawa, K., Behrentz, E., Pandratz, D., Gemmill, D. 2006. Evaluation of mechanisms of exhaust intrusion into school buses and feasible mitigation measures. Final Report to California Air Resources Board, Research Division, Sacramento, CA.

e) Technology Concerns

216. Comment: We operate 100 school buses, transport 7,000 students one way a day, 53 natural gas buses and the additional balance are diesel. And we are the proud owners of 33 Cleaire traps. If the staff were to do an air quality report, they would say I've improved air quality by 50 percent, because half the time the buses don't run. They're parked up against a fence, and my ongoing costs are unbelievable. Traps are boondoggles. They do not work. (STA)

217. Comment: The failure rate (of exhaust retrofits) is something your staff should know. And they should be out there in the field. And they should be looking at how they're working in the school districts. (SES)

218. Comment: We've heard a little bit about the problems about the exhaust retrofits, and I would like to tell you about some firsthand experiences that I have experienced at my transportation yard. When I have buses that go out on trips or I have buses that come into my school district that have the exhaust retrofits on them, there are times when those buses are in limp mode or de-power zone basically where they are unable to drive safely with students on board. That requires either to find a facility that has an exhaust retrofit kit where they can recharge or burn off their filter or, by any chance, if that is not available, they have to drive in a limp mode sometimes at low excessive speeds with students on board to a safe spot where we can get a mechanic out there to replace a filter so they can get back safely. I would like you to please look at this and just think about very carefully what you're doing for the safety of our students. (KUSD)

219. Comment: Many school buses with filters can no longer be used for field trips. (STC)

220. Comment: I have 25 compressed natural gas buses, and I put traps on 58 of my buses long before you ever asked for them. We were the guinea pigs, and we tried to work out the bugs for our neighboring districts. Please know there are bugs. We were able to accommodate that with our regular education students on big buses due to the size of our fleet. I could handle the breakdowns. That cannot be the case for special needs buses. The smaller buses are for medically fragile students. They cannot sit by the side of the road in heat and cold while we have wait to get another driver to them. They're emotionally disturbed and they get too shook. So I do encourage you to look at those special ed buses and follow through with what you're recommending. (ELKG)

Agency Response: Hundreds of thousands of PM filters have been installed successfully on trucks and buses throughout the world, both in new vehicles and in numerous on-road retrofit applications. Most medium-heavy and heavy-heavy duty diesel engines produced since 2007 have been equipped by the manufacturer with DPFs. PM filters have been installed in response to existing regulations targeting urban buses, transit fleet vehicles, solid waste collection vehicles, vehicles owned by public agencies, drayage trucks, and others. Experience to date has demonstrated that PM filters provide effective, reliable, and durable performance for most engines. In California, PM filters on school buses have been funded through the Lower-Emission

School Bus (LESB) Program, successfully placing thousands of PM filters on school buses throughout the state.

The regulation requires fleets to use technology that is verified by ARB's Diesel Emission Control Strategies Verification. The ARB's Diesel Emission Control Strategies Verification Procedure ensures that emission reductions achieved by a control strategy are both real and durable. As part of the verification process, a robust and comprehensive durability demonstration is required. Additionally, the Diesel Emissions Control Strategies Verification program provides a comprehensive warranty. One manufacturer representative testified at the Board hearing that their warranty rate is in the one percent or less range.

f) Cost Analysis

221. Comment: ARB assumes that the total cost is only $60 million. Their original cost estimates were based on school buses that were greater than 14,000 GVWR. The proposed regulations are based on the school buses greater than 26,000 GVWR. This reduced the population of private and public school buses by 88%. ARB simply factored all their cost data by 88%. Because we needed additional information that was not contained in ARB's original staff material, we actually did a more refined calculation of the school buses covered by the proposed regulation. Table 1 provides a list of the buses summarized by year. [The table to which the commenter is referring is not reproduced here. It was submitted during the 45 day comment period as part of a comment letter identified as Comment 111 of the comments posted on the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10]. The distribution by year of the smaller buses between 14,000 and 26,000 GVWR that were removed is slightly different from the remaining school buses. For example, and not surprisingly, the buses are newer; the average age is 13 compared to the average age of 18 for the buses covered by the proposed regulations. In general, the impacts of these differences on costs are minor. Unless otherwise stated, we used the underlying assumptions used in ARB's methodology. This does not account for the huge cost differences between us and ARB. Instead, the following are the four major reasons for the great difference in the cost estimates.

- First, ARB assumes that school districts will replace the 1,701 public school buses – buses built prior to 1987 plus the 2-strokes built in 1987 – at no cost to the regulation because they will be older than 30 years by January 1, 2018. The regulation states that school buses that cannot be retrofitted with a PM filter must be replaced by January 1, 2018, which is approximately seven years from now. Unfortunately, the average age of our public fleet is 20 years. According to CDE, school buses should be replaced after 15 years. Over 14% of the public fleet is already 30 years or older. There is nothing magic about the ARB's 30-year date to school districts. Given the extreme fiscal times, it highly unlikely that school districts will have the funds to purchase new school buses. If ARB truly believes that school districts will get rid of the 1,701 school buses when they are 30 years old, then they do not need regulations to mandate that it

be done by January 1, 2018; otherwise, they need to show the cost as a cost of the regulation to replace the school buses.

- Second, ARB assumes that when the old school buses are replaced that are less than 30 years by 1/1/2018, the cost of that replacement is only the value of the school bus at 1/1/2018. For example, if an old school bus is only worth $10,000, that is the cost assigned to the regulation by ARB instead of the actual replacement cost of at least $165,000 for a diesel, $190,000 for a CNG, and $220,000 for a hybrid school bus. That is the cost to the district and that will be the cost of the mandate. ARB assumes that the replacement cost of 688 public 2-stroke buses and 170 private 2-stroke school buses is only $11.4 million. ARB factored this cost by 88% to get a savings of $1.4 million. We instead assumed that all the 2-stroke buses were greater than 26,000 GVWR. ARB assumed that the cost of a new school bus is $140,000; however, that cost never entered into any of ARB's calculations. We assumed that school districts would buy 75% diesel, 20% CNG, and 5% Hybrid. Therefore the average cost will be $172,750 per school bus not the junk value of $10,000 per bus.
- Third, ARB assumes that all school buses built after 1986, except for the two-strokes engines can be fitted with an active or a passive filter. A passive filter only has to be cleaned once a year. Older school buses emit a larger amount of particular matter (PM) emissions that will clog-up the passive filters. PM emissions are particularly dangerous because they can enter children's lungs. School buses that were built prior to 1987 were built before the state had any controls on PM emissions. Thus, the replacement of those school buses is our number one priority. Active filters on old school buses also clog-up, but they can be removed and the PM emissions can be "burned" off. The engine manufacturer also has to certify that the filter can be used on that engine. Our experience has shown that active filters cannot be used on buses built prior to 1994. Under the regulation, if a bus cannot be fitted with a filter then it must be replaced during the next seven years. We have conservatively assumed that the buses built between 1887 and 1990 cannot use an active filter. We also assumed that all the remaining 858 2-stroke school buses were built in this period. This increased the number school buses that have to be replaced by 1,906 public school buses and 880 private school buses. Therefore, the replacement cost of the public school buses (3,612) in the first and third point is $624 million.
- Fourth, ARB assumes that a passive filter costs $11,000 and an active filter costs $15,000. In addition, ARB assumes that 78% of the 1987-1993 4-stroke school buses have an passive filter, 66% of the 1994-2002 school buses have a filter and 0% of the 2003-2006 school buses already have a passive filter. The problem with the active filter, especially on an older bus, is that it requires a great deal of servicing. This is the regenerative cost or cleaning cost. For example, the cost can include installation ($3,000 – one-time cost), electricity use for cleaning (annual cost of $945), manpower

(annual cost of $1,000), out servicing (annual cost of $600). Over the 15-year life of the filter, the present value (PV) of the upkeep will often exceed the cost of the filter. In this example, the PV is $24,500. This does not include the impact on the engine - $6,000 cost to replace injectors, $11,000 to replace an engine, $200 just for staff to drive the school bus for warranty service, and reduce driving range of 100 to 200 miles. All of these costs are mandated cost. The cost of the new filters for 1994 to 2006 is $23 million for the private schools and $21 million for the public schools. If we assume that the present value of the upkeep for all the active filters is conservatively estimated at $5,000 per filter, then the additional cost is $13 million for public buses and $8.5 million for private school buses. (STC)

222. Comment: There is a large difference between ARB's calculation of the cost impact and STC's calculation. ARB assumes that the cost impact to public schools is just $33.5 million, while STC assumes that the cost impact on public schools is $658 million. The major difference is that 1) ARB assumes that all school buses greater than 30 years old will be replaced by the school districts before January 1, 2018, and 2) ARB uses the value of the bus, while STC assumes the actual replacement cost to the school district. (STC)

223. Comment: There are several additional costs to the regulations beyond the cost estimated by ARB. First, ARB has assumed that new cost of a school bus is $140,000. The more appropriate cost of a new diesel bus is between $165,000 and $170,000. Especially in mountain terrain, engine brakes, transmission retarders, luggage storage, manual and or automatic snow chains will be needed. Second, the cost of CNG school buses is in the vicinity of $195,000. Even if Proposition 1B funds are available, the cost differential between $140,000 and the actual cost of the replacement school buses must be borne by the school districts.

The additional cost of implementing and installing an active filter will often exceed the cost of the filter sometimes by as much as a factor of four. The annual electricity cost for the electricity can be near $1,000. The manpower cost can be in the same magnitude. The data from Los Angeles Unified shows that the life time cost is equal to the original cost of the filters. The cost of the de-ashing equipment is $51,000. With the exception of the de-ashing equipment all this cost has to be paid for by the school district.

We have other examples where the cost has increased by 1) $6,000 for the replacement of injectors, 2) $11,000 to replace an engine, 3) $200 just for staff time to drive the school bus 120 miles for the warranty service on the filter, and 4) reduced driving range of 100 to 200 miles because of the active filter. Many school buses with filters can no longer be used for field trips. In analyzing the impact of the active filter it is important to look at all the costs on the school districts. We have requested that ARB analyze the cost and do a cost-benefit analysis on the active filters at the school site. We think in many cases that it may be more cost-beneficial to replace a pre-1987 school bus than to install active filters on school buses.

We do know for a fact that active filters will increase the operating cost of the district's transportation system. During these critical fiscal times it is less likely for administrators to continue programs like school transportation if those programs are increasing in cost. (STC)

Agency Response: As noted on page 1 of Appendix K: Cost and Economic Analysis Methodology of the Technical Support Document for the 2008 rulemaking (http://www.arb.ca.gov/regact/2008/truckbus08/appk.pdf), the cost attributable to the estimated 8,312 private and public school buses in California still needing to become compliant with the Truck and Bus Regulation was estimated to be $69 million, with $27 million in costs attributed to the public school bus fleet and $42 million in regulatory costs to be incurred by the private school bus fleets. Below, **Table 6** summarizes those anticipated costs to the school bus fleet in California.

Table 6: Estimated Cost of Truck and Bus Regulation for School Buses

Estimated Costs	Public Fleets	Private Fleets	Total
Replacement	$8.8 million	$2.6 million	$11.4 million
Retrofit	$18 million	$39 million	$57 million
Total	$27 million	$42 million	$69 million

The cost of a replacement school bus is based upon school bus purchases funded through the LESB Program. The actual costs of a school bus can vary depending on the configuration and options chosen by a particular school district. Compressed natural gas (CNG), hybrid electric, and zero emission electric school buses are not required for compliance. This approach is conservative because the regulation does not require that replacement buses be new; that is, compliant used buses may be used for compliance.

Staff used a school bus service life of 30 years and school bus replacements to reflect a conservative approach in the cost analysis. The regulatory costs associated with the replacement of school buses with 1987 to 1993 model year two-stroke engines were prorated to the remaining service life of the school bus. For example, the full cost of a school bus replacement cannot be attributed to the regulation if it was only replaced one year early: rather one-thirtieth of the cost of a school bus replacement is assumed.

In addition, staff estimates that a substantial number of school buses will use PM filters to meet compliance. A wide variety of sources were used to collect information about active and passive PM filter costs, including surveys, retail price guides, and actual invoices from fleets where PM filters were installed. Retrofit cost assumptions were based on actual installations of PM filters on a variety of vehicles including school buses.

Staff used retrofit costs of $11,000 for a passive-style PM filter and $15,000 for an active-style PM filter. These costs do not include operating and maintaining a diesel particulate filter. ARB staff acknowledges that there are costs associated with filter maintenance such as regeneration of active filters including the cost of electricity or fuel used per regeneration. Staff also researched the total life cycle cost of using PM filters

to reduce diesel PM. Based on this research, staff found that no better cost-effective option exists to reduce public exposure to harmful diesel PM emissions than using retrofit PM filters.

Ultimately, the business decision to retrofit older school buses that are scheduled to be replaced is one for the school districts to make.

g) School Bus Service Transportation Reduction

224. Comment: We are concerned about the cuts and reductions to school transportation. School districts have taken cuts of over 20%. There are fewer school buses on the road; our children are walking longer distances. Several school districts have completely eliminated school bus services and many are planning to do so in the near future. Congestion and air pollution have increased as families that can afford to do so are transporting their children in the family car. It was not coincidental that the San Joaquin Valley was just hit with a $27 million fine because they were out of compliance for two days in August and these two days were the first two days of school. (STC)

225. Comment: These mandates would have the unintended consequence of increasing congestion and thereby increasing air pollution. (SUHSD) (MPPSTA) (OUSD) (CASTO1) (WCTA) (PUESD) (CASTO2) (KCUT) GVUSD)

226. Comment: West County Transportation Agency is a Joint Powers Agreement of sixteen school districts in Sonoma County. Due to ongoing funding cuts, our school districts have reduced over thirty school bus routes over the years. Two of our members have completely eliminated home to school transportation. (WCTA)

227. Comment: The school districts have to make a lot of cuts. They're going to cut school transportation. They're going to cut school transportation especially if it costs money and retrofits do cost more to service. They're going to make kids walk longer. They're going to cut out routes. And they're not going to allow them for extracurricular activities. And in some cases, they're going to get rid of them, the whole transportation system. (SES)

228. Comment: I'm going to use Pleasant Grove High School as an example. I transport 1100 students every day on 18 buses. It's incredibly efficient, clean equipment. Putting those kids on the roads means 1100 cars. We are the public bus. There is no public bus coming down Jackson highway, and it's 16 miles to school. I don't think anyone expects them to walk. (ELKG)

229. Comment: Only one in five of our district's families even have a second vehicle, so walking to school is the only option if we eliminate our non-compliant school buses. (KCUT)

Agency Response: Staff recognizes that the installation and maintenance of diesel particulate filters represents an additional cost. However, PM filters are standard equipment on all new diesel school buses which means that school districts must include maintenance costs in their budget anytime a new diesel school bus is added to the fleet. Additional costs to school districts due to the PM requirements of the

amended regulation would be the cost of PM filter installation on existing buses and the cost of replacing buses where PM filters cannot be installed. Replacement can be done through purchase of newer used buses that have a PM filter already installed or that can be retrofitted with a PM filter after purchase, both of which effectively reduce the cost of the regulation below what many commenter's have suggested. Additionally, the cost of the regulation is spread out over a number of years, which should provide the time needed for school districts to factor these costs into their budgets.

Student transportation has been declining steadily since 2002 as school districts across the state have reduced or eliminated school transportation services. Staff does not anticipate that the regulation will have an impact on this trend. Staff conducted a survey of school transportation trends in 2009 and again in 2010. Both surveys indicated transportation reductions from more than half of the responding transportation managers. A quarter to a third of the responding transportation managers indicated no changes to their routes while a small percent indicated increasing routes. Decreases in routes were attributed to budget cuts, economic downturn, and increasing special education enrollment with associated mandated transportation requirements. Staff will continue to monitor the effects on school transportation services.

h) Impact on Safety

230. Comment: The school bus is the safest method of transporting children. According to the National Safety Council it is 172 times safer than the family automobile. We are concerned that ARB regulations will have the unintended consequence of increasing a child's risk of death. Your briefing paper on "Characterizing the Range of Children Pollutant Exposure during School Bus Commutes" recognizes that we must be very careful. Your own staff has stated that ARB must be careful that it does not:

> "Have the unintended consequence of actually increasing a child's risk of death due to the switching to an automobile (200 in a million) or walking longer distances to school than due to the lifetime increase cancer risk due to diesel vehicle-related pollutant exposure (30 in a million)" (STC)

231. Comment: We are extremely concerned about safety of our school children. We are concerned that these regulations will force us to curtail or to eliminate school transportation for most of our disadvantaged children. School transportation is 172 times safer than riding in the family automobile. It will harm our most disadvantaged children because they will have to walk longer distances to school or simply not go. (SUHSD) (MPPSTA) (OUSD) (CASTO1) (WCTA) (PUESD) (CASTO2) (KCUT) (GVUSD)

232. Comment: It was upsetting that one of three seven-passenger vans transporting basketball players from Hoover High at Fresno Unified school district was recently involved in an accident. Unfortunately, it is becoming more and more common because of budget reductions and increased costs, that school districts are no longer transporting children with a school bus. (STC) (STA)

Agency Response: Staff acknowledges the safety benefits of school bus transportation relative to other types of transportation. As noted earlier, staff doesn't expect the rule to change busing patterns. Because school bus fleets have several opportunities to have all or most of the costs paid for through incentive programs, staff does not believe that districts will need to reduce their transportation services because of the regulation.

Please see the Agency Response to Comment 229 for information on school bus service transportation reductions.

i) Environmental Justice

233. Comment: The majority of the school bus ridership is minority students, farm workers, and low-income disadvantaged children. (STC)

234. Comment: Parents and children from affluent areas will be able to drive their children to school. It will be the less affluent that will be hurt the most. (SUHSD) (MPPSTA) (OUSD) (CASTO1) (WCTA) (PUESD) (CASTO2) (KCUT) GVUSD)

235. Comment: Because of that, students are not riding on school buses. They're being left out on the streets. And more than likely, it's the most socioeconomic or disadvantaged students that are affected by this. (CAST03)

Agency Response: ARB is committed to integrating environmental justice in all of its activities. The proposed regulation would require cleaner fleets of in-use on-road diesel vehicles to be used throughout the State, which would reduce emissions in all the communities of California, including those with environmental justice concerns. Staff does not believe the regulation will adversely impact children in environmental justice areas through reduced bus service, as discussed in response to previous comments.

j) Funding

236. Comment: The first priority of funds should be to replacing pre-1987 school buses. The proposed regulations state that all school buses that do not have filters should be replaced by 2018. (STC)

237. Comment: Incentive funding should be prioritized to cover the costs of these retrofits on school buses. (MECA1) (MECA2)

238. Comment: Let's be good stewards of this money and replace the equipment. It's the reasonable way to do it. We want to do it with you. The voters voted three years ago, and we had Proposition 1B and we were going to replace old school buses. We get safer buses that were clean. It's been three years. I haven't seen a dime. That's a failure to our kids and a failure to our community. (ELKG)

239. Comment: We believe that the staff proposal runs counter to SB 77, Chapter 171, Statutes of 2007, which is the implementing legislation of Proposition 1B. SB 77 states 1) that the funds are allocated to air quality districts in proportion to the number of pre-1987 school buses and 2) each air quality district should determine how much of their allocation should be spent to replace

old school buses (pre-1987) and retrofits. ARB was deliberately not given the authority to administer the funds and they were deliberately not allowed to determine the distribution of the funds between school bus replacement and retrofits. It is important to note that the Proposition 1B funds can only be used to replace pre-1987 buses or retrofits. The air districts must replace the oldest school buses first and or retrofit the most polluting school buses first. (STC)

240. Comment: We are a full attainment air district. I recently received our grant to retrofit our school buses and will be underway at the beginning of January doing that. However it is the wish of all of the schools in Lake County that we were able to take -- if we could take our 1.9 million that came into Lake County Air District and apply it to replacing pre-87 school buses. We all feel it would be most advantageous for all of us. The main thing is that all of those buses, the minute they hit the yards, will be underway with children in those buses and longevity wise will last us a long time. (LUSD)

241. Comment: I want to make it very, very clear - when the Legislature passed -- the voters voted for the bond measure and the Legislature did the implementation legislation, they specifically gave the direction to the local air quality district. The local air quality district could spend that money either on getting rid of the pre '87 buses (They were built before you had any particulate standards. Very, very dirty buses as far as PM) or they can have retrofits for the most polluting buses. The control for the Proposition 1B money is in the hands of the local air quality districts. To do otherwise and to try to change that from ARB is going against the Legislature. As far as the seven-to-one ratio, we have always taken problems with that. Because you take those pre '87 buses – they're very, very heavy polluting bus – the ratio cannot be seven to one. And we've been working with staff to try to get some cost effectiveness – to study what is the cost per ton for getting rid of a pre-'87 bus versus putting on retrofits. And I think we have concluded that it is actually cheaper per ton to get rid of a pre-'87 bus than it is to put a retrofit on 1995 or earlier bus. (SES)

242. Comment: Please work with us to get additional funds for school transportation. (SUHSD) (CASTO1) (WCTA) (MPPSTA) (OUSD) (PUESD) (CASTO2) (GVUSD)

243. Comment: Kings Canyon Unified replaced our remaining pre-1977 school buses this past year. We appreciate the Proposition 1B funds that made these school bus replacements available with no required match. Our district has utilized funds to retrofit all possible equipment to level III. We operate many school buses on alternative fuel CNG. While we will be in compliance through 2014, our remaining 25 non-compliant school buses will need to be replaced under the rule. The remaining LESBP funds are encumbered and will soon be gone. No other state program has been cut as much as education and school transportation. Our school district cannot afford to take additional funds away from the classroom or to reduce or even eliminate school transportation any further. Please work with public schools to seek additional funds for school bus replacements and school transportation. (KCUT)

244. Comment: There are no additional state funds for the proposed regulations. Page K 4 of ARB's original Appendix K on the School Bus Cost methodology states:

"In the cost calculation for the school buses affected by the proposed regulation it was assumed that all Proposition 1B funds have been fully expended."

In other words there are no additional state funds for these proposed regulations. In conversations with ARB staff, we now understand that ARB is going to claim that there is now $84 million of Proposition 1B funds available. We simply do not believe that is the case. We would like to know how much is available by air quality district. If there are any additional funds available, then the need calculations in Appendix K should be updated. (STC)

245. Comment: I'd like to see if some changes could be made specifically for full attainment air districts to allow us to replace pre-87 buses that the regulation initially wanted to address. (LUSD)

Agency Response: The Lower-Emission School Bus Program (LESB Program) is a voluntary grant program administered by the ARB and implemented by local air quality management and air pollution control districts (air districts) and is completely separate from the regulatory action. The LESB Program has provided funds to purchase new school buses that replaced old, high-emitting public school buses, and equipped in-use diesel school buses with retrofit devices that have significantly reduced toxic particulate matter (PM) emissions since 2001. Unlike the other vehicles covered by this regulation, funding has been dedicated to school districts to clean-up their fleets.

In 2006, $200 million was allocated to the LESB Program by passage of Proposition 1B. Current funding allocations are prescribed by Senate Bill 88 (SB88; Stats 2007 Ch 181) which specifies that once funds are set aside to replace the pre-1977 model year school buses, the remaining funds are to be allocated to air districts based on their share of the 1977 to 1986 model year school bus population.

Once all pre-1977 model year school buses were replaced, funding could have been prioritized for PM filters and nearly all of the 13,000 school buses eligible for public incentive funds would be clean. However, SB88 provides flexibility by allowing air districts the discretion to determine how to split their remaining allocation between replacing and retrofitting buses. Throughout the implementation of the LESB Program, staff strongly encouraged the funding of retrofits even though local school districts preferred replacements.

To maximize use of State funds, the LESB Program requires $25,000 in match funding for each new school bus that replaces a 1977-1986 model year school bus. Match funding may come from the school district, air district, or any source other than the Proposition 1B funds, which are insufficient to replace and retrofit the entire population of the California public school bus fleet.[21] There is no match funding required when

[21] ARB has granted Lake County Air Pollution Control District, an air district not able to collect local fees, the authority to use Proposition 1B funds to pay for a full waiver for the match requirement for 20 percent of the buses funded in its air district.

replacing a pre-1977 model year bus or when installing a PM filter. Additionally, State funding cost caps have been set in place for both replacements and retrofits to maximize State funds. Replacements have been capped at $140,000 and retrofits at $20,000.

Every effort has been made to ease the burden on school districts including providing incentive funding though the LESB Program. Local and federal funds are also available to help many school districts. As directed by the Board, ARB staff continues to seek additional funding to assist in bringing the remaining school buses into compliance.

k) Benefits Assessment

246. Comment: I think your emission inventory is wrong. The savings you're getting are not due to your regulations. They're due to Proposition 1B. They're due to the $197 million that you're putting out there that the air quality districts are spending to get rid of old buses and install retrofits. Your baseline shows no change. Your baseline should show the change of that $193 million, not the changes that you say are there because of regulation. ARB staff -- I disagree with them. But ARB staff today said that their regulations cost $60 million. And ARB staff says there is $84 million available. Well, geez, that means $84 million available from the Proposition 1B money. So that means Proposition 1B is going to be paying for everything. So I think you got to change your emission regulations. (SES)

247. Comment: ARB's emission inventory has completely overestimated the PM reductions due to the regulations and completely overstated the emission reduction in the baseline case or under current law. If the ARB staff is assuming that the regulations cost $60 million (we disagree with that assumption) and that there is $84 million of Prop 1B funds available, then all the emission reductions that are shown in the inventory are due to Proposition 1B and not due to the ARB regulations. The emission reductions because of Proposition 1B need to be reflected in the baseline case. They are not being reflected now. In the Appendix K – School Bus Cost Methodology, ARB staff assumed that the Proposition 1B funds resulted in 56% of the pre-1987 school buses (2,000) complying, that is being replaced, 78% of the 1987 to 1993 school buses (2,565) having active filters installed, and 66% of the 1994 to 2002 school buses (4,222) having either an active or a passive filter. ARB staff seems to have accounted for the emission reductions due to Proposition 1B funds, which are substantial, as due to the ARB regulations. That is incorrect and misleading. These substantial emission reductions should have been accounted for in the baseline case or the current law case. (STC)

Agency Response: As noted on page 1 of Appendix K: Cost and Economic Analysis Methodology of the TSD for the 2008 rulemaking, the cost attributable to the estimated 8,312 private and public school buses in California still needing to become compliant with the Truck and Bus Regulation in 2010 is estimated to be $69 million, with $27 million in costs attributed to the public school bus fleet and $42 million in regulatory costs to be incurred by the private school bus fleets. This estimate already accounts for

buses funded through the LESB Program, and therefore does not include benefits and costs associated with these buses.

As Appendix K states, “From the 2005 CHP Safety Certification Database it has been estimated that in 2010 there will be approximately 15,500 diesel-fueled school buses that will be covered by the proposed regulation, of which nearly one-half are already compliant with the proposed regulation or will be in the near future due to available State or local funding. School buses that have been replaced or will be replaced with current funding have been removed from the population of school buses that still need action to comply with the proposed regulation.” This estimate was based on the assumption that the LESB Program would fund 1,100 pre-1987 model year school bus replacement projects and 3,500 school bus retrofit projects. Current data suggests that 686 school bus replacement projects and 4,413 retrofit projects will be funded. Because more school bus projects are being funded than originally estimated, the cost attributable to the school buses in California still needing to become compliant with the Truck and Bus Regulation will be less than the originally estimated $69 million.

Please see the Agency Response to Comment 245 for more information on funding.

l) Reimbursable Mandate

248. Comment: In addition, STC also believes that this is a state reimbursable mandate. Therefore, the additional cost of $658 million to the schools is another state mandate or increases the state deficit by $658 million. (STC)

Agency Response: Pursuant to Government Code sections 11346.5(a)(5) and (6), the Executive Officer has further determined that the board approved regulatory action would create costs for school districts, and may impose a mandate that would not be reimbursable by the State, pursuant to Government Code, title 2, division 4, part 7 (commencing with section 17500). The mandate which would require school bus engines to be retrofitted engines with the best available verified diesel emission control strategy is not reimbursable because the costs would apply to all school bus owners, not just school districts. All other on-road heavy-duty vehicles that operate in the State will need to be upgraded to 2010 model year or newer engines and many will need to have PM retrofit filters. To the extent that the regulation would require school districts to remove all school buses manufactured before April 1, 1977, that requirement also applies to all school bus owners and not to school districts alone. As previously stated, all other on-road heavy-duty vehicles that operate in the state must be replaced or upgraded to 2010 model-year engines when they are approximately 20 years old. Additionally, school districts qualify for public funding grants under the California Clean School Bus Program (HSC section 44299.90) for replacement of all pre-1987 school buses that were in operation as of December 31, 2005.

It is estimated that the direct regulatory cost of the regulation for public school districts is $27 million from 2010 through 2017 based on 2008 dollars. Further information on the cost of the regulation to public and private school fleets may be found in Appendix K of the TSD.

7. Cost and Economic Impact

a) Delay or Eliminate Rule

249. Comment: These draconian regulations are killing the farmers and truckers---the backbone of our economy. Where will you go for the eggs once you've killed the Golden Goose? This is insanity! Do not even give in to the environmental extremists. California's economy isn't even on their list of concerns. You must stand against them on behalf of people of the State of California. (PPIN)

250. Comment: Please do not impose the new diesel regulations!! Our state economy needs help, not another increase in the cost of doing business and, therefore, living here. And honestly, if it keeps getting more and more expensive to live in the state, we will have to leave. We have a lot of family - I'm a fifth-generation Californian - so the last the thing I want to do is move, but when the money runs out, something has to give. (CRAND)

251. Comment: People are hurting in this state. We don't need the prices of everything to go up due to your destruction of the trucking industry. Your stupid regulations will put mom and pop type truckers out of business, leaving us to deal with the big companies only. How will that help California? Please do the right thing and leave the trucking industry alone. (SSTAL)

252. Comment: I respectfully request the Board to reject any amendment that jeopardizes the ability to retain transportation jobs in within the state. While I understand the intent of the environmental special interest groups, I believe their tenets are extreme and not business nor job friendly thus reducing the number of potential employers to other states and thereby losing potential tax revenues to the general fund. (JBALL)

253. Comment: Unless killing off what little economy left in California is your intention, stop your diesel proposal. Look at who is leaving California: businesses, the tax base providers, the people that manage to sell their homes and leave. (KGRAV)

254. Comment: I am against any further pollution regulation at this time. As long as businesses are leaving in droves and unemployment is so high, we need to stop increasing costs on businesses. (WBENG)

255. Comment: If this is enacted with all of the new regulations regarding diesel fueled farm equipment and trucks, will the last person leaving this state please turn out the lights. (BSAM)

256. Comment: Stop your plans to impose further regulations on diesel engines. These new regs will cost us all money and devastate the trucking and ag industries. (HNAP)

257. Comment: During the last energy crisis you put many independent truckers out of business--now you want to destroy: jobs, the trucking industry, the farm industry, highway construction firms. Back off we cannot do this until our economy is back to normal. (WSKIN)

258. Comment: My salary has been non-existent (zero) for the last 2 years and 3 months. (DCC1)

259. Comment: Dump the job killing diesel regulations now! I say again, vote No on the diesel regs!!! (GFLEM)

260. Comment: The enforcement of these new proposals will affect the weak job sector, and we cannot afford any more taxes. Please decline both amendments. (CRIT)

261. Comment: I have talked to 3 major companies that will be leaving CA. if this law passes. We will be putting more companies out of business and people out of work! (MVT)

262. Comment: I am against any new regulations on the diesel transportation industry. In this time of economic crisis, any new regulations are just not warranted. (AKELL)

263. Comment: Why make more regulations to choke business and by direct relation cost jobs? (SHALL)

264. Comment: Your policies are going to cost CA dearly and I would hope that you take a closer look at what you're trying to do. While I fundamentally agree with the green concept, I truly believe that slowing the implementation to a rate that is more in line with the rest of the United States would benefit all Californians. If you push ahead with all the plans you have, you could see the whole [industry] fail because CARB acted too quickly. You don't want to cut off your nose to spite your face do you? (BHULZ)

265. Comment: I was just thinking what a role reversal we have had here. 2023, that's not good news. As I listen to the reports from UCLA and UOP and everything was off. I was here in '07 for the off-road hearings when the folks were trying to tell you we've got a big problem. Whether it's reflected yet or not, we are in a recession. Think back to December of '08 when we filled this hall and we tried to say we're really in a recession, we need some relief, no one was listening. We are trying to comply. And believe me, we all want to. We always want to comply but were unable. And I don't know when the economy will come back. Our credit ratings are shot. We can't purchase. Folks that did get incentive funding have lost that equipment. It's been repossessed. Check out Peterbilt, Kenworth, and look at all the dump trucks. The guys that traded in all their old ones and even with incentive funding couldn't continue to make the payments. (CDTOA3)

266. Comment: On the way in from the Bay Area, I heard a talk show host saying after yesterday's meeting, if you have a business in California, leave now. When I listen to the kids from Oakland talk about the trucks going down the road and reading that in Northern Mexico China is helping build the largest intermodal facility so they can go around California, there will be less trucks on the road. There will be less jobs. So we will get -- the air is going to be cleaner, and you will all probably get kudos for doing that. I think it just happens. So our California economy Margaret Thatcher talked about running out of people's money. But we're there. We don't

have money. I listened to quite a few people come up and they don't say we'd like more tax money, but they use euphemisms for that. We don't have more to give them. Let the free market system work and get out of the way. The air will clean up. At this point, you've done a good job up to this point. I grew up in Riverside where you couldn't see down the street. I went down there last summer. It's much better. Your city is much cleaner than when I left it in 1969. So that's good. So try to keep the businesses that are in California in California. (BCPG)

267. Comment: Concern about air quality is certainly a noble cause. Realistically however, in these financially perilous times air quality concern is tantamount to worrying about the smoke from Titanic's funnels when the iceberg is in sight. If Governor-Elect Brown's predictions are correct, the State California is on the verge of bankruptcy. Now is not the time to impose crippling financial regulations on businesses that pay taxes or non-profits that provide free community services that state and local governments can no longer afford to provide. It is unreasonable for the State of California, including the California Air Resources Board, to allow themselves budget cuts but to impose regulations on their constituents that could force them out of the state or out of business. A more logical reaction to the financial crisis that is affecting the state and local governments as well as large and small businesses and religious and charitable organizations across the state would be to declare a moratorium on the implementation of the truck and bus regulations until the economy is not in such crisis. (GIBBS)

268. Comment: No more regulations!! Let's enforce the laws and regs we already have on the books. Unless you want this state to fail, don't regulate jobs away!! (TWRIGH)

Agency Response: ARB adopted the regulation, in part, to meet California's legal obligations under federal law to achieve attainment with the national ambient air quality standards (NAAQS) for PM2.5 and ozone by 2014 and 2023 respectively, and to reduce exposure to toxic diesel exhaust emissions. See the response to Comment 2 that describes how State law assigns ARB the primary responsibility to ensure California's compliance with the federal Clean Air Act.

ARB recognizes that the recession has had a significant impact on California's economy and on companies that rely on diesel engines – whether it is trucking and transportation businesses, construction companies, or airlines. Overall, businesses' revenues and employment are down, and this has reduced the ability of many fleets to make the investments needed to comply with the regulation. The recession has also resulted in lower emissions than expected when the regulation was initially approved. Cognizant of the impacts of the recession, in designing the amendments to the truck and bus regulation, staff attempted to reduce the regulation's compliance costs while still achieving sufficient emissions reductions to meet its federal state implementation plan (SIP) commitments and attain NAAQS by the applicable federal compliance dates. The amendments reduce the compliance costs of the existing regulation for all affected fleets by, among other things, reducing the number of required PM filters, and providing a longer period of time for retrofitted trucks to operate before having to upgrade to a 2010 MY or emissions-equivalent engines. Changes to the provisions for accruing

compliance credits and other special provisions provide further flexibility and reduce annual compliance costs. The amendments have nearly eliminated the compliance costs for small businesses with lighter trucks, which will not be required to be retrofitted with diesel particulate filters. Further compliance delays could not be provided without impairing the State's ability to meet the NAAQS and diesel PM health risk reduction goals.

