Appendix J

Comments and Responses

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Appendix J: Comments and Responses

This Appendix contains comments received during the District's public workshops and during the public comment periods following those workshops. This appendix also contains the District's responses to those comments. In most cases, the responses include the verbal response given at the workshop; occasionally, supplemental information was added to clarify and enhance the initial verbal response.

The District's first workshops on the Draft *2008 PM2.5 Plan* were held on December 18 and 19, 2007, and the public comment period for this first draft closed on January 9, 2008. Verbal comments from the December 2007 workshops are reported in the order in which they were received in Section J.5, and written comments are summarized and organized by topic in Section J.6.

The District held workshops on the 2nd Draft *2008 PM2.5 Plan* were held on February 25 and 26, 2008, and the public comment period for this second draft closed on March 5, 2008. Verbal comments from the February 2008 workshops are reported in the order in which they were received in Section J.3, and written comments are summarized and organized by topic in Section J.4.

The California Cotton Ginners and Growers Associations requested that the District complete a more thorough analysis and response to documentation submitted on January 7, 2008. This is presented in Section J.2.

The District held a 30-day public review period on the Proposed *2008 PM2.5 Plan* from March 13, 2008 through April 14, 2008. These written comments are summarized and organized by topic in Section J.1.

J.1 WRITTEN COMMENTS ON THE PROPOSED 2008 PM2.5 PLAN

Comment period held from March 13, 2008 through April 14, 2008.

Comments were received from the following people and organizations:

Coalition for Clean Air (CCA)

On behalf of the Central Valley Air Quality Coalition, Fresno Metro Ministry, Fresno/Madera Medical Society, Latino Environmental Advancement and Policy Institute, Madera Coalition for Community Justice, Medical Advocates for Healthy Air, Merced-Mariposa Asthma Coalition, the Merced Stop Wal-Mart Action Team, and the Center on Race, Poverty, and the Environment

International Sustainable Systems Research Center (ISSRC)

Evan Shipp (Shipp)

Health Impacts of PM2.5

1. **Comment:** PM2.5 is known to cause premature death, heart disease, heart attacks, cancer, asthma, and other respiratory problems. These impacts cost the Valley over $3 billion each year. PM2.5 needs to be cleaned up without delay. **(CCA, Shipp)**
   Response: Comment noted. The District is committed to improving public health.

State PM2.5 Standard and the 2006 Federal PM2.5 Standard

2. **Comment:** Despite repeated requests, the plan doesn't include information about its progress towards the more health protective California PM2.5 standard and the 2006 Federal PM2.5 Standard. The plan should include more specific information about how and by when this plan makes progress towards the more health protective standards. **(CCA)**
   Response: Attaining the 1997 PM2.5 standard will help the Valley make significant progress towards the 2006 PM2.5 standard and the state standard. The levels of these standards are shown in Chapter 2, in Table 2-1. The 24-hour average levels that are expected to be achieved by this plan are shown in Appendix H in Table H-4. However, while the annual averages presented in the plan (in Table H-3, calculated for the federal standard) can provide an estimate of progress towards the state standard, it should be noted that the State standard uses a different calculation for the form of the standard, and thus the two are not directly comparable.

   The District is prohibited by state law (California Health and Safety Code 39602) from including measures in the SIP that are not required by the Clean Air Act. Control measures that are needed to attain the state PM2.5 standard and/or the 2006 PM2.5 standard, but not needed for the 1997 PM2.5 standard are therefore not appropriate for this SIP submittal.

Attainment Year

3. **Comment:** According to EPA's Guidance on the Use of Models and Other Analysis for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze (April 2007), attainment is based on three-year averages. EPA guidance says that if, at the attainment date, the three year average is above the standard while the data for the single year immediately preceding the attainment date is within the standard (and it planning requirements have been met), the area is eligible for a 1-year extension. This implies that the modeled year of 2014 is the single year of 2014 and not an average of 2012-2014, otherwise the document would not mention one-year extensions. It follows that in basing attainment on a 2014 carrying capacity, it seems that the District is

planning on seeking a one-year extension for attainment in 2015. However, the plan only ensures sufficient NOx reductions for 2014, when the design value will be 14.68 µg/m³ (according to the regional modeling). When averaged with higher annual averages in 2012 and 2013, the Valley will not actually be in attainment in 2014. Therefore, the Valley will be in violation of the Federal Clean Air Act for failure to attain the standard by April 5, 2015. The modeling uses 2004-2006 averages for the baseline year of 2005. Therefore, it could conceivably be interpreted that the 2014 design value is based on 2013-2015 data. **(ISSRC) Response:** EPA established guidance for selecting both the base year for modeling and the future year for modeling for development of the PM2.5 SIP. It should be noted that guidance for developing the plan to accomplish attainment is separate from the guidance for the retrospective review of air monitoring data to demonstrate compliance with the standard. Planning relies on design values that by EPA nomenclature are defined by the middle year of the period. Attainment is determined on three prior years of observations. The selection of years to model for development of the plan and the procedure for modeling are in compliance with EPA guidance.

The same EPA guidance referenced in the comment directs the District to model the year before the projected attainment year, as the year to model for the "final" year for planning purposes. In this guidance, EPA reference to a baseline year is the middle year of a design value period of several years. EPA nomenclature for describing the design value period with a single year number does not imply that the design value represents only one year. "PM2.5 Design value" is defined in 40 CFR Part 51, Subpart Z, Section 51.1000 as "the highest of the three-year average concentrations calculated for the monitors in the area." For more information on design values, please refer to Section 2a of Appendix H and Table A-12 and Section A-4 in Appendix A. The relative modeling response between a baseline emissions year and a future emissions projection year is multiplied by the design value to predict the future design value. This projected design value is used to determine the sufficiency of the plan, from a planning perspective, and must meet the standard or be close to the standard and be confirmed as an acceptable target through weight of evidence evaluation. Because the projection to 2014 was close to the standard, both the District and ARB prepared weight of evidence evaluations that conclude that the PM2.5 plan meets requirements established by EPA.

At some future date, EPA will determine whether attainment has been achieved using actual monitored data. While the attainment deadline is in early 2015, monitoring data for 2014 may not be fully certified until quality assurance has been completed and is submitted to EPA as required by July 1, 2015. Only after all data is certified and EPA conducts its evaluation of progress will it be possible to determine if attainment has been achieved. The District believes that the progress predicted by the modeling is conservative and has also committed to a variety of additional reduction efforts to advance progress for attainment. Many of the additional reductions are not quantified in the model due to EPA

constraints on accounting for reductions that are not fully funded or are conducted through voluntary programs. The District believes that attainment will be achieved well before 2015 and does not plan to seek a one-year extension.

4. **Comment:** The District claims to have modeled each three-year design value period from 2009 through 2014 (Comment #36, March 13 draft). Where are the predicted future annual design values for 2009 through 2014? **(ISSRC)**
   Response: The Weight of Evidence approach requires that several different metrics be used to evaluate air quality progress. The District's receptor modeling was conducted for each year between 2009 and 2014 to determine when each site in the Valley could be expected to comply with the annual PM2.5 standard. Results of these evaluations are included in Table 3-2 as the "Predicted Compliance Year" with discussion for each site included in Section 3.4.1 Discussion of Results. ARB's regional photochemical modeling was conducted for for 2007-2009 and 2012-2014. Table 9-1 shows the attainment outlook for the years 2009-2014 based on an analysis of the projected controlled emissions inventories. Because ARB's regional modeling was only able to demonstrate attainment by including new emission reductions in the *2008 PM2.5 Plan*, it can be surmised that repeating the regional modeling for earlier years (with higher emissions than 2014) would not demonstrate attainment.

5. **Comment:** The District indicates that it conducted a thorough review of EPA Guidance. However, the District fails to mention that the EPA Guidance document (EPA 465/B-07-002) assumes that areas will model a future year based on attaining within the first 5-year period (by 2009, in this case): "The procedures for justifying an extension of the attainment date are contained in the PM implementation rule (40 CFR 50.1004). In this guidance document, we will assume that areas will model a future year based on attaining within the first 5 year period." The document goes on to indicate that "Area that request and are granted attainment date extensions should consult with their Regional Office regarding future year modeling analyses and requirements." **(ISSRC)**
   Response: The District has followed the procedures of the PM2.5 Implementation rule as well as EPA modeling guidance. The District and ARB have worked very closely with EPA Region IX on modeling for the PM2.5 Attainment demonstration. EPA staff has agreed with the approach presented by the District and ARB. See also comment 4.

Reasonable Further Progress

6. **Comment:** Reasonable Further Progress (RFP) is important for ensuring continuous health benefits as an area progresses towards attainment. **(ISSRC)**
   Response: Comment noted. Based on the analysis of Dr. Jane Hall, the District and ARB strategy will result in the elimination of an estimated 460 premature

deaths each year when the entire air basin reaches attainment. Before that time it is estimated that 1500 premature deaths will be avoided due to improving air quality.

7. **Comment:** Table 8-4 shows continuous and generally linear progress towards attainment by achieving between 2% and 5% per year of emission reductions of direct PM2.5 and NOx. However, EPA noted that "requiring a fixed annual emissions reduction percentage would impost a 'one-size-fits-all' approach. … The EPA believes that defining the RFP requirement in terms of generally linear progress toward the emissions reductions needed for timely attainment assures that each area will achieve a steady rate of progress most appropriate for the area to achieve timely attainment." (72 *FR* 20635) **(ISSRC)**
Response: While EPA chose not to impose strict percentage reductions to apply nationwide, the PM2.5 Implementation Rule does not preclude regions from calculating their own percentage reductions. Table 8-4 helps to demonstrate that the Valley's progress towards attainment is generally linear.

8. **Comment:** The plan does not follow the procedure for showing "generally linear progress as described by EPA's example, wherein a region with a baseyear of 2005 and an attainment year of 2014 has to show 4/9 of the reductions needed by 2009 and 7/9 of the reductions needed in 2012. **(ISSRC)** There is an RFP shortfall for 2009 and 2012. **(ISSRC, CCA)**
Response: The calculation noted by the commenter is outlined as 2009 and 2012 benchmarks in Table 8-2 in Chapter 8. The comparison of actual reductions to these benchmarks (the RFP shortfall noted by the commenter) is shown in Table 8-3. However, EPA also notes (72 *FR* 20635) that a one-size-fits-all approach is not appropriate for RFP. Generally linear progress is shown for 2009 and 2012. Due to the innovative nature of ARB's new measures and the technical complexities of implementation, the final increment of the emission reductions needed for attainment will not occur until 2014.

9. **Comment:** 2012 reductions for ARB's rules should be incorporated into the RFP calculations. **(ISSRC)** The time of ARB's truck Rule implementation poses a significant challenge to the Valley's ability to demonstrate RFP milestones in 2009 and 2012. **(CCA)**
Response: At ARB's direction, ARB control measure commitments do not show reductions prior to 2014, due to the complexities of implementation. Although the District agrees with the commenter that ARB emission reductions will likely occur prior to 2014, ARB has not committed to pre-2014 emission reductions. The District has called on ARB to expedite and commit to earlier reductions.

Contingency Measures

10. **Comment:** In Comment #22 in for the March 13 draft, the District said that ISSRC commented that $30 million in fees would bring 1/5 tpd of NOx reductions. In actuality, ISSRC wrote that $30 million would result in 1.5 tpd of NOx. Please acknowledge the error. **(ISSRC)**
    Response: This typographical error has been corrected.

11. **Comment:** The plan proposes three ways of meeting contingency measure requirements. Of the three, only the current program using secured incentive funding clearly qualities as a contingency measure. Requesting ARB to accelerate implementation of state measures (as South Coast proposes as contingency in their AQMP) could be costly, and it does not result in timely reductions. Using fees from failure to reach attainment of the 1-hour ozone standard seems to indicate that the success of bringing clean air to the Valley is contingent upon the failure to attain clean air (i.e., PM2.5 standards will be met, only if the 1-hour ozone standard is not met). Furthermore, these fees will not be realized by the beginning of 2013, and they will result, at best, in 1.5 tpd of NOx reductions. **(ISSRC)**
    Response: The plan implements all feasible measures. No significant additional emission reductions have been identified that could be set aside and used only if needed for contingency. Because real reductions from unsecured incentive funds cannot yet be counted as a federal commitment, the District believes these are appropriate contingency reductions. Prop 1B funding in the amount of $200 million would generate approximately 8 tpd of NOx, at $25 million/ton per day.

    The District is not waiting to request timely adoption and implementation of state control measures. One of the primary components of the District's Fast Track program is to compel the ARB to expedite its regulations and assure they are as effective as possible.

    The commenter's summary statement ("PM2.5 standards will be met, only if the 1-hour ozone standard is not met") unfairly characterizes this contingency measure. The District intends to attain both standards in a timely manner. If, the unfortunate and unlikely event of nonattainment of the former 1-hr ozone standard in 2010 were to occur, additional fee revenue from any source would be put to use to expedite the attainment of all standards. Emission reductions from adopted Rule 3170 represent rule-based reductions not used in RFP or attainment demonstrations, and therefore meet EPA's criteria for contingency measures as given in 72 *FR* 20643.

12. **Comment:** Even with the District proposed contingency measures, the possible 3.5 tpd of NOx reductions feasible fall short of the required 31.5 tpd. The District should consider the following as contingency measures:

- Ban the use of pre-tier 3 off-road engines during high pollution days, as similarly proposed by the South Coast. In addition, the District should ban the use of pre-tier 3 agricultural engines, such as tractors and harvesters during high pollution days.
- Require technologically feasible BACT-level technology on all existing stationary sources and allow alternative compliance, such as retrofitting mobile sources, which effects equivalent reductions.
- Furthermore, the District should accelerate the adoption and implementation of rules to the extent feasible, as proposed for state mobile sources. **(ISSRC)**
- Operational controls, including limiting the use of industrial equipment on high pollution days **(CCA)**.

Response: The 31.5 tpd cited by the commenter is an EPA recommendation, not a requirement embodied in regulatory language.

The contingency measures currently stated in the plan achieve more than 3.5 tpd of NOx reductions. We will correct section 9.2.2.2.2 of the Plan to show that $90 million per year will cause a cumulative increase in emission reductions. Adding $90 million each year would get an additional 3.6 tons per day each year. After 5 years, for example, the cumulative reduction would be 18 tpd.

Requiring technologically-feasible BACT on all existing stationary sources is the District's primary strategy for reducing emissions under its jurisdiction.

Prohibiting the use of relatively new Tier 1 and Tier 2 engines – which were purchased using public funds - on a sporadic, non-predictable basis could be disruptive and financially disastrous for smaller businesses. EPA notes that unreasonable measures, which are absurd, unenforceable, impractical, or that would cause severely disruptive socioeconomic impacts (e.g., gas rationing and mandatory source shutdowns), are not required by the Act (72 *FR* 20613). The District thus deems operational controls to be inappropriate as contingency measures at this time.

Mid-course review

13. **Comment:** The PM2.5 Implementation Rule requires areas that plan attainment beyond the first five-year period to conduct a mid-course review of the plan by April 2011. ISSRC recommends that a mid-course review be done right after the adoption of ARB's proposed truck rule (the end of 2009). **(ISSRC)**
Response: The District will be continuously evaluating the situation regarding PM2.5. Rather than committing to an early and possibly premature mid-course review, the District will allow sufficient time for research and development to come to fruition, thereby providing important data for evaluating PM2.5.

Control Measures

14. **Comment:** The Plan's analysis of control measures that could be deemed Reasonably Available Control Technology (RACT) for stationary sources and Reasonably Available Control Measures (RACM) for all sources, including area sources and stationary sources, is inadequate. Potential measures that are reasonably available considering technical and economic feasibility must be adopted as RACM if, considered collectively, they would advance the attainment date by one year or more. For example, a modest 10% reduction of PM2.5 from agricultural sources by enhancing the Conservation Management Practices Requirement or by removing exemptions for on-field agricultural operations in the Fugitive Dust Rules (Regulation VIII) would show that attainment could be advance by one year, without serious disruptions of agricultural activities. **(ISSRC)**
Response: The discussion of RACM in Section 6.2 of the Plan meets federal requirements. Appendix I of the Plan identifies in detail the measures considered by the District. The State has submitted a similar strategy for emissions sources under their jurisdiction.

With so many ARB reductions occurring in 2014, it would take a very large magnitude of reductions to advance attainment by one year. Furthermore, the commenter is assuming that reducing agricultural fugitive dust emissions will automatically and assuredly improve PM2.5 air quality. The District, on the other hand, must assure that proposed control measures will actually benefit air quality, and not just reflect "paper reductions." The District understands that the highest concentrations of PM2.5 occur during the wintertime in urban areas, when and where agricultural fugitive dust concentrations are relatively low. As shown in Chapter 6, both agricultural and non-agricultural fugitive dust emissions are scheduled for review via feasibility studies to better determine their contribution to the PM2.5 emission inventory and the efficacy of potential controls.

15. **Comment:** There should be more stringent NOx controls on the following sources: medium boilers, small boilers, glass melting furnaces, IC Engines, Dryers, and Solid-fuel Boilers. A 40% reduction of 2012 emissions from these categories would result in 17.13 tpd of NOx reductions. **(ISSRC)**
Response: ARB has commended the District current rules as being some of the most stringent in the state, setting the benchmark for stationary source control (Air Resources Board Staff Report on Accelerating San Joaquin Valley Air Quality Progress (2007)). As stated frequently throughout the development of the Plan, the District will be applying the most effective controls to all stationary sources according to the rulemaking schedule in Chapter 6. We welcome the commenter's input on technological feasibility issues during the rulemaking projects.

