January 22nd, 2019

Ms. Mary Nichols
Chair, California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: San Joaquin Valley Integrated PM2.5 Plan

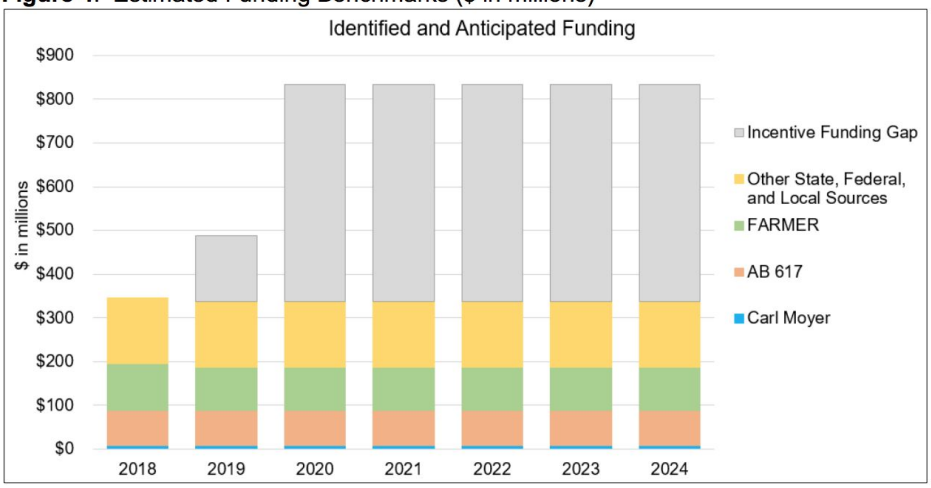
Chair Nichols and Board Members,

The California Air Resources Board (CARB) and the San Joaquin Valley Air Pollution Control District (Valley Air District or District) have made significant improvements to the San Joaquin Valley plan for attainment of multiple fine particulate matter (PM2.5) standards (PM2.5 Plan). These improvements include more stringent residential wood-burning and charbroiling rules, a new agricultural equipment rule, and a more robust public engagement process. However, timely attainment of PM2.5 standards relies on a host of uncontrollable variables, such as action from the California State Legislature and the federal Environmental Protection Agency. Furthermore, major sources of pollution are left unaddressed in the Plan – such as direct PM2.5 from oil and gas facilities and agricultural burning, and ammonia. CVAQ and its partners urge the Board to adopt the proposed Plan, but direct staff to conduct more oversight to find future emission reduction opportunities in the event the Plan falls short of expectations.

I. Significant Uncertainties

The largest contingency upon which the plan relies is the hope that an additional four billion dollars will be allocated and properly invested to achieve the voluntary emission reductions necessary for attainment (see Figure 4 below). Dollars needed are well in excess of current or prospectively scheduled future appropriations. And unfortunately, because Greenhouse Gas Reduction Funds are expected to be in shorter supply in fiscal year 2019-20, CA Governor Newsom's budget proposal already cuts funding for heavy-duty vehicles and agricultural diesel upgrades: clean trucks, buses and freight equipment would decline from the already-inadequate $180 million in 2018-19 to $132 in 2019-20, and agricultural diesel funding would go down from $132 million to $25 million.

Figure 4. Estimated Funding Benchmarks ($ in millions)



Source: CARB Staff Report: Review of the San Joaquin Valley 2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards (December, 2018)

A critical 10% of reductions necessary for timely attainment is reliant on these unsecured investments. While CVAQ and partners understand that 90% of mobile-source emission reductions rely on existing "phase-out" regulations, the majority of those regulatory measures were originally put forth as part of CARB's 2016 State Implementation Plan (SIP) for the 8-hour ozone standard—and thus are scheduled for full implementation along a 2031 timeline. Unlike the ozone attainment timeline, the state is obligated to reach attainment with the multiple PM2.5 standards much sooner (between 2020 and 2025). A large proportion of the state's additional contributions to the PM2.5 plan is made through incentivizing earlier equipment turnover prior to a number of the regulatory actions from the 2016 SIP. Thus, to meet the earlier timeline, CARB's PM2.5 plan relies heavily on the 10% of reductions that comes from roughly $5 billion worth of incentives, for which less than $1 billion has been identified. In other words, the largely unfunded 10% worth of reductions is the lever CARB is using to speed up attainment of PM standards by the applicable dates.