Overall, the amendments have substantially reduced the estimated compliance costs of the Truck and Bus regulation. The net investments for affected fleets in the first five years of compliance have been reduced from $3.3 billion to about $1.5 billion, a reduction of more than 50 percent. For the life of the amended regulation, the overall cost has been reduced by about 60 percent - from $5.5 billion to about $2.2 billion. Average costs for businesses such as local contractors, retailers and local moving companies, has been reduced by approximately 70 percent, with nearly all of the costs being eliminated entirely for thousands of small businesses with lighter trucks (trucks having a gross vehicle weight rating (GVWR) greater than 14,000 pounds but less than or equal to 26,000 pounds).

b) Impact on Businesses

269. Comment: I often communicate with individuals who share horror stories with me of being forced to purchase retrofits of their trucks that cost in the tens of thousands or even hundreds of thousands of dollars. These are real human beings, and they are already struggling to get by. If not offered relief, many will go out of business or leave the state, costing our state even more jobs and hurting our already fragile economy.

Aside from the very serious impact diesel regulations will have on our jobs and economy, please also consider the role of economics on public health. Nations with the highest poverty rates also have the highest infant mortality rates and lowest life expectancies. A conversation on public health is not complete without considering how harmful economic impacts also detract from citizen's ability to pay for quality medical care.

With even the San Francisco Chronicle reporting on the pollution overestimates, now is an ideal time for the Board to revise its diesel policy to take into account the needs of affected citizens, taxpayers and business owners. (COEU)

Agency Response: ARB must balance the cost of regulations against the adverse health impacts associated with elevated PM2.5 levels. These health effects include mortality, hospitalizations, and emergency room visits, among others. Each excess incidence of these health effects imposes a cost either to individual health insurance, to the public which pays for healthcare for people without insurance, or to income. Please see the response to Comment 40 for information on the many effects, including reduced employment, due to air pollution.

See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets. See

also the response to Comment 66 that explains the updates to the emissions inventory and how the effects of the recession made the most significant change in emissions from trucks, buses, and off-road equipment.

270. Comment: This law is false and inconclusive. This is the worst possible time to submit these regulations on trucks because we are bordering a full blown depression in the construction industry. (GMEN)

271. Comment: CARB must recognize that California businesses are in a time of extreme hardship because of the recession. Though the members and employees of CARB have not received any pay-cuts, the private industries in California have. California cannot afford to lose jobs and businesses because of unnecessary regulations. We demand that CARB suspend all rule-making processes and implementation of PM2.5 regulations until all the data has been collected and the studies have been completed, peer-reviewed and commented upon by the stakeholders. (JYOUNG)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets. To the extent that the commenter JYOUNG is referring to health studies related to PM 2.5, see response to Comment 39 that describes how our conclusions about the relationship between long-term exposure to PM2.5 and mortality are in alignment with those of the U.S. EPA, the World Health Organization, Health Canada, and the British government, many of which have been peer reviewed. These conclusions have been publicly peer reviewed by multiple independent bodies worldwide. See the response to Comment 66 that explains how the most significant change in emissions from trucks, buses, and off-road equipment was the impact of the recession and that there has been no significant change to the fundamental science and air quality modeling used to set the 2014 emission targets in the South Coast and San Joaquin Valley. ARB cannot identify a reason to delay the regulation for further review of PM 2.5 studies as suggested by the commenter.

c) Economic Impact

272. Comment: The majority of people out here are barely making it and you would enforce insane regulations that are only going to burden the poor and middle class! The people are going to be outraged when the effects of this measure take hold and prices rise even further. You are forcing the working people and businesses out of this state. What will you do then? I have lived here my entire life but we are in the process of trying to get out of this insane state. (KBROWN)

273. Comment: California is in decline because it is over taxed and over regulated. Businesses are fleeing the state so they can do business without all of this. Putting more stringent fuel standards on Trucks, Buses, etc. will just cause all products we depend on to rise in cost and some will not be available. What may sound like a good idea needs to be given far more attention than passing another "feel good" rule that becomes a bad one once it is realized what it causes. (ALAM)

274. **Comment:** If the diesel regulations are implemented as currently designed, small trucking companies will go out of business because they cannot afford to make costly retrofits that could sock them with tens of thousands or even hundreds of thousands in new costs. The diesel regulations are aimed at truckers and operators of heavy machinery but their costs will hit all of us with more expensive prices on everything brought to us in a truck – that is to say, nearly everything. Housing prices furthermore will be affected as construction will become more costly. (KTRAV)

275. **Comment:** Just another Californian against the restrictive regulations you are trying to push through, which will force small trucking companies out of business and also drive up the costs of ALL goods statewide. Until then, diesel regulations like the ones you're trying to force on California will continue to drive business elsewhere and will keep our state under the water. (ERIK)

276. **Comment:** I work in the trucking industry and our industry has been making great strides. The new regulations are putting small trucking companies out of business in droves. There needs to be resolution and these people back to work. The transportation industry is one of the leading industries in this state. (SCHAT)

277. **Comment:** I can't believe you would even consider new regulations on diesel fuel that will put independent Truckers and Small Trucking Companies out of business. How can you justify an action of this magnitude that will create a domino effect on commodities, cost of goods and freight? (SFIN)

278. **Comment:** Obviously, as the shipping cost of virtually everything we touch, wear, and eat goes up our cost of living goes up and more middle and lower class peoples will suffer greater poverty. (DJER)

279. **Comment:** Your overbearing proposed regulations on diesel engines will drive consumer costs up and up and drive viable businesses from the state little by little. It is time to back off and allow existing federal air quality rules to achieve their goals. (JQUILT)

280. **Comment:** I am a small business owner and have lived in California for 49 years. My business has gone from 42 employees to 9, as the current economic conditions have affected business. Our business requires equipment such as trucks, driven locally. I have not made a profit in 3 years. The only reason I am still in business is that I am using my savings from more prosperous years (the greedy rich). I keep my trucks in fine running condition. I cannot afford to replace them. The letter you sent us about this law is a joke. It said simply "Pass the cost on to your customers". I don't have enough customers to make this happen. There is a reason residents are headed to Texas and Arizona. Please help this state recover. Stop over regulating. No one wants to destroy our home, we will be responsible without the rule. California cannot afford this. You are driving productive people into places where they can’t be successful. Be smart - stop the madness. (SLYNES)

281. Comment: These are challenging times for small businesses like APTCO, LLC. Sadly, we were recently forced to lay off some of our workers. Regulations such as the ARB truck and bus regulation must contemplate not only the difficulty of the adverse economics facing small businesses in California, but also must calibrate the timing and stringency of regulation to the reduced emissions that have resulted from the poorer California economy. (APTCO)

282. Comment: I'm down 72 percent, barely hanging on with the business. I've already lost employees due to the economic downturn and also legislation that this Board is trying to pass, some haulers, and I don't know how much longer that we can stay in business. I don't support any of these amendments or propositions or proposals that you're proposing. The thing that I do support is what the Senator was saying is through attrition. (TLT)

283. Comment: With the economy the way it is, I hope considerations can take place for extensions and revisions. I have children and would never want to jeopardize their health and well-being. But with the additional expense of new emission equipped diesel trucks and the fact that it must be purchased relatively new with this equipment has just made it impossible under our current business environment. I only hope that ARB realizes what this is doing to small business owners. I am in favor of all amendments. (EDTOW)

284. Comment: Everything that you can see, hear, feel, touch, taste or smell came here by truck. If you impact the cost of trucking, you will impact the cost of Everything!!!! When it comes to payload, there is not a "known" fuel that has the efficiency of diesel. Today's engines and diesel fuel are very clean compared to a few years ago. Right now, California needs JOBS more than a little cleaner air. (GHILL)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

The impact on the price of goods is not expected to be noticeable to the average consumer. For the initial 2008 rulemaking, staff's cost analysis showed that there would be a modest increase in the cost of goods of about 0.04 percent. For example, this equates to about a 1 to 2 cent increase in price of a pair of shoes. With the amended regulation, these costs should be substantially lower for all fleets and still lower for fleets that have been more adversely affected by the recession. Diesel fuel standards are not within the scope of the Truck and Bus regulation and are not pertinent to this rulemaking.

Average compliance costs for businesses, including small businesses, such as local contractors, retailers, and local moving companies would be reduced by 70 percent. The amendments have nearly eliminated the compliance costs for small businesses with light trucks, which are not required to be retrofitted with diesel particulate filters. With the reduced costs, staff believes that many affected businesses will recover some

of their costs by passing the costs to their customers, although we recognize the ability to pass on costs will vary by company and business sector.

While the amendments will significantly lower compliance costs for affected fleets, businesses that have been more adversely affected by the economy and are operating fewer heavier trucks in the compliance year compared to 2006, can further delay compliance with the PM filter phase-in option. See response to Comment 128 for more details on how fleets can take advantage of the downsizing credits to lower compliance costs further.

In addition, a low-mileage construction truck provision was added to provide more time for certain construction trucks. This compliance option both delays the initial PM filter requirements for these trucks, and phases-in the PM filter requirements between January 1, 2014 to January 1, 2016 at the rate of 33 percent per year. The response to Comment 157 describes the low-mileage construction truck provision in more detail.

Small fleets with three or fewer vehicles can take advantage of the small fleet provision to delay compliance for heavier trucks until 2014 and can postpone their replacements until 2020 or later as described in the response to Comment 308. A single truck owner with a low-mileage construction truck can delay compliance until 2016, and a single log truck owner can delay compliance until 2018.

285. Comment: Weatherford appreciates the effort undertaken by Staff as directed by the Board to propose amendments. We have serious doubts about the wisdom of implementing the rule even as proposed given the depth of the recession and the continued high rate of unemployment in general and relative to the other states. We do believe that even if approved, the Board should continue to evaluate the impact of this rule upon affected companies and consider a further slide should the economy not meet staff projections for recovery as presented in the workshops. (WEAT1) (WEAT2)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

Staff will continue to track the economy and emission trends, and their effects on fleets. ARB Resolution 10-44[22] directs the Executive Officer to monitor the state's progress toward meeting its emission reduction commitment and to provide an update to the Board at its July 2012 meeting that includes an updated emissions trend including the impact of economic conditions on the on-road and off-road source categories.

286. Comment: Even with these changes, this rule will still cause significant negative economic impact to California farming operations by driving up costs associated

[23] Verified diesel emission control strategy. – a retrofit device that has been verified under ARB's Verification Procedure which ensures the effectiveness and durability of diesel engine retrofits.

with transportation of California fresh produce. This will only increase the regulatory cost advantage enjoyed by farmers in other states and nations. (WGROW)

Agency Response: In consideration of the unique circumstances involving the agricultural industry and its motor vehicle fleet, the amended regulation continues to have provisions for agricultural trucks that operate below certain mileage thresholds (10,000 to 25,000 annual miles) and for a limited number of specialty trucks. The provisions delay compliance for farm trucks and seasonal trucks that haul the harvest from the farm to the first point of processing. Overall, the provision delays compliance with the emissions reduction requirements until 2017 or 2023 for all agricultural vehicles that operate in California, irrespective of where they are based or registered. In general, transportation costs represent a small fraction of the cost of growing, harvesting of crops, and processing agricultural products to market. Transportation needs for hauling finished agricultural products to market are generally provided by long-haul trucking companies that are already expected to have newer trucks because of the high annual miles they travel. These high mileage fleets will typically have little or no compliance costs with the amended regulation whether based in California or not.

d) Comments by Small Businesses

287. Comment: I'm a one truck owner operator that the new regulations could probably put me out of business, so I'm hoping for a change or postponement on the rules, and like me there's thousands of small fleets owner operators that will be out of business. (RMAR)

288. Comment: I really, really believe that you guys have got to give us mom and pop operations, the low mileage guys; we've got to have more time. We want to comply. We want to do what we can. We can't make it with what we've got with the equipment we're trying to run now. We are in horrible shape with this recession, depression, whatever it is. It's terrible. Just to make our house payments. Please give us some time. (DSTR)

289. Comment: I own a small landscaping business with one truck bought new in 2006 and because of the economy I can't afford the retrofit nor can I purchase another vehicle that meets the current standard. I feel like I am being penalized for something that I have no control over. (LCL)

290. Comment: I'm a tow-truck operator, twice as big as the other fellow. 2010 revenue versus 2008 revenue's down 44 percent. I have one employee. He's the sole source of income for his family. I no longer can provide him with health insurance, paid holidays, sick leave. He's moved with his family to a house with another family because of these conditions. I cannot afford a new truck, replacement truck, or to put a device on it. I do not qualify for any of the programs for a number of reasons. We need more time. We are hurting. And I'm doing better than most. (JPT)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the

severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets. Also, see the response to Comment 308 on how the amended regulation substantially lowers the compliance costs for small fleets with three or fewer vehicles.

291. Comment: My entire life's monetary worth is tied up in my trucks and business. If the new laws take effect it would literally shut down small business. I'm a law abiding, tax paying, and even drive a Prius. Please reconsider the small businesses and are struggle to survive in this miserable economy. My trucks are smoke tested and they pass with flying colors. However their age make them vulnerable under the new proposed regulations. We certainly care about the air quality. Please have heart and keep this little guy in mind. (KCEAR)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets. Also, see the response to Comment 308 on how the amended regulation substantially lowers the compliance costs for small fleets with three or fewer vehicles.

The opacity test, referred by the commenter as a smoke test, serves to detect visible smoke in the exhaust and is useful to determine engine tampering , or if an engine is malfunctioning. Also, most diesel PM is PM 2.5 and not visible. Opacity doesn't measure whether PM emissions are high. Because of this a properly operating engine still has complex mixture of air pollutants including diesel particulate matter that is a toxic air contaminant and has the potential to cause cancer, premature death, and other health problems. Without major reductions from existing engines, including those with low opacity readings, California cannot meet its SIP obligation to attain federal air quality standards by the required dates.

292. Comment: My family has been in heavy construction in California since 1929 for 3 generations we have gone from 45 employees to 3 that are laid off for the winter. These regulations will be the final nail in the coffin for our family business. (JSERRE)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets. Also, see response to Comment 284 on how a number of provisions can substantially lower compliance costs further.

If the fleet size has suffered a 90 percent decline since 2006 as has the employee staff, compliance for the fleet could be delayed until 2016 by reporting and using the downsizing credit. See the response to Comment 128 for more details on how fleets can take advantage of the downsizing credits to lower compliance costs further.

e) Competitive Advantage or Disadvantage

293. Comment: Truck owners that have already invested in upgrades to comply with regulations are at a competitive disadvantage to those who have not. Implementation of the Truck and Bus Regulation as soon as is feasible will help to level the playing field for all truck owners and operators, and also for the ports that are committed to reducing air emissions. (UPSD)

294. Comment: I don't think amendments should be made to the regulation at this point in time because companies that have already made the move to become compliant are the ones that will suffer. The companies that have dragged their feet will be rewarded by these amendments. As far as the economy, it's already showing signs of improvement and by the time these new amendments go into effect, the economy will be well on its way to normal productivity. So, we need to keep the regulation in place as is. I believe if you amend the regulation you will only be hurting companies that have already moved to become compliant and at this point, put them at a disadvantage to the companies that have not made a move to become compliant. By allowing these noncompliant companies to run their junk at reduced operating cost, due to fact they have minimal operating costs verses a company that has retrofitted or replaced their units to become compliant and proactive, and by doing so increased their operating cost which they will need to recover in the form of higher rates, the amendments would make the already compliant companies less competitive with their competitors that are noncompliant and putting them at a disadvantage. (HBAB)

Agency Response: ARB recognizes that some fleets have already taken steps to meet the requirements of the existing regulation. With this in mind, a number of provisions have been included in the amendments to provide credits for early installation of PM filters, for the purchase of newer vehicles, and to allow for PM filters installed on off-road equipment to count towards compliance for on-road vehicles. These credits reward fleets that have taken action early by delaying compliance requirements for other trucks in the fleet and reduce the overall cost of compliance compared to other fleets that have not been proactive. In addition, to the modified model year schedule for heavier trucks, the amended regulation also allows fleets to comply with an alternative compliance option specified in section 2025(g)(3), from 2012 to 2014, that is based on the original engine model year schedule. We believe the new credits appropriately reward fleets for being proactive and the alternative engine model year compliance option assures that owners who made investments based on the original engine model year schedule are not adversely affected.

295. Comment: The large, big, national corporations that run construction companies that would love to do our roads and our bridges don't need to be in California. They don't mind seeing California businesses go out because they can just come in when they need to. (BCPG)

296. Comment: I'm with the California Independent Oil Marketers Association. We remain opposed to the mutually expensive emission control requirements. While staff has made significant adjustments to the regulatory package, there will remain

a very significant burden on California-based trucking operations. Out-of-state and interstate trucking operations are able to manipulate their fleets so that newer trucks will be based for California deliveries, while older trucks will remain in active duty at least to the other 48 states. In-state operators do not have that luxury. We believe this will put a competitive disadvantage to our members and likely increase the demise of independent small businesses in the state. With that demise, California public will experience higher costs and less convenience in the product delivery options. CARB need only examine the in-state gasoline regulations to understand the cost impacts of this. California gasoline is typically 25 to 50 cents a gallon higher than other states, and that's largely due to the loss of small independent refiners in the state. We question the regulation necessity. (CIOMA)

Agency Response: The amended regulation applies equally to in-state and out-of-state fleets. While we understand that some out-of-state fleets may have the ability to manage their fleets to operate cleaner vehicles in California without incurring added costs to comply, there is no way to eliminate this possibility while applying the same requirements for all fleets. However, the amended regulation reduces the overall costs further and will provide relief to all fleets, in particular in-state fleets with older trucks.

The costs associated with the regulation and the ability to pass on costs will vary by individual fleet and business sector. We believe the economic impact of the regulation will be similar for fleets that compete in the same markets. Long-haul fleets are expected to have newer trucks and little or no compliance costs whether based in California or not. Short haul fleets, whether providing fuel delivery or other services tend to travel fewer miles per year because of their local operation and are expected to have somewhat older trucks. These fleets compete with other fleets that also operate locally and will have similar costs to comply with the regulation. In this instance staff does not believe it is likely that out-of-state fleets will have a noticeable advantage. Overall, we expect that the costs of the regulation will be similar for businesses that compete with each other in providing the same service.

f) Other Cost Comments

297. Comment: I'm the president of a third-generation trucking company based in Hayward. Our company submitted full financials for I believe four years to the staff. I hope they were revealing and either interesting or boring to you. But just want to talk about the economics and the marketing. I'm on board with the clean air thing. We have done nothing -- we've been hanging by a thread for the last year-and-a-half, two years. We do nothing but try to pay wages, fuel, and repairs. Our capital expenditures are near zero. In normal times over the last three years, we would purchase nine brand-new trucks to replace older equipment. We have one that we purchased in the last few years. So our fleet has gotten older. For the first time in our history, we borrowed against a credit line. And thank God we were still able to qualify for one. But our time is running out on how long we can continue to draw on that. All of our 45 or so employees have taken pay cuts, including that of the president. We've reduced expenses everywhere we can. In short, the turnaround has not come for our company yet, as I suspect, many truckers and some of them have spoken here. It's not just limited to the one- and two-truck operators. In my

circumstances, it's 30 or 40. But I have the same issues they do. Maybe I'm just weary about it, but I complement the good work of the staff. I support the amendments. Whatever you do, vote on it and then don't change it, because one of the hardest things we've had to do is deal with the constant back and forth. Now, the proposed amendments, I have a couple wins. My 05-06 equipment I get to run another year or so. However, my 2000 equipment, which I have 15, has to be dealt with in the next 12 months. Probably one of the largest things I'm going to have to do is maybe reduce my fleet size by 25 vehicles if I can't find a way to finance it. And I will tell you it's just a question of being able to finance the equipment. So again, I support the goals. Move ahead. I think a lot of us have just tired of the back and forth. I think the staff has done just about the best job they could in trying to find some fairness and give us a little breathing room. It's not going to be enough. So I'll take my lumps and see what we can do. Hopefully, we can protect jobs before we get into a growth mode again. (RTRU)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets. The amendments were crafted with a number of provisions and credits to give fleets the most flexibility, so that each business would be able to comply without having to retire or sell a significant portion of the fleet. However, for fleets that have already downsized or choose to downsize the fleet as part of the compliance strategy, the downsizing credit can delay compliance for the remaining fleet. See the response to Comment 128 for more details on how fleets can take advantage of the downsizing credits to lower compliance costs further.

Staff understands that the administrative process in considering amendments creates a level of uncertainty in the business community for compliance planning, but overall staff took the time to ensure that the amended rule achieved the best balance in meeting air quality goals and lowering costs for fleet owners, and that the information used in crafting the amendments was as robust as possible. Staff does not anticipate major revisions to the rule going forward.

298. Comment: I have supported my family by the sales of Heavy Diesel Trucks for the past 15 years. The last two years have been tough. We are in the middle of the biggest sale slump in 25 years. You would think Heavy truck dealers would be having a field day selling new Trucks and retrofitting older trucks with the soon to be CARB mandated particulate traps. After all, The California government is requiring our customers to retrofit or buy new trucks. No chance, as every time government gets in the way of natural market forces it has crippled an already struggling industry. The Federal EPA in the middle of a 15-year plan to reduce diesel emissions. Our industry has responded by meeting all the federal requirements. The engineers should be commended. All of the engine manufactures have complied or gotten out of the business of manufacturing diesel motors. (A whole other topic).

If you buy a new truck today it will meet the new standards. This goes for 50 states. Somewhere in their infinite wisdom, CARB is trying to force Company's and

individuals to replace or retrofit by 2014. They have amended their plan several times as recent as 1/20/10. But that is still the bottom line. What do you think that has done to the value of used diesel trucks in California? Industry estimates 40-80% devaluation. So the fleets that run the most miles that normally would replace trucks in say 5 years. Now they cannot afford to. Their fleet has no equity in it to be used for replacing their older trucks with the new non-polluting trucks. The typical use for the trade-ins would be to sale them for lower mile applications, local delivery, construction, etc. The used trucks are converted to other types of trucks. A lot of people make a buck off on this transaction. It used to be a win-win for everyone and the environment. Now there are thousands upon thousands trucks rotting, trucks that where once recycled and reused. Now the big fleets that run the most miles can't afford to upgrade to the new less polluting trucks that are available NOW. (SNIETO)

Agency Response: The commenter is correct to note that emissions have continued to decline as businesses normally replace older trucks with newer trucks. Also, the recession has resulted in lower emissions than originally expected in 2008; however, the regulation is still needed to meet federal air quality standards and other state obligations. See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

With the amended regulation, no trucks need to be replaced if less than 20 years old until 2020 and with the PM Filter Phase-in Option specified in section 2025(i), no truck is required to be replaced until 2020 regardless of age. In addition, trucks operating exclusively in NOx exempt areas are exempt from the requirement to upgrade to a 2010 model year engine if equipped with a PM filter. Fleet owners may also find a market to sell their older trucks to fleet owners in NOx exempt areas. Also, if a PM filter is not suitable for an engine annual extension would require no action until 2018. Therefore, in most cases, trucks will be able to operate their full economic lives.

Quality used trucks will continue to have value. Trucks are regularly traded across State lines and this practice is expected to continue. It is a common business practice for dealers to purchase trucks from other states to sell in California and vice versa. Also most auction houses regularly sell trucks to purchasers in other states or countries.

We do not believe there is any evidence that suggests that lower truck sales volume or variations in used truck prices can be attributed to the regulation. California new truck sales have fluctuated consistent with national trends. Historical truck sales are shown in Appendix G - Emissions Analysis Methodology and Results of the 2010 staff report. Historical national truck sales over the past 25 years, for both medium duty trucks and heavy duty trucks, have fluctuated widely as the growth in the economy has fluctuated. Prices for used trucks vary based on demand for trucks and their availability and the effects in California are no different than in the rest of the nation. As described in the 2008 Staff Report, staff compared new and used truck prices of trucks for sale in California at www.truckpaper.com and compared them to National Automobile Dealers Association prices and found no significant differences.

299. Comment: The church programs provide a variety of social services to families who are in need. They are non-profit ministries that receive no public funding, nor do they sell a product or service to generate an income. Instead they depend upon the charitable donations of members and friends to be able to operate and to provide the services their communities so desperately need in this time of economic depression when government bodies are reducing services to the needy.

Traditionally, donations to churches and other charities are among the first to be cut from the budgets of donors who are facing their own economic crises. As a result, the churches we represent are being forced to cut their budgets to continue to provide the services on which local communities depend; making it impossible for them to meet the original deadlines imposed by the Truck and Bus regulation to reduce emissions of diesel particulate matter and other pollutants. (GIBBS)

Agency Response: Staff recognizes the impacts that the regulation could have on churches and other non-profit organizations that operate these buses, and that ARB is continually evaluating approaches that will allow California to meet its emission reduction needs in a manner that would have less of an economic impact on affected fleets. See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

Diesel buses emit a complex mixture of air pollutants, including diesel particulate matter that is a toxic air contaminant based on its potential to cause cancer, premature death, and other health problems. Those most vulnerable to exposure to diesel PM are children whose lungs are still developing and the elderly who may have other serious health problems.

While considering recent amendments to the regulation, the Board placed a high priority on reducing exhaust emissions from all buses, and was particularly concerned with those that transport children. Although older buses may not travel as many miles as some trucks, they have considerably higher emissions than newer vehicles. Exhaust emissions tend to collect in the cabin of older buses and increase exposure of the passengers to elevated levels of diesel PM. Therefore, reducing diesel PM emissions from buses is a significant public health priority.

g) Construction Industry Comments

300. Comment: About a year ago you asked me when I would be able to meet the requirements of the on-road truck rule. I half-jokingly said "ask me again in a couple of years." My answer today is 2 years after the economy returns to 2004-2005 levels.

I am not sure when the economy will get back to those levels, but I do know as of today and the near future, we do not have any money for a down payment or for moving the dump body and other equipment to a new truck. We are not making

enough money to cover a monthly truck payment or the additional cost of running a new truck, including higher fuel costs due to lower fuel economy, maintenance costs of the PM filter and SCR units, etc. On top of all these additional costs, rates in the dump truck industry have gone down due to fewer jobs. Competition is tough in this economy as we all scrap for the few construction-related jobs available. Considering how little work is available, there is no way that we can afford CARB's requirements. Even if we were offered financing, we have no way to make the monthly payments until the construction industry comes back to its previous levels. (WARD1)

301. Comment: The dump truck industry is dying with this depressive economy. We cannot afford to pay our bills much less try to upgrade, retrofit, or repower our trucks. We need more time for the economy to come around before we can do any of this. We all want clean air, but not at the cost of our businesses, families, health and our own lives due to the stress of no work. (SJONES)

302. Comment: The construction materials industry has been hit hard by the economic downturn. California aggregate and ready mixed concrete production is off 50% and 60% respectively from 2005 to 2009. For 2010, production continues to be flat or slightly below 2009 levels. Most forecasts, including one by the Legislative Analyst Office's, do not foresee any significant up-turn in the construction sector prior to 2015. In fact, the LAO states, "The construction industry remains flat on its back- with few immediate prospects-due to the massive fall in residential and commercial real estate markets." (LAO, California's Fiscal Outlook, Nov. 2010). (CEMEX1) (PRMI) (CCIMA1) (SYAR) (AARMC)

303. Comment: CARB staff and other board members have been working with us and other like-minded industries to discuss additional relief for fleets who continue to be discriminatorily impacted by the Truck and Bus rule, such as vocational trucks. The economy has truly been devastating to our industry over the past few years and we are appreciative of all efforts to work with us to find a solution.

It is true that the construction industry has been decimated over the past 3 years. However, if you look at the most directly negatively impacted subset of the construction industry, you will undoubtedly find the small businesses that subcontract dump truck services. CDTOA's membership has dropped by more than 50% in the last three years, directly attributable to the terrible construction industry and these impending regulations. For many of our members, they are truly unique as their dump trucks are the sole asset for their business – essentially serving as their office, tool of their trade, sole source of capital and investment, and only basis of income. (CDTOA1)

304. Comment: We are a small Ready Mix Concrete firm (11 trucks) in the Northern Sacramento Valley. Because of the nature of our business, the nature of people in Construction and the weather, we need a lot of trucks for a short period of time each day. In the heat of summer, people want to pour concrete in the 6am-10am range. Ambient air temperature is detrimental to placing and finishing of concrete. It also adversely affects the people who do the work. Likewise in winter, with cold temperatures and slower set times, concrete must be poured early in order to

prevent concrete people from working into the night on overtime. While we have 10 mixer trucks, it is generally safe to say that 70% of them are parked after about 4 hours use per day. In this current economy, it is rare that all 10 are used at all on any given day. Since they are seldom used, they are older trucks. A new Mixer Truck costs approximately $130,000. You simply can't run newer equipment with such little use. It's a financial no-brainer. Over the past 3 years, our Diesel purchases have dropped from approximately 36,000 gallons in 2006 to 33,283 in 2008 and 31,805 in 2009. The Construction Industry meltdown has already achieved the goals set by AB 32. Also, given the Housing Industry collapse and the Banking meltdown, I have no idea how we can comply with your regulations. I have no idea how we can borrow the money necessary to upgrade our fleet, who we could borrow it from or how we would be able to pay the money back. There are grants (none available) guaranteed loans but only for Interstate freeway corridors that we do not use. (FRMI)

305. Comment: As a small business owner, I want to protest the onerous regulations that are being proposed for trucks in the construction industry. Our industry in particular is such that we stay fairly close to home - usually within a 50 or 100 mile radius. We contribute very little to any supposed "negative diesel" particulate effect. Our industry is so suppressed now, due to the economic recession we are experiencing, that I am barely able to draw a paycheck, let alone have the fund to either retrofit my not-very new (1998) truck OR to buy a newer one. To do either of those things requires capital that can be recouped by working. There is little or no work, and the rates because of it are absolutely pathetic. Unless there is a huge change in our economy, the enforcement of the regulations I have heard are proposed will put me out of business - I become just another statistic. (PMAC)

306. Comment: Dump trucks are truly now the industry that will be most destroyed by the Truck and Bus Rule being that they are construction-based, have a higher GVWR, and are relatively low-mileage. The rule provides no real relief for this group, while other industries have been accommodated. Many of our members are now wondering, "When has the air we breathe become more important than the people that are breathing it?"

Aggregates, construction and the transportation of construction materials was California's fourth largest industry. Every Californian makes use of nearly 7-tons of aggregates per person per year and 95% is hauled to and from locations via trucks. Statewide, the aggregates and construction industry's total economic impact is $230 billion – 16% of all California industry output. Construction materials transportation costs are worth approximately 7% of that total or $16 billion. A new "2010" transfer dump truck with the new 2010 clean diesel engines and emissions devices, without any other special equipment, costs about $210,000 (not including sales tax - an additional 10% $21,000 or licensing - about 1.5% or $3,500). That's about $234,500. The median home price in California is $297,500. A new 2-axle dump set-up straight truck tractor costs about $130,000 (not including sales tax or licensing). And a 3-axle truck tractor costs about $145,000 (not including sales tax or licensing). Specialty truck prices can easily exceed $225,000 (not including sales tax or licensing). These higher equipment

costs when combined with low truck rates and worsening credit scores, is a "perfect storm" that few within our industry can overcome. (CDTOA1)

Agency Response: The response to Comment 268 explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets. Also, see response to Comment 284 on how a number of provisions can substantially lower compliance costs further.

See the responses to Comments 39 and 40 regarding the adverse effects of air pollution on the public.

307. Comment: Who's going to help build the freeways, streets, all the buildings. I have 32 years in the dump truck business, hundreds of owner operators have been put out of business because the way Arnold and his group has handled his "GREEN" state. You need the trucks, you want the trucks, you cannot do without the trucks. (MSHENK)

308. Comment: We are here today because the economy is in the tank and emissions are lower than we thought. I'm thankful that the Air Resources Board is recognizing these conditions, and I encourage the members to approve the proposed amendments. But I would also like some more consideration for owner-operators like myself. I have one truck. I'm due to replace it by -- particulate filter by 2014. And in these economic times, I don't have the money. And I don't foresee the money being available within a couple of years. What I would do would be buying a new truck. That way, I would meet all the proposals of the rule. But I have money for a down payment. I work in the construction industry and have a transfer dump truck. My business is way off. I wouldn't have money for -- until the economy picks back up to 2004/2005 levels, I don't foresee having the money for a monthly truck payment. The additional costs of particulate filter maintenance, the SCR, units or having extra money to pay for higher fuel costs because smog engines get less fuel economy than mine does now. So with that, with those things in mind, I would like additional time or additional flexibility within the rules. Wait another two years for the economy to get back to 2004/2005 levels when I can save up the money for a down payment when I think I can make monthly payments and, you know, the higher costs of running a new truck. (WARD2)

Agency Response: Small fleets can take advantage of the small fleet provision to delay compliance for heavier trucks until 2014 and can postpone their replacements until 2020 or later. Smaller fleets generally have fewer resources than larger ones, and because of the limited number of vehicles in the fleet, are not able to take full advantage of regulation's flexibility options like larger fleets. Small fleets are defined as having one to three vehicles with a GVWR greater than 14,000 lbs.

To be exempt from the PM filter requirements until January 1, 2014, small fleets must report information about the heavier trucks in the fleet by January 31, 2012, if any of the heavier vehicles have 1996 to 1999 model year engines and by January 31, 2013, if any of the heavier vehicles have 2000 to 2004 model year engines. All small fleets will need to opt-in by January 31, 2014. By January 1, 2014 one truck must have a PM filter, by

January 1, 2015, a second truck must have a PM filter, and by January 1, 2016, the third truck must have a PM filter. The owner must report by January 31 of each compliance year until the owner reports information to show that all trucks are equipped with PM filters. No additional reporting is required unless the vehicles in the fleet are replaced or more vehicles are added.

Small fleets can also take advantage of other provisions or credits. Any fleet with PM filters on all heavier trucks by January 1, 2014 can report in January 2014 and delay all heavier truck replacements until 2023. This means that single truck owners that retrofit their trucks with PM filters by 2014 will not need to upgrade to a 2010 model year engine until 2023.

A single truck owner with a low-mileage construction truck can delay compliance until 2016 by reporting by January 31, 2012. See the response to Comment 157 that describes the low-mileage construction truck provision. Please also see the response to Comment 360 regarding funding opportunities for construction truck owners.

309. Comment: I'm an owner-operator of one ten-wheel dump truck. Let me explain briefly how I get my work. I call brokers, many of which are here today. And when their trucks are out, they give me a call back and tell me I have some work. When their trucks don't get out and they're not, then I don't have any work. So this recession, like everybody else, has hit me very, very hard. I'm down over 50 percent in what I'm taking in a year. I have a 1990 Kenworth. And I talked to Peter earlier this morning, and he said that there might be some relief on the way as far as a particulate matter filter or something I might be able to do for my truck. Without some kind of relief like that, with this recession, you're going to find another 60-year-old man in the unemployment line, because I just won't be able to purchase any truck. It's just not in the cards. (WATS)

Agency Response: The amended regulation allows the owner of a single truck with a 1990 model year engine to delay compliance until 2015, thereby providing more time to upgrade or retrofit, as well as additional funding opportunities. In 2012, the truck will be 22 years old and the fleet owner can purchase a used vehicle and still meet the compliance requirements See the response to Comment 157 that describes the low-mileage construction truck provision. The amended regulation is expected to reduce compliance costs by reducing the number of required PM filters, delaying truck replacements substantially, and extending credits. See the responses to Comments 342 through 362 for more information on funding opportunities.