It is noted that some of the commenter's estimated reductions do not equate to 40% of the commenter's stated baseline emissions. It is also unclear why the commenter chose a general 40% reduction for all categories.

16. **Comment:** There should be more stringent PM2.5 controls on the following sources: On-field Farming Operations; Construction, Demolition, Excavation & Other Earthmoving Activities; Open Areas; Paved & Unpaved Roads; Agricultural Sources; and Prescribed Burning & Hazard Reduction Burning. A 10% reduction of 2012 emissions from these categories would result in 5.3 tpd of PM2.5 reductions. **(ISSRC)**
Response: Without supporting information, it is unclear why the commenter assigned 10% reductions to all categories without supporting discussion. As stated frequently throughout the development of the Plan, the District will be applying the most effective controls to all stationary sources according to the rulemaking schedule in Chapter 6. We welcome the commenter's input on technological feasibility issues during the rulemaking projects and feasibility studies.

17. **Comment:** There should be more stringent VOC controls on the following sources: Confined Animal Facilities, Composting Biosolids, Composting Greenwaste, Wine Fermentation and Storage Tanks, and Brandy and Wine Aging. A 40% reduction of 2012 emissions from these categories would result in 32.14 tpd of VOC reductions. **(ISSRC)**
Response: See response to comment 15 above. ARB modeling has shown that VOC reductions are not as effective in reducing secondary PM2.5 as NOx or SO_2 reductions.

18. **Comment:** When the more stringent NOx, PM2.5, and VOC reductions [Comments 18-20] are evaluated for NOx equivalency, attainment can be reached in 2013. **(ISSRC)**
Response: The commenter's proposed reductions and equivalency factors are unsupported. Using this approach to claim earlier attainment would be questionable from a technical perspective. Also, the commenter's controlled 2013 emissions inventory is still 93 tpd above the target NOx level presented in Chapter 9 of the Plan.

19. **Comment:** The commenter **(ISSRC)** resubmitted their draft control measures to show where additional control measure improvements are possible.
Response: Please refer to responses previously provided by the District.

20. **Comment:** The District should take a more vocal and public approach to urge ARB to follow through on its commitments. **(CCA)**
    Response: Comment noted. See response to comment 9.

21. **Comment:** Opportunities for additional direct PM emissions, such as limiting exemptions for open burning should be further explored. **(CCA)**
    Response: Open burning exceptions are already tightly controlled. Open burning is prohibited on days where it could lead to an exceedance of the federal air standards.

22. **Comment:** Additional reductions should be obtained from secondary PM2.5 sources such as internal combustion engines, glass-melting furnaces, boilers, and dryers and the District should commit to those reductions in the plan. **(CCA)**
    Response: The Plan already contains the indicated control measures and the governing Board has also made a commitment to these measures in the *2007 Ozone Plan*. No additional reductions are expected over what is indicated in Chapter 6.

23. **Comment:** The Plan should include control measures for measures that reduce VOC emissions from coatings, solvents, composting operations, sumps and refinery equipment. **(CCA)**
    Response: EPA guidance does not require such control measures in this plan unless they are required to demonstrate compliance with the PM2.5 standard. All of the categories mentioned, however, are commitments in the *2007 Ozone Plan* and will not result in additional control measure commitments.

24. **Comment:** The current proposed PM2.5 plan relies almost exclusively on the upcoming, not-yet adopted Air Resources Board (ARB) Heavy Duty Diesel Truck Rule. While we acknowledge the significance of this rule to help reduce PM2.5 levels in the Valley, we are concerned that most of the emission reductions from this rule will not be actualized in the Valley until 2014 at the earliest. **(CCA)**
    Response: Comment noted. With about 37% of the Valley's NOx inventory coming from heavy heavy duty diesel trucks, ARB's measure is indeed a crucial part of the plan's strategy. It is also important to note that ARB's emission reduction commitment is binding, and must be achieved once the statewide strategy is approved by EPA.

Modeling and Technical Issues

Summary of comments received from Evan Shipp

Comments were provided on the PM2.5 SIP regarding meteorological assessments, modeling and air quality data to be used for the PM2.5 SIP. In addition to general remarks, 27 page identifications were provided where the issues discussed in his general remarks were mentioned. Seventeen comments on District responses to his previous questions were submitted and attached all of his previous comments as reference documentation.

Meteorology

25. Comment: The District needs to ensure that attainment will occur even under worst-case meteorology. Because the 2004-2006 period had better dispersive meteorology, these design values are non-representative. The 2005 design value may not be the best year to project into future years. **(Shipp)**
Response: The premise of this comment is in conflict with the form of the air quality standard and the guidance from EPA on selection of the years to be modeled. The standard is not based on worst case and the form of the standard is to minimize the influence of meteorological variation on the design of the plan. That is why the design value is averaged across three years, to minimize exaggeration of control requirements that might be implied by a single year's unusual meteorology or atypical events. The basis of the plan, as recommended by EPA guidance, confirmed by consultation with EPA and using EPA terminology, is the 2005 design value, representing the averages of 2004 to 2006 data rather than a single year as suggested. The averaging of three years is done to remove over and underestimation due to single year variations of meteorology. Modeling is conducted for specific years s recommended by EPA but is only used in a relative fashion with the rate of change between the beginning and end year of the modeling projection (Relative Reduction Factor – RRF) being applied to the three year base design value. Note carefully that the form of the health-based standard is not based on the highest worst-case value, but rather the 98th percentile value averaged across three years. It is possible to be in full compliance with the air quality health standard and still have a few days with higher concentrations at each site. Where data collection has missing samples, EPA has established the procedures, which the District has followed, that are to be used to provide correction for missing data (see detailed explanation in Appendix A.3.2).

26. There should be more meteorological evaluation. The District indicated that it reviewed 100 years of meteorological data, but it didn't provide any documentation; this evaluation should be included in the plan. The District dismisses the correlation of PM2.5 to the stability index as being poor, yet these indicators are used in CRPAQS analysis and in the District's daily PM2.5 forecast. As stated in previous comments, the trend charts need to reflect fluctuations in meteorology by using adjustment methods and/or analyzing meteorological parameters that correlate to PM2.5. Trends charts on pages A-14 though A-24 need to reflect fluctuations in meteorology. Again, as stated above,

these comparisons with 1999-2001 and 2004-2006 need a meteorological evaluation. **(Shipp)**

Response: The District selected those evaluations that provided the most probative value as items to be included with the plan. The District has not received other requests for the 100-year meteorological analysis but will consider issuing the information as a separate document in the near future to be available on public request. The District completed this analysis, speciation data analysis, persistence evaluation and a variety of technical assessments as a preparatory analyses for the PM2.5 SIP. The District has documented many of the results of technical evaluations in Appendix E. Additional analyses are documented by ARB in Appendix H. As the 100-year meteorological analysis provided a negative finding that recent years were not atypical and did not represent a special pattern, the publication of an extensive negative assessment does not seem to be of reasonable value for inclusion within the Plan.

Note that stability is a factor used by the District and within CRPAQS to predict whether particulate levels can be expected to rise or fall but is not a strong predictor of absolute magnitude of particulate concentration.

The statistics reported on pages A-14 through A-24 follow standard methods. The suggestion for meteorological indexing of trend data is innovative and has been attempted in a few journal publications but generally requires a larger set of data for acceptable determination of uncertainty. The District will stay with standard methods until a larger data set is available and alternative methodologies are developed and accepted by EPA.

27. **Comment:** Section 3.2.1 on Natural Conditions of the Valley should state that PM2.5 emissions could be retained in the air basin for up to one month (as seen in the 2000-2001 CRPAQS episodes). Assessment of representative meteorology should include how long episodes last. The description of subsidence does not account for the humidity increase at the surface as water vapor is trapped by the dry warm air above it (a factor during major winter PM2.5 events). **(Shipp)**

Response: The first part of this comment implies that the stagnation events are progressive and cumulative for the entire period. That is not confirmed when diurnal data or analysis of persistence and particulate peak concentration is considered. The variations in atmospheric chemistry and other effects, such as deposition that remove pollutants, cause the concentrations to rise and fall during extended stagnation events. A statement that the particulate can be retained for a month would imply that concentrations continue to accumulate progressively. Analysis of persistence of events (determined by the daily variation of the meteorology parameter of the difference between Oakland and Fresno 850 millibar temperature) has determined that this is not the case. In 1999, concentrations for three to six day persistence events were higher than for events lasting seven to nine days. In 2005, persistence events lasting two to

eleven days reached similar values (slightly less than 60 micrograms per cubic meter) with one twelve-day event reaching 71 micrograms per cubic meter.

The increase in humidity during a subsidence event is not a significant factor in the calculation of expected particulate concentrations. The range of humidity where both sulfate and nitrate formation occur is quite broad and therefore in most regimes provides only a tertiary change to the particulate concentration, inhibiting nitrate formation only at levels so high as to cause deposition (see the fog discussion Appendix E section 2a to section 2a.4).

Air Quality Data for the PM2.5 SIP

28. Comment: 2007 PM2.5 ambient air quality should be used to calculate design values in the plan. Real time data indicates numerous exceedances of the 24-hour PM2.5 standard in 2007, and real time data can be used in the absence of filter data. This should be incorporated into the Weight of Evidence and page 3-30 (Air Monitoring and Trends). **(Shipp)**
Response: Uncertified 2007 data cannot be submitted as the basis for the plan. At this point it can only be used as a sensitivity evaluation, which has been done and is discussed in the plan in Section 3.4.2 "Weight of Evidence" in the paragraph on Air Monitoring Data and Trends. The procedure recommended in the comment is not in accordance with EPA Guidance. The use of uncertified data and commingling data sets from two different types of monitors is not appropriate and does not comply with established guidance for the processing of air monitoring data. Differences between real time monitors used to advise daily forecasting and federal reference method samplers used to assess compliance with the health standard must be carefully considered. Real time monitors have a higher capture rate for water, VOC artifact that the FRM would consider as gaseous material, and collection of semivolatiles of nitrate, sulfate and organic carbon that would not be retained to the same degree in the FRM sampler that has been used to establish the health standard limits.

29. Comment: Because the 2004-2006 period had missing data, these design values are non-representative. Quarter completion problems on page A-2 should be investigated – is missing data due to aerosol loading during poor meteorological conditions? Tables A-3 and A-8 are affected by missing data. Weight of evidence (Appendix H) should address missing data during periods of weather stagnation that are conducive to high PM2.5 levels. Failure to address this issue in the design values underestimates the reductions needed to achieve the NAAQS. **(Shipp)**
Response: All guidance for adjusting for missing data when determining design values have been met, see Appendix A. Even uncertified data has been considered by sensitivity evaluation, see Section 3.4.2 "Weight of Evidence" in the paragraph on Air Monitoring Data and Trends. The Design Values and the

calculation of reductions needed to achieve the PM2.5 annual standard follow EPA methodology.

30. **Comment:** The plan references PM10 attainment (page 3-27 and 9-3). However, the PM10 Plans didn't predict exceedances due to natural events (and covered by the Natural Events Action Plan). **(Shipp)**
Response: The modeling is not supposed to predict natural events, which are by EPA definition excluded from consideration in determining attainment. Natural events are not an appropriate basis for determining the amount of anthropogenic controls that should be imposed. The requirement for natural events is to establish and impose BACT for sources that are commonly affected by natural events. Imposing BACT is intended to minimize the severity of event that would ensue from the natural event; however, this does not mean that the District is required to prevent a natural event from causing an exceedance of the 24-hour standard, only to have a reasonable level of control imposed on applicable sources. As established by EPA Guidance, as long as the applicable BACT is in place and enforced, natural events are to be excluded from the nonattainment data determinations. Certainly, under no circumstances are natural events to be used to determine anthropogenic reduction goals.

31. **Comment:** The species trends in Appendix H, Figure H-14 and H-18 look flat. This should be explained. Figure H-23 is useful for worst-case scenarios, but might not reflect the chemistry involved that produces high annual averages. More documentation is needed on what drives the annual average (highest days, moderate episodes, etc). **(Shipp)**
Response: The figures referenced are not species trends. They are reaction rate evaluations examining the strength of correlation between observed NOx throughout the Valley and local PM2.5 nitrate concentrations. This provides an evaluation of the formation dynamics of ammonium nitrate and the influence of NOx concentrations throughout the region on the urban nitrate concentrations. Since NOx has been determined to be the limiting precursor for urban PM2.5 nitrate, this evaluation is intended to probe for the strength of relationship between NOx and formed nitrate to determine if the linkage is related to local or regional emissions. Similarly, figure H-23 and H-24 examine the atmospheric presence of nitric acid and ammonia showing that ammonia is ubiquitous in the Valley and nitric acid, formed from the reaction of NOx with hydrocarbons, is the limiting reaction media.

32. **Comment:** The plan states that the Valley complies with the 24-hour NAAQS, although section 3.3.3 supports the idea that the District does not have enough data to determine compliance. On page H-27, it states that the Valley has attained of the 24-hour standard [based on 2004-2006 data]. Attainment is not the correct term, as that is an EPA designation. Page 3-22, Section 3.4 says that

some sites already comply with the NAAQS, but this should not be stated without rigorous analysis and EPA approvals. **(Shipp)**
Response: Section 3.3.3 identifies that the fact that the FRM monitoring network has been in place for only a few years makes it improper to use certain statistical methods as corroboration for a finding that attainment will be achieved in the weight of evidence determination required for sites where the predicted future design value is close to the standard. It only requires three years or more of data to establish District compliance or exceedance of the standard. There is sufficient data to establish that the District does not currently comply with the annual PM2.5 standard. Compliance with the standard is the correct terminology when one or more sites is within specified standard limits and the use of this terminology does not require an EPA designation. Attainment is the term used only when all sites meet both the annual and 24-hour standards and is a designation that must be reviewed and approved by EPA. Attainment is projected to occur by or before 2014 but the District does not automatically receive an attainment designation from EPA when monitoring data shows compliance with the standards. An official request for redesignation must be submitted and must comply with a wide variety of requirements including the establishment of a maintenance plan to ensure the District does not go back out of compliance. Due to the revision of the 24-hour standard, the District would not be able to request redesignation until both the annual standard and the new 24-hour standard have been met at all sites.

Modeling

33. **Comment:** The plan should show projected PM2.5 concentrations for the intermediate years, not just the attainment year, to show steady progress toward attainment. **(Shipp)**
Response: This task was completed by receptor modeling analysis after determining strong agreement between receptor and regional modeling results, see section 3.4 Table 3-2 where the intervening year results are used to identify the projected year of compliance for each site (attainment is not the applicable term until all sites comply with both parts of the PM2.5 standard and EPA redesignation is granted)

34. **Comment:** The plan does not include a full photochemical model evaluation. Uncertainty assessment and discussion is an integral part of specifying the amount and chemical species to control. **(Shipp)**
Response: ARB is preparing the photochemical model evaluation. The District will rely on ARB to complete this assessment and forward the results to EPA with the PM2.5 SIP submittal. It should be noted that EPA modeling guidance (Section 18.5.3) also recognizes the method of using multi-variate source apportionment models (CMB and PMF) to evaluate the uncertainty of the regional model. This process was completed by the District and is included in

the Plan in section 3.4.2. The correlation of the modeling methods is extremely good with results that are nearly identical as shown in Table 3-5.

35. **Comment**: The Plan provides poor documentation of the relative reduction factors, and lack of documentation on how the photochemical model was used to derive these. The process used to calculate the Relative Reduction Factors (RRFs) and show attainment of the NAAQS is undocumented. According to ARB, RRFs were based on a future year and baseyear model runs. However, a majority of emissions reductions in the plan occur at the attainment year, so the modeling system using the base and end year inventories is not sufficient. If the documentation files are too big to download and distribute, then the District and/or ARB should condense this information. **(Shipp)**
Response: The process for SMAT calculations is fully documented in Chapter 3, Appendix F and Appendix G. The procedures follow EPA guidance with use of the base and end year required as the methodology for SMAT. However, additional modeling was conducted for intermediate years with receptor modeling to evaluate the year-by-year progress at each site (see Table 3-2). Note that only the Kern County site requires the 2014 reductions to reach compliance; therefore it is not appropriate to imply that the District Plan places too much reliance on 2014 reductions. The District and ARB have condensed the results of the detailed technical calculations into tables provided in Chapter 3 and Appendix G. Receptor modeling files for the year 2014 are posted and the receptor files for other years are available on request. ARB produced the SMAT calculation files for the regional model, but these files are too large to be provided as a download link.

36. **Comment:** Section 3.3.3 should document the conclusion that the annual standard is more stringent than the 24-hour NAAQS. **(Shipp)**
Response: See section 3.4.2 *Weight of Evidence Conclusion* on page 3-31.