Other contingencies the Plan relies on include the federal government committing to a new locomotive standard that they have not publicly agreed to, an assumption that the general

public will comply 100% with new wood-burning rules, and the assumption that existing pollution-control systems, such as the ERC system, are working as intended and will guard against increases in pollution over time. Overall, the plan relies on many scenarios that are improbable.

To guard against these uncertainties, CARB committed to emission reductions "in aggregate." On page 4-29 of the Plan, CARB staff proposes:

> *"to commit to achieve, in aggregate, 32 tons per day (tpd) of NOx emission reductions and 1 tpd of PM2.5 emission reductions [...] if a particular measure does not get its expected emission reductions, the State is still committed to achieving the total aggregate emission reductions [...] For example, if a federal heavy-duty low-NOx engine standard is not established, CARB will look to achieve the necessary reductions from other source categories, such as stationary sources."*

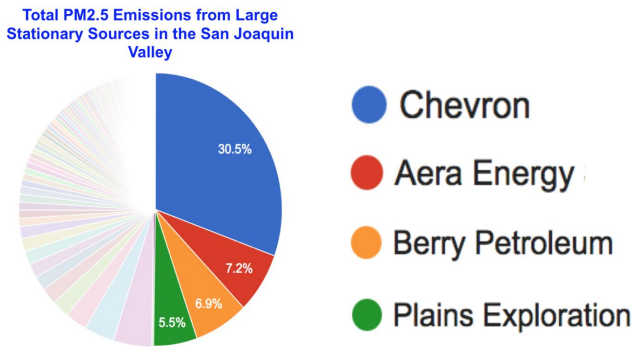
The legality of emission reductions in aggregate, a form of "black-box planning," is questionable for PM2.5 plans, but not something this letter hopes to address. Rather, we seek to find solutions to the problem at hand. If CARB will look to "other source categories, such as stationary sources," we believe CARB needs start looking now.

II. Potential Solutions

CVAQ and partners outline four oversight opportunities available to the Board that will prepare the agency to take action if and when it is needed. These include reviewing the Valley's largest stationary sources of PM2.5 to find potential opportunities for emission reductions, auditing the San Joaquin Valley's ERC banking system, expediting a review of the Valley's agricultural burning program, and identifying ammonia-reduction strategies.

A. Review of Largest Stationary-Source Polluters

`Oil and gas facilities are the largest stationary sources of direct PM2.5 in the San Joaquin Valley, and nothing in the proposed Plan addresses direct PM from this source category. Just four corporations - Chevron, Area Energy, Berry Petroleum, and Plains Exploration - account for half of all PM2.5 emissions from large stationary sources (CARB Air Pollution Mapping Tool, 2016). That is more direct PM2.5 than is produced by all passenger vehicles and light and medium-duty trucks combined (Emissions Inventory, 2015). Chevron alone produced



560 tons of direct PM2.5 in 2016 - more than was produced by all trains and aircraft combined. There may be opportunities for reductions at these facilities that could result in significant improvements for air quality, but they are not currently known.

To add insult to injury, pollution from the oil and gas industry is expected to worsen. Kern county expects more than 72,000 new wells and associated infrastructure over the next 25 years (Kern County Oil and Gas Ordinance, 2016). This amounts to approximately 780,000 new tons of air pollution through 2035. At such high levels, this projected expansion will produce the lion's share of all air pollution emitted within Kern County by 2035, including 40 percent of all PM2.5 emissions and 70 percent of all nitrogen oxide (NOx) emissions county-wide (Arvin Petitioners' Opening Merits Brief, 2016). Even with mitigation, expansion like this will cause a significant, cumulative increase in air pollution.