310. Comment: I've been hauling rock, sand, and gravel in Sacramento for over 45 years. My position on this hasn't changed one bit. Everybody wants the cleanest air possible. They want the latest technology and everything else, and there is nobody in their right mind that wouldn't like to own a brand-new state-of-the-art truck or any company. I'm down to the small fleet, three truck operator right now because of taking advantage of the complying element with your original rules. Due to the economics, our business is down probably like 90 percent today. It depends on how you look at the figures. Fortunately, almost all of our equipment is paid for. And I would hate to think if I had a couple thousand dollars a month

payment on a new truck, even though a large percentage of it was granted money from one place or another, we could not meet that liability. We would not be able to meet the terms and conditions of that. I am quite sure there are a lot of people that have already lost the Carl Moyer trucks, all the stuff. I really want you to take a good look at how down the economy is right now. And when it comes back, it's going to be hard to borrow money to meet the new technology in the state-of-art vehicles. Even if you have some grants because you won't be able to borrow any money if you can't state some income, have some jobs. There's just no work in the construction industry in Sacramento, northern California right now to speak of. And our entity is probably in good times we put 45,000 miles on our truck because it's all pretty local. We're not in that category where we're gross emitter. And there's a lot more people. There's thousands of people with one, two, three truck, swimming pool diggers or whatever that due to the economy, one thing, cannot afford any more cash outlays. Please be sensitive to where our economy is right now and where it's going to be for the next ten years. (AFTR)

311. Comment: I have been in business for ten years. I have 3 ten wheel dump trucks, 2 of which I am still making payments on and will do so for two more years, if I'm lucky. The newest one being a 1999 year model motor with 240,000 original miles is junk according to you guys! You want me to replace it! I have not even finished paying for it yet. Prior to 2008, I averaged about 20,000 miles a year per truck. Last year 2009, I went 6,000, 9,000, and 11,000 per truck and my revenue has declined from being a small profit business to being a no profit business. I am only hanging on because I had a small savings account, available credit, health insurance, and now that those are all gone I just hope and pray everyday that I will have a job for tomorrow and nothing breaks on any of my trucks if I am lucky enough to work. So having said all that, please delay or scrap the on road rule until things get better in this state of ours. (MMURRY)

Agency Response: The regulation cannot be delayed further. See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

See responses to Comment 308 that address the phase-in options for small fleets. See the response to Comment 157 for a summary of the provision for low-mileage construction trucks.

312. Comment: Our company has been impacted profoundly by the recession in construction. We have gone from approximately 330 employees to around 200 employees. These changes being considered to the on-road and off-road diesel emission laws would be a small step towards helping to keep us in business. We hope for more far reaching measures in construction for On-Road Diesel. If you were to increase the low-use mileage exemption for construction to 15,000 miles per year, this would be another step in the right direction. Our on road vehicles have been used far less than they used to be due to the recession, and when they are used they are on jobsites for the most part, so they are a very small part of diesel emissions. (BYOUNG)

313. Comment: Our company has been greatly hurt by the recession in construction. We have gone from 100 employees to 7 employees. The changes to the on-road and off-road diesel emission regulations are the minimum needed to keep us in business. We hope for more help in construction for On-Road Diesel. We need you to increase the low-use mileage exemption for construction to 15,000 miles per year. Our on road vehicles have either been parked in great numbers due to the recession, or spend most of their time on jobsites, so they are a very small part of diesel emissions. (GGIFF)

Agency Response: Consistent with the commenter's request, the annual mileage limits for the low-mileage construction truck provision was modified as part of the 15-day changes to the proposed amendments to 20,000 miles for dump trucks and 15,000 miles for all other trucks that are eligible. See the response to Comment 157 for a summary of the provision for low-mileage construction trucks.

See response to Comment 128 which discusses how fleets can take advantage of the downsizing credits to delay compliance with the PM filter requirements and lower compliance costs further.

314. Comment: CalPortland owns about 300 ready-mix trucks in the California area, but only operate about half of those due to the downturn in the economy. Although the downturn in the general economy of California has been very bad, construction industry specifically has been extremely hit hard. I've installed or had installed 24 retrofits on ready-mix trucks at initial cost of $497,000. That's a lot of money in this economy right now when we are doing all we can just to keep the doors open. I say initial cost, because the ongoing cost of limited operating hours of those trucks is going to be continuous.

I'd like to thank the staff of CARB for working with our industry as well as all the other industries. A lot of time and effort that was put into coming up with the amendments. And I just want to say I believe the amendments will be good for all Californians in the long run because we'll have better technology and hopefully better economy to work with. (CAPC)

Agency Response: See the response to Comment 306 regarding how the compliance options in the regulation can delay compliance and lower costs.

h) Logging Fleet Comments

315. Comment: The companies that Associated California Loggers represents in California are largely family-owned, and have been passed down from generation to generation. We represent some large companies with extensive fleets, but we also represent many small-business owner-operators with only several trucks. Our companies operate in rural counties which are overwhelmingly in attainment for NOx (78%) and PM (97%) – counties which themselves are suffering from the current disastrously poor California economy, at levels of unemployment well above the levels in more populous areas of the state.

At a time when the timber industry is facing a downturn in lumber prices, log prices and available work at levels not seen since the Great Depression, our association has nonetheless committed a great deal of time and personal investment in meeting with CARB staff and working on the language of the In-Use On-Road rule (hereafter, “the Diesel Truck Rule”) (ACLOG1) (ACLOG2)

316. Comment: There has been no significant measurable improvement in California’s economy for the Forestry Sector in 2010 and we do not expect much improvement for the foreseeable future. For the forestry sector, we believe the On-Road Rule staff recognized that it makes little or no sense to spend $20,000 for a particulate filter for a truck that's worth $10,000 or less. The compliance schedule has been adjusted to recognize this and try to create a situation where an investment only has to be made once (either repower or replace). Further, and more important, we believe we've demonstrated that there is no particulate filter technology in the market place that will work in our forestry application with old, mechanical fuel injection, trucks.

The in-State forestry fleet owners have historically turned over their trucks at a rate of 4 percent per year. Forestry fleets generally put 30,000-60,000 miles/year on their part-time trucks (they're weathered-out 5-6 months/year). So it takes 20-30 years to “wear-out” the truck. Further, there is no bank in California that will lend money to a fleet owner to buy a filter and install it on an old, mechanical fuel injection truck.

We applaud On-Road staff's efforts in working with the Forestry Sector to craft an excellent Log Truck Provision. Turning the log trucks over at a 10 percent annual rate starting January 1, 2014 is a simple, easy-to-understand approach. The problem is there's no economy in California to support the implementation. The historic replacement rate is 4 percent. What this will mean is that fleet owners will declare a percentage of their log trucks under the Log Truck Provision and keep the rest within the mileage exemption categories for Agricultural Vehicles. (CFA1)

317. Comment: Our members are aware that they provide a significant amount of the employment in rural timber counties. This rule will thus doubly harm local counties, first by harming our industry, and then by harming our industry’s support to counties. Further, we understand that 60% of trucks in rural California are 1994 model year and older, and banks won’t lend money on equipment over ten years old. Given that these counties are largely in attainment for NOx and PM, they are being treated inequitably as against the more high-pollution counties in California, with little or no relief funding directed their way.

At a time when all governments are looking to create more jobs in the U.S. and California, the diesel truck regulation is still poised to take jobs away – including both private sector and public sector jobs in rural California counties -- unless certain actions are taken to reduce the cost and impact of the rule. The proposed amendments are a good step in that direction, but more must be done. (ACLOG1) (ACLOG2)

318. Comment: You heard about the economy. Our situation is no different than anybody else's. Quite frankly, even with the adjustments, we're not going to be able to afford the rule. Some solutions that we've come up with is time credit. We haven't had a chance to understand what was presented here this morning, but our written comments will talk about that later on after we understand them. One other item -- I mentioned this before we've been before the Board. We are continuing to have a lot of down time with our new trucks. So we're not anxious to jump into more trucks. We would suggest as government funding becomes available that the rule become implemented over time. We need to stretch out compliance period for a longer period of time. One thing that we are current, some of the other people that have spoken, we're a seasonal operation. We're five-and-a-half months. A good year for us is seven months. We're trying to get compliance to buy new trucks with that money. It's just not possible. One solution we've come up with -- I hope our employees aren't watching -- is cancel our health insurance. If we cancel our health insurance, we could afford to buy five trucks a year. That is not on the table yet, but that is the only place I can see in our operations that we can find any extra money to comply with the rules. (REI)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

The engine model year schedule for heavier trucks in the amended regulation delays the clean-up requirements for the oldest trucks until 2015 and 2016. Vehicles that comply with the engine model year schedule for heavier trucks have no requirements for pre-1994 model year engines until January 1, 2015 and no requirements for 1994 and1995 model year engines until January 1, 2016. Fleets with older vehicles can avoid having to retrofit these older vehicles and instead elect to wait to replace these vehicles with newer used trucks that are originally equipped with PM filters.

In addition, owners of trucks with permanent bunks that haul logs could elect to comply the Log Truck Phase-in Option. This alternative compliance option does not require installation of PM retrofits, but instead requires the phase in of 2010 model year emissions equivalent engines at the rate of 10% per year from January 1, 2014, to January 1, 2023. Vehicles must be labeled “AG” on both doors, like the trucks using the agricultural provision. The log truck provision applies statewide and there are no mileage limits. In a mixed fleet, can the log truck provision and the agricultural truck provisions be used together. The number of trucks that can use the log truck provision and the agricultural vehicle provisions is limited to the number of vehicles owned by the fleet on January 1, 2009. Fleets must opt-in by January1, 2012, and identify which trucks will use this alternative compliance option for log trucks.

Vehicles that are operated exclusively in the NOx Exempt Areas (typically rural areas) can also reduce costs by delaying compliance with the PM filter requirements for heavier trucks and by making any truck exempt from the requirement to upgrade to a 2010 model year engine if equipped with a PM filter.PM filter requirements for heavier vehicles may be delayed until January 1, 2014, at which time the fleet owner must have

PM filters on 33 percent of their vehicles. By 2015, 66 percent of the vehicles must have PM filters and all vehicles must have PM filters by 2016. The fleet owner must report the vehicle information to the ARB, and label (or using a tracking system) vehicles the use the extension. Vehicles that have been reported and are equipped with PM filters will not need to be replaced starting 2020 like other trucks as long as they continue to operate exclusively in the NOx exempt areas.

Fleet owners that comply with the engine model year schedule for heavier trucks must meet the PM filter requirements according to the schedule and do not need to report; however, if any of the vehicles in the fleet will stay in the NOx exempt areas, whether they are lighter trucks or heavier trucks, the fleet owner can use the replacement exemption by reporting information about each vehicle and PM filter installed on the engine before the replacements are required in the appropriate model year compliance schedule. At that time the owner must label the vehicle (or using a tracking system).

See the responses to Comments 342 through 362 for general information on incentive funding programs and in particular, see the responses to Comments 342, 360, and 362 for information applicable to log trucks, trucks that drive limited miles and trucks that operate in rural areas.

319. Comment: Even with the proposed amendments this rule will dramatically impact employment in rural California. There simply is not the money available for the updates even with the amendments in this rule, for rural operations to continue with seasonal constraints as they have for multiple generations. These companies have provided jobs in rural California for generations and today these same areas are listed in the top ten cleanest air districts in the Country. Even though these districts are ranked high nationally for clean air, businesses within them will suffer greater impacts and higher costs to comply when compared with companies operating in San Joaquin and South Coast air basins. The inequity in this regulation is due to seasonality of operation and access to public funding. A majority of the trucks operating in rural California are pre 1994 mechanical engines. These trucks are still being utilized because seasonal operations take decades to exhaust the useful life of a truck, not to mention the cost to purchase a replacement truck or engine using a rural business model, State agencies have no concept of the burden this puts on small business in the current financial situation.

Replacing a pre-1994 mechanical engine with a post-1994 electric engine is something that can be done at a reasonable cost or hopefully no more than the fair market value of the original truck itself. In NOx compliant rural California the result of taking mechanical engines out of service and replacing them with electronic versions would have an astronomical impact on the reduction of Particulate Matter. Replacing mechanical engines with electric engines and no further requirements could save jobs in rural clean air districts while providing significant PM reduction. Instead the PM reduction will come from business's closing their doors and eliminating jobs because of the cost of this rule. Everyone would like to have a new truck however spending money that the business does not have makes no sense. Requiring local trucking firms to run the cleanest diesel technology in the

low use areas of the state that currently have the cleanest air in the nation makes little sense either. (ALOG)

Agency Response: Please see response to comment 318 on the compliance options that lower the compliance cost for log trucks and for vehicles that operate exclusively in cleaner parts of the state defined as NOx Exempt Areas. Costs are lowered even further if the fleet has downsized since October 1, 2006. See response to Comment 128 for more details on how fleets can take advantage of the downsizing credits to lower compliance costs further.

Commenter's recommendation for replacing a pre-1994 engine with a post-1994 engine as a method to reduce PM emission would result in some PM emissions reductions, but would not be as health protective as an engine equipped with a PM filter. Diesel engines produce a complex mixture of air pollutants including diesel particulate matter that is a toxic air contaminant. Diesel PM emissions have the potential to cause cancer, premature death, and other health problems. PM retrofit filters are a cost effective method to reduce exposure to harmful particulate matter emissions including fine particles. Finally, if suitable PM filter is not available for the engine, the amended regulation allows for annual compliance extensions until 2018.

320. Comment: My constituents have very grave concerns with how this will affect their livelihoods. So the voters of California are interested in clean air. They are also interested in having jobs in an economy. And the direction this Board I hope can go will be able to pause and take into account what the best solutions really are in a practical way, especially for rural California where the air attainment zones are doing better. I know the issues down in the valley are more acute. But we are doing pretty good up in the north and much of rural California. So when we look at the plan -- and I know you're working on amendments right now. As we move forward, that we can take into account some areas are doing better than others and some areas don't need nearly the focus. And so as dollars are allocated, whether that's through Carl Moyer or other methods, let's put these efforts where it's really needed.

But let the folks that are doing well have a little more of a time line. So one of the things I'm talking about is that people with fleets that need updating, let's let the process work through normal attrition. My own farm, for example, we've purchased newer trucks for us in the last couple years that have brought us quite a bit into the direction you would like to see us go. We're running cleaner trucks than the 70s models we've had in the past. So we are achieving right there just with normal attrition 90 percent increases in efficiency in those trucks for the low mileage that we use in agriculture. Applying that model to all across the industry, the long haul people that use them up fairly quickly, trade them off, the medium line people and the mom and pops as these move down the steps, we're achieving air quality improvements dramatically just through that transition. And this is then affordable.

I can afford to upgrade my trucks one generation from a 70s model to a 90s model. So can the mom and pops and the medium ones, but they can't all just jump from 1970 to 2012. And I appreciate that you've worked that way with the ag exemption, but more folks out there need this kind of relief. And so as you

consider these amendments and other policies as you push forward, please really take a look at what that means. All manner of truckers, especially in the mom and pops, they can't afford to put on technology that does not work for them. We are even seeing it with the newer rigs. Brand-new ones, they're having to get many times major repairs because the retrofit equipment or the new equipment they're putting on is not working for them. (MALFA)

Agency Response: The commenter is correct to note that emissions are expected to decrease as fleets normally replace older trucks with newer ones; however, the emissions reductions do not occur fast enough in California to meet federal air quality standards. See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

The amended regulation continues to recognize that certain areas in California do not need the same emissions reductions as the rest of the state. Please see response to comment 318 regarding compliance vehicles that operate exclusively in NOx Exempt Areas

Also, see the response to Comment 308 on how the amended regulation substantially lowers the compliance costs for small fleets with three or fewer vehicles.

Please see response to Comment 93 for details regarding the durability and availability of retrofit PM filters. Finally, if a suitable PM filter is not available for the engine, the amended regulation allows for annual compliance extensions until 2018.

321. Comment: On behalf of Associated California Loggers, we thank the Air Resources Board and you for changes and amendments made or contemplated to the Diesel Truck Rule. At the same time, we remain concerned that the implementation of the Diesel Truck Rule will require a careful and ongoing review of the effect of the divested economy on the ability of our members to comply with the rule, and a search for grant funds which can be used to meet compliance requirements. Additionally we believe that we must continue to work on the measures by which all provisions of the rule can be made workable and cost-effective at a time when emissions inventories are decreasing as a natural consequence of the economy.

California is already experiencing a decline in the “logging infrastructure” necessary to manage our forestlands and assist in the prevention of massive fires and to assist in the fight against climate change. In adopting these amendments, we hope that the Air Board will continue to offer its understanding of the particular problems of the timber industry in complying with the Diesel Truck Rule. (ACLOG1)(ACLOG2)

Agency Response: Please see response to Comment 318 regarding compliance options that spread out the compliance costs for log trucks and for vehicles that operate exclusively in NOx Exempt Areas. The response also describes how the changes to the regulation affect funding opportunities.

322. Comment: Even as we have all worked towards meeting deadlines imposed by the state and federal government on these diesel rules, the national, state and logging economies have refused to meet any deadlines for recovery thus far. Associated California Loggers still has many members who are struggling, month to month, to keep their businesses going and to provide for their families. For these members, the requirements of any rule that might involve cost – the purchase of equipment or trucks, the retirement of trucks upon which they depend to make a living – cannot even be contemplated at this time. We must use the years remaining to us before the Diesel Truck Rule requirements become fully operative to find the means to make this rule work financially. In addition, we believe that it is appropriate to further delay the start of Diesel Truck Rule requirements, given that the economy is not improving markedly and we can assume that this will keep the emissions inventory levels in California low and ahead of your schedule for further reduction. (ACLOG1) (ACLOG2)

Agency Response: Staff analysis demonstrated that emissions from trucks, buses, and construction equipment were much lower by the end of 2010 than previously anticipated in the SIP. The updated forecasts strongly suggest that emissions would also be lower in 2014, and the amendments providing for greater compliance flexibility have taken this into account. However, the regulation is still needed for the State to meet federal air quality standards and SIP commitments. See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

Please see response to Comment 318 regarding compliance options that spread out the compliance costs for log trucks and for vehicles that operate exclusively in NOx Exempt Areas.

323. Comment: Costs of purchasing and financing diesel particulate filters, let alone new diesel trucks, are prohibitive. Our logging season is short (six months or less) and the ability of our members to earn a living, make a small profit, or even break even is limited in the best of times. These are not the best of times. Our ability to earn the income to re-pay loans is limited.

The rule contemplates our companies being able to set aside the money, or to secure the financing, to buy new logging trucks --- or to buy PM filters for existing older trucks. But our members cannot borrow money against their trucks as collateral (CARB has been presented with letters from the banking industry saying this.)

CARB staff has told our membership that if the filters are not a cost-effective solution, “you might as well buy the new truck.” Easier said than done. Our members are currently relying on older trucks, or fleets containing older trucks, in reliance on the long life of those trucks. The regulation will continue to render those older trucks worthless for resale in California, while requiring our companies to buy new trucks. Thus, our members won’t be able to use the sale of their older trucks to finance the purchase of new trucks, which can cost upwards of $130,000.

And, as forestry competes in a world market, we cannot pass on these additional costs to consumers. (ACLOG1)(ACLOG2)

Agency Response: Staff met with representatives of the logging industry to better understand the industry and their concerns with the existing regulation. Given the specific characteristics of logging trucks, staff recognizes that the retrofits might not be the best compliance solution for all fleets in the logging industry. Subsequently, as part of ARB's 15-day changes to the proposed amendments, a special replacement option for log trucks was added to the amended regulation in response to industry requests. Trucks that remain in NOx Exempt areas do not have to be replaced if they are equipped with a PM filter. Please see response to comment 318 regarding compliance options that spread out the compliance costs for log trucks and for vehicles that operate exclusively in NOx Exempt Areas.

As described in response to Comment 298, there is no evidence to suggest that truck prices in California differ significantly compared to other states. See Comment 342 regarding low cost loans.

324. I think that changes in the design and performance of diesel engines should be incorporated at the manufacturing level. I, as a business man, understand that as technology changes and new products become available, I may have to pay a little extra when purchasing something new. What you guys want to do is change the standards, making our current fleet noncompliant. This forces us to spend money on our existing fleet to comply, or buy new equipment to replace a unit that is a productive part of our business. I do not have to explain that these are tough economic times, and these standards will force people out of business. Any good business owner will upgrade their fleet, over time, when it is necessary. We would voluntarily upgrade our fleet to current standards as we gradually phase out the older units. All of the units we purchased in the past met the guidelines and standards set during the time of purchase. (TTOW)

Agency Response: The emissions are expected to decrease as fleets normally replace older trucks with newer ones; however, the emissions reductions do not occur fast enough in California to meet federal air quality standards. See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

i) Continue Monitoring and Evaluation

325. Comment: We believe the Board should direct staff to continue diligently looking for modifications to these rules to reduce the financial burden in California's struggling economy with specific emphasis on integration and consistency between the Rules. (CFA1)

326. Comment: We appreciate the effort ARB has put into reviewing emissions estimates resulting from the downturn in the economy; and, consequently, the proposed rule changes based on these realities. We encourage ARB to continue

assessing emissions and the impact of the economy. (CCIMA1)(AARMC)(CEMEX1)(PRMI)(SYAR)

Agency Response: ARB will continue to track the economy and emission trends as explained in response to comment 285.

j) Economic Effects on Retrofit Manufacturers

327. Comment: These changes will also have an impact on the number of green jobs created here in California. Our business is done through California distribution where literally thousands of jobs are created by my industry to market, sell, install and maintain VDECS systems. The elimination of the requirement for retrofit for off-road and the slashing of the affected vehicles for on-road by more than half will literally result in the elimination of the need for many thousands of these green jobs. (JMC1) (JMC2)

328. Comment: ARB's diesel fleet regulation push California into a sustainable green economy and create jobs associated with the manufacture, sales, installation, and servicing of diesel exhaust emission controls. A survey conducted in late 2008 shows that MECA members directly contribute over 65,000 green jobs around the country including more than 1,000 jobs in California. These jobs include technical and service personnel responsible for selling, developing, installing and maintaining diesel retrofits that are employed by our members. A more recent analysis took into account independent small businesses in California that install and maintain retrofit devices and estimated 4,000 jobs are associated with the diesel retrofit industry in California. An independent economic analysis completed in early 2009 (available on MECA's diesel retrofit website, www.dieselretrofit.org, under "Useful Documents") translates investments in diesel retrofit technologies into jobs associated with manufacturing, sales, installation, and maintenance of advanced emission control technologies. Every million dollars spent on diesel retrofit technology creates or preserves about 21 jobs. The mandatory PM retrofits on 1998-2006 MY trucks/buses (> 26,000 lb GVWR) included in the ARB staff proposal are estimated to create more than 20,000 jobs. On the contrary, the removal of mandatory PM retrofits for 1994-1997 trucks and the lighter trucks < 26,000 lbs, as well as, all retrofit requirements from California's off-road equipment eliminates the opportunity for more than 26,000 additional retrofit-related jobs. (MECA1)

329. Comment: Back in 2000 or so CARB invited JMI and other emission control technology companies to come to California and develop and commercialize PM control technology for the Diesel Risk Reduction Program. We came, and we developed, verified and commercialized technology to reduce PM from HDD vehicles by over 85% (Level 3 devices). We came and spent many millions of dollars to do so on the promise of a defined market that allowed for the development of a business plan that justified the development, verification and commercialization of these technologies. Now, due to the effects of the economy and reduced economic activity, that promised market has been dramatically reduced.

Economic relief was a goal of these amendments. However, one of the affected industries that has not been included in this economic relief effort is my own, the VDECS manufacturers. We as an industry, and specifically for my company, JMI, have spent millions of dollars to develop, verify, and in several cases reverify technology due to amendments in the Board approved verification process, and then commercialize these technologies. The economic downturn has affected JMI's overall business just like all the regulated industries here in CA and across the nation. We have started conversations with Staff on some ideas for economic relief but we would ask that the Board direct Staff to look at specific ways that the VDECS manufacturers can be provided with some economic relief. (JMC1) (JMC2)

330. Comment: We are also heavily involved in the retrofit market here in California. In 2000, ARB essentially invited Johnson Matthey and our industry to come here to California and essentially develop, verify, and commercialize technology for the Diesel Risk Reduction Plan. We came to California. We've spent millions of dollars developing technology and verifying, some cases re-verifying, and commercializing technology. That was based on our business plan, which essentially came off of a market that, in essence, was proposed and promised based on your rules.

Today, there are more than 21 verified systems out there, some of them mine. We are also in process verifying combined NOx PM systems, which can take advantage of your rule by meeting 2007 emission standards and allowing engines or vehicles to be operated until 2023. Now due to the reduced activity because of the economy, we do agree that relief is necessary. In fact, Johnson Matthey, our business has been affected. And quite honestly, just the specter of the changes in the rule has already started to really slow down the number of retrofits being done here in California.

You guys had recommended the staff to look at economic relief for industry. I guess regulated industry was what people had in mind. But our industry has also felt the impact of the recession and such. And we would ask that the Board consider directing staff who we've had conversations with already to look at some measures for economic relief for our industry as well.

Our VDECS products are sold here in California through distribution, through California companies. We market. We sell. We install. And we essentially maintain these systems through California green jobs. The changes to the rules really will impact the number of jobs that can be foreign. (JMC2)

331. Comment: Ten years since the finalization of the Diesel Risk Reduction Program (DRRP), the proposed changes in the In-use Heavy Duty Diesel-Fueled Fleet Rules have eliminated 160,000 highway retrofits and over 100,000 off-road retrofits. This leaves the number of remaining diesel engines requiring mandatory retrofit in the highway segment to just over 100,000. Mandatory retrofit requirements of offroad machines have been completely eliminated. The investments made in support of ARB’s Diesel Risk Reduction Program by all verified device manufacturers in the emissions control industry will be greatly

impacted by the proposed in-use rule changes. Despite the fact the verified device manufacturers have already made numerous investments and re-investments over the past ten years, our industry remains the only stakeholders before you today which still faces the full impact of the economy as well as the proposed pullback in the in-use fleet regulations. (CDT1)

332. Comment: We're a manufacturer and designer of electrically-regenerated diesel particulate filters. We've been developing these products over the last ten years at significant cost to us as individuals and founders as well as our investors. We made that investment based on supporting the market created by the clean air regulations here in California. These systems take years to design and develop and to verify, and we've reached the point where the mandatory retrofit regulation would finally start to produce fruit to support this industry over time. I believe the proposed changes will impact not just our company but the long term health of the industry. It will lead to fewer green jobs in California. In our particular case, we've had no choice but to push off our implementation of a 40-person assembly shop in the San Joaquin Valley that was going to be specifically building off-road retrofit devices. That sends a strong message mine to invest hard to come by private capital in other places and other things. The proposed changes I think set the stage for requests for additional relief from other industries, and I think this is a slippery slope that could ultimately defer or delay the recovery of the economy of California that many believe will be on the backs of clean tech jobs. In our particular case, we're a member of MECA. We support what MECA has proposed as relief for the industry. We ask specifically that you reconsider the 100 percent removal of mandatory retrofits. (RYPOS)

333. Comment: Our members have invested and continue to invest significant resources in developing and verifying diesel retrofit technologies for the whole range of in-use diesel engines currently operating in California, including on-road, off-road, and stationary sources. A 2007 survey of MECA members estimated that more than $2 billion has been invested in developing and commercializing diesel emission control technologies for both new and in-use vehicles. New diesel emission control products continue to be added to ARB’s list of verified retrofit technologies. There are twenty-one Level 3 diesel retrofit technologies on ARB’s verified list each of which has taken between $1-2 million of up-front investment to develop and verify. Retrofit manufacturers have made substantial additional investments in verification costs associated with de-verified technologies, revised verification requirements, and pending verifications of new retrofit technologies to further expand the options available to fleet owners to comply with ARB’s in-use fleet regulations. In 2013, off-road VDECS manufacturers will be required to re-verify existing systems using the Non-Road Transient Combined (NRTC) test cycle. Manufacturers have made significant investments in re-verifying retrofit PM reduction technologies to comply with other changes to ARB’s verification requirements such as NO2 limits. Furthermore, manufacturers are required to begin the in-use compliance portion of the verification process after the sale of only 50 units. Before their initial investment is recovered, manufacturers are required to remove and replace devices from vehicles for testing. In-use testing

requires significant resources at an added cost of approximately $0.5 million per Level 3 device that manufacturers must bear at a time when their business has disappeared due to regulatory changes and delays. Technology providers rely on regulatory stability in order to develop their business plans and justify the necessary investments to meet the commercial needs in time for implementation. The regulatory changes outlined in this proposal have significantly diminished their present and future business outlook. (MECA1)

Agency Response: Staff realizes that the amendments will reduce the number of retrofit PM filters required for fleets and economically impact the retrofit manufacturers. However, this impact must be balanced against the rest of the affected fleets that have been impacted by the recession. The amended regulation lowers costs substantially, delays vehicle replacements and continues to rely on PM filters to achieve substantial PM emissions reductions. See the response to Comment 268 that explains why the regulation is necessary and how given the economic and emission impacts of the severe recession, the regulation has been amended to substantially lower the compliance costs of affected fleets.

In mitigating the impacts of the amendments on retrofit manufacturers, staff expanded the early compliance credits to reward proactive fleets and to further encourage fleets to install retrofits early. Fleets that have already installed a retrofit PM filter or install them prior to July, 2011 would be able to treat another vehicle as compliant until 2017. The vehicle that was retrofitted early would also extend compliance until 2020. The amended regulation also extends the expiration date of the credit from 2014 to 2017. Furthermore, any vehicle that is equipped with a PM filter prior to 2014 can delay compliance until at least 2020. Finally, fleets that equip their vehicles (both those above and below 26,000 lbs) with PM filters by 2014 extend the vehicles' compliance until 2023. These early compliance provisions are expected to result in earlier and greater demand for PM retrofits.

334. Comment: In collaboration with the rest of the industry through MECA, a list of proposed relief measures has been provided to ARB staff for consideration. Based upon initial discussions, we believe that a significant period of time could still pass until any relief is provided to the retrofit industry. Clean Diesel Technologies is asking the board again today to reiterate its support for the industry and direct senior ARB staff to urgently lead the pursuit of immediate relief measures which are comparable to the loss in market that have resulted from these in-use fleet rule changes. (CDT1)

335. Comment: Market stability demands finalization of the in-use on-road rule. Since release of the proposed changes to the Highway and Off-Road In-use Rules, we have observed that fleets are delaying purchases hoping that even further relief will be provided to fleets. For this reason, it is of paramount importance that the proposed changes for the In-Use Highway Truck Rule are approved without further delay or any further reduction in the number of mandatory retrofits. Given the industry investments needed to insure supply capacity requirements in 2012 thru 2014, the highway truck retrofit market needs, at a minimum, stability in the interim year of 2011. Further delaying the In-use Highway Truck Rule is likely to result in

the decline of sales in 2011 creating further financial challenges for retrofit device manufacturers. (CDT1)

Agency Response: The ARB recognizes the importance of retrofit manufacturers in its partnership to achieve its clean air obligation. As such, the Board directed staff to not only develop amendments that provide relief for fleets but also to maintain support for clean technologies. Please see response to Comment 333 for information on credits for early installation of retrofit PM filters. Staff expects regulatory amendments to be effective by the end of 2011, and we do not anticipate additional changes in the near future.

336. Comment: We've for the last ten years strategically invested behind ARB's clean air objectives. And we had to make these investments, not just over time, but also had to make green investments in the products to maintain compliance. And despite the fact that we've made these numerous investments, we remain today one of the -- I think the only stakeholder before you which still faces the full impact of the bad economic times, but additionally the pull back of these regulation.

Today one of the things I would ask the Board is to reiterate its support for the industry and direct senior ARB staff to lead the pursuit of immediate relief measures for the retrofit device manufactures so that we have some stability in the next year as we ramp up towards complying with the demands in 2012 and 2014. Additionally, we have had reports from our distributors already that when the proposals came out for these rule changes that fleets immediately stopped making purchases. And that's further destabilizing the marketplace that we have to operate in. And we again saw further destabilization in the Lower Emission School Bus Program. Our distributors were recording money that was set to flow, that should have flowed a year and a half ago is now delayed because of the removal of the 26,000 pounds in school buses. There was already money lined up for the school buses, and now it's leading to another delay where all the money is being shuffled to other school buses. This is a very critical time to say we need you today to pass these rule changes so that, at a minimum, we have finality and we have stability. (CDT2)

337. Comment: MECA requests that the Board direct senior ARB staff to quickly identify relief opportunities within the verification program to off-set the loss of revenue from these regulatory roll backs. (MECA1)

Agency Response: See response to Comments 333 and 335 for information on how credits for early installation of retrofit PM filters are expected to stabilize the PM retrofit market.

The Board further determined that children’s health risk associated with diesel PM was important and therefore directed that the amendments should be modified to retain the PM filter requirement for school buses with a GVWR less than 26,001 pounds. Those changes were made as part of the 15-day changes to the proposed amendments. By maintaining the PM filter requirements for the lighter school buses, the demand for school bus retrofits should return.

ARB will be addressing amendments to the ARB's verification program separately.

8. Funding

a) Requests for Additional Incentive Funds for Log Trucks

338. Comment: We urge CARB to explore and provide as much funding as is necessary to allow California companies to purchase filters, engines, and trucks. Funding mechanisms must be found, with an emphasis on grants rather than loans, as neither the general economy nor the timber harvesting economy make it feasible to repay loans in the amounts contemplated by this regulation. (ACLOG1)

339. Comment: The simple problem is that there are not sufficient monetary incentives through existing programs to make the On-Road Rule workable for in-state fleet owners. The Carl Moyer Program has insufficient funds and the match requirement is crippling to potential applicants. The Forestry Sector is not eligible for Proposition 1(B) funds or 118 funds. (CFA1)

340. Comment: Financial burden is still beyond the ability of many in-state fleet owners to comply even with these modifications. You'll hear more about that. So I won't say any more. We obviously need more money in the Carl Moyer and other related programs. And I was extremely gratified there was $200 million in the omnibus bill for federal emission reductions. Unfortunately, Senator Reed pulled the omnibus bill yesterday, which was bad news. And obviously $200 million, California could suck that up in a heartbeat. That was the national number. (CFA2)

341. Comment: Our industry is committed to the achievement of proper air quality in California, and our individual companies have strived to comply with air quality requirements as they exist now. Some of our members have participated in the much-needed Carl Moyer Program which provides funds for retrofits of diesel vehicles – but many other of our members have found their companies ineligible for Carl Moyer funds or trying to obtain them in poor counties that cannot provide matching funds and hence refuse to participate. (ACLOG1)

342. Comment: At the January 22, 2009 meeting of the Air Resources Board at which the original Diesel Truck Rule was adopted by the Board, you made the following comments:

> "CHAIRPERSON NICHOLS: We were talking when we broke about the fact that the federal government has just made available (a) really substantial amount of money for agricultural air quality purposes. Ms. D'Adamo is familiar with how that worked. I believe it goes mostly for irrigation pumps on farms. But for the first time, there was money made available for mobile sources like tractors as well…Clearly this is a problem that can be solved with money (emphasis ours.) And to the extent that we can identify any potential new sources of funding that can assist, I think that ought to be factored into the discussion as well. "(Transcript, January 22, 2009 Air Board meeting, page 139, lines 5-17.)

Associated California Loggers concurs with your statements as the Chair. This is a problem that can be solved with money, and we must act over the coming months to identify sources of money that can be used to purchase filters, engines, and new trucks.

One existing source of money is the Carl Moyer Program, which should be a good source of grants for our members to purchase this equipment, but which currently poses many barriers to doing so: ineligibility to apply for Carl Moyer funds based on the counties in which we work or the number of miles we run on our trucks each year; unwillingness of impoverished local governments to cover matching costs; lack (in some cases) of enough money in a local Carl Moyer account to meet demand.

We also understand that logging and log trucking companies are largely unable to access Proposition 1(B) monies because our companies do not operate in areas that are part of the "goods movement" corridors in that program.

We believe that all of these obstacles can be surmounted via a coordinated effort among CARB, the business community, the federal government, local governments, and, if need be, the U.S. Congress and the State Legislature to make the changes to law and policy necessary to free up Carl Moyer funding, secure federal funding and make the logging community eligible for such funds.