37. **Comment:** Page 3-20 says that the District will perform the SMAT analyses, but ARB performed these analyses. More documentation of SMAT calculations should be provided on page 3-23. **(Shipp)**
Response: The District performed SMAT for the receptor models, ARB performed SMAT for the regional model. Additional documentation of the SMAT procedure is included in the Appendix F SJV PM2.5 Modeling Protocol and Appendix G Regional Air Quality Modeling. Procedures used are in accordance with EPA Guidance. The District does not agree that the massive calculation files should be included within the text of the plan. The District and ARB have condensed the results of the detailed technical calculations into tables provided in Chapter 3 and Appendix G.

38. Comment: PMF and CMB are not independent checks because they still depend on design value calculations that are flawed. PMF and CMB corroborate, but more corroboration is needed, perhaps including other photochemical modeling, meteorological adjusted trends, and alternate design value calculations. **(Shipp)**

Response: The procedure used for design value calculations follows EPA guidance, see Appendix A, and the District does not concur with the assertion that the design value calculations are flawed.

EPA modeling guidance (Section 18.5.3) does not agree with the assertion that CMB and PMF do not provide independent corroboration of the regional model. Guidance recognizes the method of using multi-variate source apportionment models (CMB and PMF) as an independent means to corroborate and evaluate the uncertainty of the regional model. Receptor modeling is diagnostic – evaluating what was identified as present in the air. Regional modeling is prognostic – replicating the accumulation of particulate from emissions inventory inputs and photochemical, chemical and equilibrium equations. The observed data is an input for receptor techniques but is not an input for the regional approach where the observed PM2.5 concentration data is only used for performance evaluation. The two modeling approaches do not rely on the same techniques or inputs and these differences make them independent from each other. Additional corroboration by other techniques is provided to establish the weight of evidence determination that attainment will be achieved by 2014 (see section 3.4.2 *Weight of Evidence and Appendix H: Weight of Evidence*).

39. Comment: ·The District has failed to recognize alternative methods of analysis under the weight of evidence provisions of the EPA modeling guidelines. **(Shipp)**

Response: A variety of analyses have been considered by ARB and the District to establish the weight of evidence determination that attainment will be achieved by 2014 (see section 3.4.2 *Weight of Evidence and Appendix H: Weight of Evidence*). The weight of evidence guidance provided by EPA is not intended to require that every possible approach be used; it identifies acceptable available methods, which may be included in a weight of evidence evaluation. The weight of evidence determination should be made using enough different approaches to ensure that the projection of attainment does not rely on a single model or approach. The District and ARB analyses meet this requirement.

40. Comment: Without a meteorological evaluation, Figure H-4 is not definitive. The 2001 meteorology was much worst than it was in 2006. This may be the difference in the meteorological trend and not necessarily emissions. As stated in previous comments, the 2004-2006 period had missing data and better dispersive meteorology and therefore is non-representative. Method 2 projections may be misleading. **(Shipp)**

Response: A weight of evidence determination is conducted because the data available is often limited and every analysis and modeling approach has uncertainties and limitations. Individual assessments within a weight of evidence evaluation are not expected to separately provide definitive information. The point of a weight of evidence determination is to consider a variety of technical factors and evaluations to provide assurance that the overall findings are reasonable, despite the uncertainties and data limitations that affect individual assessments.

41. **Comment:** Because photochemistry is non-linear, the RRF's should be based on multiple cuts in the inventory. If multiple cuts are run, the District should include nitrate, sulfate, and VOC isopleths. An evaluation of the result of control of individual NOx, VOC, EC, and SO_2 needs to be performed. It is the District's and/or ARB's responsibility to condense this information into an easily understandable format showing the output of the photochemical model before and after control for each chemical species and how that affects the design value. It is unclear whether the RRFs were the result of numerous modeling runs at various percentage cuts in the inventory or just the 50% cuts as has been used in the past. In addition, the District should show alternative species strategies and give more detail on the way the model was used to show that a NOx only strategy is viable. As in the comment above on analyzing intermediate years, the plan needs to provide documentation on speciated RRF's and predicted species concentrations for intermediate years. In addition, a run containing the attainment inventory should be documented. **(Shipp)**
Response: This comment is based on the approach used for ozone modeling. The procedure for particulate modeling is much different and is described in EPA SMAT methodology (see 3.3.4, Appendix F and Appendix G). Rather than modeling a few days and doing percent cuts or isopleths as has been done in the past for ozone, the SMAT methodology for PM2.5 requires modeling more days and determining relative response from a base modeling year to the projected attainment year for each specified component of the particulate concentration. The results of the regional modeling provide results for each day of the fourteen-month period with each day having a specific meteorological and emissions input file and generating a daily output file. The amount of information developed is extensive and far exceeds the output from previous ozone modeling methods. The SMAT methodology does not follow the old ozone modeling process of revising emissions until a specific attainment run is generated, rather the relative response of the model is used to determine the amount of reductions needed to achieve attainment.

EPA recommends modeling a full year for the PM2.5 SIP evaluated on at least a quarterly basis. Rather than relying on a few days and performing sensitivity evaluations, the particulate modeling incorporates at least an entire year and establishes variation in response by component on a quarterly or monthly basis. ARB modeled fourteen months for the regional model evaluated on a quarterly

basis for each required component. Regional modeling allows use of equilibrium equations to reflect aerosol chemistry in a more dynamic manner. The CMB receptor modeling incorporated twelve monthly evaluations for two different sets of years with a component breakdown that is more extensive than required by guidance. Receptor methods allow analysis of smaller division of the components, such as dividing the carbon into mobile, vegetative burning and industrial and secondary organic carbon.

42. **Comment:** Neither the 24-hour nor the annual NAAQS address the issue of the month long episodes the SJV experiences. **(Shipp)**
Response: This comment should be directed to EPA, which is the agency responsible to identify the form of the standards related to health impacts. The current standards address short-term one-day exposure and chronic annual exposure. The District is not authorized or commissioned to establish additional health based standards. The most that the District is able to do is support health studies in our area that might identify additional health concerns. The District is proactive in this regard by supporting and facilitating health based research in the SJV. Furthermore, although the SJV experiences protracted stagnation events that last from a few days to two weeks, the particulate levels are not extreme for the entire duration of these events. Any implication that the particulate levels are above the applicable daily standard for a month at a time would be an exaggeration.

43. **Comment:**· The District does not address what types of days drive the annual standard and whether those were analyzed for NOx limitation. There is still a question as to whether moderate days that affect the annual average are NOx limited. Document whether the NOx limitation on PM2.5 is verified by the photochemical model for all days. **(Shipp)**
Response: This comment is based on an incorrect premise that all days must have similar NOx response and that the strategy must have the same effect each and every day. This is not a requirement or a reasonable expectation. The District has included reduction programs for days dominated by other source contributions including carbon, geologic material and sulfate particulate. The detailed comment for this point also requested detailed evaluation of VOC and ammonia. These issues have been thoroughly investigated and discussed in both the Modeling Protocol and Chapter 3 Section 3.2.6 of the Plan. The assertion that each day must be investigated by the regional model, even days that meet the standard, is not a correct premise. EPA has outlined guidance that indicates that VOC and ammonia should be presumed as not dominant and should not be the focus of the plan unless technical evaluation shows domination by these processes. All of the technical evaluations for CRPAQS and prior assessments of regional particulate models have indicated that NOx is the dominant factor and VOC and ammonia are not.

J.2 RE-EVALUATION OF COMMENTS AND RESEARCH SUBMITTED BY THE CALIFORNIA COTTON GINNERS AND GROWERS ASSOCIATIONS, JANUARY 7, 2008

The California Cotton Ginners and Growers Association (CCGGA) letter dated January 8, 2007, and technical documents accompanying the letter, have been reviewed by District staff.

1. **Comment:** CCGGA requests removal of all fugitive dust candidate control measure proposals and feasibility studies from the PM2.5 Plan. This request is based on various recent studies that show fugitive dust is a major component of PM10 annually and in autumn, but PM2.5 is only a small fraction of that PM10 (five to ten percent). This is supported by a recent study on the fig and almond PM10/PM2.5 harvest emissions that shows a ratio of approximately ten percent PM2.5 contained within the PM10. Recent studies also show that the highest PM2.5 concentrations occur in the winter with ammonium nitrate (ammonium + NOx) as the dominant component and not fugitive dust. In addition, a winter PM2.5 study shows that ammonium nitrate, and to a lesser extent organic carbon, is transported from urban to rural areas. Reference was made to a presentation from the ARB project manager for CRPAQS, Karen Magliano, that identified geologic emissions from the combination of urban and rural sources as a contribution of approximately one microgram to the PM2.5 annual average. Furthermore, the FRM (Federal Reference Method) PM2.5 sampler was designed for accuracy of particles generally found in urban environments, which generally have two to four times smaller mass median diameters (MMD) than do agricultural processing emissions. This sampler design adversely affects the FRM sampling which then produces a higher than actual PM2.5 for agricultural processing facilities. This is further supported by source test studies for cotton gin emissions which determined that current EPA-approved source sampling methods may be accurate for PM10, but are reportedly overestimating PM2.5 emission levels by as much as 1.5 to 13 times.
   Response: While agreeing that winter nitrate particulates are a dominant source for annual PM2.5 in the SJV, the District does not concur with the conclusion that geologic sources may be dismissed from consideration without further study. The impact on attainment must be assessed for all contributing sources. The PM-10 annual standard of 50 micrograms per cubic meter was given a de minimus limit of one microgram as a guiding standard for sources large enough to require control evaluation. The PM2.5 annual standard of 15 micrograms per cubic meter has no de minimus threshold. Therefore, the geologic contribution to the PM2.5 annual average of one microgram per cubic meter must be assessed for its contributing sources and potential for identifiable reductions. Feasibility studies will assist the District in determining the actual contribution of PM2.5 from urban and rural sources, identify if rural contributions contribute measurably to the peak

levels, improve the accuracy of emission factors for PM2.5 emissions from agricultural activities, determine which PM10 control measures provide PM2.5 emission reductions and establish whether PM2.5 reductions are achievable from sources emitting geologic material.

The range of values for PM2.5 fraction of PM10 cited in the CCGGA letter for the few activity types for which data is available provides justification for feasibility evaluation to establish PM2.5 actual emissions for a variety of agricultural practices. Improvement of the emissions inventory requires feasibility studies to determine the actual magnitude of PM2.5 contributions from agricultural activities and to determine whether existing PM10 measures have a measurable benefit for PM2.5 or could be refined to enhance their PM2.5 benefit. Due to the wide variation in reported results for different activities, PM2.5 emission factors applicable to agricultural activities require an analysis to improve the emissions estimates. Refining these emissions estimates will require thorough review of technical literature and consultation with agricultural technical representatives and federal and state agencies. In consultation with stakeholders, experts and approving agencies, the District will employ a scientific quality assurance program for data collected as part of the feasibility studies, including assessment and documentation of sampler bias.

J.3 VERBAL COMMENTS, FEBRUARY 25-26, 2008 PUBLIC WORKSHOPS ON THE 2ND DRAFT 2008 PM2.5 PLAN

J.3.1 February 25, 2:00pm Workshop

Approximately 34 people in attendance (18 Fresno, 10 Bakersfield, and 6 Modesto)

1. **Comment:** Will CEQA thresholds be changing? Will the District compute PM2.5 reductions for ISR, and will District have PM2.5 fees for ISR?
   Response: The District's CEQA department will respond to the commenter.

2. **Comment:** Will ISR (Indirect Source Review) reductions be incorporated into the Plan?
   Response: Reductions from ISR will be incorporated into the next version of the plan. The reductions will be similar to those reported in the *2007 Ozone Plan*.

3. **Comment:** How will population growth affect the District's 2014 attainment projections?

Response: Population growth estimates (as developed by the California Department of Finance) are built into the emissions inventory and attainment demonstration.

4. **Comment:** How do drive-through windows impact air quality?
   Response: Generally, if they have very short wait times, drive-through windows can reduce emissions (as compared to cold start emissions resulting from shutting off a car and starting it again a few minutes later).

5. **Comment:** The Plan does not meet RFP requirements for 2009 and 2012. Pre-2014 reductions from ARB's truck regulation should be incorporated into the RFP demonstration.
   Response: At ARB's direction, the *2008 PM2.5 Plan* does not show pre-2014 reductions for this measure. The EPA's final rule on RFP stipulates "generally linear progress." The 2009 and 2012 projected emissions presented in Chapter 8 of the Proposed *2008 PM2.5 Plan* meet RFP requirements.

6. **Comment:** The plan does not satisfy the contingency measures requirement.
   Response: The plan's contingency measure discussion is in Chapter 9. EPA's Final Rule for implementing the PM2.5 NAAQS (72 *FR* 20586) emphasizes that states should make decisions on contingency measures in conjunction with determinations of RACM. EPA also emphasizes that all available measures needed in order to demonstrate attainment of the standards must be considered first; all remaining measures should then be considered as candidates for contingency measures (74 *FR* 20643). The District and ARB have complied with this directive by aggressively identifying control measures for PM2.5 and its precursors; as shown in Chapter 9, these measures are needed to demonstrate attainment in 2014. Remaining measures (those with reductions not used in demonstrating RFP or attainment) were used for contingency, in accordance with EPA's Final Rule implementing the PM2.5 NAAQS.

7. **Comment:** Will District be applying for 1-year extension to show attainment? Meeting the standard based on 2014 data is not enough because attainment is based on three-year averages.
   Response: The District expects that the Valley will attain by 2014, with no extension required. The modeling projects attainment based on design values, which are three-year averages, as specified in Federal modeling guidance.

8. **Comment:** The plan should include evaluation of 2007 data and real-time data. Also, the plan reports that District staff evaluated 100 years of meteorological data; where is this documented?

Response: 2007 data is available in Appendix A. See also page 3-27. Real-time data is used primarily for air quality forecasting. The 100-year review of meteorological data is available upon request.

9. **Comment:** There have been studies yielding measured data for PM2.5 from cotton gins. Re-entrained PM 2.5 fugitive dust is included in the Plan, but dust is not as great a contributor in the winter.
   Response: The District is continuing to look into these issues.

10. **Comment:** Would Prop 1B funding help the Valley reach attainment sooner?
    Response: Increased amounts of Prop 1B funding would assist earlier attainment.

11. **Comment:** ARB staff should consider delaying implementation of the truck rule by one year, to 2010. ARB would get reductions sooner and only require the replacement of one truck rather than two.
    Response: This comment has been relayed to ARB staff

12. **Comment:** Control measures in PM2.5 Plan should be aligned with those in *2007 Ozone Plan* and focus on NOx only. All control measures for directly emitted PM2.5 and SO_2 should be feasibility studies. Control measures for directly emitted PM2.5 are very costly.
    Response: In accordance with federal regulations (40 CFR 51.1002), this *2008 PM2.5 Plan* identifies and evaluates sources of PM2.5 direct, SO_2, and NOx for potential control measures. The modeling conducted for this plan shows that the District's projected PM2.5 and SO_2 reductions are important contributors to 2014 attainment; without these reductions, many more NOx reductions would be needed. The rule development process will allow for further evaluation of cost-effectiveness of controls of direct PM2.5, SO_2, and NOx.

13. **Comment:** When will the 2006 PM2.5 standard be addressed in a plan?
    Response: This *2008 PM2.5 Plan* addresses the 2006 PM2.5 daily NAAQS of 35 µg/m³ in at least two ways. First, the Plan contains a commitment to re-open the residential wood combustion rule to consider a number of changes, including establishing the threshold for wood burning prohibitions for when the PM2.5 air quality is predicted to be at or above the level of the 2006 standard (35 µg/m³). Secondly, modeling results presented in Appendix G illustrate progress toward the 35 µg/m³ standard. As dictated by the requirements of the federal Clean Air Act, preparation of a formal plan dedicated to the 2006 standard will be linked to the timing of EPA's official designations under the 2006 standard. Plans will be due in either 2012 or 2013, and the final attainment year for the 2006 standard

will be 2019 or 2020. The *2008 PM2.5 Plan* will result in quantifiable progress towards the 2006 standard. By 2014, worst PM2.5 levels are expected to be more than 50% closer to the 2006 standard (as compared to 2006 air quality).

14. **Comment:** It is very important to look at alternatives to open burning. Biomass facilities may not be able to take the cuttings by 2010, as required.
Response: District continues to work with industry to investigate alternatives to open burning.

15. **Comment:** Additional incentive money is needed.
Response: District continues work to identify more sources of incentive funding. The District aggressively pursued allocation of more Proposition 1B funds at ARB's Board hearing on February 28, 2008. See comment number 10.

16. **Comment:** Annual analysis shows that PM2.5 formation is NOx limited. Was annualized episodic data used for that analysis? Some days may be NOx limited, and some may be ammonia dominated.
Response: The NOx limitation is documented through evaluation of two prior seasonal modeling evaluations and research findings from the CRPAQS project. Much of this has been documented in the modeling protocol (Appendix F). Current regional modeling provides a modeling assessment of each day of a fourteen-month period and continues to establish an annual dominance of ammonium nitrate. Many days during the year have very low levels of ammonium nitrate and are dominated by directly emitted particulate and ammonium sulfate. It would not matter on these days whether ammonium nitrate is NOx or ammonia limited when it forms in very small amounts. For any reduction of ammonium nitrate of consequence to the annual PM2.5 standard, we must concentrate on the winter period of high concentrations of ammonium nitrate, which has already been well established by research and modeling as NOx limited.

    The photochemical model output is analyzed in accordance with EPA guidance for speciated modeled attainment test (SMAT). This is a complex process that involves separate analysis of the main chemical groups processed by the model (ammonium sulfate, ammonium nitrate, carbon) and use of the model results for each of these separate contributions using the relative response factors (RRF) from 2005 to 2014. More detail of this process is included in the modeling protocol (Appendix F) and Appendix G.

    The development of a SIP control strategy for ozone, PM10 or PM2.5 is based on conditions that cause higher levels of air pollutants. For both PM10 and PM2.5 the key period for analysis is winter, with high levels of ammonium nitrate

that have been scientifically analyzed by research project evaluation and several modeling analyses as being NOx limited.

17. **Comment:** The plan uses straight relative response factor (RRF) out of the photochemical model. Alternative approaches should also be used.
Response: The photochemical model output is analyzed in accordance with EPA guidance for speciated modeled attainment test (SMAT). This is a complex process that involves separate analysis of the main chemical groups processed by the model (ammonium sulfate, ammonium nitrate, carbon) and use of the model results for each of these separate contributions using the relative response factors (RRF) from 2005 to 2014. More detail of this process is included in the modeling protocol (Appendix F), and Appendix G that presents the regional model methodology and results. Any alternative model evaluation approach that does not follow EPA modeling guidance would have to be submitted to EPA as a proposed modification in the modeling protocol. The District has not identified any alternative calculation procedures for the attainment demonstration that merit amendment of the protocol. The District did identify in the modeling protocol, in part from EPA sources, elements of the approved methodology that are not ideal for California or the San Joaquin Valley; however, that does not provide an alternative processing procedure for the photochemical model results. Instead of alternative processing of the photochemical model results, it is more useful to compare the results of other analytical approaches including the receptor modeling and weight of evidence evaluation in Chapter 3 of the Plan and in Appendix H to the Plan. These comparisons confirm the findings of the regional modeling results and the receptor analyses are in close agreement and are supported by other weight of evidence analysis.

18. **Comment:** Control measures should address just one pollutant; SO_2, PM2.5, and NOx should have separate rules. The control measures should focus on NOx and designate SO_2 and PM2.5 measures as feasibility studies.
Response: See response to comment number 12. The modeling conducted for this plan shows that the District's projected PM2.5 and SO_2 reductions are important contributors to 2014 attainment; without these reductions, many more NOx reductions would be needed. The District believes that multi-pollutant controls can be optimized when considered in a single rule.

19. **Comment:** Biomass power plants are not the answer for replacing open burning. Other agencies are in rulemaking process for measures that will limit composting.
Response: The District continues to work with industry on alternatives to open burning.

20. **Comment:** Future presentations should include slides to show progress towards the State standards for PM2.5.
    Response: There is no 24-hour State standard. The State's annual standard is 12 µg/m³. While the annual averages presented in the plan (calculated for the federal standard) can provide an estimate of progress towards the state standard, it should be noted that the State standard uses a different calculation for the form of the standard.

21. **Comment:** What is the timing for submitting this plan to EPA?
    Response: The Plan is due to EPA 4/5/08. It is scheduled to go to the District Board in April 2008 for consideration for adoption. ARB is scheduled to consider the Plan for adoption in May 2008. The District and ARB have discussed this schedule with EPA Region 9 staff, who indicated that the schedule as presented would not trigger EPA issuance of a finding of failure to submit.

22. **Comment:** The contingency measures section includes a curious element, saying that failure to attain the 1-hour ozone standard will trigger section 185 fees. These fees will not be available if the Valley attains the standard.
    Response: Emission reductions from Section 185 fees for failing to attain the former 1-hour ozone NAAQS are rule-based reductions above and beyond those used to demonstrate RFP and attainment in this *2008 PM2.5 Plan*. As such, they meet EPA requirements for contingency measures for PM2.5 (72 *FR* 20642-20643) and were thus included in this plan.

J.3.2 February 26, 6:30pm Workshop

Approximately 8 people in attendance (5 Fresno, 3 Bakersfield, and 0 Modesto)

23. **Comment:** By planning based on 2014 levels, the District seems to expect to need a 1-year attainment extension. Please review the April 2007 EPA Model Guidance, page 35, 2nd paragraph.
    Response: The District has conducted a thorough review of said guidance. The District expects that the Valley will attain by 2014, with no extension required. The modeling projects attainment based on design values, which are three-year averages.

24. **Comment:** Are the Healthy Air Living program, incentives, and Fast Track all above and beyond SIP requirements?
    Response: Yes. Programs such as these lead the District to expect that attainment can be achieved before 2014.

25. **Comment:** How will the current plan impact the 2006 PM2.5 standard?
    Response: See the response to comment #13.

26. **Comment:** Will there be PM2.5 reductions from ISR?
    Response: Yes. PM2.5 reductions will come from reductions in NOx emissions. ISR is expected to achieve about 4.2 tpd of NOx reductions in 2014.

27. **Comment:** The District should include developers on the list of groups for Healthy Air Living outreach.
    Response: The District will include developers in outreach.

28. **Comment:** How and when will the new wood burning fireplace regulation affect the number of no-burn nights?
    Response: There were approximately 13 no-burn nights during the 2007-2008 season Valley-wide (Kern County had the most no-burn nights with 12). Next year, the same regulation will be in place. In 2010, the new rule could result in more no-burn nights (possibly as many as 36 total no burn nights per year in Fresno and 32 in Bakersfield, based on 2006 PM2.5 concentrations).

29. **Comment:** The District should do more to coordinate air quality with general plans at the local level.
    Response: The District's *Air Quality Guidelines for General Plans* includes suggested policies for cities and counties to include in their General Plans. The District reviews CEQA documents for general plans and general plan amendments. The District integrates air quality considerations into the General Plan process via its comments on those plans.

30. **Comment:** Into which emissions category does smoke from wood burning fireplaces fall?
    Response: It is categorized in the modeling as vegetative burning; chemically, wood smoke from fireplaces is nearly identical to smoke from other types of vegetative burning. In the emissions inventory, fireplaces are part of the Residential Fuel Combustion category.

31. **Comment:** How does this plan address AB32?
    Response: The state Air Resources Board and other state agencies have the main workload for AB32. AB32 is incorporated into the District's CEQA projects, and the District may help collect emissions inventory data for AB32.

J.4 WRITTEN COMMENTS, DECEMBER 18-19, 2007 PUBLIC WORKSHOP ON THE DRAFT 2008 PM2.5 PLAN

Comment period held through March 5, 2008

Comments were received from the following people and organizations:

California Cotton Ginners and Growers Associations (CCGGA)
California Grape and Tree Fruit League (CGTFL)
California League of Food Processors (CLFP)
Central Valley Air Quality Coalition (CVAQC)
On behalf of Fresno Metro Ministry, Madera Coalition for Community Justice, Merced-Mariposa Asthma Coalition, and the Center on Race, Poverty, and the Environment
Chevron U.S.A. Inc. (CUSA)
International Sustainable Systems Research Center (ISSRC)
Nisei Farmers League (Nisei)
Western States Petroleum Association (WSPA)
Steve Gary (Gary)
Sandi Murray (Murray)
Evan Shipp (Shipp)

Public Process

1. **Comment:** Thank you for providing workshops in the evening to allow community residents the opportunity to participate. **(CVAQC)**
   Response: Comment noted.

2. **Comment:** The time period for review for the 2nd Draft was too short (20 days). **(CVAQC)**
   Response: The comment period on the first draft was 36 days, and there will be a 30-day public comment period on the Proposed Plan beginning on March 13, 2008.

Control Measures

3. **Comment:** The District's proposal to incorporate PM10 and SO_2 control measures contradicts the District's NOx-based strategy, which previously stated that PM10 and SO_2 reductions are not needed to attain the 1997 PM2.5 Ambient Air Quality Standard (AAQS). The proposed PM10 & SO_2 control measures do not conform to federal guidelines which states that measures that are not

necessary to satisfy Reasonable Further Progress (RFP) or expeditious attainment are also not required RACT/RACM for the area, and any measures that collectively, would not advance attainment by at least one year are not required for PM2.5 RACT/RACM. Therefore, PM10 and SO_2 control measures should be removed from the plan because the District projects to attain the 1997 PM2.5 AAQS in 2014 (one year prior to the 2015 statutory deadline). **(CUSA, WSPA)**

Response: The Plan has been revised to more clearly explain that the reductions from PM2.5 and SO_2 controls are required to attain federal AAQS by 2014. This finding was reflected in the ARB modeling, which was recently received; federal regulations (40 CFR 51.1002) require their inclusion in the Plan.

The discussion included in previous drafts of the PM2.5 SIP was intended to reflect that because the annual PM2.5 concentration is almost half ammonium nitrate, the primary focus of controls has to be the precursor to ammonium nitrate, emissions of nitrogen oxides (NOx). However, the emissions reductions included in the plan and modeling have always included the reductions of directly emitted PM2.5 and other precursors including SOx. The text of the plan has been improved to reflect this comprehensive approach that includes reductions from all emissions and precursors. Additional evaluation has been conducted to determine how much the other reductions assist towards attainment (see additional text added to Chapter 3 at the end of section 3.4.1). The total of other reductions reduces the need for additional NOx reductions by 172 tons, advancing attainment by much more than a single year.

4. **Comment:** A control measure for IC Engines (mostly stationary diesel engines, some spark ignited engines; application includes powering irrigation pumps) could achieve an additional 11 tpd of NOx reductions. **(CVAQC)**
   Response: Electrification would appear to be the only control technology available to achieve the suggested reductions. Unlike the more urbanized Los Angeles area, the San Joaquin Valley does not have the electrical distribution infrastructure needed to support a rapid switch to electric motors. The current rule incorporates feasible controls for this category, based on technological and economic considerations. The Plan does commit the District to revisit this rule and incorporate new technology that is available or planned at that time. The commenter is encouraged to participate in the rulemaking process.

5. **Comment:** The District can achieve an additional 2 tpd of NOx reductions from Glass Furnaces. The proposed rule for industrial glass manufacturers should be adopted. **(CVAQC)**
   Response: District staff is currently developing a rule with potential reductions of 3.4 tons of NOx/day from glass-melting furnaces. District staff would be interested to learn what additional control technologies are available to obtain the suggested reductions. More information pertaining to this comment is needed.

The draft rule is scheduled for adoption in the third quarter of 2008, according to the commitment in the *2007 Ozone Plan*. The commenter is encouraged to participate in the rulemaking process.

6. **Comment:** The District can achieve an additional 9 tpd of NOx reductions from Boilers & Dryers (gas & liquid-fired boilers, solid-fuel boilers: dryers 5MMBTU/HR and below as area/point sources). **(CVAQC)**
   Response: District staff is currently developing a boiler rule with potential reductions of 5.3 tons of NOx/day. District staff would be interested to learn what additional control technologies are available to obtain the suggested reductions. More information pertaining to this comment is needed. The draft rules are scheduled for adoption in the third quarter of 2008, according to commitments in the *2007 Ozone Plan*. The commenter is encouraged to participate in the rulemaking process.

7. **Comment:** Costly selective catalytic reduction (SCR) systems would yield very few emissions reductions while also necessitating additional production, transportation, storage, handling, and use of ammonia, which generates additional environmental and public safety concerns. **(CLFP, WSPA)**
   Response: SCR systems can yield 80 to 95% NOx control efficiencies from uncontrolled levels and have been in use for some time in industrial environments. Ammonia is a common industrial and household product that is also in wide use as a fertilizer, anti-fungal treatment, refrigerant, and disinfectant. State and federal requirements govern the transportation, storage, and use of the product, mitigating potential safety problems. There is also increased interest in its use as a fuel, making it a more ubiquitous commodity in the future. The rule may include an Advanced Emission Reduction Option (AERO) to lower cost and maximize reductions.

8. **Comment:** The District should provide a range of compliance options so that facilities can use the most cost efficient and timely way to reduce emissions. The District should consider providing advanced early emissions reductions options, incentives, and thorough socioeconomic analysis. Ensure that rulemaking does not impose a “one size fits all approach.” **(CLFP)**
   Response: Where possible, staff tailor the control requirements to account for an industry's unique circumstances. The recently released draft of Rule 4320 contains Advanced Emission Reduction Options (AERO) to provide affected sources with control options while still obtaining required reductions. Future rules are expected to include similar AERO considerations.

9. **Comment:** We are opposed to control measures that require the installation of electrostatic precipitators (ESP) or baghouse filters on natural gas fired stationary

equipment. These types of equipment emit a small amount (0.23 tons/day) of direct PM2.5. **(WSPA)**
Response: Staff are not currently requiring, or even suggesting, that either ESP or baghouses be installed on all such equipment. For larger sources, such as glass-melting furnaces, ESP are currently successfully employed and have been for some time. New, large, oilfield steam generators are required to employ PM10 controls, but nothing limits these controls to either ESP or baghouses.

10. **Comment:** We are opposed to control measures that require the installation of fuel gas conditioning units or sulfur dioxide scrubbers for natural gas fired equipment. The SOx emissions from this equipment are primarily from the beneficial use of gas recovered from digesters and landfills. We believe that the District should encourage the use of these recovered gas streams. **(WSPA)**
Response: During rule development, staff will evaluate the appropriateness of applying controls to a specific source of category. While smaller sources such as digesters or landfills may not warrant fuel scrubbing due to low sulfur emissions, sources like oilfield steam generators have considerably higher emissions and are good candidates for such controls. Also, sulfur removal is sometimes required to allow NOx reduction controls, which will aid attainment of both ozone and PM AAQS.

11. **Comment:** The District, along with other agencies, in conjunction with agriculture, should look at alternatives for the industry other than open vegetative burning that are economically feasible. **(Nisei)** There shouldn't be restrictions on the shredding of agricultural prunings because it is the only alternative to burning, which is already banned in the San Joaquin Valley. **(CGTFL)**
Response: Staff are actively involved with the Agricultural Technology Committee and similar state and local representatives who are researching agricultural issues and air pollution. At this time, there are no planned restrictions on shredding of prunings.

12. **Comment:** The District has proposed to conduct a "feasibility study" to on "Conservation Management Practices" (CMPs), which is expected to be completed in 18 months. This is not a sufficient amount of time to complete this task. **(Nisei)**
Response: The District intends to move forward on feasibility studies as expeditiously as possible. These studies will help show whether emissions reductions opportunities warrant a rule amendment or if additional studies are required. It is possible that the comment is correct and that completion may take longer than the proposed eighteen months; however, until the feasibility study is developed it is difficult to be certain of its duration. The nature of a feasibility study may not be as extensive as is anticipated. The feasibility study may draw on work already completed or in progress to assess the emissions potential for

PM2.5 or may require new research to establish reliable findings. Current CMP information is based on PM10 and the amount of PM2.5 affected by the CMPs is unknown. If assessment of work currently in progress can be used to establish that the PM2.5 fraction of PM10 is too small to merit attention, such information may be used to conclude the feasibility assessment. If, however, preliminary information indicates that the PM2.5 fraction of PM10 from these sources is a percentage that merits attention for development of potential reductions and it is found that some of the CMPs have a potential to reduce these emissions, a more thorough evaluation may be required to complete the feasibility assessment, new field measurement programs may be required and the project may take longer than the current estimate. The District will coordinate any additionally required field research through the AgTech Committee, which has been established for the purpose of involving stakeholders and qualified scientists in development and review of agricultural air quality research to ensure accuracy and usefulness of the products and findings of the research.

13. **Comment:** The District should not increase the number of CMPs to achieve PM2.5 emission reductions. Tree and vine crop operations are minimal during the winter season when PM2.5 levels are the highest. **(CGTFL)**
    Response: Please refer to comment number 12.

14. **Comment:** The District needs to evaluate how the changes proposed in the "Dryers" control measure (I-41) will affect the quality of dry fruit and vegetables. **(Nisei)**
    Response: The last rule development project did address this issue and it will be considered in any future amendments.

15. **Comment:** Please review Federal and State labor and transportation regulations in relation to the proposed "Employer Based Trip Reduction" rule. There are major conflicts with these rules within the agricultural industry. **(Nisei)**
    Response: Staff will review the documents and make appropriate allowances during the rule development project for that control measure. District rules cannot, however, resolve any conflicts between the state and federal regulations.

16. **Comment:** We believe that the tremendous effort that the agricultural sector has made to comply with local, state, and federal regulations should be acknowledged. Examples include: the pump engine rule, CMPs, open burning rule, emergency generator permits, surface water regulations, and many others. **(CGTFL)**
    Response: Comment noted.

17. **Comment:** The District should not adopt a rule that would require more no burn days for residential wood combustion. Other measures should be implemented instead. **(Murray, Gary)**
    Response: Staff will consider all feasible options during the rule development process for that control measure. District staff would be interested in any alternatives that could be implemented in addition to those already listed in the plan.

Reasonable Further Progress

18. **Comment:** The PM2.5 Plan does not demonstrate how reasonable further progress (RFP) will occur by 2009 and 2012. There should be further explanation on how RFP will be achieved so that the plan will be approved by EPA. **(CVAQC, ISSRC)**
    Response: EPA's final rule on RFP stipulates "generally linear progress." The 2009 and 2012 projected emissions presented in Chapter 8 of the Proposed *2008 PM2.5 Plan* meet RFP requirements.