The emissions reduction benefits from this action are conferred on the entire state of California; we should have access to monies that will allow us to confer these benefits without going out of business. (ACLOG1)

Agency Response: As described in Chapter VII of the October 2010 Staff Report: Initial Statement of Reasons, the proposed regulatory amendments are expected to reduce compliance costs by reducing the number of required diesel particulate filters (DPFs), delaying truck replacements substantially, and extending credits. The overall cost of the regulation is expected to be reduced by about 60 percent – from $5.5 billion in the original regulation to about $2.2 billion after the proposed amendments. However, even considering the reduced overall cost, ARB recognizes these costs are still significant and that financial assistance programs are not adequate to fund all of the emission reductions necessary to meet clean air standards and reduce exposure to toxic air contaminants. As is the case with most regulations, the majority of compliance costs are expected to be borne by the regulated community.

The Carl Moyer Program Guidelines include specific funding eligibility for log truck projects that provide early or extra emissions reductions, and coordinate with the log truck compliance deadlines. In addition, many log trucks are eligible to participate in the On-Road Voucher Incentive Program (VIP), implemented through the Carl Moyer Program, as well as the Providing Loan Assistance for California Equipment (PLACE) program, which is implemented through the California Capital Access Program (CalCAP).

VIP funding is available throughout California on a first-come first-served basis and does not restrict usage to a specific air district. Therefore, VIP funding is currently

available even in rural areas that may not have funding available through the traditional Carl Moyer Program. VIP provides up to $45,000 for truck replacement and up to $10,000 for PM filters. VIP allows participation by trucks with a manufacturer gross vehicle weight rating (GVWR) of at least 19,501 pounds, and minimum usage is set at 15,000 miles or 1,500 gallons of fuel consumed per year as long as the project achieves cost-effective emission reductions. ARB recognizes that the current economic downturn could affect mileage accrual for log trucks as well as other vehicles. This can be an issue since grant amounts are largely dependent on vehicle mileage or fuel consumption. To help provide funding options for lower-mileage trucks, the VIP includes a two-for-one option to allow the combined mileage of two existing trucks to be used for one replacement truck. This flexibility is expected to help some applicants qualify for funding that otherwise would not have met minimum usage requirements or may have qualified for very low grant amounts.

PLACE provides loan assistance to help owners gain access to capital for the portion of a project cost that is not covered by a grant. ARB believes that grant programs as well as loan assistance programs are important components of the overall funding assistance portfolio.

Finally, ARB staff will continue to work with our federal, state, and local partners to identify new potential funding opportunities, such as the federal Diesel Emissions Reduction Act, that can help to make additional funds available to California truck owners.

b) Changes to Existing Funding Programs

343. Comment: The California Air Pollution Control Officer Association **(**CAPCOA) is very concerned that the effects of this rulemaking be assessed in regards to the various grant programs for heavy-duty diesel engines. This is essential since CARB will be taking this rulemaking action prior to coming out with both revised program language and guidance for several of the incentive programs (e.g., Carl Moyer, Prop. 1B, VIP). Coordination and consistency between the different grant programs and the diesel emission reduction rules are essential for effective and efficient use of the funds, and for the expedited protection of public health. The CAPCOA Grants Committee is prepared to assist ARB staff in completing a review of the packages and identifying areas where appropriate changes may be warranted. We urge ARB to implement the needed changes at the same time the diesel rulemaking occurs in order to ensure that no gaps or conflicts are created. (CAPCOA)

344. Comment: We're very pleased to see the credit for the new purchases of 2007 vehicles. The amendments are welcome relief. And, in fact, for many in our segment of the industry, the light at the end of the tunnel is no longer a train headed right for us. And it's positive also that with potential expansion of funding criteria for Cal Cap and for 1B, many fleets all over the state will be afforded the opportunity to purchase compliant equipment with public assistance. (CTA2)

345. Comment: The other comment regarding the grants is that we've had great leadership from Board Member Berg and the Committee or the work group that

has been in place. We are very close with your staff with some recommendations to fix some of the impediments that currently exist in the program. Your staff mentioned in January we will have $12 million to go out with grants. As we begin that process, we're going to be offsetting the current grant guidelines and the changes in your rule do not match. And there are some obstacles, some inconsistencies that would be good for your Board to weigh in on in this resolution. So as we begin that process, we can count on your Board to support with the specific recommendations that I believe your staff is going to bring to you later on anyway, but we can begin that process. And as we have applications, to be able to count on those things as being things that your Board supports. (SJV/SC2)

346. Comment: Adopt uniform program guidelines and funding caps across various incentive grant programs (i.e., Prop. 1B, VIP, Moyer, etc.) with a particular focus on encouraging emissions reductions as early as possible by increasing program participation. (SCAQMD1)

Agency Response: Specific changes to ARB funding programs are considered separately from this regulatory process. As described in Chapter VII, Section D of the October 2010 Staff Report: Initial Statement of Reasons for Proposed Rulemaking, funding program changes were planned to occur after Board action and direction on the proposed regulatory changes. The most recent modifications to the Goods Movement Emission Reduction Program and Carl Moyer Program incorporate changes resulting from the regulatory amendments. These changes were discussed at Incentive Program Advisory Group meetings in November 2010 and April 2011 as well as funding workshops in January 2011 and implemented at the April 2011 Board meeting (Carl Moyer Program only) to ensure that public comments were considered regarding the Truck and Bus amendments. In general, these changes were made to expand funding opportunities for fleets and to streamline administrative requirements.

347. Comment: Implementation of the recommendations from the advisory committee headed by ARB Board member, Sandra Berg, by streamlining State grants programs: Over the past year, a significant effort has been spearheaded by ARB Board member, Sandra Berg, in relation to the re-tooling of State grants programs. That process has brought forward a number of significant streamlining suggestions that would make the granting process easier, more user-friendly and more attractive to prospective applicants.

The Air District urges the ARB Board to implement the suggestions from the advisory committee now. This would make it possible to mitigate any increased emissions that may occur based on the proposed rule amendments in the event of improved economic activity. This would also allow the Air District to continue to address its health risk concerns via a simplified and less cumbersome State grant process. This new streamlined process would retrofit and replace on- and off-road vehicles during the period before the proposed start dates of regulatory mandates. (BAAQMD1) (BAAQMD2) (BAAQMD3)

348. Comment: Streamline and simplify application processes that encourage (not discourage) participation, especially from small fleet owners and owner operators. (SCAQMD1)

Agency Response: As described in the response to Comment 346, modifications were made to the funding programs after the Board adoption of these regulatory amendments. In April 2011, the Board approved updated Carl Moyer Program guidelines that included streamlined administrative requirements for air districts and applicants, modifications to increase participation from minimum allocation and rural air districts, and provided flexibility to air districts to make contract adjustments. These updates incorporated suggestions made by the Incentive Program Advisory Group and are geared at increasing overall participation.

349. Comment: Support air districts in efforts to seek streamlined legislation and extension of State grants programs: One of the principal recommendations of the advisory committee mentioned above has been the request to streamline the requirements of State grants programs. This recommendation has received strong support from industry, air districts, the public and local communities. However, ARB staff has insisted that they believe legislative changes will be necessary in order to make this happen.

In light of the proposed rule amendments and their implementation timeline, the Air District believes that ARB should support local air districts and CAPCOA in a legislative effort to seek simplified and unified requirements for State grants programs. Additionally, the Air District believes that ARB should also support an extension of State grants programs through the year 2024. This would allow air districts to continue to achieve emissions reductions over and above what is required by the proposed amendments to the regulations. (BAAQMD1) (BAAQMD2) (BAAQMD3)

Agency Response: As noted in Comment 347, the Incentive Program Advisory Group, led by ARB Board Member Sandra Berg, provides a forum for discussing policy level issues relating to the development and ongoing implementation of the ARB incentive programs. We anticipate that the group will continue to provide a useful venue for policy level coordination among agencies and programs. All interested stakeholders are invited and encouraged to participate. ARB's funding program staff will continue to work together to implement near term and long term solutions identified by the Incentive Program Advisory Group, CAPCOA, and other stakeholders.

350. Providing additional funding and larger percentages to loan guarantee programs to increase grant program participation: As the ARB is aware, one of the main considerations which led to the proposed regulatory amendments was the downturn in the economy. This economic downturn has also had a severe impact on the ability of those affected by the proposed regulations to obtain credit or loans to replace equipment. (BAAQMD1) (BAAQMD2) (BAAQMD3)

351. Based on input obtained through an End-User issues process initiated by CAPCOA and subsequent feedback from the State grants advisory group; the Air

District urges the ARB to consider additional funding and larger percentages for loan guarantee programs associated with equipment replacement. Such programs would provide the ability for grant applicants to secure the additional funding necessary to replace equipment and would give confidence to lending institutions to invest in these projects. (BAAQMD1) (BAAQMD2) (BAAQMD3)

Agency Response: As described in the response to Comment 342, PLACE assists trucking fleets operating in all areas of California to obtain affordable financing for truck purchases as well as ARB-verified equipment such as exhaust retrofits and SmartWay-certified equipment to improve fuel efficiency. PLACE provides a stable financing structure enabling eligible financial institutions to provide competitive-rate loans to small businesses that fall just outside of conventional underwriting standards. Since inception in 2009, the PLACE program has made some program refinements to better address the needs of trucking fleets. In November 2009, Senate Bill 832 (Chapter 643, Statutes of 2009) was signed to allow truck manufacturing and dealer finance companies to participate in the PLACE program. The newly-added financing entities have a unique knowledge of the trucking industry and are able to utilize their established relationships with fleet owners to market PLACE to eligible borrowers. Additionally, in October 2010, ARB authorized CalCAP to change the premium contribution from 14 to 20 percent with the goal of increased accessibly.

352. Comment: Allow increased participation by medium sized fleets in State grants programs: As they currently stand and under proposed revisions, the guidelines of State grants programs do not provide for sufficient funding to address reducing the emissions from on-road fleets in the 3 to 20 vehicle size range. The Air District believes that this segment of the regulated community comprises a significant portion of the emissions inventory and that while small fleets in the 1 to 3 vehicle size range still requires significant help, it should not be done at the expense of these medium size fleets. Therefore, the Air District encourages ARB to revise its State grants program guidelines to allow significant funding to be available for both of the equipment categories above. (BAAQMD1) (BAAQMD2) (BAAQMD3)

353. Comment: Increase opportunities for small businesses by adjusting the definition of small fleets to include small businesses with more than three vehicles. This concept is in alignment with CARB's current focus on assisting small businesses and we would welcome the opportunity to assist in crafting an appropriate definition of small fleets. It is our understanding that your staff is considering such flexibilities as part of the Carl Moyer Program retooling early next year (SCAQMD1)

Agency Response: As described in the response to Comment 346, modifications were made to the funding programs to incorporate changes due to these regulatory amendments. At the April 2011 Board meeting, the new 2011 Carl Moyer Program Guidelines were adopted, including expanded funding eligibility for fleets of 4-10 vehicles.

354. Comment: Maximize flexibility with respect to the definition of "surplus" as allowed under federal law, with an emphasis on maximizing the availability of projects and cost-effectiveness. (SCAQMD1)

355. Comment: We understand, first hand, the strain on California's fleets caused by today's economic environment. MECA supports ARB's efforts to increase the availability of state incentive funds, grants and loan programs to help end-users comply with the off-road and on-road regulations. End users that have to comply with ARB's various diesel risk reduction regulations can make use of federal economic stimulus funds, state incentive funds and loan programs to help pay for clean diesel technologies and vehicles that comply with these regulations. California incentive programs need modifications that provide additional opportunities for the use of verified retrofit technologies. These should include; accepting projects with 2 years of surplus emissions and additional weighting given to cost effectiveness of diesel retrofits relative to repowers or replacements. (MECA1)

356. Comment: With respect to the on-road regulations, we basically appreciate the changes you've made to delay compliance. Our refuse fleet has basically been in compliance with the previous rule. We were a little concerned about the fact you eliminated the compliance credits for alternative-fueled vehicles, but we think the delay might provide additional opportunities for us to get the funding through Carl Moyer and other types of programs. We are aware that you're in the process of also revising Carl Moyer programs, so we urge you to encourage staff to make sure we can secure maximum funding and surplus emission credit opportunities through that program. (WMAN)

Agency Response: As described in the response to Comment 346, modifications were made to the funding programs to incorporate changes due to these regulatory amendments. At the April 2011 Board meeting, the surplus methodology in the Carl Moyer Program was revised to provide greater long term funding opportunities while meeting statutory requirements. The revised methodology incorporates a baseline that reflects regulatory requirements and compliance dates.

c) Low Mileage Vehicles

357. Comment: As I've mentioned in previous hearings and workshops, members of our industry rarely qualify for any grants or money and have no source of relief. Is there any help for our industry? And also to amend the opportunity for grants or other forms of aid to allow low mileage industry to participate in relief. (CMSA2)

358. Comment: My husband and I have two trucks. We both drive. One is an '88 with extremely low mileage. It's probably one-fourth its life. The other one is a '91. Neither one can be retrofitted, repowered. It's impossible. In December of 2008, I found out I had qualified for a $50,000 grant for a new truck. And I was quite excited about that. But then the Prop. 1B money disappeared. And that was really a blessing in disguise because had I bought that truck, I would have lost the truck like so many others that have tried to comply and went out and did that. And I probably would have lost my home and my business. I'm glad that money dried

up. And contrary to belief, I'm not available for Moyer funds. The dump truckers do not go enough miles, so we can't even ask for that. My business is now down 45 percent, and I have worked more than most. And also up here in the north, as you know, we don't work 12 months out of the year due to the rain. This makes it even harder for us to make up for lost time. (DSTR).

359. Comment: Every time something comes up, they say call this number and we'll help you get a truck. And I call and they tell me I don't qualify. I have a '90 Peterbilt three axle. I've not heard anybody address the dump truck industry. So I think that either you guys don't know about us or don't care about us. I know you know about us because you talk to the people with the CDTOA. But how do we get funded? How do we get money? How do we get attention of somebody? (MAFEE)

360. Comment: The California Dump Truck Owners Association (CDTOA) is a 501(c)(6) trade association incorporated in 1941. A little over three years ago, we represented nearly 2,000 construction industry related trucking company members ranging in size from 1 truck to over 350 trucks. Sadly, today that number has diminished to fewer than 1,000 due to the recessionary economy, near-depressionary construction industry, the off-road diesel engine rule, and the ramifications of the Truck and Bus Regulation. Approximately 60%, or less than 600, of our members are sole proprietors; small one truck independent contractor owner-operator businesses. Additionally, the majority of our members operate low mileage vehicles, typically between 20,000 – 65,000 per year. These vehicles are all well above 26,001 GVWR, thus do not receive any of the true benefits of the recent proposed amendments. It is important to note that due to the relatively low mileage that the typical construction truck operates, small business owners within our industry rarely qualify for any of the grant money or funding CARB constantly alludes to. So while you and your staff continue to publicly avow that “a billion dollars is available for retrofits and replacements,” our industry continues to be overlooked and neglected despite the financial devastation the Truck and Bus Regulation has brought and will continue to bring. (CDTOA1)

Agency Response: While substantial public incentive funding has been made available to reduce emissions, ARB recognizes that existing financial incentive programs are not adequate to fund all of the emission reductions necessary to meet clean air standards and reduce exposure to toxic air contaminants. ARB funding programs include eligibility criteria to ensure that projects achieve emissions reductions and meet statutory requirements. Many factors are considered in establishing eligibility for funding programs including cost-effectiveness, usually calculated based on usage (mileage or fuel), or competitive application ranking. For the Carl Moyer Program, the cost-effectiveness requirement is prescribed in Health and Safety Code Section 44283. In general, projects with very low usage tend to have poor cost-effectiveness.

However, as described in the response to Comment 342, VIP has incorporated flexibility to address low-usage trucks. VIP grants can be combined with loan assistance through the PLACE program. Additionally, eligible borrowers securing loans through the PLACE

program without the use of ARB's incentive grants are not subject to the same project specific criteria such as cost-effectiveness or usage.

Other programs that do not include a specific mileage requirement include the Goods Movement Emission Reduction Program and the Hybrid Voucher Incentive Program (HVIP). The Goods Movement Emission Reduction Program provides funding for vehicles with a GVWR greater than 26,000 pounds through a competitive application process. The HVIP, part of the AB 118 Air Quality Improvement Program, is a first-come, first-served program that provides vouchers for the purchase of hybrid trucks or buses, with no mileage requirements.

d) Rural Fleets

361. Comment: Major grant programs, particularly the large amount of 1B funding, is focused exclusively on more populated areas of the state. Mendocino County equipment is ineligible strictly because of geography.

Besides the 1B Program, equipment in Mendocino County is also not eligible for the following programs –

- EPA Clean Diesel Campaign (no funding for Ozone attainment areas)
- CMAQ Funding (no funding for Ozone attainment areas)
- ARB's AQIP (AB 118) does not provide funding for projects in Mendocino County (ozone status)

The total amount of grant funding available for private diesel projects in Mendocino County is $180,000 annually in Carl Moyer Program funding. Although more funding is technically available from the Carl Moyer Program, the District lacks the available matching funds to receive its full allocation from ARB. The District also expends a small amount of AB 923 funding (enough for less than one bus per year) for school bus projects in Mendocino County.

While the Air Resources Board is not considering changes to the Grants Programs until a later date – it is critical that these changes are closely coordinated with the changes before the Board today. Any changes made in March 2011 will not have any effect until projects are approved for funding in the spring of 2012 at the earliest (Year 14 of the Carl Moyer Program).

The District Board is requesting that ARB consider ways to expand the benefits of the 1B and AB 118 programs to cover equipment in Mendocino County. (MCAQMD)

362. Comment: There is no public funding for truck/engine replacement in rural California, Mendocino County has turned down Carl Moyer funding the last 3 years because they have no matching funds. There are no other direct funding opportunities in our County as with most of rural California. Even with the matching funds no more than 3 trucks would be replaced assuming the county did not use the funds to replace their own engines first. Industry only receives funds once municipalities have turned it down, and seldom is there any funding left.

Mendocino County with its clean air is still going to face significant job losses due to their employer's inability to replace trucks in compliance with the amended rule. This scenario will play out in multiple rural counties facing the exact same problem. (ALOG)

Agency Response: In addition to the Carl Moyer Program, which is allocated statewide based on statutory requirements, several other programs exist that provide funding statewide or specifically to rural areas. As discussed in the response to Comment 348, the Carl Moyer Program incorporated updates in April 2011 that were geared at increasing participation by rural air districts. In addition, recognizing the unique needs in rural areas, the Carl Moyer Program includes a Rural District Assistance Program (RAP). The RAP program, administered by the CAPCOA, provides a pooled funding resource to help rural air districts identify and fund cost-effective projects through a combined application and project selection process. Many trucks with model year 1994 or newer engines may be eligible for diesel particulate filter funding through the RAP program. More information and application materials are available on the CAPCOA website at www.capcoa.org.

Funding for truck replacement and PM filters is available statewide through the VIP on a first-come, first-served basis. The VIP does not restrict usage to a specific air district and provides up to $45,000 for truck replacement and up to $10,000 for PM filters.

Unlike the VIP, Proposition 1B funding does include geographic truck usage restrictions. The ballot proposition and implementing statute expressly direct ARB to focus funding from the Goods Movement Emission Reduction Program on diesel trucks and equipment used to move goods in California's four major trade corridors. These include the Bay Area, Central Valley, Los Angeles/Inland Empire, and the San Diego/Border regions of California. However, Proposition 1B funding is available to trucks based in rural areas, as long as the funded trucks have sufficient travel in the trade corridors.

Other incentive programs that are available statewide include the Lower-Emission School Bus Program (LESBP), the HVIP, and the PLACE program. The LESBP includes provisions that ensure rural air districts have access to school bus funds. The HVIP has no air district administrative or matching fund requirements and fleets have equal access to funding, regardless of their location within California. The PLACE program assists trucking fleets operating in all areas of California obtain affordable financing for truck purchases, exhaust retrofits, and SmartWay-certified equipment to improve fuel efficiency.

9. Consideration of Alternatives

a) Proposal for More Stringent Requirements

363. Comment: The uncertainties about future economic growth, the inability to enforce changes in the emission inventory, and the significant negative impacts to the most impacted communities argues for a more cautious approach that leaves no room for eroding the Board's commitment in the 2007 State Strategy. The rule amendments should focus on providing short-term economic relief over the next

couple of years. Short term relief should not rollback requirements up to ten years or longer at the expense of public health benefits. The following proposed strengthened amendments would ensure long-term benefits.

(1) Proposal: Require all model year 1994-2000 heavy-duty vehicles with a GVWR of greater than 26,000 lbs to install PM filters by 2012, or upgrade to newer models. Allow all retrofitted vehicles eight years before compliance with 2010 standards:

Direct diesel PM emissions are responsible for the high cancer risks experienced by communities near truck traffic. Cost-effective particulate retrofits are widely available and have been proven a successful technology for these trucks. According to ARB estimates, model year 1994-2000 trucks emit 7 times more PM per mile than ones equipped with a particulate filter. Allowing retrofits an eight year life as in the current proposal would allow truck owners to hold on to these vehicles, while providing benefits for impacted communities where some of the oldest trucks travel most.

(2) Proposal: Replace all heavy-duty vehicles more than 20 years old beginning in 2012.

The current proposal allows uncontrolled pre-1994 model year trucks to continue operating until 2015. A mandatory 20 year retirement age would remove the oldest vehicles from use, giving owners a choice to either retrofit or upgrade to a newer model year.

(3) Proposal: Require all trucks less than 26,000 pounds to retrofit, retire or upgrade to a newer vehicle at 15 years of age:

These trucks, delivery vehicles, tow trucks, and others operate primarily in high density, urban areas where exposure to diesel emissions is greatest. The proposal should be modified to begin retiring medium duty trucks at 15 years of age, while providing an option to retrofit to extend the life of the truck.

(4) Proposal: Preserve the original clean up requirements for all school buses, large and small (less than 26,000 pounds), with a commitment to ensure funding where necessary: (BWG1) (BWG2)

Agency Response: The commenter suggests several proposals to ensure continued emission benefits of the regulation. The following is a summary of each comment (identified through underlined text) and response:

Proposal 1: Require all model year 1994-2000 heavy-duty vehicles with a GVWR of greater than 26,000 lbs to install PM filters by 2012 and allow to operate for 8 years.

We do not agree with the commenter's proposal. Staff presented modifications to the compliance requirements and options for heavier trucks at the December 17, 2010 Hearing. The changes included modifications to the model year schedule, the addition of a delayed compliance option for construction trucks, and a credit for the early addition of newer engines to the fleet. The net changes are not expected to result in a significant change in total emissions from the original staff proposal, but are expected to

result in early addition of newer engines and lower compliance costs for construction truck owners.

While there is no PM retrofit requirement for trucks with 1994 and 1995 model year engines, as proposed by the commenter, these engines must be replaced by 2016. Trucks with 1994 and 1995 model year engines represent a smaller part of the emissions inventory because they are near the end of their useful lives and typically operate fewer miles than newer engines. If they were retrofitted by 2012 as proposed by the commenter and allowed to operate up to eight years, they would not be replaced by 2016 as required by the amended regulation. This means that although there would be more PM reductions from 2012 to 2016 from these engines, the benefits would also be partially offset from higher NOx emissions from 2016 to 2020 and would not be as health protective as it would initially appear.

The changes to the model year schedule for heavier trucks were made available for comment with the May 19, 2011 Notice of Availability of Modified Text. The modified schedule requires heavier trucks with 1996 and 1997 model year engines to be retrofit by January 1, 2012 and delays the PM filter requirement for 2000 model year engines by one year, until 2013. Consistent with the above comment, the schedule allows retrofitted vehicles to operate 8 years before being required to be replaced. The requirements for 1995 and older model year engines remained unchanged from the regulation that was made available with the December 2010 Notice of Public Hearing.

Proposal 2: Replace all heavy-duty vehicles more than 20 years old beginning in 2012.

While the alternative proposal would achieve additional emission reductions, the proposal to begin replacements by January 1, 2012 would increase the capital investments required for fleets with older equipment compared to both the existing regulation and the amended regulation and would require replacements with new vehicles rather than allowing used replacements to be a viable compliance option. Such a proposal is counter to the Board's goal of amendments that provide near term economic relief to on-road fleets.

Staff believes the most cost effective way to achieve the needed emissions reductions to meet federal requirements, to address localized risk, and to proctect public health is to initially retrofit existing trucks that continue to have sufficient useful lives remaining and to phase-out older trucks with new ones in later years. Targeting PM filters on newer engines is a lower cost compliance strategy than replacing trucks. Immediate PM reductions are achieved equal to a vehicle replacement for a fraction of the cost (a new tractor trailer sleeper cab might cost $130,000 while a PM filter costs around $15,000 installed). This approach has the lowest compliance costs and considerably lower capital costs in the early years and provides more time for the economy to recover before replacements are required and makes used vehicle replacements to be a viable compliance option.

Proposal 3: Require all trucks less than 26,000 pounds to retrofit, retire or upgrade to a newer vehicle at 15 years of age.

Staff considered a number of options to achieve emissions reductions from trucks while seeking a strategy that would lower capital investments required and achieve the most cost-effective emissions reductions. We believe the amended regulation, which does not require lighter vehicles to install PM filters but focuses on replacement of such vehicles at 20 years of service, achieves the appropriate balance between costs for affected fleets and emissions reductions needed to protect public health and meet federal air quality standards.

Overall emissions from light trucks represent less than 10 percent of the emissions inventory while emissions from the older light trucks targeted by the proposed alternative represent less than 2 percent of the inventory. The additional emissions reductions achieved by requiring PM filters on these older light trucks at 15 years would be about 2 percent of the total benefit achieved for all trucks with the regulation as amended. Considering this, the commenter's proposal would not be as cost-effective as reducing emissions from heavier trucks.

In the 2010 Staff Report, the overall cost effectiveness of the amended rule was $44.20 per pound of PM reduced. For comparison, staff estimated the cost effectiveness for a lighter truck with a level 3 PM filter and an analysis period of 5 years of operation. Five years represents the remaining useful life of the 15-year old vehicle. The cost effectiveness for the lighter truck is about $200 per pound of PM reduced because of the reduced 5-year useful life of the PM retrofit (compared to the 8 years allowed by the regulation) and because lighter trucks tend to operate fewer miles and have lower emissions per mile travelled. This makes the costs of this proposed alternative relatively high and the benefits rather small in comparison to the benefits from heavier trucks. The cost of replacement of the lighter truck at 15 instead of 20 years would be even higher than the cost of retrofitting and therefore the emissions reductions would be even less cost-effective than that estimated for retrofitting. Finally, the commenter's proposal would not be consistent with the Board's goal of improved cost-effectiveness for the amendments.

Proposal 4: Preserve the original clean up requirements for all school buses, large and small (less than 26,000 pounds), with a commitment to ensure funding where necessary.

Staff originally proposed to exempt diesel-fueled school buses under 26,001 lbs. GVWR from the amended regulation. However, the Board chose to include school buses greater than 14,000 lbs. GVWR in the amended regulation and directed staff to make necessary changes to preserve the requirements for smaller school buses, effectively accepting Proposal 4 as suggested by the commenters.

364. Comment: We suggest some amendments that we think would particularly help to reduce some of the localized impacts. For the on-road rule, require the '94 to 2000 vehicles to install PM filters in the next two years, replace all the vehicles more than 20 years old beginning in 2012 and require all the trucks under 26,000 pounds also retrofit, retire, or upgrade to a newer vehicle when they hit 15 years of age. (SCC)

Agency Response: The alternatives proposed in the above comment are similar to proposals 1, 2 and 3 of Comment 363 See the response to Comment 363.

365. Comment: I come here to recommend that as we - or you - consider offering some economic relief to the small and large businesses, and that you don't forget about the communities that are also having to contend with an economic crisis, while having to contend with the negative impacts on their health caused by toxic diesel pollution, as Senator Polanco detailed earlier. In particular, East Yard EJ recommends that you require all 1994 to 2000 year heavy-duty vehicles to install these much needed filters by 2012. Waiting until 2017, as staff proposes, is inconceivable, given our communities are already overburdened with diesel pollution. (EYARD1)

Agency Response: The alternative proposed in the above comment is similar to Proposal 1 of Comment 363. See the response to Comment 363. Also, please see the discussion of the benefits of the Truck and Bus regulation in the responses to Comments 18 through 38 on the public health impacts of exposure to diesel exhaust.

366. Comment: We also request that you replace all heavy-duty vehicles that are more than 20 years old beginning in 2012. We cannot allow for these uncontrolled pre-1994 model year trucks to continue to park near our schools, drive past our parks, and exhaust in our lungs. I ask that you consider the children and the communities that are most negatively impacted both by the economic crisis and also by these dirty businesses. (EYARD1)

Agency Response: The alternative proposed in the above comment is similar to Proposal 2 of Comment 363. See the response to Comment 363. Also, please see the discussion of the benefits of the Truck and Bus regulation in the responses to Comments 18 through 38 on the public health impacts of exposure to diesel exhaust.

b) Require Level 1 and Level 2 VDECS[23] on Lighter Trucks

367. Comment: We understand that retrofitting lighter, less expensive, vehicles (<26,000 lbs GVWR) with Level 3 retrofits may not be cost effective in all cases, however, in-order to capture some emission reductions of PM and other air toxics from the medium duty fleet, we believe ARB should incentivize installation of ARB or EPA verified Level 1 and Level 2 retrofits on these lighter trucks. These technologies provide a more economical, passive solution to achieving some emission reductions from this fleet of 140,000 vehicles in the state. (MECA1)

368. Comment: Incentivize installation of ARB or EPA verified Level 1 or Level 2 retrofits on under 26,000 pound trucks before turnover to provide additional reductions in toxic exhaust emissions from the medium duty fleet. (DFS1)

[23] Verified diesel emission control strategy. – a retrofit device that has been verified under ARB's Verification Procedure which ensures the effectiveness and durability of diesel engine retrofits.

369. Comment: Incentivize program for less than 26,000 pound vehicles that would allow for Level 1 or 2 VDECS. (JMC1)

370. Comment: With respect to highway vehicles with Gross Vehicle Weights less than 26,000 lbs, we ask that ARB consider the installation of verified Level 1 diesel oxidation catalysts which can be supplied for less than $1000 per vehicle and will afford particulate emissions reductions of more than 25% and a significant reduction in unregulated toxics. This would seem to be a better option than simply eliminating all mandatory retrofit requirements. (CDT1)

Agency Response: Lighter trucks represent a smaller portion of the emissions inventory in comparison to heavier trucks, because lighter vehicles generally are replaced in shorter cycles, their population is smaller, they operate fairly low miles, and have lighter engines. The additional near term emissions reductions achieved by requiring PM filters on the light trucks prior to 2015 are small – about 2 percent of the total benefit achieved for all trucks with the regulation as amended. These additional emissions reductions are also not as cost effective as controlling emissions from heavier trucks. Lighter trucks also don't tend to be concentrated in localized areas such as distribution centers and don't pose as much of a local PM exposure risk as heavier vehicles. Further, the amended regulation requires the replacement of all light trucks starting in 2015, ultimately providing the maximum PM benefits – more than would be achieved under the commenter's proposal.

Staff investigated the cost effectiveness of requiring lower level verified devices to provide additional reductions in toxic exhaust emissions from lighter vehicles. In the 2010 Staff Report, the overall cost effectiveness in dollars for each pound of PM reduced was $44.20. For comparison, staff estimated the cost effectiveness for a lighter truck with a level 2 PM filter and that of a heavier truck with a level 3 PM filter. Both trucks are 10 years old and the analysis period is for 8 years of operation. The cost effectiveness for the lighter truck is about $120 per pound of PM reduced and for the heavier truck it is about $26 per pound of PM reduced. The typical heavier vehicle has higher emissions per mile and travels significantly more miles per year, so retrofitting a level 3 PM filter on a heavier truck is a substantially more cost effective way to achieve the same emissions reductions.

Using PM filters verified to a lower level, especially a Level 1 device (which achieves only a 25 percent reduction in PM emissions), does not provide many of the air quality benefits that would be achieved by using Level 3 devices or by vehicle replacement, regardless of the lower cost. For this reason, the staff did not recommend and the Board did not direct the use of Level 1 devices.

c) Performance of Engine and Retrofit Technology

371. Comment: Diesels [diesel vehicles should] be given a 20 year life from date of service introduction if not compliant to 2007 standards or an alternate compromise of 1.2 million miles or equivalent engine hours. (CTI1)

Agency Response: As the commenter recommends, the amended regulation is designed to allow most trucks to operate until they are 20 years old; however, significant

PM emissions reductions are needed by 2014 and the maximum achievable NOx emissions reductions are needed by 2023. Prior to 2020, the amended regulation does not require truck replacements unless the vehicle is 20 years old or older. However, we expect that by 2014 more than 85 percent of all truck miles driven in California will be from heavier trucks that need to be equipped with PM filters to achieve enough PM emissions reductions to meet SIP obligations. Therefore, most trucks operating in California that are less than 20 years old will need to have retrofit PM filters installed or be replaced. Additionally, to achieve needed NOx reductions by 2023 , between 2020 to 2023, all engines must be upgraded to 2010 model year or newer engines to achieve the maximum NOx emissions reductions needed to meet the State's SIP commitments.

372. Comment: Diesel EPA requirements would be covered the same as the warranty life of the engine block of 500,000 miles or equivalent engine hours, including all of the electrical relays. This will enhance the manufacturer's ability to insure quality technology and durability. Towing bills should be included in this warranty. (CTI1)

Agency Response: We agree that a warranty is necessary for new engines. However, this comment is not relevant to the rulemaking. Engine warranties are already addressed as part of the engine certification standards.

373. Comment: Provide financial incentives:

A. No sales tax on retrofitting costs or new truck sales.

B. Fuel taxes to be reimbursed for retrofitted and new trucks for 5 years. This feature alone will enhance the economy and clean the air faster because more units will be bought with an immediate cash savings to the buyer. (CTI1)

Agency Response: The ARB does not have the authority to establish or develop any tax-based programs to help reduce emissions. Any tax-based programs would have to be approved by the Legislature and signed by the Governor. In addition, several funding sources have already been allocated through proposition or by the Legislature to address emission impacts from diesel engines. For a discussion of the financial incentives available, please see the responses to Comments 338 through 356 in the section on Funding.

374. Comment: Provide an extension of 2 years until 2016 for the time allowances for real field testing to ensure the reliability and durability of the products being introduced and the current problems to be corrected. (CTI1)

Agency Response: We do not believe there is evidence to suggest that emission control system reliability or durability is a problem, as explained in the response to Comment 96.

d) Credit for Dual-Fueled Engines

375. Comment: Clean Air Power has been working to reduce air pollution and emissions from the trucking industry for over 20 years. These efforts have

encompassed a variety of offerings in natural gas vehicles, as well as after-treatment emission control technologies. It is anticipated that some of the proposed amendments by CARB to the on-road regulation will put a select Clean Air Power technology at a competitive disadvantage-- technology that would be successful in providing the equivalent if not greater environmental benefit as those proposed.

The amendments propose that the purchase of alternative fuel or hybrid vehicles would allow the fleet to treat another vehicle as compliant until January 1, 2017, and would thus provide a potential significant market incentive for alternative fuel and hybrid technologies. However, dual-fuel engines are specifically excluded as a compliance path for credits. The exclusion of dual-fuel engines within the amendment decreases the options, flexibility and efficiency that truck fleets will have in achieving emissions reductions.

The amendment in the regulation defines dual-fuel engines as "any compression ignition engine that is engineered and designed to operate on a combination of alternative fuels, such as compressed natural gas (CNG) or liquefied petroleum gas (LPG) and diesel fuel or an alternative diesel fuel. These engines have two separate fuel systems, which inject both fuels simultaneously into the engine combustion chamber." This definition and the exclusion of dual-fuel engines from credit eligibility are remnants from prior regulations that forced fleets to choose either a diesel path or an alternative fuel path. The current proposals are fuel neutral but not technology neutral; considering that the overarching goal is to reduce petroleum consumption and resulting criteria air pollutants and greenhouse gases in California, CARB should further amend the proposed revisions in order to include other technologies which meet equivalent reduction goals.

Clean Air Power in conjunction with Navistar has developed a dual-fuel technology that not only meets but exceeds the 0.2 g/bhp-hr emission standard. A small amount of diesel-10%-25% of what is typically used in conventional trucks-will act as the "pilot" or ignition source for the natural gas and air. The resulting combination is a hybrid between conventional diesel combustion-where the diesel pilot auto-ignites as it would in a standard diesel-cycle-and a regular otto-cycle engine with a sparkplug for incoming natural gas and air. Thus, with the compression-ignition engine, the dual-fuel MaxxForce 13 will offer the efficiency, power and performance levels more commonly associated with diesel-fuel engines. Furthermore, the MaxxForce 13 engine will have the flexibility of being powered by CNG or LNG, thus making it viable in a diversity of markets and a wider range of applications. The concept readiness phase has been completed and internal testing has proven the ability to certify the criteria emissions as targeted while displacing between 75%-90% of diesel normally used.

Overall, the dual-fuel engine is expected to displace four times the amount of diesel displaced by a hybrid meeting the 20% reduction required in the proposed changes to the regulation. The benefit of the dual-fuel engine is likely to be even greater due to the heavier duty cycle. The dual-fuel engine would also reduce well-to-wheel greenhouses gas emissions by nearly 20% in comparison with diesel

counterparts, and create opportunities for near-zero well-to-wheels GHG emissions as bio- methane fuel production technologies mature and become increasingly used.

There are no additional emission benefits for either dedicated or high-pressure direct injection (HPDI) natural gas engines. However, the current proposed regulation could act as a significant driver for these technologies, without the consideration of dual-fuel engines that would provide the same if not greater petroleum and emissions reduction benefits.

In conclusion, Clean Air Power requests revisions to the rule changes in order to remove the exclusion of dual-fuel technologies from the type of vehicles eligible for credits under the on-road regulation. (CAP)

Agency Response: Staff does not agree that fleet owners should receive credit for dual-fuel engines to delay compliance for another vehicle in the fleet. Dual-fuel engines, by definition, can operate with alternative fuel or on diesel fuel. However, this flexibility means the vehicle can operate on diesel indefinitely and can pose the same toxic PM exposure risk as conventional diesel vehicles and may not achieve any of the GHG emissions benefits expected with alternative fuels.

Although, heavy-duty pilot ignition engines are eligible for the credit, there are specific criteria in the regulation that must be met. Heavy-duty pilot-ignition engines are eligible only if diesel fuel is used at an average ratio of no more than one part diesel fuel to ten parts total fuel on an energy equivalent basis. The amended regulation also stipulates that the vehicle cannot idle or operate solely on diesel fuel to be eligible for the credit.

e) Increase Mileage Limits

376. Comment: NAFA's Council recommends increasing all vehicle and equipment minimum usage exemption parameters (mileage and hours of operation). This will provide a small measure of relief to public and private fleets which have been incredibly impacted by the current economic situation. It is no secret that this state has been especially hard hit by the recession and that current diesel vehicle operation and usage is far below projections due to the economic environment. (NAFA)

Agency Response: The limits on mileage and hours of operation for low-use vehicles were set to allow limited use from back up vehicles that are used only incidentally to the normal operation of a fleet. It is also a limit that minimizes the potential for out-of-state fleets to gain an unfair competitive advantage.

The regulation, as amended, has attempted to create a level playing field between California and out-of-state fleets. Staff believes that increasing the mileage limit would increase the potential for out-of-state trucks to manage their fleets to circumvent the regulation by rotating in several different trucks each year. This could result in California businesses being placed at a competitive disadvantage and would result in fewer emissions reductions from out-of-state trucks that in turn would need to be made up by California fleets to achieve the needed emissions reductions.

f) L*ow Mileage Vocational Trucks*

377. Comment: Movers have been negatively impacted by the economic downturn and are linked to construction, when buildings are not built no-one is moving. Additionally, individuals losing their homes are not calling professional movers. Like many other California based Low Mileage Vocational Trucking businesses we are still in need of economic and regulatory relief in order to continue our long standing tradition of providing service, employment, and tax revenue to our customers, local communities, and state. (CMSA1)

378. Comment: While CSMA is appreciative of the willingness of ARB staff to listen to our proposal for additional relief for fleets with vocational trucks, their proposed modifications fall short. I ask the Board to direct staff to amend the 15-day changes to broaden the two-year deferral of lower use trucks to include CPUC permitted carriers and movers. (CMSA2)

379. Comment: In addition to staff's proposed rule modifications for trucks less than 26,001 pounds, Low Mileage Vocational/Special Use Vehicles industry is in need of further relief in the form of a mileage based exemption for Medium Heavy Duty and Heavy Heavy Duty Trucks. CMSA would propose a 20,000 miles exemption for class 7 and 8 trucks. We believe that a mileage based benchmark is more in line with the spirit of the rule than a distance based exemption. Simply put, mileage most strongly correlates with particulate output. (CMSA1)

380. Comment: After review of the currently proposed modifications to the "Statewide Truck and Bus Rule" recommended by ARB staff, the California Moving and Storage Association (CMSA) requests that the Board adopts additional relief for Low Mileage Vocational/Special Use Vehicles. The legal California moving industry would definitely fall within the definition of low mileage vocational trucking. For a large portion of our work truck engines are only used for a small segment of the billed hours. Household and Office/Industrial movers generally drive short distances, many times less than an hour per day, truck engines are turned off and the movers spend the majority of their time moving furniture. (Attached are the California Public Utilities Commission (CPUC) requirements to be a permitted household goods carrier ("mover"), a small part of a 58 page application. Clearly the requirements are arduous enough that one would not undertake getting a permit unless they planned to be a dedicated mover. It seems reasonable and correct to define CPUC PERMITTED CARRIERS (LICENSED MOVERS) as a part of a larger class of Vocational Trucking.)" (CMSA1)

[Note: The commenter's attachment is not reproduced here. It was submitted as part of a comment letter identified as Comment 1 of the comments presented during the Hearing and posted on the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10].

381. Comment: I would just like to add something to these low mileage trucks. We've had a real hard time trying to figure out what is a vocational truck. You could go and look up everything and try to find vocational. I think we all agree it's a pretty

specific truck. A dump truck, that's pretty easy to look at. He's hauling dirt. He's hauling construction. A tow truck, he's got a huge investment. He's really well a vocational truck. But I did want to point out -- and I had the clerk point out for you from the moving guys, because this is something I didn't realize. They are also very short hauls. And I'm talking about the guys that start the truck, drive to your house, park it, load it, and then drive back and park it that night. They may do, 10-20,000 miles a year also. They don't look separate. I would just like to pass on this information for you to notice that they are regulated by the Public Utilities Commission and that might be a way to determine that group. (CDTOA3)

382. Comment: As members of the vocational trucking industry, we continue to have deep concerns with the implementation and impact of the Truck and Bus regulation. The amendments to the regulation proposed this morning provide insufficient relief for the moving industry who continue to be negatively impacted by the dramatic economic slides of home sales and construction. Even though there's been some relief here, all these costs are front loaded. And our industry can't really bear it. If you say the economy is down 30 percent for the moving and storage industry, I can tell you I get calls on a regular basis from small and medium-size operators that with a 30 percent reduction they're unable to take salaries for themselves. They've taken out loans on their homes to finance their business. (CMSA2)

Agency Response: See the response to Comment 268 that explains why the regulation is necessary and, that given the severe recession, how the regulation was amended to substantially lower the compliance costs.

During the development of the amended regulation, staff collected survey data on trucking fleets and financial information from several businesses. The data showed that moving companies predominantly have lighter trucks (those with a GVWR less than 26,001 lbs). The amended regulation eliminates PM filter requirements for this lighter class of vehicles, delays the start of the replacement requirement to 2015, and limits the replacements to engines 20 years old or older until 2020. From 2020 to 2023 all engines need to be upgraded to 2010 model year engines or equivalent. The cost saving from the amendments for lighter trucks greatly lowers the compliance costs for most moving companies. As summarized in the October 2010 Staff Report (http://www.arb.ca.gov/regact/2010/truckbus10/truckbus10isor.pdf), we estimated the average compliance costs for local moving companies would be reduced by about 70 percent over the life of the regulation and additional changes to allow moving companies to use the low-mileage construction truck provision are unwarranted. The response to Comment 160 provides the rationale for the limits on the number of eligible low-mileage construction trucks and on the miles they can operate to qualify for the provision.

For heavier vehicles, fleets can defer all replacements until January 1, 2020 by using the PM filter phase-in option. With this option fleets would not have to replace older vehicles until at least 2020 and at that time could upgrade to 10 year old replacement vehicles to comply. Fleets could also delay compliance with the PM filter requirements through 2016 if the fleet is smaller at the time of required compliance than it was in

2006. For example, if the number of trucks currently being operated has decreased by 30 percent, then the fleet can use the fleet size reduction credit to delay clean-up of 30 percent of the heavier trucks in the fleet until January 1, 2016. In addition, if a suitable PM retrofit is not available, no other action is required to meet the PM reduction requirements until 2018.

Staff also performed an analysis on a typical moving company with 14 trucks, seven of which are heavier than 26,000 lbs GVWR. The analysis is in the Chapter VII, Section A of the October 2010 Staff Report: Initial Statement of Reasons for Proposed Rulemaking. The analysis found that the amended regulation would impose no additional costs beyond what the fleet would have historically done as part of its normal business operations through 2013. Additionally, the amendments would reduce total compliance costs by 55 percent compared to the originally adopted regulation. Overall, the cost to comply would represent about 0.15 percent of the annual revenue for this company. Of course, the actions and compliance costs of any individual company would likely deviate from the example above and depend on many factors such as the size of the fleet, the vehicle types, vehicle age, and normal vehicle replacement practices: however, the costs for most moving companies are likely to be well below 1 percent of revenue.

383. Comment: I look at CARB's estimates of the on-road annual mileage as being dangerously simplistic. These estimates of annual mileage I think should be deconstructed to reflect not just the quantity of miles traveled, but also the quality of miles traveled. What I mean by this is a long haul truck is actually traveling we'll say a higher quality mile as far as pollution is concerned than a short haul truck because the engines in a short haul truck or short haul, the engines don't really come up to temperature. So what's going to happen with these annual mileage estimates is that you're basing -- the painting both long haul and short haul trucks with the same brush. I think that some real attention needs to be given to on-road trucks traveling under 20,000 miles a year. And many of these are actually I would categorize as vocational vehicles. I've spoken about vocational vehicles before, and I think there should be a clear distinction in the regulation covering vocational vehicles. In fact, you might want to view vocational vehicles as somewhere in between an on-road and an off-road vehicle.

One thing for sure is that both of these trucks share a similar characteristic, and that is there's probably a limiting operating budget generated by the activity, if you have basically limited resources, less money to afford the new technology. And given the limited resources, any imposition of, say, the installation of a diesel particulate filter puts an undue hardship I believe on the operators who are running fewer miles. (RLEE)

Agency Response: Staff recognizes that there are differences between high-mileage and short-haul vehicles and appropriate distinctions were made in the emission modeling and cost analyses during the rule making process in 2008 and in the development of these amendments. The revised emissions inventory accounts for differences between different categories of trucks and buses. Construction trucks are one of the categories. Information about the methods used to calculate the inventory is

available in Appendix G of the Staff Report and on the AB 1085 compliance website for the Truck and Bus rulemaking: http://www.arb.ca.gov/msprog/onrdiesel/ab1085compliance.htm.

Long-haul fleets travel high annual miles, have predominantly newer vehicles with the latest emissions technology, and have the lowest emissions per mile. Local fleets tend to operate fewer miles and the trucks are kept longer. Older trucks have considerably higher emissions than new trucks. Older truck emissions can be effectively controlled with exhaust retrofit PM filters. Retrofit PM filters are widely available for vehicles that have a low exhaust temperature profile. Please see the response to Comment 95 for more detailed information regarding retrofits for cold duty cycle vehicles. In the event that a PM filter is not available or cannot be safely installed, fleet owners may request an annual extension until January 1, 2018 as explained in response to Comment 134.

As suggested by the commenter, a compliance option for low-mileage construction trucks is included in the amended regulation and is described in response to Comment 157. See response to Comment 268 that explains why the regulation is necessary and how the amended regulation substantially lowers the compliance costs.

g) Regulate Other Vehicle Owners

384. Comment: Before we get crazy on truck and bus emissions we should look at what vehicles are not required to meet any standards, such as state and local government owned vehicles, utility company vehicles, emergency vehicles, transit vehicles, solid waste collection vehicles, and others which are all exempt from diesel regulations at this time. If California wants to be green it should start at the top and include all these vehicles too. (LECK)

Agency Response: Several ARB regulations already require reductions of PM and other criteria pollutants from all other in-use trucks and buses that are not in the scope of the Truck and Bus regulation. In fact, most other diesel trucks and buses in the state will have PM filters by the end of 2011. This includes: urban bus vehicles, transit vehicles, solid waste collection vehicles, public agency and utility vehicles, and drayage trucks. Most of the vehicles in these fleets installed PM filters before 2011. All authorized emergency vehicles are exempt from the in-use diesel vehicle regulations per California Vehicle Code, section 27156.2 which does not allow installation of motor vehicle pollution control devices.

h) Increase California Weight Limits for Trucks

385. Comment: What would the Board and staff think about an additional 20 percent reduction in diesel emission reductions in the state? The way to accomplish that is to increase the gross vehicle weight from 80,000 to 105,000 pounds in California. We had that opportunity as an option until 1991 through the federal highway bills. We didn't do it. We're now surrounded with states with 105,000 pound gross vehicle weight. And the studies are in; you get a 20 percent reduction in fuel consumption with the increased gross vehicle weight. (CFA2)

Agency Response: The ARB does not have jurisdiction over California vehicle registration laws. Thus, the ARB has no authority to set higher gross vehicle weight limits on vehicles operating on California highways.

i) Body Built or Special Built Trucks

386. Comment: BJ Services would like to ask for one additional change in there as far as the body load trucks where we have the 20-year span for life span for a truck. On the body load trucks, a lot of times just switching the body and putting the stuff on the back of the truck costs about ten times the cost of the initial truck. So we'd like to see that we could get another five year running time out of the body load, instead of 20 years, so we can have a chance to recoup our investment costs on that. Normally, in the past, we've run about 30 years. So five is cutting back some already. Ten year cut back makes it really tough when you're looking at trucks that run about a million, million-four to replace. (BJSC)

387. Comment: Body Built or Special Built Equipment. We have presented testimony regarding the costs structure that has not resulted in any accommodations for some of our fleet that simply defies the justification for rule promulgation. We have estimated that in general the rule is predicated upon a $120,000 base purchase price, which was not argued by Staff. We have certain units that fit that model and some that are more but not significantly and which we would agree the model is close enough. We also have some units that can cost from 2 times the purchase to over 8 times the purchase price for added equipment and fabrication. These units are special built and do not fit the model of purchase, use and sell to replace with new after a few years. We have been frustrated that Staff has not seen fit to make special accommodations for equipment that obviously exceeds the amount that would fall into acceptable level for rule promulgation. Further, this equipment is generally already extra-legal or otherwise not suitable to retrofit technologies. The Unique Vehicle allowance does not provide relief for this as it does not address the inequitable and unjustifiable costs basis.

I'm not suggesting we exempt these units. I am saying perhaps a 25-year rule versus 20 for anything with the body built that we've taken. And you can't put a retrofit on it. There is no place. You can't have any weight. So it's a replacement anyway. So if we could maybe slide those 25 year versus a 20-year replacement cycle and no retrofit requirement, we'll let that go.

Staff should be directed to draft language identifying Body Built or Special Built Equipment exceeding the costs basis of the rule by a factor of 2 and allow a more reasonable slide to the rule so that we can make a onetime change into model year 2011 trucks without having to replace the entire fleet at once. (WEAT1) (WEAT 2)

Agency Response: In designing the regulatory amendments, staff lengthened the required engine replacement cycle as long as possible while ensuring that the overall SIP commitment would be met. Staff met with oil service company representatives about body load trucks and considered these issues when options in the amended regulation were developed. In meetings with the commenters above, prior to finalizing

the regulatory amendments, staff was informed that the typical body load truck life was about 20 years, although some body load trucks may last even longer.

In general, the amended regulation does not require any truck replacements of engines that are less than 20 years old until 2020. Fleets that opt to use the PM filter phase-in option have no replacement requirement regardless of truck age until 2020. Staff believes this provides adequate time to plan compliance. In addition, fleets can defer all heavier vehicle replacements until 2023 if they can demonstrate that all heavier vehicles in the fleet are equipped with PM filters by 2014. A similar provision applies to all lighter vehicles in the fleet.

Lastly, in order to achieve the 8 hour ozone standard by 2023, reductions of NOx, on the order of 75 to 88 percent, are needed. Despite the fact that emissions in future years are expected to be lower than originally anticipated when the regulations were adopted, all on-road trucks will need to have 2010 or newer engines by 2023 to meet the 8-hour ozone attainment deadline.

10. Out-of-State Fleets

a) General

388. Comment: The nearly 153,000 owner-operators, small-business motor carriers, and professional truck drivers ("small-business truckers") that make up OOIDA's membership, including more than 5,000 members in California alone, operate approximately 200,000 trucks in all 50 states and Canada. OOIDA is the largest international trade association representing the interests of these small- business truckers on all issues affecting their operations. Small-business truckers, like those belonging to OOIDA, have a significant presence in the trucking industry. Indeed, one-truck motor carriers represent nearly half of all active motor carriers operating in the United States while approximately 96 percent of active motor carriers operate 20 or fewer trucks. See American Trucking Associations, Economic and Group Statistics 2004. This segment of the goods movement industry has been hit particularly hard by the economic contraction, given the low profit margins and levels of compensation that have left many of them struggling to survive.

Because compliance with the Truck and Bus Regulation imposes a significant financial burden on many of OOIDA's members who haul freight in interstate commerce to and from California, generally on an intermittent and irregular basis, OOIDA appreciates CARB's efforts to implement new compliance schedules and phase-in options that will make compliance easier for some of these and other financially strapped motor carriers and owner-operators.

OOIDA also appreciates other changes, including those expanding exemption coverage, that should decrease the number of motor carriers subject to the Regulation. However, the Association also believes that the Regulation in general and some of the recently proposed amendments focus relief on and disproportionately benefit in-state entities, while ignoring the dire economic plight of out-of-state motor carriers, especially small-business truckers, who may

occasionally serve California. Indeed, the exemptions will rarely accrue to the benefit of out-of-state truck owners who often operate far fewer miles in California than in-state motor carriers who are exempt. Accordingly, OOIDA suggests that the Board direct CARB staff to explore further means to reduce the regulatory burden being felt by small-business motor carriers and owner-operators nationally. (ES-OOIDA)

389. Comment: Although OOIDA appreciates the additional compliance options now being offered by CARB to alleviate the economic burdens placed on financially-strapped motor carriers by the ongoing economic downturn, the Association believes that it is incumbent upon CARB to consider further amendments that will reduce the regulatory burden imposed by the Truck and Bus Regulation on small-business motor carriers and owner-operators nationwide. In particular, in order to eliminate conflicts with the Interstate Commerce Clause, CARB should make adjustments to existing exemptions that allow out-of-state motor carriers operating only limited miles in California to be exempted from the Regulation in a manner that is comparable to exemptions available primarily to agricultural and other in-state interests.

390. Comment: The seemingly uniform regulatory requirements and the exemptions from those requirements give the Truck and Bus Regulation, on its face, the appearance of an even-handed regulation furthering a legitimate state interest. If that were the case, the Regulation would be a totally appropriate exercise of CARB's regulatory authority. Upon closer scrutiny of the Regulation as a whole, however, OOIDA has found that various provisions improperly discriminate against out-of-state interests and place an undue burden on interstate commerce. In short, while the exemption language is crafted to appear non-discriminatory, we believe that is illusory and that benefits will flow primarily to in-state motor carriers. (ES-OOIDA)

Agency Response: The amended Truck and Bus regulation balances necessary reductions in toxic PM air pollution and NOx emissions while reducing costs for fleets. This balance was achieved in a manner that does not unduly burden interstate commerce or favor in-state over out-of-state interests. The regulation is structured to provide flexibility for in-state and out-of-state fleet owners to determine the best compliance options for themselves.

Responses to each of the issues raised by the commenter are summarized below and are addressed in more detail in each of the responses identified. As described in response to Comment 396, long haul fleets, typical of OOIDA membership, have newer trucks and generally have lower compliance costs than most in-state fleets. Interstate fleets also may be able to lower costs by managing their fleets to operate their newer lower emitting vehicles in California. The response to Comment 398 explains how the list of exemptions identified in section 2025(c) of the amended regulation predominantly exclude vehicles that are already subject to in-use diesel vehicle regulations or represent very limited categories of vehicles and have no bearing on interstate commerce concerns.

The special provisions in the amended regulation that are claimed to be unfair are available to be used by either in-state and out-of-state fleets, so long as the fleet meets the criteria of the provisions. Because these provisions are available to any fleet regardless of whether the fleet is in-state or out-of-state, they do not create a competitive disadvantage for interstate fleets. The responses to Comments 399 and 401 address comments on the agricultural vehicle provisions, and the response to Comment 400 addresses the comments on the optional phase-in provision for log trucks and the NOx exempt area provision.

The commenter's concerns that the amended regulation would create advantages for in-state fleets relative to out-of-state fleets are partly based on misinterpretations of how compliance for out of state fleets is determined. The response to Comment 402 describes how the low use provision benefits infrequent visitors to California, and the response to Comment 403 describes how the three-day pass exemption can be used by out-of-state fleets. The commenter's misunderstanding of the definition of fleet size and the flexibility to designate cleaner vehicles for California operation is addressed in the response to Comment 404. In addition, staff's evaluation of the commenter's alternative to increase the mileage limits within California's borders can be found in the response to Comments 405.

391. Comment: The multiple CARB regulatory requirements have also had a significant impact on small-business truckers who must in many cases comply with CARB's Transportation Refrigeration Unit (TRU) Regulation, the GHG regulation, and Drayage Truck Regulation (DTR), as well as the Truck and Bus Regulation. (ES-OOIDA)

Agency Response: Overall, the cumulative costs of multiple regulations on individual fleets is not expected to be significant for interstate long haul fleets because they generally have newer trucks and therefore should have little to no costs in meeting the requirements of the amended Truck and Bus regulation. See response to Comment 396 that describes how few interstate trucks will be affected.

Staff have identified a small number of fleets that will experience cumulative cost impacts. Specifically, trucks that must meet the emission reduction requirements of the Tractor Trailer Greenhouse regulation, by definition, are long-haul fleets that commonly have newer trucks. Staff's analysis presented to the Board in 2008 showed that only about 5 percent of the trucks that operate in California should have costs associated with both regulations. However, these costs are not expected to be significant considering that the equipment required under the Tractor Trailer Greenhouse regulation is expected to provide a net cost savings to fleets over its useful life, thereby offsetting any cumulative cost impacts of the two regulations.

Most TRUs from out-of-state that enter California are replaced before the TRU regulation would require any action. The TRU regulation requires engine upgrades after 7 years. Appendix C of the 2011 Staff Report for the TRU Air Toxic Control Measure documents that engines in out-of-state TRU fleets have an average age of 4.6 years. Therefore, most TRUs will meet the requirements with normal replacement cycles and only a portion of the fleet will likely have costs associated with the TRU regulation.

Additionally, the Drayage Truck regulation and the Truck and Bus regulation both have the potential to impact similar fleets; however, these two regulations do not have overlapping compliance requirements at the same time. The Drayage Truck regulation requires PM filters and truck replacement before the Truck and Bus regulation would require them. As an option for fleets that have trucks that are subject to both regulations, the amended Truck and Bus regulation allows fleet owners to include all their drayage trucks in determining compliance with the Truck and Bus regulation. Therefore, the combined costs for fleets with both drayage and non-drayage trucks are similar to other fleets that have no drayage trucks.

392. Comment: OOIDA also notes that in-state motor carriers that must comply with this Regulation are unable to access public funding for truck replacements and retrofits through various state programs, such as Carl Moyer grants, that limit participation to those entities located in California.

Agency Response: Public funding programs for emissions reductions from diesel trucks are funded by California taxpayers and are intended to lower emissions in California. Therefore, it is appropriate that a significant percentage of a truck's miles be driven within the state. Funding opportunities are available to vehicles that travel out-of-state provided the in-state mileage criteria are met. These programs target early reductions before regulatory compliance is required and the use of publicly funded vehicles engines or retrofits for demonstrating compliance during the funding contract period is not allowed.

Moreover, to the extent that the commenter's claim that it is discriminatory for in-state trucks to be able to access public funding for truck replacements and retrofits through various state programs while out-of-state trucks cannot has no merit. See West Lynn Creamery v. Healy (1994) 114 S.Ct. 2205, 2214 ["A pure subsidy funded out of general revenue ordinarily imposes no burden on interstate commerce, but merely assists local business."]

b) Burden on Interstate Commerce

393. Comment: It is beyond dispute that a state and its various authorities may only regulate conduct within their own state's boundaries. Laws or regulations that impose liability on or otherwise regulate conduct occurring wholly outside of the state go beyond inherent limits on the state's authority and may not be allowed to stand. *Healy v. Beer Inst*., 491 U.S. 324, 336 (1989); *Edgar v. MITE Corp*., 457 U.S. 624, 642-643 (1982). This is so whether or not the extraterritorial reach was intended. *Id*. This general principle is reflected in the Interstate Commerce Clause of the U.S. Constitution, which gives the federal government authority over commerce between the various states and, in so doing, relegates each of the states to the regulation of commerce within their own borders. Article I, Section 8, Clause 3. Thus, CARB's authority extends to the regulation of air quality and vehicle emissions only within the state, which correlates to miles operated within the state. As stated in CARB's enabling statute, the agency is to engage in a coordinated effort, with state, regional, and local authorities to "protect and

enhance the ambient air quality **of the state**." See Cal. Health & Safety Code 39001 (emphasis added). What happens outside of California is not and cannot be of concern – specifically regarding how vehicle miles are accumulated.

Recognizing the reality that state laws and regulations will often have incidental and indirect effects on interstate commerce, however, such effects are ordinarily allowed if the benefits to the local state interest outweigh the burden on interstate commerce. *Healy v. Beer Inst., supra; New Energy Co. of Ind. v. Limbach, 486 U.S. 269, 273 (1988); Brown-Forman Distillers Corp. v. New York State Liquor Auth.,* 476 U.S. 573, 579 (1986); *Edgar v. MITE, supra*. The burden is undue when a balancing of national and local interests reveals that the costs of complying are disproportionate (i.e., clearly excessive) when compared to the demonstrable local benefits that cannot otherwise be obtained by the state. United Haulers Ass'n, Inc. v. Oneida-Herkimer Solid Waste Mgmt Auth., 550 U.S. 330, 339 (2007); Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970).

Because of the obviously interstate nature of the transportation industry, the interstate commerce issue has often arisen in U.S. Supreme Court cases involving state regulation of transportation. For example, in *Raymond Motor Trans., Inc. v. Rice*, 434 U.S. 429 (1978), the Supreme Court struck down on Commerce Clause grounds a state statute that prohibited trucks longer than 55 feet with one trailer and trucks pulling more than one trailer from operating within that state without a permit, based upon the finding that it substantially interfered with the movement of goods in interstate commerce without a meaningful contribution to highway safety. *See also Kassel v. Consolidated Freightways Corp*., 450 U.S. 662 (1981) (invalidating state statute banning trucks over 60 feet); *Bibb v. Navajo Freight Lines*, 359 U.S. 520 (1959) (invalidating state law requiring mudflaps that could not be used in adjacent states); *Southern Pacific Co. v. Arizona*, 325 U.S. 761 (1945) (invalidating state law restricting length of trains). Although discrimination against out-of-state interests was not the decisive factor in the *Raymond Motor* case, the Court did note that the numerous exemptions from the general rule, some of which were found to discriminate in favor of local industry, raised additional doubts about the validity of the regulation. *Raymond Motor*, 434 U.S. at 446-447.

The Interstate Commerce Clause may also be violated when a state statute or regulation that does not expressly favor in-state over out-of-state economic interests, does so in practice, thereby raising the costs of doing business for out-of-state interests, but not their in-state counterparts. *Hughes v. Oklahoma*, 441 U.S. 322, 336 (1979); *Hunt v. Washington State Apple Advertising Comm'n*, 432 U.S. 333, 350-351 (1977). The discriminatory result is even more objectionable where the state requirement also deprives out-of-state interests of advantages they might otherwise have over local interests. Id. When in-state versus out-of-state discrimination is demonstrated, the burden falls on the involved state to justify it both in terms of the local benefits flowing from the regulation and the unavailability of nondiscriminatory alternatives adequate to preserve the local interests at stake. *Id*. at 353.

While the U.S. EPA has primary authority to set emissions standards for new motor vehicles, California alone has the right to regulate emissions from in-use motor vehicles (42U.S.C. § 7521, 7543), a right that has been delegated to and exercised by the CARB. However, this right is not unlimited. Among other limitations[24], this right must be exercised consistent with constitutional limitations, including the Interstate Commerce Clause. As discussed above, this requires a careful balancing to make certain that the Truck and Bus Regulation, as modified, does not unduly burden interstate commerce directly or by favoring in-state over out-of-state interests. (ES-OOIDA)

Agency Response: Staff believes that the board approved amended regulation would not be in violation of the Commerce Clause of the U.S. Constitution. The Commerce Clause of the United States Constitution (U.S. Const., Art. I, §8, cl. 3) grants Congress the power "[t]o regulate Commerce with foreign Nations, and among the several States. . . ." In addition to granting Congress an affirmative grant of authority, courts have found that the clause creates an implied restraint on state authority to enact legislation that imposes significant burdens on interstate commerce. (See *United Haulers Ass'n, Inc. v. Oneida-Herkimer Solid Waste Management Authority* (2007) 127 S.Ct. 1786; *Healy v. The Beer Institute* (1989) 491 U.S. 324, 326, fn.1.) The adopted regulation is not *per se* unlawful in that it does not expressly discriminate against out-of-state heavy-duty vehicle fleets, have the practical effect or purpose of protecting California economic interests at the expense of out-of-state interests, or have an impermissible extraterritorial effect on other states.

In such cases, the courts have typically applied a balancing test that weighs the state's legitimate interests in adopting the regulation against the burden that the regulation may have on interstate commerce. (*Pike v. Bruce Church, Inc.* (1970) 397 U.S. 137.). Here, the board approved regulation, which achieves significant reductions in diesel PM, an identified toxic air contaminant, and NOx, with concomitant reductions in health risks to the public (i.e., resulting in fewer fatalities, hospitalization, lost school and work days), would provide great health and welfare benefits to the public. The benefits of the regulation, adopted under the police powers granted to the State, clearly outweigh any burdens that the regulation would impose on out-of-state interests above and beyond those imposed on in-state interests. As stated, since the regulation applies equally to both in-state and out-of-state fleets operating within the state of California, no economic inequality will occur as a result of the regulation

As addressed in response to Comment 390, the amended regulation is drafted so as to treat in-state and out-of-state trucks evenhandedly. As to the commenter's statements that the regulation would have an impermissible extraterritorial effect, by its terms, the

[24] CARB's actions are also limited by the preemption provision of the Federal Aviation Administration Authorization Act, 49 U.S.C. § 14501© ("FAAAA"), which prohibits states from adopting any law or regulation related to a price, route, or service of any motor carrier with respect to the transportation of property. Although the effect of that provision on the Truck and Bus Regulation is not addressed in these comments, it is worth noting that barriers to interstate operations, such as those created by the Truck and Bus Regulation, might also run afoul of the FAAAA.

regulation will only apply to trucks and buses that operate in California. It has no applicability to trucks that operate wholly outside of the state (i.e., never enter and operate within California). See Healy v. Beer Inst., 491 U.S. 324, 336 (1989); Edgar v. MITE Corp., 457 U.S. 624, 642-643 (1982). The regulation will impose no requirement or condition on commerce that occurs wholly outside of California. As stated, the focus of the regulation is only on trucks that operate within the state. It does not regulate the sale or servicing or any other out-of-state activity engaged in by out-of-state vehicles.

Applying the Supreme Court created balancing test of Pike v. Bruce Church, Inc. (1970) 397 U.S. 137, which balances the state's legitimate interests in adopting the regulation against the burden that the regulation may impose on interstate commerce, the scales clearly weigh in favor of the legitimate state police powers to protect the health and welfare of its citizens. As acknowledged by the commenter in Comment 394 below, California has "the nation's most polluted air [and] has a strong and legitimate interest in reducing emissions within the state, including emissions from heavy-duty trucks that jeopardize the health of California's residents." ARB adopted the regulation to reduce emissions and public health risk associated with exposure to diesel PM, an identified toxic air contaminant linked with cardio vascular and pulmonary disease and cancer. ARB, as the designated air pollution control agency for purposes set forth in federal law and the agency responsible for the preparation of the state implementation plan under the Clean Air Act, adopted the regulation to meet national ambient air quality standards. Health and Safety Code section 39602. Upon approval by the United States Environmental Agency (U.S. EPA), the regulation will have the effect of federal law. The regulation will impose no greater economic burdens on out-of-state trucks than imposed on California-based trucks that operate in the same sector of the trucking industry. (See response to Comments 1-3 and 11-13.) Indeed, the economic burden imposed by the regulation on out-of-state trucks, in fact, will in most cases be less than the burden imposed on in-state vehicles. See response to Comment 396 below.

The cases cited by the commenter to support its claims of a Dormant Commerce Clause violation are inapposite. For example, in Raymond Motor Trans., Inc. v. Rice (1978) 434 U.S. 429 and Kassel v. Consolidated Freightways Corp. (1981) 450 U.S. 662, a plurality of the Court found that the statutes in question violated the Commerce Clause, in large part, because the defendant states did not provide persuasive evidence showing that the statutes prohibiting the use of 65-foot double trailers were any less safe than 55-foot single trailers, and that the illusory state interests were consequently outweighed by the identified burdens imposed on interstate commerce. Further, as opposed to the real interstate regulatory conflicts that existed in Bibb v. Navajo Freight Lines (1959) 359 U.S. 520 [Arkansas and Illinois had conficting mudflap statutes that could not be harmonized making it impossible for an interstate truck to comply with both statutes) no such conflict exists here.

ARB does not agree with the commenter's passing assertion in footnote 1 above that the regulation violates the motor carrier preemption in the Federal Aviation Administration Authorization Act of 1994. The regulation does not directly or indirectly regulate prices, routes, or services of motor carriers engaged in the transportation of property. Moreover, the state action here is effectively authorized by the federal Clean

Air Act (CAA), is part of the state implementation plan that California is required to adopt pursuant to the CAA, and once approved by EPA will have the effect of federal law.

Staff addressed the specific provisions that the commenter believes would deprive out-of-state interests of advantages they might otherwise have over local interests are summarized in response to Comments 390 and in the response to Comment 398.

c) Burden on Truckers who Drive Limited Miles in California

394. Comment: As applied to the Truck and Bus Regulation, it is undisputed that California, the state with the nation's most polluted air, has a strong and legitimate interest in reducing emissions within the state, including emissions from heavy-duty trucks that jeopardize the health of California's residents. Moreover, it is logical for CARB to extend the Regulation's coverage to out-of-state heavy-duty trucks that provide transportation services in California, since CARB has found that out-of-state trucks travel millions of vehicle miles annually on California's roads. *See Staff Report: Initial Statement of Reasons for Proposed Rulemaking. Proposed Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation, and the Tractor-Trailer Greenhouse Gas Regulation* (Oct, 2010) ("ISOR"), at Appendix G, Emissions Analysis Methodology and Results, p.10. However, just as all in-state trucks are not treated similarly because they are not comparable in all pertinent respects, all out-of-state trucks are not equal and should not be treated as such. Specifically, while many trucks based in states adjacent to California travel a significant number of miles on average in the state, the number decreases substantially for trucks coming from farther away. Yet CARB has lumped them all together in the analyses underlying this Regulation. (ES-OOIDA)

Agency Response: Staff did not "lump" together vehicles from states adjacent to California with vehicles from non-adjacent states as the commenter suggests. In the inventory out-of-state trucks are categorized into two categories: one for neighboring states and one for non-neighboring states. Vehicle miles travelled from non-neighboring states account for 75% of total vehicle miles travelled from out-of-state trucks.