19. **Comment:** ARB should project emissions reductions from their proposed rules for use in the 2012 RFP calculations. **(ISSRC)**
    Response: ARB has made no formal commitment for pre-2014 reductions from the truck rule now under development. Their only commitment from all new state measures is for 2014, regardless of whether or not reductions begin earlier from phased implementation of a rule. Because of this, the Plan cannot take credit for pre-2014 reductions from any ARB rules.

Contingency Measures

20. **Comment:** The District has only documented a fraction of the contingency measures that are required (approximately 30 tpd of NOx, or the equivalent of one year of RFP). **(CVAQC, ISSRC)**
    Response: EPA's Final Rule implementing the PM2.5 NAAQS (72 FR 20586) **recommends** that the level of reductions in contingency measures represent one year's worth of emissions reductions necessary to meet RFP (72 *FR* 20643). This is strictly a recommendation and is not supported by any regulatory language in 40 CFR 51.1012. It is also a pessimistic scenario that assumes an RFP milestone is missed by a full year's of emission reductions; in reality, the shortfall could be smaller. In any case, the overarching requirement is for the nonattainment area to remedy the shortfall within one year of the end of the RFP year in which the shortfall occurred, "without significant further action by the state or EPA." (40 CFR 51.1012). See discussion in Chapter 8.

21. **Comment:** One of the District's contingency measures (like South Coast's) is to request that ARB accelerate adoption and implementation of state measures. However, this would require additional ARB staffing and implementation costs. Also, these reductions are not timely. Phase one of the truck rule will be implemented by December 31, 2013. The second phase will begin by 2017, phasing in until 2021. As a result, the major source reduction brought in by the truck rule will not occur until 2016. **(ISSRC)**
Response: The District's contingency measure described in the comment is not directed exclusively towards emission reductions from the truck rule now under development. It applies to any state measure under development and/or implementation, with the goal of accelerating reductions from the measures.

22. **Comment:** One of the District's contingency measures is to collect fees from stationary sources in the event that the Valley fails to attain the 1-hour ozone standard (District Rule 3170, which has not been approved by EPA). The success of bringing clean air is contingent on the failure to attain clean air. Based on District documents estimating $30 million per year in fees, the most reductions that could be achieved by this approach is about 1.5 tpd in the first year. Also, these reductions are not timely, since they would not be realized until the beginning of 2013. **(ISSRC)**
Response: The District developed its contingency measures in accordance with EPA's Final Rule implementing the PM2.5 NAAQS (72 *FR* 20586). In this rulemaking, EPA emphasizes that states should make decisions on contingency measures in conjunction with their development of control measures needed to show RFP or attainment. In particular, EPA notes that "all available measures needed in order to demonstrate attainment of the standards must be considered first; all remaining measures should then be considered as candidates for contingency measures. It is important not to allow contingency measures to counteract the development of an adequate control strategy demonstration."

The District's *2008 PM2.5 Plan* emphasizes control measures needed to demonstrate attainment, and lists measures not needed for RFP or attainment demonstration as contingency measures. One of these measures is the emission reductions that would result from spending fees collected **if** the San Joaquin Valley Air Basin fails to attain the former 1-hr ozone NAAQS; Section 185 of the federal Clean Air Act requires collection of such fees if a severe or extreme area fails to attain the former standard.

The commenter is incorrect in estimating the amount of funds that could be generated. The figure cited by the commenter is based on outdated (though correct at the time) fee costs; as noted in the federal Clean Air Act, the fee is to be adjusted for inflation and is now close to $8000/ton. The figure will likely be higher in 2010 or 2013 due to continued inflation. Also, the District now regulates

many more major sources of pollution that was the case when the original estimate was derived. These factors will increase the amount of total fees possible under the current District-adopted rule to above those cited by the commenter. Also, the estimated reductions are also higher than those cited by the commenter; using the figure of $25 million per ton of permanent NOx reductions (as given in the *2007 Ozone Plan*), the $30 million cited by the commenter would generate about 1.2 tpd of permanent NOx reductions.

In general, nonattainment areas have one full calendar year after the RFP year in which to remedy any RFP shortfall. Consequently, failing to meet a 2012 milestone would require that a remedy be implemented by December 31, 2013. Since the District has a backlog of well over $100 million worth of incentive projects that are awaiting funding, District staff is optimistic that emission reduction projects could be put in place in time to correct any RFP shortfall from the 2012 milestone, should the need arise.

23. **Comment:** The District should ban the use of pre tier-3 off-road engines (including agricultural engines, such as tractors and harvesters) during high pollution days as a contingency measure, as proposed by South Coast. The District should also accelerate adoption and implementation of District rules by one year as a contingency measure. **(ISSRC)**
Response: In the Final Rule implementing the PM2.5 NAAQS, EPA notes that PM2.5 plans should not include unreasonable control measures, 'such as measures that are "absurd, unenforceable, or impractical" or that would cause "severely disruptive socioeconomic impacts (e.g., gas rationing and mandatory source shutdowns); such measures are not required by the Act. 55 *FR* 38327.' (72 *FR* 20613) Many of the Tier III engines in the District are used for irrigating crops, and can't readily be turned off due to air quality conditions without causing severe economic impacts to the economy.

The District's rulemaking schedule outlined in Chapter 6 achieves emission reductions as expeditiously as practicable. The contingency measure regarding acceleration of emission reductions is geared toward the state because 80% of the NOx emissions, which are a significant precursor to secondary PM2.5, are caused by mobile sources under the control authority of the California Air Resources Board.

Transportation Control Measures

24. **Comment:** The addendum for Chapter 7 indicates that a total of 100.5 tpd of NOx (attributed to Table 9-1) is necessary in 2013 to advance attainment of PM2.5 by one year. However, this doesn't account for ARB reductions that start as early as 2009 (the truck rule has a compliance date of December 31, 2012 for

certain model years). Without proper prorating of ARB emissions reductions, full consideration is not given to potential sources of emissions reductions that may actually advance attainment by one year. **(ISSRC)**
Response: ARB has made no formal commitment for pre-2014 reductions from the truck rule now under development. Their only commitment from all state measures is for 2014, regardless of whether or not reductions begin earlier from phased implementation of a rule. Because of this, the Plan cannot take credit for pre-2014 reductions from any ARB rules.

25. **Comment:** The addendum for Chapter 7 (section 7.2.3) states that the plan includes reasonable further progress demonstrations for 2009 and 2012. However, the plan does not show RFP in 2009 and 2012, and it does not show attainment by 2015. **(ISSRC)**
Response: The Proposed *2008 PM2.5 Plan* does show expeditious progress for RFP and most certainly demonstrates attainment using a variety of EPA-approved approaches and techniques.

Air Quality Data

26. **Comment:** Design values should be recalculated for missing federal reference filter data during events when meteorology and real-time data show exceedances of the PM2.5 NAAQS. **(Shipp, ISSRC)** Design values for some high-concentration sites (such as Bakersfield – California) are affected by missing data when meteorological conditions are conducive to PM2.5 formation. In years where meteorology produced high concentrations of PM2.5, filter-based data is missing while real-time data is high (2005 data was provided as an example). EPA's data substitution method may not fully account for this bias, but EPA has indicated to the commenter that this type of non-reference method analysis would be allowed under the weight of evidence provisions. Correlation to parallel real-time monitors is good, and this data can be used to calculate alternate design values for weight of evidence. These alternative design values would be over the level of the 24-hour standard for 2004-2006, so additional control commitments should be made to reduce these levels to under the NAAQS. A similar analysis should be made for the annual standard **(Shipp)**
Response: The monitoring data cannot be used in the manner suggested by the commenter. EPA has established procedures for adjusting the data for differences between the sampler characteristics (SANDWICH) when using sampler data from monitors that are not equivalent to reference method samplers. The procedure for this method is detailed in the protocol and regional modeling documentation (Appendices F and G). The procedure requires adjustment for speciation differences between FRM and the non-reference method. BAM data does not provide speciation data and cannot be adjusted in this manner. Part of the difference between BAM and FRM data is a higher

amount of captured water that is not removed from the BAM sample. In coastal locations, the water collection has been high enough to cause the filter tape to break, but the SJV has not experienced this mode of sampler failure. Alternative operating procedures are available to drive off trapped water, but currently this involves heating the air stream, which may also reduce capture of ammonium nitrate. The District uses data from these BAM real time samplers to assist in daily forecasting and smoke management, not for determination of attainment due to the differences between FRM and BAM samplers. It is not appropriate to use the data in the manner suggested by the commenter.

27. **Comment:** Design values should be recalculated with 2007 data. **(Shipp, ISSRC)** This should be part of the weight of evidence analysis. Also, the District has been asserting that the District already meets the 24-hour PM2.5 standard. The commenter is concerned that the District will be granted attainment status. **(Shipp)** The District's claim that 2007 data was analyzed and showed attainment needs to be documented in detail in the main volume of the plan with 2005-2007 design values and RRF. **(Shipp addendum)**
Response: The District cannot be granted attainment status for the daily standard for several reasons. Most importantly, both the annual and daily standard must be met to receive a redesignation to attainment. Separate findings for attainment are not given unless both standards are met. This is true for both PM10 and PM2.5. The annual standard is more difficult for the SJV to meet than the daily standard and will determine when the District will qualify to request attainment status. From modeling contained in the plan, this is not expected to occur before 2014 unless additional early reductions are achieved. In addition, the current daily standard was superceded (although retained for planning requirements for this submittal), and no redesignation to attainment will be provided for meeting the previous daily standard.

The daily air quality standard is not as stringent for the SJV to meet as the annual standard. Note that the regional modeling, as documented in Appendix G and H, projects a maximum 2014 future annual design value of 14.68 (Bakersfield –Golden State) while projecting a future daily design value of 44.6 at the same location. Considering that the annual standard is 15.0 and the daily standard effective for this planning requirement is 65, it is clear that more reductions are required to meet the annual standard than are required to meet the daily standard. The District conducted a sensitivity assessment by receptor analysis with both the current design value, as established by EPA guidance, and an estimated design value for 2005-2007 from the uncertified and incomplete data for 2007, which cannot be submitted in detail to EPA precisely because it is based on uncertified and incomplete data. Both of these assessments indicate that attainment of the daily standard requires much less reductions than is required to meet the annual standard, confirming the regional modeling evaluation. Additional text has been provided to reflect these findings in the

District Weight of Evidence determination (Chapter 3 section 3.4.2) in the section "Air Monitoring Data and Trends."

28. **Comment:** The 2004-2006 period should be reevaluating for representative meteorology. **(Shipp, ISSRC)** The meteorology of 2004-2006 was less conducive to PM2.5 formation than previous years. The average stability correlated to PM2.5 was lower in the last few years than in other years. The District's responses to previous comment were inadequate, and there should be a full investigation of this subject and a re-evaluation of how this affects the design value and control strategy. **(Shipp)**
Response: The District feels that the response was adequate and it is repeated below:

The District performed an examination of meteorological trends in the San Joaquin Valley. Statistics for 100 year and 20 year meteorological databases were reviewed. Statistical analysis was performed to determine the relationship between meteorological indicators and PM2.5 concentrations. The results of these analyses indicate that the relation between examined meteorological indicators and PM2.5 is poorly correlated and not statistically significant. It would be inappropriate to adjust particulate data based on poorly correlated indicators.

In addition, PM2.5 data has been collected for a relatively short time frame, resulting in a database that does not have a statistically adequate number of samples for a long term trend comparison between PM 2.5 and meteorology.

Ozone data has been collected for a much longer time period than PM2.5. The EPA presents meteorological adjusted ozone analyses for Bakersfield and Fresno at the following website:

http://www.epa.gov/air/airtrends/weather/region09.pdf#page=4

The EPA analyses for Bakersfield and Fresno indicates that there is very little difference between actual data and in trend adjusted data for the period 2004-2006. This resolves the issue that 2004-2006 had 'better' meteorology than past years. The District welcomes analyses developed by the commenter that addresses these issues.

The 2006 PM2.5 Standard

29. **Comment:** The District has failed to plan for the 2006 standard in this plan. **(CVAQC)**
Response: This *2008 PM2.5 Plan* addresses the 2006 PM2.5 daily NAAQS of 35 µg/m³ in several ways. First, the Plan contains a commitment to re-open the

residential wood combustion rule to consider a number of changes, including establishing the threshold for wood burning prohibitions at the level of the 2006 standard (35 µg/m³). Secondly, modeling results presented in Appendix G illustrate progress toward the 35 µg/m³ standard. As dictated by the requirements of the federal Clean Air Act, preparation of a formal plan dedicated to the 2006 standard will be linked to the timing of EPA's official designations under the 2006 standard. Plans will be due in either 2012 or 2013, and the final attainment year for the 2006 standard will be 2019 or 2020. The *2008 PM2.5 Plan* will result in quantifiable progress towards the 2006 standard by 2014.

Modeling and Emissions Inventory

30. **Comment:** The latest version of the plan indicates that our previous comments did not include measured PM2.5 data from farming operations. The document "Interim Report: Sources and Sinks of PM10 in the San Joaquin Valley" was included and contained specific PM2.5 data for cotton picking, cotton stalk cutting, almond pickup and sweeping, and fig sweeping and pickup. The District did not respond to the cotton gin data that was provided for the previous draft of the PM2.5 Plan. We included two studies that showed specific "measured PM2.5 levels" from cotton gins and the District must recognize them. **(CCGGA)**
Response: The data submitted is under review and will be incorporated in any feasibility studies. It is premature to dismiss any sources from consideration prior to conducting a thorough technical review. The District will consult with stakeholders through the Ag Tech committee to address these issues.

31. **Comment:** The CRPAQS clearly indicated that fugitive dust is not a significant contributor to the formation of PM2.5. Also, PM2.5 levels are highest during the months of November through February, when agricultural activity is the lowest. The District should focus on combustion sources, and not fugitive dust. **(CCGGA)** District staff should review the Fugitive PM10/2.5 studies that have been done by ARB and the San Joaquin Valley over the past 10 years. The studies deal with open areas, paved and unpaved roads as well as agricultural sources under Rule 8081. **(Nisei)** CRPAQS indicated that dust from agricultural sources is larger in size than PM2.5. This contradicts the data used by the District and ARB. **(CGTFL)**
Response: Some geologic sources may have bigger contributions to PM2.5 than others. Right now, a single average number represents all sources. A closer look is needed to identify the most significant contributors to PM2.5.

32. **Comment**: The plan needs to provide a full photochemical model evaluation. **(Shipp, ISSRC)** This evaluation has full bearing on the uncertainty of the

estimation of the emissions reductions needed to achieve the NAAQS. ARB has indicated that this is forthcoming. **(Shipp)**

Response: The photochemical model output is analyzed in accordance with EPA guidance for speciated modeled attainment test (SMAT). This is a complex process that involves separate analysis of the main chemical groups processed by the model (ammonium sulfate, ammonium nitrate, carbon) and use of the model results for each of these separate contributions using the relative response factors (RRF) from 2005 to 2014. More detail of this process is included in the modeling protocol (Appendix F) and Appendix G that presents the regional model methodology and results. The uncertainty estimation for the model can be directly evaluated by performance analysis (in progress by ARB) and by comparing the results to other analytical approaches including the receptor modeling and weight of evidence evaluation in Chapter 3 of the Plan and in Appendix H to the Plan. These comparisons confirm the findings of the regional modeling results. The regional model projections and receptor analyses are in close agreement and are supported by other weight of evidence analysis.

33. **Comment:** The plan needs to document whether the photochemical modeling verifies whether PM2.5 formation is NOx limited on all days. **(Shipp, ISSRC)** It seems that the NOx limitation statements in the plan are based on severe episodes, and those do not necessarily drive the magnitude of the annual standard. There should be an assessment of individual days in the model to determine whether some days show major sensitivity to VOC and/or ammonia controls. **(Shipp)**

    Response: The NOx limitation is documented by evaluation of two prior seasonal modeling evaluations and by research finding from the CRPAQS project. Much of this has been documented in the modeling protocol Appendix F. Current regional modeling provides a modeling assessment of each day of a fourteen-month period and continues to establish an annual dominance of ammonium nitrate. Many days during the year have very low levels of ammonium nitrate and are dominated by directly emitted particulate and ammonium sulfate. It would not matter on these days whether ammonium nitrate is NOx or ammonia limited when it forms in very small amounts. For ammonium nitrate reduction of consequence to the annual PM2.5 standard, we must concentrate on the winter period of high concentration of ammonium nitrate, which has already been well established by research and modeling as NOx limited.

34. **Comment**: EPA's method of applying Relative Response Factors (RRF) needs to be used with the direct photochemical model output. **(Shipp, ISSRC)** RRFs from the CMAQ model should be analyzed as an alternative to the rollback method. Since the protocol and EPA guidelines recommend the use of straight photochemical derived RRFs, the District should at least show these calculations as an alternative. **(Shipp)** Calculations using RRF obtained directly from the

photochemical model need to be shown. Both 2005-2007 and 2004-2006 attainment should be demonstrated for speciated rollback and direct photochemical model RRFs. **(Shipp addendum)**

Response: EPA methods were used for the regional modeling analysis. Table 3-3 reflects these calculations, which are also documented in Appendix G and H. The most recent version of the regional model calculation files completed by ARB have been requested by the District; however, these files will not be printed or incorporated in the plan document due to the size of the files (approximately 54 megabytes). The calculations use the design value years required by EPA. The suggested alternative 2005-2007 period does not have complete data available to allow its use as discussed more extensively in response to a previous comment. (See response to Comment 27)

35. **Comment:** The role of VOCs and ammonia should be further evaluated, specifically in regions prone to PM2.5 pollution, such as the Bakersfield area. Studies in PM2.5 formation have not adequately investigated this in more limited geographic areas. **(ISSRC)**

    Response: Because these pollutants are considered to be sub-regional in nature, forming over time and traveling between areas within the Valley, it is unclear whether a limited geographic area analysis would be technically valid. However, it is possible to study limited areas to identify how they differ from general Valley conditions. CRPAQS projects included a number of special studies conducted in more limited geographic areas to answer specific technical questions. The findings of these special studies were used to develop our regional measurement program. Special studies were used to determine how much particulate forms from VOC emissions. These documents are available from the ARB Airways website of CRPAQS published results.

36. **Comment:** By just modeling attainment for 2014, the District is not addressing the need to show attainment as a three-year average. It appears that the District is expecting to request a 1-year extension (although RFP has to have been met for said extension to be granted). How can the Valley attain by 2015 if many reductions will not be implemented until 2014? **(CVAQC, ISSRC)**

    Response: The District and ARB followed EPA guidance, which identifies how to model the design value three-year periods. In addition, the District modeled each three-year design value period from 2009 to 2014. In accordance with EPA Guidance (page 33, EPA 454/B-07-002) the base year used for the modeling projection is “the middle year of the baseline average design value” and the future design value year to be projected is the “single year/season **immediately preceding** the attainment date” (page 35, emphasis as contained in the guidance document). The model projections are used with methods that project a three-year design value average for the required years.

J.5 VERBAL COMMENTS, DECEMBER 18-19, 2007 PUBLIC WORKSHOPS ON THE DRAFT 2008 PM2.5 PLAN

J.5.1 December 18, 2007, 6:30pm Workshop

Approximately 27 people in attendance (25 Fresno, 2 Bakersfield, and 0 Modesto)

1. **Comment**: Will ARB's regional modeling include emissions inventory adjustments for new control measures?
   Response: Yes, and a new inventory will be available at a future date.

2. **Comment** Rather than focusing on the PM2.5 standards as set by EPA in 1997, the District should focus on the 2006 standards. Perhaps this could be done in an Appendix or as a separate Community Plan that goes beyond the SIP.
   Response: This is not an "either-or" situation where we choose which PM2.5 standard to address. The District is targeting both standards. This plan will make major progress in attaining the new standard well ahead of EPA's deadline. The idea of a community plan is interesting, similar to the "Fast Track" approach to implement programs beyond the SIP to help the Valley attain the 8-hour ozone standard sooner. The District is working on several efforts to accelerate attainment that are not strictly SIP creditable, including Healthy Air Living and Fast Track. Taken as a whole, these are the start of the "Community Plan" concept suggested by the commenter.

3. **Comment:** The more health-protective state standards should be addressed.
   Response: The proposed control measures will provide significant progress toward meeting California standards. California has no specific dates by which state air quality standards must be attained. California Health and Safety Code (CH&SC) Section 39602 says, "Notwithstanding any other provision of this division, the state implementation plan shall only include those provisions necessary to meet the requirements of the [federal] Clean Air Act." As such, state implementation plans (SIPs) are limited to those measures necessary to attain the federal standards. However, progress towards federal standards also brings areas closer to the lower, State standards. Furthermore, the District has fully complied with California planning requirements for state particulate matter standards, in accordance with Section 39614 of the California Health and Safety Code (see the June 2005 SB656 PM Implementation schedule).

4. **Comment:** Lowering the no-burn threshold for Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) is a good idea.

Response: Comment noted.

5. **Comment:** The modeling in the draft is incomplete. There needs to be RRF (relative response factors). More meteorological analysis is needed.
   Response: The District included RRF in the receptor modeling (see Chapter 3 and Appendix F), and ARB is using RRF in the regional modeling that will be available in the next draft of the plan. Extensive meteorological analysis is available in Appendix E of the draft plan.

6. **Comment:** The recent days with concentrations over 65 µg/m³ should be looked at.
   Response: The data for 2007 will not be official until all of the filters have been weighed and there has been adequate time for quality assurance and certification. Typically, data for a year becomes official by July 1st of the following year. However, the District is considering approaches for including a preliminary discussion of 2007 data in the plan.

7. **Comment:** Wineries, digesters, asbestos dust, almond harvesting, track-out, anhydrous ammonia, fireworks, and population increases should all be considered in the plan.
   Response: Fireworks, amendments to Conservation Management Practices (which include almond harvesting and track-out), and amendments to Regulation VIII (Prohibitions for Fugitive Dust) are further study measures. Wineries and other sources of VOCs are considerations in the District's *2007 Ozone Plan*, but available evidence suggests that VOCs are not a major precursor to PM2.5. Ammonia reductions are not as effective as NOx reductions for reducing ammonium nitrate, since NOx is the limiting precursor in the Valley. Projected population increases from the California Dept. of Finance are incorporated in the plan's emissions inventories.

8. **Comment:** Fireplaces should be banned completely in urban areas, and more inspectors are needed.
   Response: Comment noted.

9. **Comment:** There are lot of NQ (not quantifiable) and TBD (to be determined) entries in the control measure evaluations. More information is needed.
   Response: Some of the values cannot be determined at this time due to lack of reliable quantitative information on feasible control technologies for directly-emitted PM2.5. More detailed information will have to await the results of the Feasibility Study or Rule Development project. If the information can be

determined prior to the plan's adoption, that information will be included in the later drafts.

10. **Comment:** Some of the feasibility studies should be control measure commitments.
    Response: Staff would be glad to review suggestions for feasibility studies that could be converted to control measures with quantifiable reductions. The feasibility studies are commitments to further examine the source category and determine if there are opportunities for future emission reductions. Feasibility Studies will engage the public and industry in identifying new potential emission reductions. Some of these studies, based on possible future control technique advancements, will be developed in a public process culminating in a public hearing before the Governing Board.

11. **Comment:** The District should focus more on meteorological criteria for Rule 4901 burning prohibitions instead of just forecasted AQI.
    Response: The District will consider this comment in the rule amendments for Rule 4901.

12. **Comment:** Several commenters expressed appreciation for the evening (12/18/07) workshop and for the availability of Spanish materials.
    Response: Comment noted.

13. **Comment:** Is there a PM2.5 monitor in Merced?
    Response: There is an FRM (federal reference method) monitor in Merced, but not a real-time monitor. The FRM is the type of monitor used to determine compliance with the air quality standard, and the data from this monitor are used to calculate design values.

    FRM data is not available until months after the sample was collected, since FRM filters must undergo laboratory analysis. FRM data is therefore not available on a real time basis to establish current air quality, so the District has deployed real time monitors to provide daily forecasting capability. These supplemental monitors are currently sited in locations expected to experience peak values. The District's goal is to eventually have at least one real-time monitor in each of the eight counties in the San Joaquin Valley. The District forecasts PM2.5 levels for Merced County based on the real time data from the Turlock monitor, which is approximately 2 miles from the Merced county line. The District expects to site a real-time PM2.5 monitor in Merced in the near future.

14. **Comment:** What is meant by "adjusted NOx" in the graphic in slide 14 and in the Executive Summary?
    Response: The initial emissions inventory provided by ARB includes reductions from regulations adopted through May 2005. The District subtracted reductions from rules adopted between May 2005 and December 2006 from these initial inventories and then made additional adjustments for methodology revisions to derive "Adjusted Inventories," including Adjusted NOx. See Appendix B for more information.

15. **Comment:** The District should keep the lay person in mind when putting together plans and presentations.
    Response: The District strives to keep lay people in mind as much as possible while meeting technical and legal planning requirements. District staff is available to provide further clarification and explanation.

J.5.2 December 19, 2007, 2:00 pm workshop

Approximately 31 people in attendance (8 Fresno, 8 Bakersfield, and 15 Modesto)

16. **Comment**: Karen Magliano of the California Air Resources Board (ARB) commented that she was encouraged by the attainment outlook of the receptor modeling and the amount of CRPAQS (California Regional Particulate Air Quality Study) research that was included. She noted that ARB's regional, grid-based modeling was in progress. She pointed out that in South Coast, the grid-based model was even more conservative; more reductions may be needed than the receptor modeling in the current draft plan anticipates.
    Response: Comment noted.

17. **Comment:** Is the District working on an environmental document?
    Response: Yes, an Initial Study/Proposed Negative Declaration is being prepared to meet CEQA requirements and should be available for public review in February 2008.

18. **Comment:** With regard to the feasibility studies for conservation management practices and cotton gins, what percent of fugitive dust is PM2.5? There are studies that say the percentage is very low, and these studies will be submitted to the District as a written comment.
    Response: Approximately 25% of PM10 from the Farming Operations and Cotton Gins categories are PM2.5, according to the ARB emissions inventory. District staff will be looking to these estimates in the feasibility studies for CMPs and cotton gins.

19. **Comment:** Have you found any upwind sources that may be contributing to non-attainment?
    Response: In general the SJV's PM2.5 concentrations are not dominated by a single source or facility or even by a cluster of large sources sufficient to impact local air quality to the degree that would necessitate special modeling or analysis (though emissions from wild fires and prescribed fires in other air basins can contribute to PM2.5 levels in the Valley). As with ozone, the particulate concentrations in the Valley are regional in nature, formed by contributions from a variety of sources. Annual average concentrations in the Valley are dominated by ammonium nitrate, which is formed secondarily rather than emitted directly. The limiting precursor for ammonium nitrate is NOx, which is emitted from motor vehicles as well as from industrial and commercial combustion processes. Regional mixing and delayed atmospheric formation of PM from these precursor emissions make it impossible to evaluate the precise contribution of a single facility.

20. **Comment:** Has the Valley's degree of PM2.5 nonattainment been characterized (i.e., serious, etc.)?
    Response: EPA has chosen not to use classifications for areas not attaining the PM2.5 standard.

21. **Comment:** Many dust control measures require watering. We need to be ready for impacts of drought on these measures.
    Response: Dust control is discussed in the plan as future/feasibility studies. Should these studies lead to rule amendments, the amendments would be evaluated under the California Environmental Quality Act (CEQA); potential effects on water resources would be evaluated under the CEQA review.

22. **Comment:** The plan should show how the District plans to bring the Valley into attainment of the 2006 standard.
    Response: The District is targeting both standards. This plan will make major progress in attaining the new standard well ahead of EPA's deadline. The District has incorporated as many control measures as possible at this time.

23. **Comment:** What are the three Fresno PM2.5 monitoring sites? Is the BAM data available? Which site is worst?
    Response: Federal reference method (FRM) monitors are sited in Fresno County at Fresno-1st, Fresno-Winery, and Clovis. Fresno-Winery (located at Fresno Pacific College) has the highest design values by a small margin. Design values calculated for the other two Fresno County monitoring sites are within one

microgram per cubic meter of the Fresno-Winery design value. See Appendix A for air quality data and calculations.

24. **Comment:** How much benefit could there be from revising the fireplace rule?
Response: The District is looking at the possibility of lowering the No Burn threshold to a PM2.5 concentration of 35 µg/m³. This could have a benefit of reducing about 14.8 tons of PM2.5 emissions on a single, Valley-wide no-burn night. As an annual, Valley-wide average, the benefit would be about 0.7 tons per day.

25. **Comment:** The District should not allow people to burn in their fireplaces all the way up to the 35 µg/m³ standard.
Response: Comment noted. This issue will be addressed fully in the upcoming amendments to Rule 4901.

26. **Comment:** Not much is known about PM2.5 and its effects.
Response: A large body of scientific evidence documents the serious health effects of PM2.5. EPA cites a large amount of evidence in its criteria document to show the extent of the serious health effects of PM2.5. See Section 2.2 of the Draft PM2.5 Plan as well as www.epa.gov/oar/particlepollution for more information.

27. **Comment:** Restrictions against wood burning should allow exemptions during power outages in foothill areas lower than 3000 feet. Major electrical transmission line maintenance and transformer work in the winter that caused power outages in foothill homes in areas lower than 3000 feet, and woodburning in many of these residences would provide a back-up heat source that would prevent property damage due to cold temperatures.
Response: See response to Comment 25.

28. **Comment:** Will most recent data on heavy-duty mobile sources be in the Appendix B emission inventory?
Response: The District is using the most recently available emissions data finalized by ARB. Further updates to the mobile source emissions inventory are anticipated to be available with the next release of ARB's on-road motor vehicle emissions model [EMFAC] (possibly in 2009).

29. **Comment:** Are farm tractors important sources of NOx?

Response: As shown in the NOx emissions inventory in Table B-4, in 2010, about 41.7 tons per day (tpd) of farm equipment emissions Valley-wide as an annual average. Of this, about 39.8 tpd are from tractors.

J.6 WRITTEN COMMENTS, DECEMBER 18-19, 2007 PUBLIC WORKSHOP ON THE DRAFT 2008 PM2.5 PLAN

Comment period held through January 9, 2008

Comments were received from the following people and organizations:

California Cotton Ginners and Growers Associations (CCGGA)
International Sustainable Systems Research Center (ISSRC)
Kern Oil and Refining Co. (KOR)
Thomas Menz (Menz)
Nisei Farmers League (Nisei)
Evan Shipp (Shipp)
San Joaquin Refining Co., Inc. & Tricor Refining, LLC (SJR)
Steven Weil (Weil)

Control Measures -

1. **Comment: S-COM-1 and S-COM-2** should not be on the District's control measures list. Boilers, heaters, and steam generators have been controlled to the maximum extent feasible, and the point of diminishing returns has been met. Further controls on this category are not cost effective, and they have not been demonstrated to achieve reductions or to be technologically feasible. As noted in the plan, the proposed control devises have not been used for gaseous or liquid-fired units. The cost per ton of reductions could exceed $300,000. **(KOR, SJR)**
   Response: Those control measures reflect the current rule development projects that were commitments in the *2007 Ozone Plan*. Staff will examine feasibility and cost as part of that rule development project, which is currently underway.

2. **Comment: S-COM-11**, Dryers: Before developing stricter regulations on facilities that use natural gas dryers, it must be shown that products will not be damaged during processing. Low NOx burner manufacturers have stated that the burners have not been tested on all products. New burners have also been reported to use more gas. **(Nisei)**
   Response: Technical limitations of the various control technologies will be examined during the feasibility study for this control measure to determine if a rule development project would lead to additional reductions. During the recent rule making project, the listed concerns were used to set appropriate limits for the dryers used as food dehydrators.

3. **Comment: S-AGR-2**, Conservation Management Practices/CAFOs (Confined Animal Feeding Operations): Lowering CAFO thresholds is a concern, in light of research already conducted that shows that farming dust is more a contributor for PM10, not PM2.5. The proposed research to evaluate PM2.5 controls on agricultural operations will take more than two years. **(Nisei)**
   Response: At this time, that category is not included in the PM2.5 Plan since the emissions from those sources are primarily VOC. This category will be addressed under the *2007 Ozone Plan* for opportunities to control VOC, based on current research projects.

4. **Comment: S-AGR-2**, Conservation Management Practices: Past and present research on CMP activities done through UC Davis, Fresno State, Texas A&M, Washington State University, and the USDA ARS Research Division should be reviewed and evaluated before determining the contribution of CMPs to PM2.5. The Agriculture Industry is interested in meeting with District staff on this topic. **(Nisei)**
   Response: Currently, the CMPs rule targets PM10 reductions, and the District has not yet determined the associated PM2.5 reductions. A feasibility study will help show whether there is a quantifiable PM2.5 benefit and whether there are any CMP options that would optimize PM2.5 reductions. For example, CMPs that reduced field passes reduce both fugitive PM10 from reduced field activity as well as PM2.5 from reduced fuel combustion.

   The District is reviewing all available data to determine the effectiveness and feasibility of conservation management practices in reducing PM2.5 emissions. Although PM2.5 might be a relatively small portion of fugitive dust, the Valley's cumulative fugitive dust levels may still contribute to the Valley's PM2.5 nonattainment. The District would be happy to meet with all interested parties to discuss this issue.

5. **Comment:** Cotton gins and fugitive dust controls for farming operations should not be considered as PM2.5 feasibility studies. There is already ample evidence indicating that fugitive dust is not a significant contributor to PM2.5: Karen Magliano's (ARB) presentation at the District's May 2006 Symposium, CRPAQS (California Regional Particulate Air Quality Study) reports, USDA studies, U.S. EPA documents, and numerous other studies. Extensive documentation was submitted to the District with this comment. This should be acknowledged by the District, and the Plan should be modified accordingly. **(CCGGA)**
   Response: The extensive documentation submitted with this comment did not provide data on measured PM2.5 levels from farming operations. Consequently, the District still believes that a feasibility study is warranted. The submitted

documentation will form an excellent starting point for the study. Also see the response to Comment 4.

6. **Comment: S-AGR-2**, Conservation Management Practices: Amend Rule 4550 to increase the number of required CMP for each applicable CMP category that will provide for a 50% reduction of current levels of PM2.5, by the year 2012. **(ISSRC)**
   Response: Merely increasing the number of required CMPs will not necessarily result in a 50% reduction since some are mutually exclusive or are redundantly controlling the same emissions. Please also refer to the response to Comment 4.