See response to Comment 396 that describes how the predominant business model for long-haul fleets results in a lower compliance cost than most in-state or local haul fleets.

Also, various provisions in the amended regulation provide relief to trucks that have incidental travel within California. The response to Comment 402 describes how the low use provision benefits infrequent visitors to California, and the response to Comment 403 describes how the three-day pass exemption can be used by out-of-state fleets. The flexibility to designate cleaner vehicles for California operation is addressed in the response to Comment 404.

395. Comment: The International Registration Plan (IRP) – which is the mandatory vehicle registration program for commercial motor vehicles, including heavy-duty trucks engaged in interstate commerce - is the definitive resource in determining the minimum <u>average</u> annual miles a vehicle from another state travels in

California during any calendar year. A cursory examination of the data for 28 geographically scattered states shows that, with the exception of vehicles from states that border California or are located along the I-5 corridor, the average mileage operated in California is quite low. In fact, it shows that more distant motor carriers tend to operate fewer miles to/from California, going there irregularly and intermittently. (ES-OOIDA)

Alabama	*2,891*	Arizona	32,143	California	42,243	Delaware	910
Georgia	*2,388*	Idaho	6,658	Iowa	1,956	Illinois	2,985
Kentucky	980	Maryland	424	Mass.	231	Michigan	2,016
Montana	5,184	Mississippi	4,718	Missouri	3,323	Nebraska	3,379
Nevada	8,568	New Jersey	2,160	New Mexico	4,446	New York	944
N. Carolina	2,177	Oregon	15,404	Ohio	2,005	Oklahoma	7,386
S. Dakota	3,344	Tennessee	3,092	Vermont	2,496	Washington	15,041

Source: IRP Estimated mileage/distance charts from each jurisdiction's respective motor carrier licensing division.

Agency Response: Staff believes that the best sources for information on interstate trucks are from the IRP and the International Fuel Tax Agreement program, and not just the IRP. Both sources are used in developing the emissions inventory. The mileage data presented by the commenter in the above table are consistent with the IRP estimates issued by each state. However, the IRP data alone are not sufficient to determine the actual miles traveled or the frequency of trips by individual out-of-state vehicles in California. Fleets report their fleet total mileage in each jurisdiction and the total number of power units. These data are then used to calculate the average annual miles per vehicle for the fleet. However, this method could underestimate the actual miles traveled in California by far-state fleets that make infrequent trips since not all trucks in the fleet that have operating authority in California will actually come to California. For example, an average of 4,000 miles can mean 100 trucks travelled 4000 miles each in California or that 10 trucks out of 100 travelled 40,000 miles each.

Staff's evaluation of out-of-state truck activity in California for the original 2008 Truck and Bus rulemaking[25] indicated that for states neighboring California, approximately 60 percent of the trucks in those fleets authorized to enter California actually do so and for non-neighboring states, this estimate falls to 40 percent. This explains why some mileage reports in the table are lower than the distance of one round trip from the border to the nearest city.

396. Comment: While the actual out-of-pocket costs of purchasing compliant equipment (to replace or retrofit) are comparable no matter where a truck or fleet is based, the economic benefits gained by motor carriers from those expenditures are far less for more distant truckers who typically operate relatively few miles in California. Accordingly, the burden imposed by the regulation on distant motor carriers operating in interstate commerce is far greater than the burden on in-state interests who will be the primary beneficiaries of the exemptions. (ES-OOIDA)

[25] Appendix G See ARB 2008 Technical Support Document, Appendix G, p.G-29 http://www.arb.ca.gov/regact/2008/truckbus08/appg.pdf

Agency Response: Long haul fleets that are typically represented by OOIDA are expected to have newer trucks than local haul fleets and many will have little or no compliance costs whether based in California or not. Interstate freight carriers typically replace their trucks on a 3 to 10 year replacement cycle and will have original equipment filters before the regulation requires them. Under the regulation's PM filter replacement schedule, any vehicle that is seven years old or newer will be ahead of the regulation's clean-up requirements because newer trucks have PM filters equipped by the original equipment manufacturer as part of a new vehicle engine. Similarly, the regulation's schedule for replacement of trucks to 2010 model year or emissions equivalent engines is based on a 16 to 20 plus year schedule. This is well after the normal course of business turnover schedule of interstate carriers.

A fleet that normally purchases new trucks within a seven year replacement cycle would continue to have no costs attributable to the regulation and a fleet with an eight year replacement cycle would have no costs other than one year of reporting. Fleets that have a 10 year replacement cycle would likely need to retrofit two out of 10 trucks. Fleets with a replacement cycle less than 10 years would not need to replace any trucks early. Therefore, the issues raised by the commenter will apply to only a small fraction of all interstate trucks – covering both California and out-of-state trucks engaged in interstate transportation – that operate in California. In addition, out of state fleets have the ability to change their operating practices to reduce compliance costs by bringing lower emitting trucks into California; in-state fleets do not have this same flexibility.

Short-haul fleets, whether wholly or partly in-state, tend to travel fewer miles per year, because of their local operation, and are expected to have somewhat older trucks. These short haul fleets typically keep trucks longer and will have similar compliance costs as other short haul fleets that transport similar products whether based inside or outside California. Overall, we expect that the costs of the regulation will be similar for businesses that compete with each other in transporting goods in the same market or in providing the same service. Also, as discussed in the responses to Comments 402 and 403, vehicles from non-neighboring state fleets that are infrequent visitors to California will be able to utilize the low-use exemption and three day pass. Therefore, staff do not believe the amended regulation unduly burdens out-of-state fleets and does not violate the Interstate Commerce Clause.

397. Comment: The primary factor affecting the amount of harmful emissions in California is miles traveled within the state.[26] *See* EMFAC 2007. Out-of-state heavy-duty vehicles are estimated to account for only approximately 30 percent of heavy-duty truck mileage in California. *See* Assessment of Out-of-State Heavy-Duty Truck Activity Trends in California, UC Davis, Institute of Transportation Studies (March 2008). Yet compliance is demanded for the occasional entry into the state of all heavy-duty trucks engaged in interstate commerce even though in-state entities that could be performing the same services can be exempt. When that is done, the burden on interstate commerce, in the form of increased costs for

[26] EMission FACtors is the model used by CARB to calculate emissions rates from all motor vehicles operating on California highways

motor carriers who must comply or stop serving California altogether, outweighs the minimal health benefits that accrue given the limited number of miles many of these motor carriers operate in the state. Under those circumstances, as discussed in Section II above, the Interstate Commerce Clause is violated. *See United Haulers Ass'n v. Oneida-Herkimer*, *supra*; *New Energy Co. v. Limbach*, *supra*; *Brown-Forman Distillersv. New York State, supra*; *Pike v. Bruce Church, Inc., supra*. (ES-OOIDA)

Agency Response: Including out-of-state heavy duty vehicles in the regulation is appropriate because they represent a significant source of emissions in California. This class of vehicles represents approximately 33 percent of the total truck mileage and 27 percent of emissions in 2014 in California.

The amended regulation applies equally to in-state and out-of-state fleets and affects fleets similarly, depending on their vocation and business model. While the agricultural vehicle provisions and log truck option have a very limited scope and provide more time to certain qualifying vehicles, these provisions are narrowly defined, have limited eligibility criteria, and do not discriminate against out-of-state fleets. Out-of-state fleets can utilize all provisions in the regulation the same way as the in-state fleets to delay compliance as long as they can meet the same requirements. In-state fleets will not be at any more of a competitive advantage or disadvantage than the out-of-state fleets that compete in the same markets. The response to Comment 394 discusses the flexibility long-haul fleets have to minimize their compliance costs.

d) Availability of Exemptions for Out-of-State Interests

398. Comment: Although the Truck and Bus Regulation purports to impose emissions-related requirements equally on all heavy-duty diesel-fueled vehicles operating in California, this Regulation, like the objectionable state statutes involved in the *Raymond Motor and Hunt v. Washington* cases, contains numerous exemptions to the rule's requirements that will be used predominantly by in-state businesses. For example, paragraph (c) of the Regulation identifies 15 classes of vehicles that are exempted from the Truck and Bus Regulation. While a number of these vehicles are exempted because they are covered by other CARB regulations, a larger number are exempted for policy reasons unrelated to emissions. These include military tactical support vehicles, authorized emergency vehicles, dedicated snow removal vehicles, two-engine cranes, historic vehicles, motor homes for non-commercial private use, two-engine water well drilling rigs, and certain school buses. Regulation, § 2025(c). Of course, most of the vehicles taking advantage of these exemptions would be registered and based in California (ES-OOIDA)

Agency Response: The exemptions addressed by the commenter exclude vehicles that are already subject to an in-use diesel engine regulation or apply to a limited group of vehicles. Most of the vehicles identified in the exemptions section 2025(c) are already covered by existing California regulations. Two-engine cranes, two-engine water well drilling rigs and workover rigs are already subject to the off-road regulation, title 13, Cal. Code Regs., section 2449. It does not make sense to subject them to a second rule with similar requirements.

School buses are subject to the Truck and Bus regulation and have a more aggressive PM filter schedule than trucks. All school buses with a GVWR greater than 14,000 lbs. need to have PM filters by 2014. The Board did not agree with staff's original recommendation to exempt lighter school buses from the PM filter requirements as described in response to Comment 209.

Motor homes for private and non-commercial use are exempt for a number of reasons. The exemption represents no change for motor home owners and applies regardless of whether the motor home is registered in California. The suggestion that somehow this unfairly benefits California motor home owners compared to out-of-state motor home owners has no merit.

By state law, emergency vehicles are pre-empted from in use regulations, and the exemption applies regardless of location of registration.

Historic vehicles are typically low use vehicles and are uncommon. The exemption applies regardless of the location of registration.

Overall, we do not agree that the limited exemptions for these vehicles represent a significant number of vehicles, nor has a significant impact on the emission benefits of the amended regulation.

399. Comment: CARB has taken care, in crafting this Regulation, to ease the burden it places on California businesses, particularly its substantial agricultural and logging businesses.

Another exemption, which probably excludes more vehicles from the Regulation's emissions-related strictures than all others combined, is the exemption for "agricultural vehicles." California is the world's fifth largest supplier of food and agriculture commodities. Thus, the state and its regulatory agencies have repeatedly bowed to pressures from the agricultural industry to exempt various aspects of its operations from environmental restrictions that could affect their profitability. The provision exempting "agricultural vehicles" from the Truck and Bus Regulation exemplifies this practice. *Id*. at § 2025(m).

First, the definition of "agricultural vehicles" includes virtually all vehicles used in agricultural operations on farms, ranches, and in forests, as well as vehicles that deliver fertilizer and other agricultural chemicals to those facilities, and vehicles that transport agricultural products from those locations to the facility where they will first be processed, which is ordinarily within the state. *Id*. at § 2025(d)(5). Further, CARB staff has, in the proposed amendments, responded to the legitimate economic concerns of in-state agricultural interests by clarifying the definition in a way that could only increase the number of vehicles that come within the scope of this exemption. *Id*. Pertinent here, however, the definition does not, in either its original or amended format, include vehicles that move the same products in interstate commerce from the first processing facility to points farther along the supply chain, ending with the retail establishments where they are sold to the ultimate consumers. *Id*. The disparity is not readily justifiable when "[i] n the supply chain that stretches from the farm to the consumer, trucking provides

the first miles, the last miles, and sometimes all the transportation miles." USDA Study of Rural Transportation Issues (April 2010), www.ams.usda.gov/AMSv1.0/RuralTransportationStudy, at pp.xii,403,432. Indeed, it is an efficient interstate trucking industry that allows California to be competitive in the national and global marketplace for agricultural products. *Id*. at 403.

Second, to qualify for the exemption, agricultural vehicles must travel less than specified annual total miles to qualify. Until January of 2017 the annual mileage limits are as follows: for a truck with a pre-1996 model year engine, fewer than 15,000 miles; for a truck with a 1996 through 2005 model year engine, fewer than 20,000 miles; and for a truck with a 2006 or newer model year engine, fewer than 25,000 miles. *Id*. at § 2025(m)(1). Emissions restrictions are delayed until January of 2023 for agricultural vehicles that have not exceeded 10,000 miles per year prior to 2017. *Id*. at § 2025(m)(2).

Agency Response: Recognizing the broad breadth of industrial sectors and vehicle classes covered by the Truck and Bus regulation, the regulation makes some distinctions between the different sectors and classes. But within each specific industrial sector or class, all vehicles, irrespective of whether they are California or out-of-state based, are treated similarly. Most OOIDA members are in the goods movement transportation sector. Examination of the regulation will indicate that out-of-state trucks engaged in goods movement are treated no differently than California-based trucks.

ARB approved an Agricultural Vehicle Provision to provide more time for a limited number of low mileage agricultural vehicles in recognition of their unique vehicle and seasonal use characteristics. The number of vehicles that could use the extension is limited to ensure that California can still achieve the SIP commitments and other air pollution goals. The agricultural provision is available only for vehicles exclusively used in the *growing or harvesting* of crops. Eligible trucks cannot transport any products other than unprocessed agricultural products from the field to the first point of processing. Because of the mileage limits and other restrictions, the provisions can only be used by farmers that own their own trucks and seasonal haulers that operate only a few months per year. The provision is not limited to California farmers or in-state agricultural vehicles.

The agricultural vehicle extensions appropriately exclude any trucks that haul packaged agricultural products or any non-agricultural products whether based in California or elsewhere, regardless of miles travelled. The narrow definition limits the number of trucks that can use the extension and assures air quality goals will be met. The population of eligible trucks cannot be expanded while meeting air quality goals, and it is immaterial whether the trucks that are excluded are part of the extensive agricultural supply chain or not.

See response to comment 400 for the discussion about the log truck provision.

400. Comment: CARB has also added a new provision under the agricultural vehicle section for "log trucks," which exempts them from the use of PM filters without mileage restrictions, but subjects them to an accelerated BACT schedule. *Id*. at § 2025(m)(11). However, logging trucks with 1997 or older engines, which

operate exclusively in NOx exempt areas of the state (21 northern California counties), may also avail themselves of a delayed compliance schedule for vehicle replacement if they meet the PM filter requirements. *See Id.* at § 2025(p)(1). Although the cleaner air in the northern part of the state provides the principal justification for this exemption, the reality is that these specialized log trucks stay in a relatively confined area that limits their annual mileage.

Agency Response: See response to Comment 399. The log truck phase-in option is limited to log trucks with permanently attached log bunks when operating in California regardless of registration state. The log truck phase-in option requires the purchase of 2010 model year or emissions equivalent engines for trucks opting for the compliance delay, and fleet owners cannot use the delay and later choose to install PM filters rather than meet the requirement to upgrade to 2010 model year engines.

The exemption from upgrading to 2010 model year engines for vehicles operated within the NOx exempt areas applies to all trucks operating in those parts of the state and is not limited strictly to log trucks. In-state and out-of-state vehicles that operate in or through these parts of the state can take advantage of the exemption provided they are not operated in the other parts of the state. The NOx exempt area provisions have no impact on the emissions reduction needed in the rest of the state. The amendments clarify that that the provision applies to vehicles that cross state lines if they operate exclusively in NOx exempt areas within California's borders.

401. Comment: Annual vehicle mileage is a key metric utilized to measure (and presumably justify) the agriculture-related exemptions, presumably in recognition of the fact that emissions are related to either the miles operated or total engine hours.[27] OOIDA would like to bring to the Board's attention, as shown in the IRP mileage chart [See Table], with the exception of a few states surrounding California, trucks entering California from non-neighboring states do not even come close to operating the total annual total miles on California highways that is being permitted to in-state agricultural interests under the exemptions. Moreover, as we get further away from California, the mileage disparity gets even greater. Nevertheless, the vast majority of these trucks, because of their total annual mileage usage in jurisdictions outside of California, will not qualify for these mileage-based exemptions. (ES-OOIDA)

Agency Response: We disagree with the suggestion that the amended regulation is unfair towards out-of-state operators because the annual miles travelled in California by out-of-state fleets can be lower than the mileage limits allowed for trucks that qualify for the agricultural vehicle extension.

All freight haulers, California based or otherwise, transporting non-agricultural products and finished agricultural products, are not eligible for the agricultural vehicle extensions at all, regardless of annual miles travelled. Non-agricultural businesses, including in-

[27] Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle, U.S. EPA website at www.epa.gov/oms/climate/420f05004.htm#key (Step 6: Using EPA MOBILE6.2 fuel economy numbers).

state and out-of-state long haul trucking fleets, have a very different business model and marketplace than the farm trucks and seasonal haul trucks that are eligible for the agricultural vehicle extensions; therefore, there is little or no competition for these loads. See response to Comment 399. Also, response to comment 396 describes how long haul fleet have lower compliance costs than most California based fleets.

See response to comment 395 regarding the limited conclusions that can be drawn from the average mileage information in the IRP table.

402. Comment: CARB has displayed almost a total disregard for the burdens imposed on out-of-state truckers by the same Regulation. The current Regulation has only two exemptions that in any way address the needs of out-of-state motor carriers, but neither of these are very useful in their current or modified formats.

First, the Regulation exempts from coverage "low-use vehicles," which are defined as vehicles that operate less than 1,000 miles and 100 hours per year. Regulation, §§ 2025(d)(40) & (p)(3). The definition does not qualify the hour and mileage requirement in any respect and, accordingly, seems to mean the total miles driven by a vehicle in any state. There are not likely to be any out-of-state vehicles driven less than a total of 1,000 miles per year that would be entering California under this exemption. This is a striking departure from the current Regulation (at § 2025(d)(47)), which expressly provides that the mile/hour limits only include California operations.[28] Even with that qualification, however, few out-of-state motor carriers are willing to comply with the Regulation's reporting requirements for such a limited number of California miles. *Id*. at § 2025(p)(3).

Agency Response: The amended regulation released with the 45-day Notice inadvertently removed language that indicated that the 1,000 mile limit applied to operation within California's borders, which may have caused confusion about requirements for out of state vehicles. This oversight has been corrected in the modified language provided with the 15-day changes and was made available on May 19, 2011. The modified language clarifies that vehicles that operate less than 1,000 miles per year in California, would be exempt from the clean-up requirements provided that fleet owners meet the record keeping and reporting requirements.

ARB disagrees that the reporting requirements are burdensome. Fleets that periodically visit California have the flexibility to plan and report that the truck will operate less than 1000 miles per year in California. This option allows the vehicle owner to come into California for a limited number of loads for whatever timeframe is needed.

403. Comment: The Regulation contains an exemption for non-compliant "Vehicles Operating with a Three Day Pass." Id. at § 2025(p)(4). The exemption describes the procedures to be used by out-of-state interests operating non-compliant

[28] It is not clear whether this change was intentional since it is not mentioned in the SOR, and Appendix I to the SOR, captioned Costs and Cost Methodology, at p.12, mentions the California limitation. If intentional, it is another slap at out-of-state long-haul truckers. If inadvertent, then the proposed new definition should be amended

vehicles seeking to enter California with such a three-day pass. The current language (at § 2025(p)(5)) reads:

(A) Until January 1, 2021, a fleet that obtains a three-day pass will be allowed to operate one vehicle in California without complying with section 2025(e) for the specified three day period per calendar year.

(B) To obtain a three-day pass, a request to the Executive Officer, identifying the initial date that an out-of-state vehicle or vehicle operating without meeting the compliance requirements within California will be traveling within the state making a one-time annual visit to the state, the vehicle owner, company name, and vehicle identification number and must obtain written approval, which must be carried within the vehicle, prior to operating in the state.

(C) A three-day pass must be obtained from the Executive Officer either online, email, or by fax. The Executive Officer will have three business days to respond from receipt of the request before the vehicle may operate in California.

A fleet owner wishing to make use of the three-day pass exemption must have also complied with the reporting requirements set forth in the Regulation (currently at § 2025(d)(7)). The proposed amendment retains all the current requirements for use of this once-yearly exemption, but expands the timeframe for requesting a pass to "at least seven days prior to the vehicle's planned entry into California." Id. at §2025 (p)(4)(B).

The Three Day Pass exemption both as currently structured and with the more onerous proposed modifications is unusable for the vast majority of out-of-state vehicle owners. First, the reporting requirements are overly burdensome for applying just to get one isolated vehicle into California once during the year, whether it is the only vehicle owned by a small-business motor carrier or is part of a larger fleet.

Second, goods movement is a dynamic business, where motor carriers – especially small- businesses – often do not know their next freight offering until the day before or even the same day of expected pick-up. Or a carrier might be dispatched on a Friday for an expected delivery in California on Monday. The lack of advance notice makes the three-day pass unworkable. Thus, both the current "three business days" allowed for a response from the Executive Officer or the minimum "seven days" timeframe for requesting a pass, plus the fleet reporting requirements, would discourage the vast majority of out-of-state motor carriers from attempting to utilize this exemption.

Finally, limiting the pass to a maximum three-day timeframe is problematic. There are significant seasonal fluctuations in freight availability, mostly driven by agricultural and import availability. If goods are not available for pick-up immediately after delivery (in industry parlance – a quick turn-around), anyone utilizing a three-day pass runs the very real risk of having to leave the state empty

in order to not be in violation. One can hardly imagine a more inefficient and wasteful use of resources than forcing out-of-state motor carriers into this position. (ES-OOIDA)

Agency Response: See response to Comment 402. The three day pass exemption is a complementary option to the 1,000 mile low-use exemption that allows the fleet owner, who did not anticipate operating trucks in California, or did not report a particular truck as a low-use vehicle because it was not expected to be needed in California, to come in to the State one time each year to pick-up an unanticipated load. Based on comments received by staff during the regulatory development process, the three day period was deemed adequate by most commenters for the original rulemaking although it may not address every possible situation.

Fleets can take advantage of the three day pass exemption provided the pass is obtained before the vehicle is used in California and the fleet information is filed three days prior to travel. The section will allow a fleet owner that obtains a three-day pass for a vehicle to operate one vehicle per calendar year in California without having to comply with section 2025(e) for the specified three day period provided the information required in section 2025(r)(10) is filed with the Executive Officer at least three days prior to the vehicle's planned use in California. This change to the regulation was made to remain consistent with the three-day period in which the Executive Officer has to respond to the request. The three day response time is necessary for the Executive Officer to have sufficient time to evaluate and respond to requests. Staff intends to have an online application process available in the near future to expedite the application and confirmation process. Considering this change and the planned implementation process, staff does not believe that the reporting necessary to obtain a three day pass is overly burdensome.

404. Comment: CARB makes it very difficult for out-of-state truck owners wanting to send only compliant trucks from their fleets into California, in an apparent attempt to improperly control conduct outside its borders. *Cf. Healy v. Beer Inst., supra; Edgar v. MITE, Corp., supra*. Specifically, in determining the size of a fleet of vehicles subject to the Regulation's replacement and retrofit requirements, the fleet owner is required to count the total number of heavy-duty diesel trucks that are subject to common ownership or control "regardless of whether the vehicles operate in California. . ." Regulation, § 2025(d)(3).

Additionally, the Regulation requires a motor carrier to notify and update CARB on equipment changes to its fleet. Thus, an out-of-state vehicle owner who puts on more than 1,000 miles/100 engine hours per year or who needs more than one three-day pass each year, must count vehicles that may never enter California in determining what equipment must be retrofitted or replaced, and must bring the overall fleet into compliance before any truck can transport goods within the state. It is not sufficient for an out- of-state motor carrier to dedicate one or a limited number of vehicles to California service and bring those vehicles into compliance with the Regulation, even though that would serve California's legitimate interest in controlling emissions within its borders. (ES-OOIDA)

Agency Response: The commenter has misunderstood how compliance is determined, as the amended regulation does not consider vehicles that will stay outside California when determining what equipment needs to be retrofitted or replaced. The amended regulation, in fact, specifies that only the portion of the fleet that operates in California in the compliance year (and more than 1,000 miles) must comply with the emissions reductions requirements. Only the vehicles that operate in California must be reported if the owner opts to use the PM filter phase-in option or other provisions that require reporting. In fact, vehicles that do not enter the State may not be included in the company's fleet for determining compliance. The term "fleet" is defined in section 2025(d)(28). Therefore, the amended regulation does allow out-of-state fleet owners to manage their fleets to operate their cleaner vehicles in California.

The "fleet size" definition in section 2025(d)(30), which includes language about common ownership and control, does require out-of-state, as well as in-state fleets, to consider all trucks covered by the regulation solely for the purpose of determining if a fleet qualifies for the small fleet provision. The small fleet provision is available to both in-state and out-of-state fleets and provides smaller fleets with additional time for compliance. Smaller fleets generally have fewer resources than larger ones, and unlike larger fleets, because of the limited number of vehicles in the fleet, are not expected to be able to effectively take full advantage of regulation's flexibility options.

e) Proposed Low-Mileage Alternative for Out-of-State Truckers

405. Comment: A closer look also shows that other reasonable alternatives exist that could accommodate interstate commerce while still allowing CARB to achieve its emissions reduction goals. Neither the three-day pass nor the low-use vehicle exemption provides adequate relief to out-of-state motor carriers who come into California on an intermittent and irregular basis. However, CARB could both eliminate the undue burden on interstate commerce and equalize the treatment of in-state and out-of-state truckers, by focusing exclusively on miles driven in the state, the only factor that truly affects emissions, and increasing the corresponding number of hours allowed under the low-use exemption to a more reasonable level. Indeed, OOIDA strongly urges CARB to consider either an annual mileage limit of 15,000 miles in the state, the number of miles allowed until 2017 by the dirtiest and most heavily-polluting agricultural vehicles with engines from model year 1995 and earlier, or the 10,000 mile limit applicable to any agricultural vehicle that wants to remain exempt from the Regulation until 2023.

While these suggested limits are far higher than those contained in the current low-use exemption and would allow the out-of-state vehicles using them to spend far more than the three days currently allowed by the one-time three-day pass exemption, the trucks making use of the exemption would not pollute any more than the agricultural vehicles that already have comparable mileage exemptions. In fact, they are likely to pollute even less because, as CARB staff recognized in its Cost and Cost Methodology analysis in the SOR, "most out of state fleets would send their newer vehicles to California and keep the small percentage of older trucks outside of California." see SOR, Appendix I, at p.12. Further, given the IRP statistics on the average number of miles operated in

California by trucks registered in other states, those based in nearby states (e.g., Arizona, Oregon, and Washington) would exceed both of these limits and not be able to make use of the exemption. At the same time, those farthest away (e.g., Delaware, Maryland, Massachusetts, New York, and Kentucky) would actually operate less and, as distance from California increases, substantially less than the maximum allowed miles. However, the higher limit would allow those out-of-state motor carriers who do find themselves in California for more than 1,000 miles and 100 engine hours or more than three days to conduct their interstate business without undue interference. (ES-OOIDA)

Agency Response: Interstate fleets benefit from the amendments made to delay compliance and lower costs equally relative to in-state fleets. See response to Comment 268.

Additionally, high mileage interstate fleets are more likely to have lower costs that most California based fleets and do not have an undue burden as explained in response to Comment 396. In addition, we do not agree that long-haul trucking businesses have a comparable compliance cost with agricultural fleets. Trucks that qualify for the agricultural vehicle extensions do not compete in the same markets as freight haulers that transport processed crops or non-agricultural products; therefore, claims about interstate commerce concerns are unwarranted. The agricultural vehicle provision is not available to most in-state or out-of-state fleets, regardless of annual miles travelled. See response to Comment 399 about the rationale for the low mileage agricultural truck provision and how the population of trucks that is eligible is limited.

Increasing the number of trucks that could operate up to 10,000 or 15,000 miles would result in higher emissions from both in-state and out-of-state trucks, resulting in the State not meeting its SIP commitments nor diesel PM health risk reduction goals. To allow a higher mileage threshold for out-of-state fleets alone would inappropriately discriminate against California based fleets. Out-of-state vehicles represent one-third of the vehicle miles travelled by heavy-duty vehicles in California and failure to control their emissions would jeopardize the State's SIP commitments.

Out-of-state fleets would only be likely to bring in cleaner trucks if the mileage threshold remains low. Out of state fleets already have the ability to change their operating practices to reduce compliance costs by bringing lower emitting trucks into the State. Increasing the 1,000 mile low-use threshold substantially would mean that a higher proportion of the out-of-state fleet would not need to take any action to reduce their emissions, and would have an unfair competitive advantage compared to California fleets that compete in the same market. For example, a near-state fleet that might average more than the suggested 15,000 mile threshold for the trucks that enter California may easily be able to rotate in different non-compliant trucks to stay below the limit because the threshold is high and would incur no costs to upgrade equipment; whereas an identical fleet that is based in California would have to incur capital costs to meet the requirements of the amended regulation for the entire fleet..

See response to comment 395 regarding the limited conclusions that can be drawn from the average mileage information in the IRP table.

11. Outreach

a) Regulatory Development Process

406. Comment: We do not get to see the staff report prior to your meetings, so it's very difficult for us to respond to them in writing and online and that sort of thing. I'm not sure if the reason we can't see them is they are so pressed for time or if there is a certain hide the bunny factor. In either case, we'd really like to see the staff report five working days before your meeting so we would be more cogent in our response to it. Since you have my prepared remarks, I don't have to read them to you. (SCCA2)

Agency Response: The staff report for this rulemaking to amend the Truck and Bus regulation was made available for comment 45 days before the Board meeting as required by law. The adoption of ARB regulations is conducted through a public process that exceeds the minimum public process mandated by State law. Before the staff proposal was presented to the board at the public hearing, staff undertook various actions to ensure participation by stakeholders. During this informal part of the public process, public workshops were held to discuss proposed amendments to the regulation and changes to the emissions inventory. Staff also met with a number of companies and representatives of trade groups and industry associations to provide further opportunity to participate in the regulatory development process.

Staff initiated the formal rulemaking process with the publication of a notice of the December 17, 2010 board hearing. The notice, staff report and the full text of the proposed regulatory language were posted by October 28, 2010, as required on several web pages of ARB's website. Specific to the Truck and Bus Regulation it was posted at http://www.arb.ca.gov/regact/2010/truckbus10/truckbus10.htm. Notice of the Truck and Bus Regulation was also made available in the Regulatory Notice Register, which can be found on the website of the Office of Administrative Law at: http://www.oal.ca.gov/California_Regulatory_Notice_Online.htm

The notice invited interested members of the public to present comments orally or in writing at the meeting, and in writing or by e-mail before the meeting. In addition, emails were sent to over 7,000 members who subscribed to the electronic mailing list for the regulation. ARB for years has provided, on its website, the opportunity for any person to sign-up for electronic mailings of its rulemaking notices. Copies were also available to any person requesting to be on a list to receive hardcopies of notices of ARB rulemakings and upon request from the ARB's Public Information Office. The notice contained detailed instructions about availability of these documents and agency contact persons. The notice also provided a link to a webpage where comments not physically submitted at the board meeting could be submitted electronically until noon December 15, 2010.

As staff received numerous comments during the 45-day public comment period before the hearing, further changes were made to the regulation and presented to the Board on the day of the hearing. As required by statute, staff's additional changes as well as changes directed by the board were made available to the public for a 15-day period during which the public could submit comments on the additional proposed

amendments. The modifications were made available for comment with the May 19, 2011, Notice of Availability of Modified Text (15-day notice). Staff used the same methods to advise the public about the 15-day comment period on additional amendments to be proposed as those described above for the 45-day comment period. In addition, the 15-day notice was sent by postal mail or e-mail to anyone who submitted a comment on the originally proposed amendments.

407. Comment: We recognize that the rule contemplates some type of a postponement of the effective date for the truck and bus retrofit and turnover requirements, however, the ARB has still failed to be specific about exactly how much of a postponement (and to what specific date) the requirements will be extended. Planning is essential to good business operations. Ambiguity and vagueness in your proposed regulation harms our ability to plan. (APTCO)

408. Comment: I hear this frequently from the people that are affected by this rule and my industry -- they are looking for certainty. They make a plan. The rule changes. They make another plan. We really appreciate what you've done for the economy. But at some point, they've got to know so they can plan going forward. (CCM)

409. Comment: We have 10,000 commercial trucks in the United States, 3,000 in California. We see the commercial truck rental business as a growing market, and we will be purchasing thousands of these diesel trucks each year and in turn, reselling the older one to five-year vehicles into the secondary market. We believe it's critical that the regulatory standards be fixed and predictable so our purchasing and re-selling decisions can be made with some degree of certainty. We support the proposed revisions, and we commit to working with you in any manner possible to fully integrate our company's practices with your clean air and the greenhouse gas reduction rules. (ERAA)

Agency Response: Staff agrees that the regulatory requirements should be clear and enable fleets to plan their compliance paths to the maximum extent possible.

However, it was important that the process be thorough and that staff receive input from interested stakeholders. Because the regulation affects so many different industries and such a diverse set of vehicles, it was important to design a regulation that would achieve the best balance between meeting air quality goals and lowering costs for fleet owners while considering the impact on various industries. The regulation, as adopted, provides clarification and certainty for fleets. Staff does not expect any major revisions to the regulation in the near future, and affected fleets can now plan for compliance with certainty.

410. Comment: I'm a small business person. I attended many stakeholder meetings. Meeting after meeting, we had people come up to the microphone and state that this is going to ruin their businesses. The proposition, the proposal that you guys came up with originally didn't take into account any of the comments that were done at any of these stakeholders meetings. So I'm spending my time, but you guys aren't considering that. (TLT)

Agency Response: The workshops conducted by staff in 2010 always included an open discussion between attendees and staff personnel. The open exchange of ideas often led to refinements of the regulatory language, additions and deletions of various provisions, and a better understanding of the regulated community. Each revision of the regulation was built on the previous version as a result of working collectively over time with the affected stakeholders. The amended regulation, presented to the Board in 2010, was the result of several iterations developed over the course of 2010. Staff has worked hard to craft a rule that provides flexibility and compliance options for all types of fleets, and reflects, where appropriate, the comments received at the workshops.

b) Continue Outreach

411. Comment: Staff has done an incredible job by modifying these regulations and re-evaluation of the data and outreaching and listening to the affected industry. I'd like to request that your staff continue their endeavors to implement outreach as diligently as they have done for the modifications. (VPS)

Agency Response: Staff agrees continued outreach is important and has committed significant resources for outreach and education to assist fleets in understanding their compliance options and the financial incentives programs that are available. Staff will continue outreach to members of the affected public through public speaking engagements, the Internet, informational flyers, media interviews, association meetings, and a variety of other methods of communication. We plan to continue to work with industry representatives and trade associations to inform their members about the regulation and to develop additional methods to educate stakeholders. We will continue to improve outreach materials. All informational fact sheets are now available in multiple languages, and the website has been made more user friendly.

Staff has created a Truck Regulations Advisory Committee (TRAC) comprised of industry members to address rule implementation issues and to get feedback on how to improve future outreach efforts. This effort will include holding public workshops, seminars, and individual meetings throughout the State. Staff has developed an online reporting system, TRUCRS, as well as other tools to assist fleets in developing their own compliance plans.

ARB staff has also initiated outreach activities to ensure that those affected by the Truck and Bus regulation are also aware of other diesel regulations that may apply to them. These include development of the Truck Stop website, an information phone line and email, and free training opportunities. The Truck Stop website is a one- stop website that has information and tools for fleet owners to find out information on multiple regulations that may apply to them.