7. **Comment: S-AGR-1**, Open Burning: Amend Rule 4103 to include a requirement that all alternatives to burning biomass that are currently feasible, such as chipping and composting, are thoroughly considered before resorting to burning. Prospective burners must be required to use alternatives to burning for portions of the biomass whenever possible. **(ISSRC)**
   Response: The state-required changes to Rule 4103 will effectively ban open burning by 2010 except where required for disease control or where economic alternatives, such as composting, are not available. Staff will consider those issues as part of implementing this control measure.

8. **Comment: S-COM-1,** Boilers, Steam Generators, and Process Heaters >5 MMBtu/hr: Amend Rule 4306 to require a NOx limit of 5 PPM for units less than 20 MMBtu/hr and 2 PPM for units greater than 20 MMBtu/hr, with a scheduled compliance by the year 2012. **(ISSRC)**
   Response: The rule amendments for this control measure are currently in development. The limits and timetables suggested by the commenter will be considered during the rulemaking project. State law requires the District to consider technological and economical feasibility when developing rules.

9. **Comment: S-COM-2**, Boilers, Steam Generators, and Process Heaters from 2 to 5 MMBtu/hr: Amend Rule 4307 to require a NOx limit of 9 PPM for all units, with a scheduled compliance by the year 2012 or electrification of units by the year 2014. **(ISSRC)**
   Response: Please refer to the response to Comment 8.

10. **Comment: S-COM-3,** Boilers, Steam Generators, and Process Heaters from .075 to 2 MMBtu/hr: Amend Rule 4308 to require a NOx limit of 30 PPM for all units, with scheduled compliance by the year 2012 or electrification of units by

the year 2014. As a minimum, Rule 4308 must be upgraded to BARCT level by making it as stringent as South Coast AQMD Rule 1146.2. **(ISSRC)**
Response: State law requires the District to consider technological and economic feasibility when developing rules. During rule development, staff will consider the suggested control levels and implementation schedules.

11. **Comment: S-COM-4**, Solid-Fuel Boilers, Steam Generators, and Process Heaters: Require baghouses and SCRs (as used in a biomass power plant in Ulm, Germany) on units burning biomass for fuel to meet 40 PPMV at 3% O2 for all units except municipal waste units. Municipal waste units should be required to use baghouses and meet 70 PPMV at 3% O2, which can be attained by using SNCR or SCRs, as done in many units in Germany. **(ISSRC)**
Response: Current Valley solid fuel fired facilities are equipped with SNCR, scrubbers, and/or particulate controls. The German units may represent levels achievable only by the newest facilities and may not be reasonable for add-on controls. Attempting to meet lower NOx limits for one Valley facility has resulted in excessive ammonia slip and increased PM in the form of a detached plume. Staff is committed to reexamining the potential controls for this category and will consider the latest available controls feasible at the time of rule development.

12. **Comment: S-COM-6,** Reciprocating Internal Combustion Engines: At a minimum, upgrade Rule 4702 to BARCT level by making it as stringent as South Coast AQMD Rule 1110.2. **(ISSRC)**
Response: The South Coast rule is based on the wholesale replacement of existing engines with new lean-burn engines or electrical motors. Valley stakeholders have made great strides in moving to electrical motors, where possible, but the limitations of fixed electrical and natural gas supply lines do not allow this for all operations. The current rule reflects technologically and economically available control options, but staff is committed to reexamining this issue in the future to take advantage of future control technologies.

13. **Comment: S-COM-7**, Glass Melting Furnaces: Since SCRs have been used successfully in Europe and Japan and will soon be the control technology for a glass manufacturer in the San Joaquin Valley, these devices are proven technology and should be required for all glass making facilities in the San Joaquin Valley Air Basin. **(ISSRC)**
Response: The rule development project for this control measure is in progress and SCR-level limits are currently proposed, as was discussed in the Plan, page I-31.

14. **Comment: S-COM-11**, Dryers, Ovens, Dehumidifiers, and Other Process Equipment Used in Industrial Processes (excluding glass products production):

This category includes dryers, ovens, and dehumidifiers that are 5 MMBtu/hr and above that are subject to Rule 4309. In ARB's emission inventory used for the *2007 Ozone Plan*, the category also covers smaller units that appear as area sources, whose emissions are estimated using fuel delivery reports (specifically, it is reported as Unspecified Agricultural Processing Losses, with NOx emissions totaling approximately 9 Tons Per Day). Rule 4309 should be expanded to cover these area sources and which should be required to emit no more than 30 PPM at 3% O2---similar to the small boiler rule requirements. In the South Coast AQMD Ozone Plan, CMB-1 addresses these small units and will be required to use low-NOx burners. Units similar to those covered currently under District Rule 4309 have been subject to requirements through RECLAIM and other facilities improvement programs, not through a prohibitory rule. Other permitted units not covered by RECLAIM programs have NOx emission limits, which at the time of permitting was the BACT/LAER standard. **(ISSRC)**

Response: As a feasibility study measure, District staff will be re-examining this category to verify the current emissions inventory estimate and assess control feasibility. "Unspecified Agricultural Processing Losses" cannot be regulated without more information on what type of equipment is generating those emissions. This notation by the ARB is just a way to account for emissions that are too small to otherwise fall into one of the other categories. District staff will reexamine this category and take into account any controls that the SCAQMD may develop for these units on the schedule proposed in the plan.

15. **Comment: S-GOV-1,** Prescribed Burning and Hazard Reduction Burning: Amend Rule 4106, Section 5.2.3.11 to require a more vigorous evaluation of alternatives to burning. The current provision stating that those that have met NEPA and CEQA requirements are considered to have satisfied this requirement is inadequate, since it does not reflect up-to-date conditions and technological advancements for alternatives to burning. Although burning may not be avoidable for certain circumstances, it should not preclude using alternatives for certain portions of the biomass that can be handled by alternative methods, such as chipping and composting. **(ISSRC)**

    Response: The Feasibility Study for this category is underway and will examine alternatives, including those currently used to minimize burning. It is important to note that such burns are controlled by the District's Smoke Management System and are not allowed when air quality is forecast to be unhealthy. It is also important to note that fire is a natural part of the wilderness ecology.

16. **Comment: S-IND-4,** Fugitive PM10 Prohibitions: Consider subjecting on-field agricultural operations to prohibitory regulation, specifically requiring curtailment of activities during wind conditions conducive to entrainment of dust. Although the portion of PM2.5 in agricultural dust is only around 10%, the months of September, October, November, and early December show above average readings of PM in all size ranges and may contribute significantly to violations of

the 24-hour PM2.5 standard. If on-field agricultural operations are not done during windy conditions, as part of an operation's Conservation Management Practices, then the operation can be considered exempt from this requirement of curtailment. **(ISSRC)**
Response: On-field operations are addressed in Rule 4550. Farmers understand that it is not in their best interest to conduct such operations during high wind conditions, which can accelerate erosion of valuable topsoil, degrade farm equipment, and create unsafe working conditions. This practice is considered to be so universal that no credit could be taken for it. Also refer to the response to Comment 4 for further information.

17. **Comment:** Facility Modernization Program: Similar to the South Coast AQMD's proposed measure, identified in the 2007 AQMP as MCS-1, require facilities to modernize permitted equipments and processes, based on pre-specified equipment useful life, as determined during rule making. In addition, facilities would be required to use super-compliant VOC materials. The objective of such a measure is to upgrade existing equipment not subjected to NSR's BACT requirements by retrofitting with BACT technology or to completely replace existing equipment with new equipment equipped with the latest BACT technology. Equipment and processes that are not beyond the pre-specified equipment useful life will remain subject to existing prohibitory rules. **(ISSRC)**
Response: District BARCT rules are essentially identical to South Coast's "modernization program." The District requires existing equipment to be either retrofit with add-on controls or replaced with lower emitting equipment to meet BACT levels.

18. **Comment:** Rule 4692, Commercial Charbroiling: Ban all residential charcoal or wood fueled outdoor barbeques, or limit them to days that would meet the criteria for an ag burn. At the very least, ban use and sale of kerosene lighter fluid at all times. Electric coil starters work perfectly well. **(Menz)**
Response: Reducing emissions from residential sources of pollution requires careful consideration of the public's behavior patterns and the public's willingness to change behavior. Swift, outright bans on widespread public activities are difficult to engage, are hard to equitably enforce, and can result in long-lasting negative impacts and distrust. A historically more successful approach is to raise the public's awareness of the problem, and to work steadily for a gradual change in the public's behavior. A well-designed and considerate regulation, coming after a meaningful public debate, can result in significant and enduring public benefits. District Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) is an excellent example of this kind of successful process. The District's Healthy Air Living program is designed to spur comprehensive lifestyle changes and conversations by providing a practical demonstration that change is easier than anticipated and that the changes can result in multiple payoffs.

Residential barbecues will be addressed significantly in the District's Healthy Air Living program.

19. **Comment:** Leaf Blowers/Fugitive Dust: Make it illegal for anyone to raise visible dust that leaves one property and travels to another property or public thoroughfare. **(Menz)**
Response: As required by state law, measures that are not necessary to meet the requirements of the federal Clean Air Act are not to be included in a State Implementation Plan. The District funded a study of leaf blowers in 2005, and the study showed that the Valley-wide PM2.5 emissions inventory for leaf blowers is 0.26 tpd (whereas the total PM2.5 inventory in 2005 for the Valley was about 103 tpd). Although controlling leaf blowers may be inappropriate for the Valley as a whole at this time in terms of bringing the Valley into attainment of the PM2.5 standards, it may be appropriate for regulation at the city or county level.

20. **Comment:** Residential Wood Burning: Fines for those who violate residential wood burning prohibitions should be increased to $1000 for the first offense. In addition, offender's flues should be filled with urethane foam. **(Menz)**
Response: The District's fines are set to bring the offender into compliance.

21. **Comment:** Residential Wood Burning: The residential wood combustion prohibitions should be based on meteorological criteria that would cause an exceedance of the NAAQS if residential wood combustion were allowed. The prohibited declaration is the largest single action the District can take to protect the NAAQS and public health. **(Shipp, ISSRC)**
Response: The District will consider this comment in the rule amendments for Rule 4901.

22. **Comment:** Residential Wood Burning: Lower the threshold for declaring mandatory curtailment. **(ISSRC)** The District should quantify how much a total ban on urban residential wood burning would accomplish. At the very least, prohibit burning when the PM2.5 concentrations are forecast to be at or above 35 µg/m³. **(Menz)** Restricting all woodburning could reduce 1 tpd of NOx and 8 tpd of PM2.5 at virtually no cost. **(KOR, SJR)**
Response: The District is proposing to lower the threshold for declaring mandatory curtailment from 65 µg/m³ to 35 µg/m³, which could reduce 1.4 tpd of emissions as averaged over a winter season (October – March), or about 14.8 tons of reductions on any Valley-wide no-burn night.

Incentive programs -

23. Comment: The District and the Agricultural Industry must develop a truck trade down program to replace trucks built prior to 1996 to help meet the need of both agriculture (which cannot pass on increased operating costs) and regulations (such as ARB's Draft Heavy-Duty Truck Rule). Many farmers' on-road vehicles are very low mileage, special designed/build, and used in a limited capacity. (**Nisei)**

Response: The District has held public workshops and meetings with industry to discuss initial concepts for a truck trade down program. This District will take into consideration the request to replace trucks built prior to 1996. Please sign up for the District's list serv at http://www.valleyair.org/lists/list.htm to ensure you receive notices regarding meetings and new program development.

24. Comment: Neither the District or the Agriculture Industry has received any SIP credit for the emissions reductions achieved by EQIP funded inventive programs, such as those focused on conservation tillage programs; oiling, graveling, and other dust suppressing agents on unpaved roads; reduction of agricultural burning through chipping; water management, dust suppression and manure management on livestock facilities; and engine replacements. These and future incentive reductions should be credited. (**Nisei)**

Response: As discussed in Chapter 7 of the *2007 Ozone Plan*, the District has embarked on a major new effort to ensure SIP creditability for incentive-based emission reductions for incentive programs administered by the District. As part of adoption of the *2007 Ozone Plan*, the District Governing Board also adopted a separate resolution describing how the District's incentive programs would be operated in the future to ensure SIP creditability of emission reductions. The elements of this resolution were developed with the U.S. Environmental Protection Agency over the course of a year-long pilot project aimed at identifying how an incentive program would need to be operated in order to ensure SIP creditability of emission reductions from the program. The District is currently implementing the items in the resolution and hopes to start seeking SIP credit for incentive-based reductions after 2009. Programs such as EQIP, which are operated and administered outside of the District, would need to meet the same operational criteria identified in the resolution referenced above, such that these programs then would be functional equivalents of the District's SIP creditable incentive program. If this equivalency was established, then reductions from incentive programs outside of the District would also be SIP creditable.

25. **Comment:** The District should take South Coast's proactive approach to promote and accelerate the installation of mobile source diesel particulate filters. An AP news article reported that "diesel exhaust alone accounts for 84% of the region's [South Coast] cancer risk," which is undoubtedly similar in the San Joaquin Valley. The District's PM2.5 Plan should include specific programmatic initiatives, especially outreach, education and facilitation, to leverage and amplify the effectiveness of ARB programs. "Off-the-shelf" diesel particulate filters for

trucks provide up to 90% of potential PM reductions at a fraction of the cost of truck replacement. The PM2.5 Plan should reflect the role the District could play to facilitate utilization of the ARB's incentives (and thereby accelerate the corresponding health benefits) in the Valley. **(Weil)**
Response: South Coast's diesel emissions (such as those from ports) are more likely to be located near population centers. More analysis would be needed to determine the cancer risk from diesel exhaust in the Valley.

The District has been proactive promoting and accelerating the installation of mobile source diesel particulate filters. The District paid over $2.2 million in incentives for mobile source diesel particulate filters from 2003-2007. Over 150 particulate filters were installed due to the District's efforts. However, the District believes that it is important to also fund devices that reduce both NOx and PM emissions because NOx emission reductions assist the District in attaining both the federal and state ambient air quality standards for both particulate matter and ozone.

Contingency measures –

26. **Comment:** In light of the uncertainties of the incomplete modeling used for the draft plan, as well as uncertainties in the emissions inventory, it is paramount to adequately document contingency measures in the event that new information indicates it is more difficult to meet attainment. The contingency measures discussion should consider the following: effectiveness of these contingency measures to expeditiously bring about the attainment of the 1997 PM2.5 standards; the timing of implementation, especially in the event that the RFP demonstrations are not met; the duration of these contingency measures; and an analysis of who will be socioeconomically disadvantaged or affected by these contingency measures. Several reasonable contingency measures that should be addressed in the plan include:
    - Prohibit the operation of the highest NOx-emitting equipments such as used in agriculture, construction, and other off-road applications on days forecasted to be high PM days.
    - Prohibit the operation of lawn and garden equipment on days forecasted to be high PM days.
    - Prohibit the operation of fireplaces and other wood-burning devices on days forecasted to cause violations of the higher 24-hour PM2.5 standard of 35 µg/m³.
    - Mandatory participation of all employers in alternative transportation programs during the PM season.
    - Mandatory 50% reduction of NOx, PM2.5, and SOx by 2017 from all stationary sources. **(ISSRC)**

    Response: The District recognizes the contingency measure requirement, as outlined in Chapter 9. The District is already proposing wood burning prohibitions at 35 µg/m³ and a mandatory alternative transportation program for

employers, so these cannot also serve as contingencies. Prohibiting certain activities on "high PM" days is problematic under an annual standard (mathematically, it is possible to have many days over the level of the standard yet still meet the standard when an entire year is averaged). Furthermore, lawn equipment and construction equipment tend to be used more in the summer while the PM levels are typically highest in the winter.

A mandatory 50% reduction of NOx, PM2.5, and SOx by 2017 from all stationary sources is inappropriate for several reasons. Stationary sources comprise a relatively small portion of the inventory (about 26% of the 2017 NOx inventory and 18% of the PM2.5 inventory). The Valley's stationary sources are already heavily regulated and have achieved significant reductions. In cases where foreseeable technology can achieve additional stationary source reductions, the District is already proposing additional control measures. Requiring a 50% reduction for all stationary sources without identifying proven technologies or methods for achieving those reductions would be unlikely to yield the satisfactory socioeconomic analyses and enforceability necessary for fully adopted control measures. As stipulated in the adopted *2007 Ozone Plan*, the District is developing an Employer Based Trip Reduction Rule. However, the rule would not be a contingency measure because emissions reductions would start taking place after rule implementation and would not need to wait until the Valley failed to meet an RFP or attainment milestone.

Please refer to Chapter 9 in the 2nd Draft PM2.5 Plan for the District's contingency measures.

Emissions Inventory –

27. **Comment:** In mid-2007, new emissions data on heavy-duty vehicles has been released that significantly changes the inventory. This data should be incorporated into the attainment demonstration. **(ISSRC)**
Response: The California Air Resources Board (ARB), as part of a process to develop an emissions control rule for in-use heavy duty diesel trucks, has been working on a revised mobile source emissions inventory that uses new techniques to estimate emissions from trucks statewide. Although ARB has "released" some of these emission estimates at workshops for this rule, they have not yet published a peer-reviewed, fully-vetted emissions inventory, incorporating these new data, for use in a federal air quality plan prepared under the federal Clean Air Act (CAA). Furthermore, ARB has not yet submitted these new, revised emissions to EPA for approval for use in State Implementation Plans (SIPs), nor has EPA approved these new, revised emission estimates for use in SIPs or for use in transportation conformity determinations. On January 18, 2008, EPA approved the State of California's latest on road motor vehicle emissions model EMFAC2007 (73 *FR* 3464). In its approval notice, EPA notes that "CAA section 172(c)(3) and 40 CFR 51.112(a)(1) require that SIP inventories

be based on the most current, accurate, and applicable models that are available at the time the SIP is developed. CAA section 176(c)(1) requires that the emissions estimates be used in conformity analyses. EPA approves models that fulfill these requirements. Under 40CFR 93.111(a), EPA must approve new versions of EMFAC for SIP purposes before they can be used in transportation conformity analyses." Section 176(c) of the CAA requires transportation conformity to ensure that federally-supported transportation activities are consistent with (conform to) the purpose of the SIP. At present, the Federal Highway Administration has directed California transportation planning agencies to effectively stop using the previous version of EMFAC (EMFAC2002) and to start using the newest version of EMFAC (EMFAC2007) for all conformity determinations started after August 1, 2007[1] (73 FR 3465). And EPA has directed California transportation planning agencies to start using EMFAC2007 for analyses started on or after April 18, 2008. No other federally-approved emissions model exists at this time for California for use in SIPs or conformity determinations; consequently, the new, preliminary data "released" by ARB in mid-2007 can not be used in the *2008 PM2.5 Plan*.

28. **Comment:** There are several source categories where the emissions inventory is documented to be unknown, or highly uncertain. These categories could have a significant impact on the attainment strategy. An update of the inventory for the following sources should be completed over the next several months. Upon the completion of the inventory updates, attainment analysis and strategy should be re-evaluated and the plan updated. The sources recommended to be updated are:

    - Small Spark-Ignited Engines and Agricultural Spark Ignited Engines (S-COM-6A1)
      The current inventory does not provide any estimate from this source. To obtain an estimate of this inventory, a survey of businesses and industries is needed to accurately determine the total number of small engines and to calculate their emissions, and a survey of agricultural operation sources is needed to accurately determine the total number of spark-ignited engines.

    - Fugitive PM10 Prohibitions (S-IND-10)
      The current inventory does not provide any PM2.5 emissions estimate from these sources. District staff recommends that a Feasibility Study, to determine PM2.5 emission factors and appropriate PM2.5 controls, be completed by 2009. It is recommended that this be conducted immediately, since the emissions from this source may be significant.

    - Flares (S-IND-21)

[1] On February 1, 2007 the Federal Highway Administration directed California transportation planning agencies to use more recent vehicle activity data consistent with latest planning assumptions for conformity determinations requiring a new regional emissions analysis and begun after August 1, 2007. Since the vehicle activity data are embedded in EMFAC, this was a de facto directive to use EMFAC 2007 after August 1, 2007.

Although there is an estimate of the emissions from this source, District staff indicates that current NOx emissions appears to be low and may have only accounted for the emissions generated by the gas fuel used by the flare pilot flame. It is recommended that an investigation on the emissions generated during emergency flaring events be conducted in the next few months and updated in the inventory.

- Farm Equipment (M-IND-1)

  The farm equipment category is a very large source of NOx emissions, and is not well understood in terms of the activity rates by tractor types and times of day/year from the current farm tractor inventory. It is recommended that District staff over the next few months conduct a study to estimate these items, update the inventory, and conduct cost analysis for control options, including retrofit and replacement, and episodic controls. **(ISSRC)**

Response: As discussed in Appendix B, emissions inventories undergo continuous updating and changing to improve accuracy, respond to new scientific and engineering developments, and to address changes to laws and regulations. A snapshot of the inventory is used to develop air quality plans. Future plans and midcourse reviews will provide additional opportunities to incorporate new emissions inventories into the attainment evaluation process.

(S-COM-6A1) The Small Spark-Ignited Engines and the Agricultural Spark Ignited Engines are currently being reported in the area source inventory. The area source emissions estimates for natural gas-fired industrial and commercial equipment were updated last year (EICs 050-040-0110-0000 and 060-995-0110-0000). Area source estimates for agricultural spark ignited engines and commercial and industrial engines using other fuel types are in the process of being updated (EICs 050-040-0012-0000, 050-995-0120-0000, 052-042-0110-0000, 060-995-0120-0000).

(S-IND-10) The District is already reviewing currently available data.

(S-IND-21) The District appreciates that this issue in the draft plan has been noted. After re-examination, it has been determined that all flares within the Valley are required to report the total amount of gas flared to the District's emissions inventory program. The District will continue to work with permit holders to insure that emissions from both the pilot gas and flaring events are reported and included in the inventory.

(M-IND-1) The California Air Resources Board is in the process of updating the emissions inventory for this category, and expects to release a revised estimate by December 31, 2008. Although the District has no regulatory authority over these sources, we will continue to pursue opportunities for emissions reductions through our grants and incentives programs.

Modeling and Meteorology –

29. **Comment**: The plan needs complete regional photochemical modeling, as required by EPA. Without this modeling, the NOx based approach is an over generalization of what it takes to get to attainment. **(ISSRC, Shipp)**
Response: ARB is preparing the regional modeling evaluation in accordance with EPA guidance. The attainment demonstration is not meant to be solely based on the regional model, but on a weight of evidence of all supporting technical assessments and other types of modeling. The PM2.5 Modeling Protocol identifies the contributing evaluations. Two prior regional modeling evaluations conducted for the prior PM10 plans evaluated small particle formation of nitrates and sulfates and consistently identify NOx reduction as the essential pathway to particulate reduction in the Valley. Due to the conservative approach provided by receptor analysis linear methods, the regional model may provide a lower estimate of reductions needed to achieve attainment. However, the model should not be expected to alter the finding that nitrates are the key portion of PM2.5 in the Valley, as such a result would be in conflict with observed speciated samples collected at monitoring sites as well as every other technical evaluation and scientific air quality study conducted in the Valley.

30. **Comment:** The role of VOCs and ammonia in PM2.5 formation has not been adequately addressed. **(ISSRC)**
Response: The role of VOC and ammonia in PM2.5 formation has been evaluated as a component of the *2003 PM10 Plan* and through scientific third party evaluations performed as part of the CRPAQS project. Findings from these studies and evaluations are documented in the Modeling Chapter of the PM2.5 Plan, the Modeling Protocol for the Plan, Appendix E to the Plan, and a worksheet within the Receptor Modeling analysis (see Control Effectiveness). These findings represent the results of two regional modeling evaluations as well as a variety of scientific research. All of these materials are available to the public on the District web site, and CRPAQS study documents are available on the ARB web site.

31. **Comment:** Since the plan lacks photochemical modeling, there is no model evaluation as specified in the SJV protocol and EPA guidelines. **(Shipp)**
Response: The protocol identifies a series of technical evaluations that contribute to the weight of evidence determination of attainment. Results of ARB's photochemical modeling are expected for the next draft of the plan. Receptor modeling based on both CMB and PMF models has already been completed. The modeling protocol also identifies how the receptor analysis meets or exceeds the EPA guidance requirements for the speciated modeled attainment test.

32. **Comment:** The plan does not address meteorological representativeness. The years the plan is based on (2004-2006) have had better meteorology than past years. **(ISSRC, Shipp)**
Response: The District performed an examination of meteorological trends in the San Joaquin Valley. Statistics for 100 year and 20 year meteorological databases were reviewed. These statistics did not indicate that meteorology for 2004-2006 was abnormal.

    Statistical analysis was performed to determine the relationship between meteorological indicators and PM2.5 concentrations. The results of these analyses indicate that the relationship between examined meteorological indicators and PM2.5 is poorly correlated and not statistically significant. It would be inappropriate to adjust particulate data based on poorly correlated indicators.

    In addition, PM2.5 data has been collected for a relatively short time frame, resulting in a database that does not have a statistically adequate number of samples for a long-term trend comparison between PM 2.5 and meteorology.

    Ozone data has been collected for a much longer time period than PM2.5. The EPA presents meteorological adjusted ozone analyses for Bakersfield and Fresno at the following website:
    http://www.epa.gov/air/airtrends/weather/region09.pdf#page=4

    The EPA analyses for Bakersfield and Fresno indicates that there is very little difference between actual data and trend-adjusted data for the period 2004-2006. This contradicts the comment that 2004-2006 had 'better' meteorology than past years. The District welcomes information developed by the commenter that addresses this issue.

33. **Comment:** The more recent high PM2.5 concentrations in 2007 may show that the San Joaquin Valley Air Basin has not met the 1997 24-hour PM2.5 standard, as claimed in the “draft” plan. **(ISSRC, Shipp)**
Response: Air monitoring data collected in 2007 is not available for reliable evaluation until standard quality control review (performed annually) is complete. In addition, EPA specified the years of data expected to be used for this analysis and did not include 2007. Despite those issues that prevent an immediate assessment of 2007 data, the District has reviewed available data prior to completion of the quality assurance. It is possible that 2007 data will cause design values to exceed the rescinded 1997 24-hour PM2.5 standard at two sites, and possibly at a third site that collects filter samples (for which preliminary values are not available). However, the District’s preliminary evaluation also indicates that even without control measures from the adopted *2007 Ozone Plan* or the draft PM2.5 Plan, the forecast 2014 emissions contain sufficient reductions to attain the daily standard. Because additional reductions are needed to attain the annual standard, the annual standard will set the carrying capacity for Valley

emissions, and the higher design values caused by 2007 monitoring data will not require a revision to the control strategy or identification of additional required reductions. A more detailed discussion of this finding will be provided in the next draft of the plan.

34. **Comment:** The plan should include meteorologically adjusted trends analyses to determine whether there is a statistical significance to the recent, lower PM2.5 concentrations. The District should provide meteorologically adjusted averages for both annual and winter PM2.5 seasons and the number of exceedances of the 24 Hour NAAQS per year. **(Shipp)**
Response: Please refer to the response to Comment 32.

35. **Comment:** The plan does not adequately address the effect of controlling for the annual standard on the 24-Hour NAAQS. Although numerous exceedances of the 65 µg/m³ 24-Hour PM 2.5 NAAQS have occurred during the last five years, the plan dismisses these. EPA has not officially designated the Valley as attainment for the 65 µg/m³ NAAQS. Also, the District has not proven that major weather stagnation events will not cause more NAAQS violations. **(Shipp)**
Response: (See also the response to Comment 33) The daily values have not been dismissed. The amount of reductions required to comply with the 65 µg/m³ standard is significantly less than is required to achieve the annual standard even if available uncertified 2007 monitoring data is considered.

Data analysis indicates that recent PM2.5 levels associated with stagnation events are not as high as concentrations recorded in the past when stagnation events of similar duration occurred. This indicates that particulate levels have been responsive to the prior implementation of reductions. As emissions continue to decline in future years, it is appropriate to conclude that the stagnation events are appropriately addressed by the control strategy. As previously discussed, the annual standard requires more reductions to achieve compliance and sets the timeline for expected attainment.

36. **Comment:** Weight of evidence using trends and data analysis for both the 24-hour and annual standard needs to be addressed in the plan. Although the plan stated that there is not enough data to do trends analyses, fine particulate data does exist back many years, and this analysis needs to be incorporated into the plan. There is enough data at the Fresno-1st Street site to look at trends for several years of nitrate and carbon data. **(Shipp)**
Response: Speciated data has only been collected since 2001 in Fresno and since 2002 in Bakersfield, Modesto and Visalia. Speciated data (which subdivides PM into component parts, such as carbon, nitrate, sulfate or geologic material) links changes in particulate mass levels to variations in the contributing sources. Since only a few years of certified data are available (2002, 2003,

2004, 2005 and 2006), and since SIPs use three-year averages to help control for meteorological variation, only three data points (2002-2004, 2003-2005, and 2004-2006) are available for trends analysis. The extent of the data record is not comparable to the historical data available to evaluate ozone trends. South Coast used dichotomous sampler data to establish trend evaluation; however, this type of sampler was withdrawn from operation in the Valley several years ago and is not available for this purpose for the Valley.

Other –

37. **Comment:** (Regarding information in page E-32, section 3.c) The District and ARB need to work with the Agriculture Industry to identify a viable alternative to burning agricultural waste besides biomass facilities. In 2007, biomass facilities couldn't process all of the agricultural waste, due to unforeseen circumstances. **(Nisei)**
Response: The District understands that the discontinuation of open burning is a major financial concern to several sectors within the agricultural industry. The District is committed to continuing to explore and encourage alternative practices in partnership with the industry and ARB. It is noted that SB 705 prohibits the burning of surface harvested orchard prunings and vineyard removals commencing June 1, 2010. The District will work with agricultural stakeholders to investigate and develop non-open burning alternatives well in advance of the 2010 deadline.

38. **Comment:** The District used ARB reductions for 2014 that came from ARB's Revised Proposed State Strategy for California's 2007 SIP, April 26, 2007, page 63. The more recent adopted September 27th state strategy should be used, addressing the new commitments. **(ISSRC)**
Response: The September 27th state strategy only included updated reductions for 2017, so 2014 reductions must come from the April 26, 2007 version of the state SIP.

39. **Comment:** Please explain the basis for assuming that ARB's reductions (line 8, Table 9-1) follows a linear progression. An appropriate prorating of ARB emissions reductions, documenting compliance schedules and rulemaking documents should be followed for the new commitments. **(ISSRC)**
Response: The District used a linear progression of ARB reductions as an initial, draft assessment. ARB has thus for committed to only 2014 reductions beginning in 2014 thus far. Future versions of the plan will reflect ARB commitments as opposed to linear prorating.

40. **Comment:** Please explain the statement that efforts done for this plan will assist in the attainment of the more stringent future standard. If facilities comply with requirements now, then are asked again to change to more effective controls, won't this increase the compliance cost for these facilities over the long term? **(ISSRC)**
Response: The District is proposing the most effective, feasible controls possible, based on current technology. As future versions of the plan will show, the reductions needed to bring the Valley into attainment of the 15 µg/m³ annual standard will also help bring the Valley much closer to the 35 µg/m³ 24-hour standard as set in 2006. Also, the District is proposing to set the Wood burning curtailment to the level of the 2006 standard.

41. **Comment:** Page 3-29 of the December 4, 2007 draft of the *2008 PM2.5 Plan* states:
"*As a result, a simplified modeling exercise was conducted by ARB to help estimate the Valley's carrying capacity for PM2.5. Evaluation of the San Joaquin Valley ozone control strategy to attain the federal 8-hr ozone standard determined that the ozone plan include NOx emissions reductions that are close to what is needed for attainment of the 1997 PM2.5 standards by the maximum possible statutory attainment date of April 5, 2015. Based on simplified modeling exercises performed at the time the ozone plan was completed, the ozone control strategy was determined to have a design that would provide most – if not all - of the reductions needed to attain the PM2.5 annual standard."*
Based on Table 9-1, this assertion is highly flawed, since attainment of the 1997 PM2.5 standards was only made possible by inventory adjustments of approximately 40 TPD of NOx (Line 3). It should be noted that this adjustment was discovered by ISSRC after the 2007 Ozone Plan was approved by the District and ARB governing boards. The quoted statements show that District planning efforts did not examine possibilities for the earlier attainment of the 1997 PM2.5 standards. It is an admission that planning for the 1997 PM2.5 standard was not done for the purpose of meeting the 2010 deadline. **(ISSRC)**
Response: The inventory adjustments are based on based thorough, periodic reviews of emissions inventory methodologies. These adjustments were also incorporated in the modeling (which sets the targets listed in Table 9-1), and the adjustments occur in past as well as future years. Also, future drafts of the plan will incorporate these adjustments into the baseline inventories, so these off-line adjustment tables and references will be removed.

Although 2010 is the initial attainment deadline, EPA allows up to a five-year extension. As shown in Table 9-1, the District is examining the possibility of attainment in every possible attainment year. As the commenter notes in another comment, part of the challenge in demonstrating attainment before 2014 is the need for commitments for ARB reductions before 2014. The District will continue

to consider the earliest attainment possible with updated reductions and attainment targets.

42. **Comment:** The District should examine the possibility of earlier attainment of the 1997 PM2.5 standard by considering the control measure comments. A 2013 attainment year (through additional NOx reductions from District, State, and federal sources, in combination with the PM2.5 and SOx reductions) should be examined thoroughly. **(ISSRC)**
Response: The District will continue to consider the earliest attainment possible with updated reductions and attainment targets.

43. **Comment:** The plan has very complex topics that require adequate review time by qualified experts. There should be a 30-day comment period once the release of a complete draft document is available. **(ISSRC)**
Response: There will be additional opportunities for public comment. There will be a brief public comment period coinciding with a second round of workshops. This will be followed by a final 30-day comment period and a public hearing.

44. **Comment**: The plan should address the length of PM2.5 episodes in the SJV and their effect on public health. **(Shipp)**
Response: Bringing the Valley into attainment of the primary federal PM2.5 standards will protect public health. EPA's health-based standards are based on long term (i.e., annual) and short term (i.e., 24-hour) average exposure as opposed to intermediate durations like episodes.

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