ARB staff will continue to conduct free training sessions throughout the State and make this training available through webcasts and videos as well. ARB staff will continue to work internally and with affected stakeholders through the Truck Regulations Advisory Committee to coordinate outreach efforts on all regulations that affect fleet owners.

12. General

a) In Support of the Regulatory Amendments

412. Comment: ARB must remain vigilant on any further attempts to stay or delay the overall goals of the agency's various in-use fleet rules or ARB's broader Diesel Risk Reduction Plan. These important emission reductions strategies not only protect the health of all the citizens of California but also provide an important source of economic growth and green jobs for the state. We wish to thank the ARB staff for its willingness to work closely with all interested parties throughout the regulatory process. Our industry is committed to do its part to help achieve the goals of these regulations. (MECA1)

413. Comment: We have a complex system of laws and regulations that govern our military funding process. It's different. And our procurement processes are also a challenge. And that was recognized. We appreciate that. We also appreciate the recognition of our dynamic and unpredictable mission. We don't always know what we'll be called upon to do. We are committed to complying with the proposed regulations. (UCMC)

414. Comment: Cal Energy supports the staff proposal for the truck and bus rule, for the off-road rule, the large spark ignition rule. In this last month, we received our first new truck. We also are retrofitting engine and particulate matter filter. It's interesting, our local ARB has asked us about the effectiveness. It sounds like there may have been some potential issues there. But we'll look forward to working through that. We appreciate the additional time to use this equipment and see how it impacts. And we want to thank the staff for their workshops coming down to El Centro. (CEOC)

415. Comment: This has been a really long and challenging time for agriculture. And I think staff would agree when they have had negotiations with us (California Citrus Mutual). But I want to tell you, I'm pleased today to tell you that we do support the amendments that have been put forth for the agricultural component of the rule.

The citrus industry has a high percentage of our trucks that do not qualify for the agricultural component of the rule, because we are an industry that pretty much operates ten months a year. So with the amendments that have been put forward in the main part of the rule today, they will have benefit for a great percentage of the citrus industry. So I do thank you for taking a look at the economy, because the profit margins that you've heard many times today are very, very thin. (CCM)

416. Comment: Ag is not exempt from the truck rule. We've been complying for the last year. We're going to continue to comply. We just wanted to make sure that you knew we appreciated that. We also appreciate the changes that you've made for the folks that could not take advantage of the mileage provisions for the agriculture community. Because there's many folks in the agriculture communities that harvest several times a year and can't stay under the low mileage provisions, and these new changes will be helpful to them. I appreciate the staff already helping us get the word out and doing the workshopping. I just wanted to make

sure that you heard from all sides on that and you appreciate the staff and the Board. (CAFBF)

417. **Comment:** Our own surveys indicate investments in excess of two billion dollars. These same companies have created or saved thousands of jobs here in California through the retrofit industry and the amendments that are before you today are going to create additional retrofit opportunities that are going to create thousands more jobs for California and the rest of the United States. As Mr. Brown indicated, our number one request today is that you finalize the requirements for trucks processing off-road equipment that are before you today to provide some certainty in the marketplace and get end users off the sidelines and into the pathway for compliance. We appreciate very much the inclusion of credits and incentives in the package before you for retrofits. These are very important to help jump start the demands for retrofit technology here in California, and we're appreciative that there are additional credits that have been included in the 15-day changes that were mentioned in the presentation this morning. (MECA2)

418. **Comment:** We are supportive of the current rule (submitted by ARB staff on October 29, 2010) and above all we urge you and your Board to adopt a rule without further delay. As one of many stakeholders in this process, we need the certainty provided by a rule in order to continue to operate our business. (CAEC1) (CAEC2)

Agency Response: ARB appreciates comments in support of the Truck and Bus regulation.

419. **Comment:** I wanted to thank everybody for bearing with us and letting us all come up together. If it's all right, we're going to have the whole group. There are 15 students in all, but not all are speaking. So I just wanted everyone to be able to come up and stand with their friends while they speak. The students who are speaking today are from Oakland and Richmond, and they can speak better for themselves than I can. So I'll just let them. (ROSE1) (ROSE2)

Agency Response: ARB appreciates comments of support of the Truck and Bus regulation. The names of the students that the commenter is referring to were submitted by the commenter during the 45 day comment period as part of the comment letter identified as Comment 22 (ROSE1). The comment letter was posted on the day of the hearing in the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10. The names of the students are listed in Table B-3. While this is a list of students who were in attendance at the hearing, only some of the students testified. The comments for the students who testified are responded to separately in the Health and Alternatives chapters.

b) Not Applicable to the Regulatory Amendments

420. **Comment:** We urge the Board to adopt the proposed changes to the fleet regulations and also request near term ARB policy guidance adjustments for existing verification and in-use compliance procedures. (DFS1) (DFS2)(MECA1)

421. Comment: CDTI asks the board to add further resources to the Retrofit Assessment Section so that verifications, extensions, and parts changes can be obtained with greater efficiency. (CDT1)

422. Comment: We have found it is possible to maintain engine combustion over an entire engine life. This eliminates unwanted diesel fuel producing increasing emissions as an engine ages. We have found Caterpillar dealers learning how to measure combustion as a diagnostic tool and then tuning the diesel engine for maximum fuel savings. This results in vehicle owner savings and the Caterpillar professional service centers are taking the engine combustion responsibility same as a aircraft mechanic signing of an airworthy engine log. Check out the Whayne Supply CAT link for information about the Mirenco products and service through CAT Dealers. I would encourage you to check is the large "Mirenco" tile in the center of the Whayne Supply home page (www.whayne.com). It will explain much of the Mirenco process (MIRE)

423. Comment: The poor economy has affected Public Utilities in much the same way it has the private sector. We have had to slash our budgets, reduce our workforce, and raise rates just to keep operating and provide the necessary service to our customers. We don't have extra money laying around to retrofit or replace our diesel trucks and equipment. Any money spent on our fleet to comply with the emission regulations has to be passed on to our customers who are already feeling the effects of the down economy themselves. Public Fleets need to have the same considerations that the private sector is receiving in the regulation amendments. We need some breathing room as well. We have had to spend hundreds of thousands of dollars to date to remain compliant with the regulations and we still have much more to go with the current compliance schedule. (CVWD)

Agency Response: These comments are not pertinent to modifying the Truck and Bus regulation or to the proposed amendments and will not be responded to in this document.

c) Reduce GHG Emissions and Dependence on Petroleum

424. Comment: I am with the California Natural Gas Vehicle Coalition. Very much share the concerns that have been raised about health impacts and about the inventory and the lack of a margin for error. But I want to use my time to discuss something that I don't think has been discussed today. A few weeks from now, in early January, the L.A. County Metropolitan Transportation Authority is going to retire its last diesel bus. It's going to retire its last diesel bus. That's an effort I was involved with back in the 1992. It's taken them 18 years, but they're going to retire their last diesel bus. I raise this, because it highlights what these heavy-duty rules don't accomplish. They don't reduce our dependence on petroleum. And they don't really do much for reducing greenhouse gases.

In 2006 and 2007, the Air Board worked with the CEC to develop an AB 1007 alternative fuels plan for the state. This Board adopted that plan. That plan -- the moderate growth scenario in that plan calls for 26 percent alternative fuels by 2022; 26 percent alternative fuels for the transportation sector in California by

2022. I have two specific requests for the Board. I raised this one before back in 2009. As I recall, several of you from the dais agreed and thought it was a good idea.

Starting now with every regulation that this staff brings to you, including amendments to regulations that you've already adopted, not only should they report on the economic impacts, not only should they report on the health/SIP/criteria pollutant impacts, but also be reporting to you on what are the greenhouse gas impacts of these changes or this new reg, as well as how does this play into our petroleum reduction goals that we've adopted as a state? That was not part of the presentation today, and it should be part of every presentation that staff makes to you with any regulation or an amendment to a regulation.

The second request is looking even beyond 2022; we've done so much work as a state in clarifying and developing our strategy for the light-duty vehicle sector. Where do we need to be by 2050 and how are we going to get there? We have not done the work with the heavy-duty sector. My request is that the Board directs staff to accomplish this in 2011. Work with interested parties and develop that equivalent plan for the heavy-duty sector in California. Where do we need to be and how are we going to get there? Today, I submit even those that work on this reg can't lay that out for you. And they should be able to. (CNGVC)

Agency Response: The purpose of the Truck and Bus regulation is to reduce emissions of PM, NOx and other criteria pollutants from in-use diesel vehicles. The GHG emissions impact of the Drayage Truck, Tractor-Trailer, and Truck and Bus regulations was evaluated and is discussed in the Initial Statement of Reasons (2010), which was provided to the public for comment 45 days prior to the Board hearing on December 17, 2010. Due to the need for brevity, the impact of the Truck and Bus regulation on GHG emissions was not discussed at the Board hearing on December 17, 2010.

The Assembly Bill 32 Scoping Plan identifies the key strategies California will use to reduce the GHG that cause climate change. The scoping plan has a long term range of GHG reduction actions which include regulations, such as the Tractor Trailer regulation, which was developed to explicitly reduce greenhouse gas emissions and fuel usage in a relatively inexpensive way, through reduction of wind resistance and rolling resistance with aerodynamic cowling and improved tires.

While the Truck and Bus regulation is not part of the Scoping Plan, it provides certain provisions which will help achieve the goals of GHG reduction and the reduction of dependence on petroleum. For example, it provides credits for adding alternative fueled vehicles and fuel efficient hybrid vehicles that result in reduced fuel consumption and reduced GHG emissions.

C. Summary of Comments and Agency Responses –Notice of Modified Text

Table 7 lists all commenters who submitted comments on the modifications to the originally proposed amendments. Following the table is a summary of each pertinent objection or recommendation, together with an agency response providing an

explanation of how the proposed action has been changed to accommodate the objection or recommendation or the reasons for making no change. The comments have been grouped by topic whenever possible. Comments not pertinent to the modifications proposed in the first 15-Day Notice are not summarized below.

Table 7

List of Persons and Entities who Submitted Written Comments During the 15-Day Comment Period

Reference Code	*Commenter*	*Affiliation*	
ATI	Shellie Archer	Archer Trucking Inc.	
BLOU	John Blough	John Blough	
CACTS	K. Michael O'Connell	Coalition of Approved California Truck Driver Training Schools	
CCIMA3	Charles Rea	California Construction & Industrial Materials Association	
CFA3	Steven Brink	California Forestry Association	
CIAQC4	Michael Lewis	Construction Industry Air Quality Coalition	
CTA3	Chris Shimoda	California Trucking Association	
CTTA2	Glenn Neal	California Tow Truck Association	
CVS	Bill & Jo Ann Bawks	Central Valley Sweeping	
DCC3	Skip Brown	Delta Construction Company Inc.	
GALL	Sean Galleher	Sean Galleher	
GCI3	Nick Pfeifer	Granite Construction Inc.	
IMET	Julius Rim	Julius Rim	
LRENN	Larry Rennacker	Larry Rennacker	
MGOR	Martin Gordon	Martin Gordon	
NAPSA1	Jay Wells	North American Power Sweeping Association	
NAPSA2	Kevin Kroeger	North American Power Sweeping Association	
NAPSA3	Mark Carter	North American Power Sweeping Association	
NRDC	Diane Bailey	Natural Resource Defense Council	
QUINN	Bob Shepherd	Quinn Company	

a) Early PM Retrofit Credit

425. Comment: CIAQC supports credits that serve as an incentive for the early installation of emission reduction technologies, i.e., PM VDECS. However, we have two concerns with the amendments for early retrofit credits as proposed.

The first concern relates to the information provided in News Release #11-13 issued April 6, 2011 that states, "ARB announces special compliance option for

California on-road diesel fleets purchase of particulate filter by May 1 earns early action credit for another truck in fleet." The news release includes the following paragraphs:

"The early action “buy-one-get-one-free” credit applies to heavier trucks with a manufacturer’s gross vehicle weight rating of more than 26,000 lbs. There is no limit on how many trucks in the fleet can earn the early action credit."

"Fleets that install a particulate matter filter by July 1, 2011, will get the early action credit. Fleets that have made the commitment to purchase by May 1 and install the PM filter after July 1, 2011, will still receive early action credit In addition, the vehicle that is retrofitted would also be compliant until 2020 regardless of engine model year. Extra particulate filter credits are not available for filters installed to comply with other pre-existing ARB regulations or, if partially paid for by public funding." This information did not state that the early action credit would only apply to the phase-in compliance option and not also the PM BACT, as the May 19, 2011 proposed amendments specify. The April 2011 news release is misleading and the two-for-one credits should be available without limitations for both compliance paths. (CIAQC4)

426. Comment: Section 2025(j) This credit section is misleading. All of the credits are tied only to the phase-in option. Even more confusing is the "two-for-one" credit that was announced in an e-mail on 4/6/11. The e-mail announcement states the credits can be taken as two-for-one with no limitations (i.e. no reference to being restricted to only the phase-in option). However, the regulation as released for the 15-day only allows this credit only if the fleet uses the phase-in option to meet the BACT percentages (section 2025(j)). Based upon the information in the e-mail copied at the end of this comment letter, a lot of people moved forward thinking this credit would also apply to owners using the straight BACT method.

This “two-for-one” credit must be allowed for both the straight BACT method (Table 2) and the Phase-In option. If not allowed for the straight BACT method, based upon the e-mail announcement, the public has been totally misled. (QUINN)

Agency Response: The news release dated April 6, 2011, was primarily an announcement of the approaching May 1 deadline for fleets intending to take advantage of the early PM retrofit credit. The announcement did not describe every detail on how to use the early action credit option and was not intended to be a substitute for the regulatory language. Although the news release could easily be interpreted to apply to the PM filter phase-in option, it did not explicitly state that the early retrofit credit would only count towards compliance with the phase-in-option or that it would not apply to fleets that comply with the engine model year schedule.

The engine model year schedule was included in the regulation as a straightforward compliance option that specifies which engines to retrofit and replace based solely on the engine model year so that no reporting would be required. Staff considered allowing fleets to use the early PM credit with this compliance option; however, as described below, to do so would add additional complexity, would create unnecessary competitive

disadvantages, and require reporting which undermines a key purpose of having the engine model year compliance schedule.

Complexity would be added by needing to track which vehicles in the fleet were using the credits. The regulation would have to spell out whether or not the credit could be transferred to different vehicles from year to year. Either approach would be problematic, but allowing credit transfers would add significant complexity by requiring fleets to audit and verify. The PM filter phase-in option already requires reporting and specifies the percentage of the whole fleet that needs to have PM filters; there is no need to specify a particular vehicle to use the credit.

Allowing for credits to be used with the model year schedule can create competitive disadvantages or loop holes that staff believes should be avoided. The engine model year schedule already defers clean-up of 1996 model year or older engines to 2015 and 2016. Certain fleets will also be able to use other provisions in the regulation and will be able to defer clean-up of the engines that would be required to be retrofit in the early years. This means that such a company able to use such provisions would be able to further delay clean-up of a small fraction of the fleet while other companies could not simply because of the model year grouping of the engines in the fleet. This would create an unfair competitive advantage, would further backload compliance costs, and would result in fewer emissions benefits than expected from the regulation. Because the PM filter phase-in option determines compliance based on a percentage of the vehicles in the fleet, it treats similar fleet more equitably regardless of engine model year groupings.

Finally, the model-year schedule requires turnover of older heavier trucks in 2015 and 2016. If fleets were able to delay engine replacements, then the engines with the highest PM emissions would operate longer and the early PM reduction credit would result in increased NOx emissions. This could further jeopardize the overall emissions reductions expected from the regulation. The PM filter phase-in option defers replacements until 2020; therefore, this issue is not present with the phase-in schedule.

427. Comment: The inconsistent application of early action credits as described in the April 6, 2011 news release and the May 19, 2011 proposed amendments also underscores that additional time should be given to receive credits for the purchase and installation of PM VDECS. The official 15-day proposed amendments were released on May 19, 2011. Until this time, the changes to the Truck and Bus Regulation were uncertain. VDECS installations are capital intensive and the decision to purchase VDECS for early credit purposes were likely postponed until the rule language was available. For this reason, the deadlines to receive credit for early PM VDECS should be extended commensurate with the five-month time frame between the amended rule adoption and the release the amendments. The early credit deadline for installing a VDECS is July 1, 2011. The early credit deadline for purchased VDECS is May 1, 2011, and the deadline to install the purchased VDECS is October 1, 2011. The July 1 and May 1, 2011 dates should be extended at least by five months to keep the incentive for early credits viable and useable. (CIAQC4)

Agency Response: The primary purpose of the early PM retrofit credit provision was to reward fleets that had taken action to comply with the regulation as originally adopted. The credit period was later extended to July 1, 2011 to further encourage fleets to install retrofits early and to minimize the potential for PM filter orders placed in 2010 to be cancelled. The July 1, 2011 installation date, gave fleets enough time to take action after the Board meeting. These installations are considered early compliance actions in that they must be made at least six months before the initial compliance deadline. We believe this appropriately rewards fleets that had taken steps to comply with the regulation.

Extending the early credit period significantly beyond July 2011 would give additional credit for meeting the basic compliance requirements and would not result in the early emissions reductions the credit is intended to achieve. Similarly, a PM filter purchased 5 months later than the May 1, 2011 purchase deadline, would be unlikely to be installed before January 1, 2012; therefore, it would not be early and should not be given extra credit for early action. .

b) Excess PM VDECS Credit

428. Comment: CIAQC applauds CARB for incorporating its recommendation to allow excess credits earned for one regulation to be applied toward compliance for the other under certain conditions as provided in section 2025(j)(2)(C). Section 2025(j)(2)(C)(1) specifies how the excessive PM credits are applied between the two regulations. This section should be amended to clarify that the unit of credit exchange between the regulations is horsepower.

The reason for this recommendation is that the PM Best Available Control Technology (BACT) requirements for the Truck and Bus Regulation is based on the number of vehicles and the PM BACT requirements (and thus credits) for the Off-Road Regulation is based on horsepower. A unit of horsepower would provide that the exchange of credits would be on an equal basis between the two regulations. This could be accomplished by inserting the following underlined text into this portion of section 2025(j)(2)(C)(1) "The annual excess PM VDECS credits are determined by counting the number of Level 3 PM VDECS filters and 2007 model year and newer engines that meet PM BACT in the fleet that exceed the minimum number required to meet the PM BACT percentage of section 2025(i) multiplied by the horsepower of engines in those vehicles that exceed the minimum number without accounting for the credits specified in sections 2025(j)(2)(A), and 2025(j)(3)."

In addition, section 2025(j)(2)(C)(2) should be modified to clarify what constitutes excess PM VDECS credit. This modification needs to clarify that PM VDECS installed on off-road equipment prior to the first compliance dates, January 1, 2014 for large fleets, January 1, 2017 for medium fleets and January 1, 2019 for small fleets, would qualify as excess credits for use in meeting the Truck and Bus Regulation PM BACT requirements.

To avoid potential confusion regarding the expiration date for utilizing excess PM VDECS credits between the two regulations, section 2025(j)(2)(C) could be

amended as follows, "For the same owner, excess PM VDECS credits granted in the Off-road regulation (title 13, CCR section 2449) may be used in the Truck and Bus regulation and excess PM VDECS credits granted in the Truck and Bus regulation may be used in the Off-road regulation to meet BACT requirements up to and including the January 1, 2016 compliance date. Starting with the January 1, 2017 compliance date no credits may be transferred between the two regulations." (CIAQC4)

Agency Response: As suggested, the method used to exchange credits between the two regulations uses horsepower, but the language on how the conversion is made is addressed in the Off-Road regulation. The Off-Road regulation also specifies the use of a conversion factor to convert the total maximum horsepower of excess engines with Level 3 PM VDECS to excess PM VDECS credits that may be applied towards compliance with the Truck and Bus regulation. The response to Comment 131 explains how the credits can be earned and transferred between the two regulations.

We do not agree that section 2025(j)(2)(C)(2) of the Truck and Bus regulation should define how credits from off road equipment should be earned in the Off-Road regulation. The specific requirements regarding compliance dates and other details for determining the off-road credits should be addressed in section 2449 of the Off-Road regulation.

The concept for transferring credits is reflected in section 2025(j)(2)(C) of the Truck and Bus regulation. Credits may be transferred between the Truck and Bus regulation and the Off-Road regulation until January 1, 2017. Starting January 1, 2017 no credits may be transferred between the two regulations. Similar language is in the amendments to section 2449 of the Off-Road regulation.

429. Comment: Text at (j)(2)(C) allows the use of excess off-road regulation PM VDECS credits to meet truck and bus PM BACT requirements, and vice versa. In general the same model year off-road engine emits significantly more PM than the same model on-road engine. In addition, the same passive or active PM VDECS costs at least 25% more in off-road applications than in on-road applications. It would therefore be in all parties' best interests to give excess off-road PM VDECS' additional credit when used to meet on-road PM BACT requirements. I would suggest a minimum of 25%. So, for example, if a 300 hp of off-road piece of equipment were retrofit generating an excess credit, the amount of credit when applied to the Truck and Bus PM BACT would be at 375 hp. (LRENN)

Agency Response: Section 2025(j)(2)(C) provides a straightforward method for calculating excess PM VDECS credits for trucks that may be used for compliance with the Off-Road regulation and the method for applying excess PM VDECS credits earned in the Off-Road regulation to compliance with the Truck and Bus regulation. The response to Comment 131 explains how the credits can be earned and transferred between the two regulations. The Off-Road Regulation, section 2449, addresses how excess credits are accrued in the Off-Road regulation and how excess PM filter credits from trucks can be used for off-road vehicle compliance.

We recognize that trucks have varying horsepower. For simplicity, the Truck and Bus regulation uses the number of PM filters and doesn't use horsepower. Of course the

Off-Road regulation is based on off-road engine horsepower; therefore, a conversion factor of off road horse power to number of equivalent PM filters for trucks has been established. The conversion rate that will be used to determine the value of the credit from action in one rule compared to action in the other is addressed in the Off-Road regulation amendments.

430. **Comment**: CalCIMA members have a variety of fleets subject to this regulation that are used in the production and delivery of materials. These include on-road fleets of mixer trucks that deliver concrete to project sites. They also include water, crane, lube, mechanics, and other vocational fleets that operate at material production plants. The materials industry continues to face many challenges in a down construction economy, so we appreciate the Board making changes to provide more options, allowances, credits, and extensions in the rule.

Since CalCIMA members operate both On and Off-road fleets, the "bubble concept" in Section 2025 (j)(2)C) is one of the potentially helpful changes, since it will allow exchange of excess credits among the two rules. Since this is a two part provision-requiring completion of the 15 day changes to the Off-road rule as well, we encourage the Board to complete the Off- road changes as soon as possible, so members will know the credit exchange rate and be able to make decisions accordingly. (CCIMA3)

Agency Response: New compliance options were added to the Truck and Bus regulation and the Off-Road regulation to allow excess PM VDECS credits in either the Truck and Bus regulation or the Off-Road regulation to count toward compliance with the other regulation. Section 2025(j)(2)(C) describes how on-road excess PM credits are determined for compliance with the Off-Road regulation. The Off-Road regulation, with the method for calculating the off-road excess PM VDECS credit is available at: http://www.arb.ca.gov/regact/2010/offroadlsi10/lsi15dayatt3.pdf.

c) Credit for Early Addition of Newer Vehicles

431. **Comment**: The revised "fleet age reduction" credit continues to treat aftermarket DPFs as the favored compliance option of the ARB. The inequitable treatment of those fleets that choose to comply with OEM equipment (for functional purposes) at ten times the upfront cost of aftermarket retrofits could be, at best, described as puzzling given that their early and additional emission reductions are identical. We have yet to hear adequate justification for this policy and fail to recognize the ARB's statutory authority to prejudice policy to favor one Best Available Control Technology (BACT) versus another.

The argument put forth by Board staff that they do not want to credit fleets that would have purchased the new equipment as part of their normal buying cycles is tenuous. It is impossible for Board staff to know whether new equipment was bought in response to the rule or not. Measuring average fleet age at a single point in time (October 2006) against another (compliance year) is an entirely arbitrary way to measure vehicles added and one that has no statutory support. Also, fleets

who ordinarily turn over equipment in advance of the requirements of the BACT schedule would have no reason to claim credits it does not need.

The simplest way to measure additional vehicles is to credit all like-reductions in emissions achieved prior to a date not to exceed six months prior to rule implementation. This is consistent with the basic principles of general pollutant incentive crediting schemes. The "one-to-one" method of crediting aftermarket retrofits is simple and easy for fleets to administer. We would strongly suggest the Board and staff consider adopting equitable crediting for aftermarket and OEM filters. (CTA3)

Agency Response: Providing extra credits for actions that would be taken without a regulation results in no emissions reductions and is counter productive to the goals of having the regulation. The credit for the early installation of retrofit PM filters is straight forward because it is reasonable to expect that PM retrofits would not be installed without the regulation; however, determining how many vehicles in each fleet would already have original equipment filters, if there were no regulation, will vary by business type and a variety of other factors. We agree with the notion that if fleets make early truck replacements, it is appropriate to provide extra credits; however, there is no ideal way to determine how many engines in a given fleet are replaced early in response to the regulation. The method included in the amended regulation is the best compromise for determining the credit and is discussed in the response to Comment 120.

d) Requirements for New Fleets and Changes to Existing Fleets

432. Comment: would like to express several concerns with changes made in the 15-day modified text.

Section 2025(o)(2)(A). I believe CARB is trying to make this more complicated than it really needs to be to ensure compliance. In several other regulations the statements for compliance are more straight-forward and do not require reporting every time equipment is added. To report to the Executive Officer every time a new vehicle is added to a fleet is too onerous. I suggest you word this section similar to the reverse of 2025(o)(2)(B):

"If an existing fleet does not meet the requirements of section 2025(f) or 2025(g) when a vehicle is added to the fleet, the owner must file a report with the Executive Officer that demonstrates how the requirements of 2025(o)(2)(C)1 and 2 will be met within 30 days of the addition of the vehicle."

If you are concerned with this language allowing someone to add an older pre-1996 engine, you could use the following language:

"An existing fleet may not add a vehicle with an engine 1995 or older. Additionally, a vehicle may not be added to the fleet that does not comply with section 2025(f) or 2025(g), and the requirements of 2025(o)(2)(C)(1) and 2".

This latter suggestion would ensure that even if the BACT phase-in option were used, the fleet could not add any vehicle that did not meet the PM BACT portion of the regulation when it was required to by Tables 1 and 2. It also prevents the

introduction of older vehicles that would not need to comply with the PM BACT at all (the pre-1996s that only require replacement later). (QUINN)

433. Comment: The requirement found in section 2025(o)(2) that an existing fleet must report within 30 days to the executive Officer each time a vehicle is added is unnecessary and overly burdensome. This section could be modified, while ensuring compliance, with the following change, "If an existing fleet does not meet the requirements of section 2025(f) or 2025 (g) when a vehicle is added to their fleet, the owner must file a report with the Executive Officer that demonstrates how the requirements of section 2025(o)(2)(c)(1) and 2025 (o)(c)(2) will be met within 30 days of the addition of the vehicle. (CIAQC4).

Agency Response: Fleets that comply strictly with the model year schedules do not need to report and do not need to report any additions to the fleet if the vehicle added complies with the schedule. Fleets that use credits provisions or the more flexible compliance options must report changes to ensure that enforcement has information consistent with the fleet's vehicle information.

For fleets that must report, section 2025(o)(2)(A) was modified to make it more clear that newly added vehicles that have 2007 model year engines or newer that meet PM BACT are not required to be reported to the Executive Officer within 30 days of adding the vehicle and only need to be reported at the next annual reporting date. However, if a fleet owner makes changes to the fleet that would make the fleet no longer compliant with the requirements that had to be met at the beginning of the compliance year, such as adding a vehicle that does not have a PM filter, the fleet owner must report the changes to the Executive Officer within 30 days and identify the steps taken to ensure continued compliance.

e) Exemptions and Extensions

434. Comment: Section 2025(f)(3) may need to be clarified as to exactly what exemptions, delays, and extensions apply to the vehicles under 26,000 lbs.; for section 2025 (j), it may help to have clarification or guidance as to which credits are one-for-one per vehicle and which are applied on a fleet percentage basis; list and section 2025 (p)(2)(G) appears to be a duplicate of Section 2025 (p)(2)(F). (CCIMA3)

Agency Response: Staff amended 2025(f)(3) to include the statement "except for the following sections that apply only to heavier trucks: 2025(p)(1)(B), 2025(p)(2), 2025(p)(8), 2025(p)(9), and 2025(p)(10)". Each of the respective sections already specify that they apply to heavier vehicles. This change was added to clarify upfront that vehicles with a GVWR of 26,000 pounds or less cannot use all of the exemptions, delays, and extensions of section 2025(p).

Section 2025(j) contains credits for fleets that have downsized; early PM retrofits; excess PM VDECS; hybrid, alternative fueled, and heavy-duty pilot ignition engine vehicles; and early addition of newer vehicles. All of these credits count towards compliance with the PM filter phase-in option. Each of these credits is described in more detail. See the responses to Comment 112 for the credit for early PM retrofit;

Comment 131 for the excess PM VDECS credit; Comment 137 for the credit for hybrid, alternative fueled and heavy-duty pilot ignition engine vehicles and Comment 120 for the credit for early addition of newer vehicles.

The duplication error in sections 2025 (p)(2)(G) and 2025 (p)(2)(F) was corrected by eliminating the duplicate section 2025(p)(2)(G) as a non-substantive change.

f) Low-Mileage Construction Trucks

435. Comment: While Granite supports the amendments, there is one detail that we feel has the potential to create competitive imbalance in the low-bid construction environment. The 10 truck per fleet limit in the low mileage construction truck exemption puts larger, pro-active fleets at a potential disadvantage. Using a percent of fleet cap rather than a 10- truck fleet cap would maintain the desired limit to the exemption while maintaining bid parity for fleets in the ultra-competitive construction market. (GCI3)

Agency Response: The low-mileage construction truck provision was modified to make the provision more flexible for construction fleets. The changes made to expand the eligible truck types and to raise the mileage threshold for dump trucks required a cap on the number of trucks to be eligible to remain emissions neutral. Because it is uncertain how many fleets will use the provision, staff specified an initial limit of 10 trucks per fleet with the ability to increase the number of eligible trucks per fleet after the initial reporting until the 9,000 truck limit is reached. Depending on how many trucks are initially eligible to use this provision, it is possible that the number of trucks approved for larger companies can be increased. The changes to the low-mileage construction truck provision are described in detail in response to Comment 157.

This provision does favor smaller businesses consistent with the original rulemaking where more time is given for smaller fleets. Smaller fleets generally have fewer resources than larger ones, and may have more difficulty complying with the regulation. In addition, smaller fleets are typically not as able as larger fleets to effectively take full advantage of flexibility options such as credits for early PM filters, vehicle retirement and other special provisions that reduce annual compliance requirements for larger fleets. A fleet limit based on a percentage of the fleet would likely require the percentage to be quite small and would potentially prevent the smallest fleets from being eligible at all. For example, if the appropriate limit for each fleet was 5%, a fleet with 9 trucks could not use the provision because 5 percent of 9 rounds to zero. In addition, as stated in the Staff Report (2008), nearly 90 percent of the California-based fleets, that are subject to the Truck and Bus regulation, are small fleets and a percentage based provision would competitively disadvantage such fleets.

Regarding the potential competitive disadvantage of proactive fleets, we believe that fleets that took early action to equip trucks or off-road equipment with PM filters or have upgraded to newer trucks are rewarded by the amended regulation for the early action with the credits that delay compliance for other trucks in the fleet. See the responses to Comment 112 and Comment 120 for discussions of the credits for fleets that retrofitted their vehicles early or purchased newer vehicles ahead of their normal replacement schedule.

436. Comment: CIAQC appreciates the direction of the CARB Board to its staff in December 2010 to provide a Low Mileage Construction Truck provision in the Truck and Bus Regulation. The following comments would improve the draft proposal and bring in to alignment the intent of the Board.

Definition of Low Mileage Construction Truck. The proposed definition of a Low Mileage Construction Truck includes "A truck with a gross vehicle weight rating greater than 26,000 pounds that travels less than 15,000 miles per calendar year and is a concrete mixer truck, truck with a concrete placing boom, a water tank truck, a single engine crane with a load rating of 35 tons or more, a tractor that exclusively pulls a low-boy trailer, or a truck owned by a company that holds a valid license issued by the California Contractors State License Board.

The last section of this definition that a truck owned by a company that holds a valid license issued by the California Contractors State License Board is too restrictive and will preclude the participation of some companies whose sole business is tied directly and exclusively to construction. For example, many companies that rent off-road construction equipment do not necessarily have contractor licenses. They do not perform work that requires a contractor's license, so they do not qualify for one. There are also construction companies (that possess a contractor's license) that have a separate subsidiary company that owns the off-road equipment and on-road truck assets used in its business. The equipment is rented back to its affiliate construction company or on occasion can be rented to other contractors. In this case the company that owns the equipment and vehicle assets would not meet the requirements for a contractor's license. This company would not satisfy the definition for low mileage construction truck definition and many of its trucks could be unnecessarily excluded from the extension.

CIAQC recommends that the definition for low mileage construction truck be revised to include companies whose business exists only to support the construction industry. CIAQC has provided CARB staff several concepts that could allow non-contractor licensed construction companies the ability to participate in the extension for low mileage construction trucks and thus fulfill the Board's direction to provide relief during this severe economic crisis. However, the concepts have not been incorporated in the proposed regulation and CIAQC believes it is incumbent on staff to continue to find a solution. (CIAQC4)

Agency Response: The definition and the requirements for the compliance extension for low-mileage construction trucks are consistent with the Board's direction to develop a provision that would reduce compliance costs for construction truck owners while maintaining the emissions reductions needed to protect public health and meet federal air quality standards. The revised definition allows for nearly all trucks owned by contractors to be eligible and for six truck body types owned by any business to be eligible. The definition does not prevent participation by companies that rent or lease vehicles that are used to perform construction work. Companies that rent or lease vehicles can take advantage of the low-mileage construction truck provision for dump

trucks, concrete mixer trucks, trucks with a concrete placing boom, water tank trucks, single engine cranes with a load rating of 35 tons or more, or tractors that exclusively pull low-boy trailers. Companies with subsidiaries that own trucks that are used in the construction industry need to decide how their fleet is managed in order to qualify for the low-mileage construction truck provision

The definition is not intended to address every company that supports the construction industry and would require an increase in the overall limit of eligible vehicles or would reduce the number of trucks that contractors could include in the provision. In addition, the definition of "businesses that exist only to support the construction industry" would be difficult to define and would create problems with interpretation and enforcement, since it cannot be defined clearly and would introduce more ambiguity.

437. Comment: Our company delivers off-road machines, power equipment, rental equipment, and other construction-related materials to the construction industry, and we also service the construction machines and equipment. Our operations are similar to those companies that hold a California State License Board license, yet we will not be able to take advantage of this extension for our construction vehicles (service trucks, tractors pulling low-boy trailers, water trucks, delivery vehicles, etc.). Companies like ours typically would not have a California State License Board license because we are not bidding construction work. In order to allow the extension to be equitable, the last part of this section needs to be worded as such:

"…, or a truck owned by a company that is registered in California that provides construction-related services to the construction industry."

Additionally in this section "a tractor that exclusively pulls a low-boy trailer" is too broad. As written, any low-boy could apply for this exemption. I would suggest the following:

"a tractor that exclusively pulls a low-boy trailer carrying construction-related materials and equipment" (QUINN)

Agency Response: We do not believe that the definition is inequitable as suggested by the commenter. Fleets with dump truck, concrete mixer truck, truck with a concrete placing boom, water tank, single engine crane with a load rating of 35 tons or more, or tractor that exclusively pulls a low-boy trailer qualify for the provision regardless of whether they have a contractor's license or not. A contractor's license is only needed if a fleet wants to take advantage of the compliance extension for additional truck types.

The definition cannot be extended as the commenter suggests as this would extend the compliance extension to a large number of vehicles currently providing services to the construction industry and would potentially reduce the number of eligible trucks owned by contractors. See the response to Comment 160 for the reason for the limit on the number of eligible vehicles.

Also, extending the definition as the commenter suggests including companies that "provide construction-related services" would create problems of enforceability of this

provision. The same situation applies if restricting the definition for the tractors that exclusively pull a low-boy trailer by adding “carrying construction-related materials and equipment.” It would create substantial uncertainty and make enforcement more difficult.

438. Comment: CIAQC requests clarification for section 2025(p)(2)(D). It is unclear how this provision would work in practice and how it provides any benefits. Please clarify this section and provide an example of how this provision is intended to accomplish the benefit it provides.

CIAQC recommends that the reporting requirements be clarified and simplified. That would help prevent unnecessary reporting violations for companies that are in compliance with the regulation. (CIAQC4)

Agency Response: The low-mileage construction truck provisions allows eligible trucks to be exempt from the emissions reductions requirements until January 1, 2016 provided that a minimum percentage of the fleet has PM filters from 2014 to 2016. The minimum PM filters required is 33 percent by January 1, 2014, 66 percent by January 1, 2015 and 100 percent by January 1, 2016. Other trucks in the fleet that do not qualify as low-mileage construction trucks will need to comply with the model year schedule or the PM Filter Phase-in Option and can use other extensions and credits.

Section 2025(p)(2)(D) of the amended regulation specifies that all heavier trucks in the fleet, except for low-use trucks that operate less than 1,000 miles per year, are counted when determining whether the minimum PM filter percentage is met. Fleets that do not meet the minimum requirement will need to equip more trucks with PM filters until this minimum is met. This approach allows fleets with a small proportion of low-mileage construction trucks to delay compliance for the low-mileage construction trucks until 2016.

Low-mileage construction trucks are exempt from the PM filter requirements until 2014. For January 1, 2014, the fleet owner will first need to comply with the general requirements of the regulation for the portion of the fleet that is not eligible for the low-mileage construction truck provision, then the fleet owner will need to determine if the whole fleet (including the low-mileage construction trucks and other heavier trucks, except for low-use trucks that operate less than 1000 miles per year) meets the minimum 33 percent PM filters required. If the fleet does not, then additional vehicles need to be equipped with filters until the minimum 33 percent is met. Similarly, for January 1, 2015 the fleet owner will need to determine compliance for the portion of the fleet that is not eligible for the low-mileage construction truck provision, then will need to determine if the whole fleet meets the minimum 66 percent PM filters required to use the extension. By January 1, 2016, the low-mileage construction truck provision ends. This approach in determining compliance allows fleet owners to retrofit higher mileage vehicles to further delay compliance for the low-mileage construction trucks. The following are some examples of how the provision works.

Suppose all 10 trucks in a given fleet are low-mileage construction. All of the trucks are exempt from the PM filter requirement until 2014. By 2014, at least 33 percent of the fleet (or 3 trucks) must have PM filters for the remaining low-mileage construction trucks

to continue to be exempt. By January 1, 2015, a minimum of 66 percent of the fleet (or 7 trucks) must have PM filters (because 66 percent of 10 is 6.6 trucks and this rounds to 7 trucks). By January 1, 2016 the provision ends and all 10 vehicles must have PM filters.

Another example is for a fleet with 110 heavier trucks. Ten (10) are low-mileage construction trucks and the 100 other trucks in the fleet need to comply with either the normal engine model year schedule or the PM filter phase-in option starting January 1, 2012. For a fleet that chooses the phase-in option, 30 trucks will be equipped with PM filters in 2012, 60 in 2013 and 90 in 2014. Like the prior example, the 10 low-mileage construction trucks are exempt until 2014. By January 1, 2014, the fleet needs to demonstrate that at least 33 percent of all vehicles in the fleet have PM filters so that the low-mileage construction trucks can continue to be exempt. In this example, the fleet has 90 vehicles equipped with PM filters. Because 90 of the 110 trucks (or 82 percent) have PM filters, the fleet meets the minimum 33% required for all 10 low-mileage construction trucks to continue to be exempt. By January 1, 2015, the fleet still exceeds the 66 percent minimum PM filter requirement, and no further action is required. By January 1, 2016, the low-mileage construction truck extension ends and the entire fleet must have PM filters unless another provision or credit allows some vehicles in the fleet to continue to operate without a PM filter.

The information that is required to be reported is expressly set forth in section 2025(r) and no further explanation is needed here. Staff is currently developing an on-line reporting system that will simplify reporting and allow fleet managers access to update their fleet information at any time. In addition, staff will be providing training on how and when to report as the reporting deadlines approach.

g) Agricultural Vehicles

439. Comment: On-Road, page 6 - definition of Ag Operations precludes chipping of wood waste in the field as an Ag/Forestry operation. We have argued with ARB staff for 3 years that chipping of orchard removals, vine removals, orchard and vine prunings, forest harvested tops and limbs and related brush and small tree removal are all standard Ag/Forestry in-the-field operations before transport to a biomass power plant.

It makes no sense for ARB to preclude these activities from the Ag/Forestry definition. The chipping is simply to put the wood waste in a transportable form. You cannot haul the raw material in a box truck because you cannot generate a sufficient payload to make the transportation cost affordable. Hence, the wood waste is chipped in the-field and then dumped into a chip van for transport.

ARB is, in essence, encouraging use of inefficient box trucks that will require two or three times as many trips to haul ag or forestry wood waste to a biomass power plant compared to in-the-field chipping and using a chip van. (CFA3)

Agency Response: The agricultural truck definition specifies that eligible vehicles include those used to transport raw, unprocessed crops to the first point of processing. The definition allows enforcement to determine whether the cargo is processed.

Therefore, vehicles in transportation business cannot use the agricultural vehicle provision unless they are transporting raw, unprocessed crops to the first point of processing. Converting tree limbs, brush, or crops, such as alfalfa, into another form, such as chipped wood or bales of hay, is considered processing and vehicles used to transport these converted products would not be eligible to use the agricultural vehicle provision. We do not believe this should be changed because it would be difficult for enforcement staff to determine whether chipped wood was being transported from the forest to a mill or if the chipped wood was waste from another source such as a construction site.

h) Tow Trucks

440. Comment: On behalf of the membership of the California Tow Truck Association (CTTA) we are writing to express our continued reservations with the California Air Resources Board (ARB)'s Truck and Bus Regulation.

Founded in 1969, the California Tow Truck Association represents over 1,000 towing companies within the state of California, providing vital services to the state's motoring public. Our members employ approximately 15,000 people across the state. Unfortunately, the current poor economy continues to wreak havoc on our members' companies.

While the recent proposed amendments may provide some much needed relief for our membership, without even further delay or modifications the regulation will have dire financial implications upon our industry, at a time when our industry can least afford it. The economic reality will be a shortage of tow trucks being able to respond to minor and major traffic incidents throughout the state. Tow Truck response times to these incidents will increase causing increases in the amount of time thousands of vehicles will sit idling in traffic gridlock. As a result, health considerations will be compounded and the safety of our state's motoring public will be jeopardized. (CTTA2)

441. Comment: As we have discussed on many occasions with ARB Staff, heavy-duty tow trucks of 33,001 GVWR and above continue to be particularly impacted by the regulation, as they tend to be traditionally driven for only a low number of miles each year (thus tend to be long-lasting, yet older model trucks) and, as specialty trucks, are extremely expensive to replace. Replacement costs for these specialty trucks range between $325K to $750K, very similar to the replacement costs for emergency vehicles such as fire fighting apparatus. Unfortunately the rule does not differentiate between a long-haul truck driving 200K miles/year and such a heavy-duty tow truck driven only 30K miles/year; the schedule for replacing both trucks is based solely on its model engine year. Furthermore, retrofit devices are oftentimes impractical as modification to these trucks would cost far more than just the retrofit device installation. Bodies would have to be modified to create space to physically enable installation. This process would be both costly and time consuming resulting in excessive out of service time.

It has always been our argument that these heavy-duty low-mileage vehicles are utilized to clean-up the most disastrous accidents on our roadways as part of the

CHP and local law enforcement tow rotation lists. With so few miles driven and such a huge cost of replacement (hundreds of thousands of dollars in specialty equipment), these trucks understandably tend to be replaced at a slower pace than smaller tow trucks. Our members have mortgages on these trucks, and their business model is based on the assumption that they can get decades of service out of the vehicles. Requiring them to replace these trucks ahead of schedule will have one of two direct consequences – get out of heavy-duty towing completely or take a massive financial risk in an unstable economy by purchasing a new heavy-duty tow truck to meet the rule requirements. Either way there's a strong likelihood there will be less heavy-duty tow truck operators in California. As such, roads will remain un-cleared, traffic will back up, vehicle emissions will increase, and our economy and environment will be further harmed. It is ironic that the very air the rule is designed to clean will actually become even more polluted. We urge you to strongly consider concessions for these heavy-duty tow trucks, as well as delaying the rule until California's economy fully recovers. (CTTA2)

Agency Response: These comments submitted during the 15-day comment period have been addressed in responses to identical Comments 172 and 173 submitted during the 45-day comment period.

Tow trucks that are used in emergency operations, as defined in section 2025(d)(22) can exclude the mileage and hours of operation in determining eligibility for the low-use vehicle exemption. The response to Comment 186 describes the provision for emergency support vehicles for more detail.

i) Street Sweepers

442. Comment: Street sweepers in California continue to be one of the most regulated vehicles in the state. A small sweeper fleet can easily be burdened by multiple local and multiple state emissions regulations. NAPSA strongly urges CARB to regulate and require reporting under a single rule. Even if utilizing PERP to avoid the requirements of the many and varied local jurisdictions, PERP is also burdensome and expensive in its own right. To be fair, street sweeper emission regulations should be the sole and exclusive purview of the On Road, Bus & Truck Rule and not subject to additional local and state rules, fees and reporting requirements.

For simplicity, NAPSA suggests allowing each street sweeper with an auxiliary engine above 50 hp. a no cost, lifetime registration in PERP. To avoid the current duplication, after the initial registration in PERP, all future reporting will be done under the On Road Bus and Truck Rule. While not perfect, this simple action places sweepers in one rule and if data is needed by PERP, they can easily request data from within CARB. (NAPSA2)

Agency Response: The regulation contains a special provision for two engine street sweepers which shifts the cleanup requirements for the auxiliary engine out of the Portable Diesel-Fueled Engines Air Toxic Control Measure and into the Truck and Bus regulation. Staff made the change to provide consistency for owners and operators in

complying with the emission reduction requirement of only one regulation for the same vehicle. The provision also allows Tier 0 auxiliary engines to continue to operate until 2014 as described in response to Comment 179. The requirement to register portable engines with the local air pollution control districts or the optional statewide portable equipment registration program has not changed and remains under the jurisdiction of the local air pollution control districts.

The portable engine registration program (PERP) is a voluntary program administered by CARB that allows businesses to report their portable equipment into a central system in lieu of requesting permits from the local air pollution control districts where the equipment is operated. It is not a mandatory program. Obtaining a permit from the local air pollution control district to operate portable equipment is required by district regulation. State law created PERP as a service to industries that operate portable equipment in various areas within the state, allowing a single point of application where one permit would be valid in all areas of California. We cannot modify compliance with district registration rules or reporting through PERP. State law provides this authority to the districts.

443. Comment: NAPSA is surprised construction sweepers were not included in the low mileage construction vehicle option. With a limit of only 9,000 trucks it is obvious, should construction activities actually increase, and it will continue to be stifled by this arbitrary limit. Members have reported construction contractors limiting work crews because ¾ of their fleet sits idle due to this (and the off-road) regulation. This limitation of work crews will only get worse as compliance dates get closer.

NAPSA strongly encourages CARB to include construction street sweepers in the low mileage limits and remove the finite number of vehicles that can be included. This will not only help maintain the jobs of our members, but also the jobs of their customers. (NAPSA2)

Agency Response: Staff disagrees with the view that fleets would limit or reduce work activity because of the limits on the number of vehicles that can be eligible for the low-mileage construction truck extension. Staff believes that construction fleets, like other businesses, will seek work regardless of whether the fleet qualifies for an exemption. If demand for services increase, then vehicle usage and revenues would also increase, and the fleet owner would then be in a better position to make needed investments to comply.

The rationale for the limits on the low-mileage construction truck provisions is discussed in response to Comment 160. Any vehicle, including construction sweepers, is included in the low-mileage construction truck definition if owned by a licensed contractor as described in response to Comment 444.

444. Comment: We have been involved in the on going discussion with CARB Staff, regarding the On Road Bus & Truck Rule and developing a solution that would allow the sweeping industry to survive through this process. We appreciate their

willingness to hear our concerns and make some changes that are positive. The following are still concerns that we have:

- Section 2025 (d) (40) Low mileage Construction Truck - Construction Sweepers should be included in this definition. Sweepers remove many tons of air and water pollution from the environment each year, much more than they add. Including the construction sweepers in this definition would help compliance and reduce overall PM. Construction sweepers work a limited number of days per year.
- Section 2025 (s)(7)(y)- Compliant fleets without motor carrier numbers should be posted on the website as well (CVS)

Agency Response: The low-mileage construction truck definition is Section 2025 (d)(40) was introduced to provide more time for construction fleets. Street sweepers that are owned by licensed contractors are eligible for the low-mileage construction truck extension; however, street sweepers that clear public roadways, parking lots or other areas are not construction equipment and are not included in the definition. See response to Comment 160 on the rationale for not expanding the definition to include non-construction sweepers. We believe that sweeper fleets will be able to comply with the amended regulation and will continue to remove surface debris.

It is not necessary to modify section (s)(7)(y) to specify that ARB staff will post the name of fleets that appropriately do not have a motor carrier number. Section (e)(7)(D) specifies that the Executive Officer can determine whether an alternative operating authority number is applicable. In the situation where no operating authority is required, fleets will be eligible to use the flexible provisions in the regulation and will be listed as having reported compliance.

445. Comment: As a member of the North American Power Sweeping Association California Chapter I have been working with CARB staff to develop a workable solution that would allow our industry to survive the On Road Truck and Bus Rule. The CARB staff has been courteous and professional. They have listened to our input and made a number of positive changes that were not easy or quick to accomplish. Staff has strived to understand our unique equipment and progressed significantly since we started this process.

There are, however, still quite a few areas that are either confusing or the new wording has changed the intent as it was explained. Follows are the items in question:

- Section 2025 (c) Exemptions (13) this is confusing as the auxiliary engine if below 50 hp is still excluded. Stating this plainly in this section avoids confusion and the need to repeat it in other sections.
- Section 2025 (d) (40) Low Mileage Construction Truck – Because street sweepers work construction all across California and are a major component for the remediation of fugitive dust, and for the same economic reasons as other constructions vehicles, construction street sweepers should be included in the definition. While other vehicles add a small portion of PM to the construction

environment, street sweepers remove it by the ton. Allowing sweepers another compliance option aids CARB in reducing overall PM.

- Section 2025 (p) (9) Extension of PM BACT Compliance Deadline… Regulation states “any” auxiliary engine in a two engine sweeper…. Please change to reflect that this refers to only auxiliary engines above 50 hp.
- Section 2025 (s) (7) (A) (4) Record Keeping: Fleets had no way of knowing they would someday need “proof” of mileage driven in 2006. It is hard enough to know what is required today, let alone five years in the future.
- Section 2025 (s) (7) (B) (2) Record Keeping: Vehicles taken to scrap recycling where they are crushed and sold as scrap metal require pink slips be submitted with the vehicle. However, only a receipt is given back. No certificate from the state or local jurisdiction is given.
- Section 2025 (s) (7) (y) Please ensure compliant fleets without motor carrier numbers (such as street sweepers) are also posted on the website. (NAPSA3)

Agency Response: The following are responses to the commenter’s recommended modifications to several sections to address some concerns of the sweeper industry.

Section 2025(c)(13) states that two-engine on-road vehicles that are subject to the Off-Road regulation are exempt from the Truck and Bus regulation except in the case where the vehicle is a two-engine sweeper. All on-road two engine sweepers, with auxiliary engines regardless of the horsepower of the auxiliary engines are subject to the Truck and Bus regulation and not the off-road regulation; therefore, it is inappropriate to make the change requested.

Please see the response to Comment 444 for the reasons that street sweepers owned by contractors are included in the low-mileage construction truck definition of Section 2025 (d)(40) but others are not.

The suggested changes to section 2025(p)(9) are not needed because the applicability of the PM BACT requirements for two-engine sweepers is clearly specified in section 2025(n). The section specifies that the PM BACT requirements apply to the drive engine of a two-engine sweeper and to the auxiliary engine if it is 50 hp or greater. It is unnecessary to add language to explicitly exclude a group of engines from a compliance extension when the group of engines is not subject to the requirement addressed by the compliance extension.

The minimum mileage requirements in section (s)(7)(A)(4) is only required for fleets that had vehicles that are registered outside of California when determining how many vehicles are in the 2006 baseline fleet. The requirement is there to prevent out of state fleets from receiving credits by identifying vehicles that never operated in California. The 1000 mile limit is consistent with the threshold for the low use exemption.

Fleets that operate interstate routes typically track miles travelled in each state for purposes of paying road fees or fuel taxes and it should be straightforward to retain existing documentation.

Section 2025(s)(7)(B)(2) requires fleet to keep documentation issued by DMV or another government agency for a scrapped vehicle. This record keeping requirement is for the forms or other documentation that is typically submitted to terminate the registration with the DMV or an equivalent agency in another state. A confirmation of the registration termination from the DMV or a copy of the form that is submitted to the DMV to relinquish title to the vehicle will meet the requirement..

As described in response to Comment 444, fleets that appropriately do not have motor carrier numbers will be listed online and the suggested changes to section 2025 (s)(7)(y) are not needed.

446. Comment: Taken as a whole, the regulation already has the effect of a phased reduction of street sweepers and the corresponding unemployment of sweeper operators. Additionally, the price increases staff has suggested must be passed on to consumers has been met with property owners electing to cancel or reduce service. Streets and paved areas now not being swept or swept less frequently are contributing to the states air pollution problems. The forced reduction of California's private sweeper fleet is particularly disturbing as street sweepers actually pick up 10 to 1,000 times more PM than they produce, including both PM10 and PM2.5. If air quality is the goal then eliminating even the oldest, most polluting sweeper remains counterproductive. (NAPSA3)

447. Comment: The slow economic recovery has resulted in less work, employees on extended unemployment, and many property owners and or business owners reducing or canceling sweeping service. This only adds to the air pollution problem. As a service business, people have a choice as to whether or not they choose to use the service. Passing on the price increases that staff has proposed, has not been received well by property owners. (CVS)

448. Comment: As the need to control emissions for street sweepers and other in-use diesel on-road vehicles has evolved, we feel (NAPSA) that the vital remediation role street sweepers play has been overlooked. Under the National Pollutant Discharge Elimination System (NPDES), street sweepers play the most important role under Best Management Practices (BMPs) to remove pollutants from streets and roadways that otherwise would enter our storm water systems, streams and rivers. Even with concessions and extensions given to our industry during the proposed changes there will be a large number of sweepers removed from service and not replaced. In fact, because of economic conditions, cities and counties have cut back on their sweeping programs which will directly lead to more pollutants entering our water systems. Private sweeping fleets will be downsized to meet the regulations and in many cases will not be able to retrofit or replace because of the high cost of replacement now nearing $250,000.00 each. Private fleets play a critical role to supplement sweeping operations not carried out by state, county, city and other government agencies. This will lead to additional pollutants entering our water systems.

To summarize this issue, the CAL/EPA departments of Air and Water need to collaborate to maintain an adequate number of street sweepers needed to

remediate the streets and roadways to protect air quality and water quality under the (NPDES) storm water system. (NAPSA1)

449. Comment: In regards to the most recent changes, CARB staff recognized that a slowing of economic activity, caused in part by this very regulation, resulted in lower emissions. Protecting and enhancing the environment is critical. In fact, "enhancing the environment" is a crucial part of the NAPSA Mission Statement. But regulating productive equipment that is fundamentally designed to remove pollutants from our air and water to the point that it is not able to be used will have the unintended result of actually hurting the environment and will further reduce economic activity as more small businesses succumb to economic failure.

While NAPSA members outside of California theoretically will enjoy the purchase of quality, productive sweeper trucks from the California fleet at fair sale prices, the reduced trade-in value and forced retirement of productive equipment is already having a devastating effect on our California members. The reduced purchasing power and company shrinkage is also affecting our manufacturer members as well. (NAPSA2)

450. Comment: Removing street sweepers from the street, when they are the only weapon against re-entrainment is counter intuitive. The only logical assumption is that these harsh regulations are based more on opinion and emotion than science, economics or reason. Street sweepers remove millions of tons of air and water pollutants from our environment every year. Even the oldest, so called "dirty" sweepers (which are perfectly acceptable across the state line) remove more pollutants than they produce. Making it more difficult to achieve this environmental benefit defies logic. (NAPSA2)

Agency Response: Staff does not agree with the commenter that the economic impact of the regulation will result in reductions in sweeper service in the state, thereby resulting in increased entrained PM emissions. First, the amended regulation significantly lowers the compliance costs for all fleets and should allow sweeper fleets to meet the demand for services when the economy recovers. The overall reduction in compliance costs are expected to be comparable to most other fleets. Staff expects that in the first five years, the estimated costs of the regulation would be reduced by more than 50 percent statewide. For the life of the regulation, the overall cost would be reduced by about 60 percent on average. The costs to businesses that contract with sweeper operators is expected to be typically 1 to 2 percent of revenue and the costs to the consumer is not expected to be noticeable.

The actions an individual company would have to take to comply with the amended regulation will depend on factors such as the size of the fleet, the vehicle types, vehicle age, and normal vehicle replacement practices. From discussions with sweeper fleets and NAPSA representatives, we understand that on average, sweeper fleets have more light duty vehicles (those with a GVWR less than 26,001 lbs) than heavier vehicles. The amended regulation eliminates PM filter requirements for this lighter class of vehicles, delays the start of the replacement requirement to 2015, and limits replacements to engines that are 20 years old or older until 2020. After 2020 all vehicles need to be upgraded to 2010 model year engines. Therefore, most lighter street sweepers will be

able to operate for a typical 20 year life and very few would need to be replaced earlier than normal. For most fleets, these reduced requirements will mean that the compliance costs attributable to the regulation for lighter sweepers will be eliminated.

For the remaining heavier vehicles in the fleet, all replacements can be delayed until 2020 or later with the PM filter phase-in option. At that time, 10 year old used replacement vehicles can be used to meet the final requirements and new vehicle replacements are not needed to comply. With the phase in option, from 2011 to 2016 fleets must meet PM filter requirements and are not required to make any replacements until January 1, 2020. In addition, no action is required until 2018 if PM filters are not available for an engine or cannot be safely installed.

The amended regulation as presented to the Board in December 2010 also has a downsizing credit for heavier vehicles over 26,000 lbs that delays the annual compliance requirements until January 1, 2016. This option can substantially delay compliance costs for fleets most affected by the recession and provides more time for the economy to recover. This credit was expanded for street sweepers in a new section 2025(n)(4) of the modified regulation that was made available for comments with the 15-day Notice of Availability of Modified Text. The change was made because street sweepers have a GVWR that is in a fairly narrow range above and below 26,000 lbs. This modification gives street sweeper owners more flexibility than other fleets in delaying compliance for heavier street sweepers when retiring lighter street sweepers.

In summary, the flexibility provided in the regulation and the reduced requirements and credits for fleets that have been more adversely affected by the economy significantly lowers the compliance costs and are not expected to have a negative effect on street sweeping services or entrained PM emissions.

j) Alternatives

451. Comment: The members of the Coalition of California Truck Driver Training Schools (“Coalition”) have investigated the possibility of retrofitting their trucks to allow compliance with regulation, and have found that (because of their unique operating conditions) there are no kits currently on the market that will bring them into compliance.

The reason for this discrepancy is that the trucks owned and operated by Coalition members to train their students operate far fewer miles than a truck operated by a typical trucking company fleet. These trucks operate an average of 12,000 – 15,000 miles per year, while a typical truck in service with a trucking company fleet operates (on average) more than 100,000 miles per year. Thus *one* truck operated in fleet service would be the equivalent of 7 trucks operated by Coalition members. Further, these trucks are not engaged in loaded operations, and therefore produce fewer particulate emissions than loaded trucks that are engaged in hauling freight.

The Coalition asks that the California Air Resources Board take these unique circumstances into consideration as the Rule is finalized and either grant an exemption to schools that have been approved by the Bureau for Private

Postsecondary Education, or grant an extension of time for them to come into compliance that extends until effective retrofit kits are available on the commercial market plus a reasonable period for them to be installed. (CACTS)

Agency Response: Staff agrees that if a retrofit PM filter is not available or cannot be safely installed, then there should be an additional period of time allowed to install a retrofit. The regulation allows fleet owners of vehicles that cannot be equipped with retrofit PM filters to get annual extensions until 2018 before the vehicle needs to be replaced.

Staff does not agree that an exemption should be provided to schools that have been approved by the Bureau for Private Postsecondary Education, as this would not achieve the needed emissions reductions to meet federal requirements or address localized health risk. The health impact on the operators from these older, dirtier vehicles is of great concern. In addition, an integral element of a truck driver training school is to instruct drivers on not only the requirements of the Truck and Bus regulation, but the installation, maintenance, and cleaning of retrofits as well.

k) Other Comments

452. Comment: I am still amazed at the level of rule and regulations to deliver products to market. With the OE engines and fuel quality improvements, the number of new truck orders coming into the market place, I feel this entire program is a waste of time and money. Older equipment is being replaced at an acceptable pace to create cleaner air. The cost and effect on the business models is damaging. I think the cost and pressure on OE technology improvements is a sufficient burden for the transportation industry to carry. (GALL)

Agency Response: See response to Comment 103. For more detailed information on cost, please see the response to Comment 268.

453. Comment: Our DPF-Hydrated EGR system was verified in Japan to meet both PM level 3 and NOx 35%. California should mandate both PM and NOx by 40-50% as a retrofit.

2007 US EPA's PM-NOx regulation is achievable economically and 2010 NOx regulation must be changed. It is because 90% NOx spikes the cost too much, and NOx is not toxic as PM. (IMET)

Agency Response: The regulation already specifies the engine and retrofit combinations that are equivalent to newer engines. Retrofit technologies can be used to extend the economic life of an engine or can meet the final requirements without additional changes to the regulation. We believe this is an adequate incentive for fleets to use available technology if it is a more cost-effective compliance option for fleet owners. Any diesel emission control strategy used to comply with the regulation must be one that has been verified by ARB's Diesel Emission Control Strategies Verification Program.

454. Comment: Where do I get money to retro fit 13 trucks at $15,000 to $20,000 per truck? I guess I will just throw it all away. I can't even sell them and that's just this year. I have 42 trucks and the newest is a 2006, not counting all of my off-road that will soon be trash. So thank you for putting companies out of business. (BLOU)

Agency Response: See response to Comment 268 that explains why the regulation is necessary and how the amended regulation substantially lowers the compliance costs.

455. Comment: My first comment is the second amendments to the original proposed regulation are unwieldy. There is not a practical way for the public to completely understand it. I am not sure that the authors have a good idea of what they have written or would have written it in an understandable way.

The conditions that led to the December 2010 amendments are still relevant. Therefore the proposal should be postponed.

(1) Diesel is still expensive which means:

- Better fuel management is in place.
- Freight is increasing therefore there will be less shipping.
- Inefficient engines will be used less.

(2) There is unlikely to be 2007 level construction in the near future because:

- The housing inventory is well over market.
- The foreclosures will continue for another 1 - 2 years.

(3) The phase in period does not accommodate the ability of trucking rates to pay for the increased expense. The exemptions of the pre 1996 motors are arbitrary and do not apply to all affected fleets evenly.

(4) The lack of interest in the early retrofit credits can now be documented and indicates:

- Lack of faith in the government's will to follow through on the enforcement of this law.
- The unwillingness for the industry to spend $18,000 to keep using a $10,000 truck. (MGOR)

Agency Response: See response to Comment 268 that explains why the regulation is necessary and how the amended regulation substantially lowers the compliance costs.

The regulation meets the clarity criteria set forth in title 1, Cal. Code Regs., section 16. That said, ARB recognizes that the regulation is long and covers numerous topics. This is a result of the number of different types of vehicles covered by the regulation and the numerous options that the regulation provides to stakeholders to provide compliance flexibility and reduce costs. Staff is taking steps to ensure that the regulation is well understood by affected stakeholders. We are committing significant resources for outreach and education about the regulation to assist fleets in understanding their

options and meeting the requirements. These include expansion of training and outreach efforts and materials to give stakeholders more opportunities to receive compliance assistance on the Truck and Bus regulation as well as other diesel vehicle regulations. See the response to Comment 411 for a description of staff's plans for outreach and implementation.

With regard to the early retrofit credit, many fleets have already purchased retrofits and will be rewarded by acting early other fleets will still be able to take advantage of this provision. Fleets choosing this option may delay compliance for other vehicles in the fleet until January 1, 2017 and will further spread out compliance costs. For many fleets, this is a cost effective choice.

l) General

456. Comment: In general, it will be helpful to have guidance and examples to assist in understanding how provisions such as downsizing, low-mileage construction truck, early addition of vehicles, and excess credit transfer work, particularly in conjunction with the different compliance paths. (CCIMA3)

Agency Response: An example of how the downsizing credit works is addressed in response to Comment 128. The low-mileage construction truck provision is described in response to Comment 157. An example of the early addition of newer vehicles credit is described in response to Comment 120. Finally the excess PM credit that can be transferred between the Truck and Bus regulation and the off-road regulation is described in response to Comment 131.

Staff has created fact sheets, outreach materials, as well as other tools, such as a fleet compliance calculator, to assist fleets in determining what compliance options are available so that fleets can develop their own compliance plans and will continue to improve available information.

457. Comment: Archer Trucking, Inc. would like to thank the CARB for listening to our needs in the matter of low-mileage construction dump trucks! This new language will be a great help to our company. (ATI)

458. Comment: We write on behalf of the Natural Resources Defense Council, Union of Concerned Scientists, American Lung Association in California, Coalition for Clean Air, Medical Advocates for Healthy Air, Environmental Defense Fund, Environmental Health Coalition, Regional Asthma Management and Prevention, Community Action to Fight Asthma, and our hundreds of thousands of California members in support of several key changes to the proposed amendments to the "truck and bus" and "drayage truck" regulations adopted in December 2010. We believe that these changes protect children's health, and provide greater health benefits to disproportionately impacted communities near ports and major trucking thoroughfares. Specifically, we strongly support the following changes:

(1) Removal of the exemption for lighter school buses, providing consistency in health protections afforded to all children who ride school buses.

(2) Retaining the Phase 2 clean up provisions for drayage trucks, providing relief from excessive truck emissions in port communities.

(3) Extending earlier clean up requirements including PM filters by 2012 for model year 1996 and 1997 trucks, which make up a significant portion of the truck fleet and lack modern pollution controls.

We appreciate the efforts of staff and board members to maintain most of the health benefits of these important regulations, particularly for vulnerable populations. (NRDC)

Agency Response: Thank you. Comments noted.

APPENDIX A

Lists of Acronyms

LIST OF ACRONYMS

AQI	Air Quality Index
ARB	Air Resources Board
BACT	Best Available Control Technology
CalCAP	California Capital Access Program
CAPCOA	California Air Pollution Control Officers Association
CDTI	Clean Diesel Technologies, Incorporated
CEQA	California Environmental Quality Act
CTTA	California Tow Truck Association
DMV	Department of Motor Vehicles
DPF	Diesel Particulate Filter
DPM	Diesel Particulate Matter
EGR	Exhaust Gas Recirculation
EPA	Environmental Protection Agency
GVWR	Gross Vehicle Weight Rating
HVIP	Hybrid Voucher Incentive Program
IFTA	International Fuel Tax Agreement
IRP	International Registration Plan
LESBP	Low Emission School Bus Program
MAR	Mileage Accrual Rates
MECA	Manufacturers of Emission Controls Association
MOVES	Motor Vehicle Emission Simulator
NAAQS	National Ambient Air Quality Standard
NAPSA	North American Power Sweeping Association
NOx	Oxides of Nitrogen
OEHHA	Office of Environmental Health Hazard Assessment
OEM	Original Equipment Manufacturer
PLACE	Providing Loan Assistance for California Equipment
PM	Particulate Matter
PM2.5	Particles up to 2.5 microns in diameter
RAP	Rural District Assistance Program
SIP	State Implementation Plan
TAC	Toxic Air Contaminant
TRAC	Truck Regulations Advisory Committee
TRUCRS	Truck Regulation Upload and Compliance Reporting System
U.S. EPA	United States Environmental Protection Agency
VDECS	Verified Diesel Emission Control Strategy
VIP	Voucher Incentive Program

APPENDIX B

Lists of Commenters Assigned to Groups

Table B-1

Signers of Better World Group (BWG) Letter

Signers	*Affiliation*
Camille Kustin	Better World Group
Bonnie Holmes-Gen	American Lung Association in California
Karen G. Pierce	Bayview Hunters Point Community Advocates
Andy Katz	Breathe California
Betsy Reifsnider	Catholic Charities of the Stockton Diocese
Christine G. Cordero	Center for Environmental Health
Brent Newell	Center on Race, Poverty & the Environment
Jesse N. Marquez	Coalition for a Safe Environment
Nidia Bautista	Coalition for Clean Air
Anna Yun Lee	Communities for a Better Environment
Giselle Fong	Communities for Clean Ports
Jocelyn Vivar	East Yard Communities for Environmental Justice
Joy Williams	Environmental Health Coalition
Sarah Sharpe	Fresno Metro Ministry
Gabrielle Weeks	Long Beach Coalition for a Safe Environment
Kevin D. Hamilton RRT, RCP	Medical Advocates for Health Air
Diane Bailey	Natural Resources Defense Council
Anne Kelsey Lamb	Regional Asthma Management and Prevention Community Action to Fight Asthma
Jill Ratner	Rose Foundation for Communities and the Environment
Bill Magavern	Sierra Club California
Don Anair	Union of Concerned Scientists
Brian Beveridge	West Oakland Environmental Indicators Project

[List of signers identified in Comment 16 in the table titled “Comments posted to on-offroad10 that were presented during the Hearing” posted on the comments log for this rulemaking at http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=on-offroad10]

Table B-2

Signers of Health Network for Clean Air (HNCA) Letter

Signers	*Affiliation*
Bonnie Holmes-Gen, Senior Policy Director	American Lung Association in California
Kris Calvin, MA, Executive Director	American Academy of Pediatrics, California District
Andy Katz, MCP, Government Relations Director	Breathe California
Justin Malan, Executive Director	California Conference of Directors of Environmental Health
Veronica Ramirez, Research Associate	California Medical Association
Ruben Cantu, Program Director	California Pan-Ethnic Health Network
William W. Stringer, MD, President	California Thoracic Society
Anne Kelsey-Lamb, MPH, Director	Community Action to Fight Asthma (CAFA) Regional Asthma Management and Prevention (RAMP)
Jeremy Cantor, MPH	Healthy Places Coalition
Sean O'Brien, Interim Executive Director	Los Angeles County Medical Association
Robert Gould, MD, President, SF-Bay Area Chapter	Physicians for Social Responsibility
Manal Aboelata, MPH	Prevention Institute
Robin Salsburg, JD, Senior Staff Attorney	Public Health Law and Policy
Mary A. Pittman, DrPH, President and CEO	Public Health Institute
Shan Magnuson, Director	Sonoma County Asthma Coalition
Sonal Patel, MD, MS, Chief, Division of Allergy and Immunology	White Memorial Pediatric Medical Group

Table B-3

List of Student Names Submitted by Rose Foundation Representative

Students
Christina McGhee
DePaul Nguon
Salvador Matteo
Segun Balogun
Jessica Orozco
Neli Gitierrez
Victoria Ramirez
Marisol Rogue
Kami Baker
Tomas Aire
Julian Fisher
Cecilia Ayala
Anabel Flores
Sheila Hong