CARB Board Members should direct staff to conduct a thorough review of the largest stationary sources of direct PM2.5 in the San Joaquin Valley and report back to the Board on any uncovered opportunities for reductions. Furthermore, CARB should investigate the Emission Reduction Credit system often utilized by the oil and gas industry to expand operations.

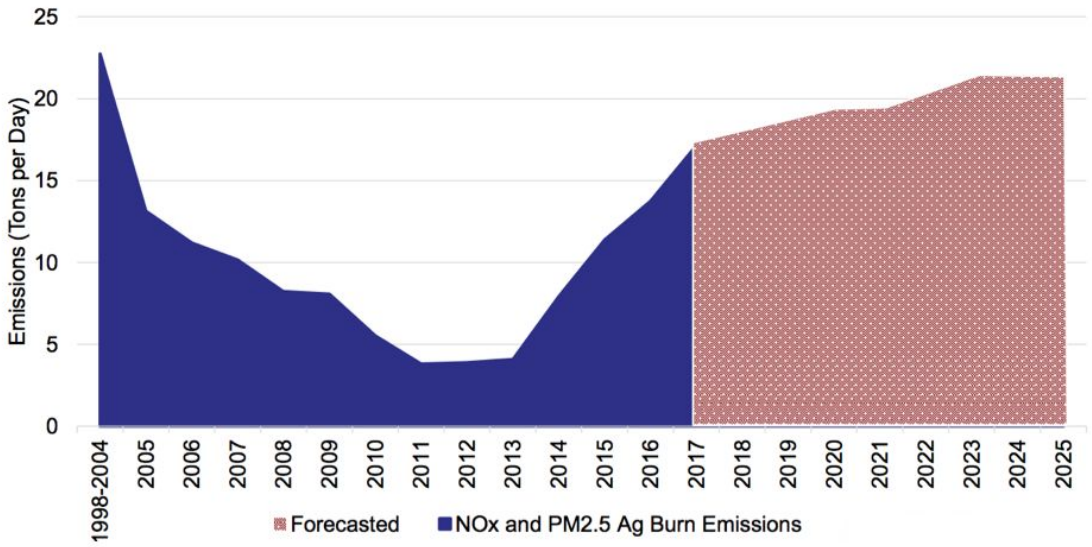
B. Audit of Emission Reduction Credits

In the late 1970s, emission reduction credit (ERC) programs emerged from federal Clean Air Act as a means to allow for economic growth without increasing overall pollution levels. ERCs are credits companies can buy or obtain that represent emission reductions in excess of what is required by law. There have been concerns in the San Joaquin Valley that the system is not working at intended, and is potentially allowing for pollution increases that go unaccounted for in modeling used to create SIPs. A 30-page report released by Earthworks in late 2018, "*Undeserved Credit: Why emissions banking in California's San Joaquin Valley puts air quality at risk,*" confirmed some of these suspicions. The report found that approximately ⅓ of the emission reduction credits in the Air District's volatile organic compounds (VOC) bank and ½ of the credits in their carbon dioxide and carbon dioxide equivalents (CO2e) bank appear to be invalid. The report further concludes that a review of even more certificates and their relationships would likely raise validity questions for an even larger proportion of credits in the District's many banks. If credits are invalid, current permits that rely on them will result in more pollution than presumed, and thus the District and the State will potentially not meet pollution reduction and climate goals as predicted. In a letter dated January 9th, 2019, CVAQ and a host of environmental justice organizations asked CARB to conduct an audit of the Emission Reduction Credit banks currently administered by the Air District, starting with the banks for VOCs, nitrogen oxides (NOx) and CO2e. Both VOCs and NOx are precursors to PM2.5, and thus important within the context of the PM2.5 Plan. The letter also asks for the findings of the audit to come back before the Board, so solutions to the potential problem can be discussed.

C. Expedited Review of Valley's Agricultural Burning Program

Next to residential wood burning, agricultural burning is the second largest source of directly emitted PM2.5 in the San Joaquin Valley. However, nothing in the Plan addresses direct PM from this source category. One oversight opportunity for the Board concerns CARB's role in approving or denying agricultural burn exemptions to the Valley Air District.

Table 1. Valley Agricultural Burning

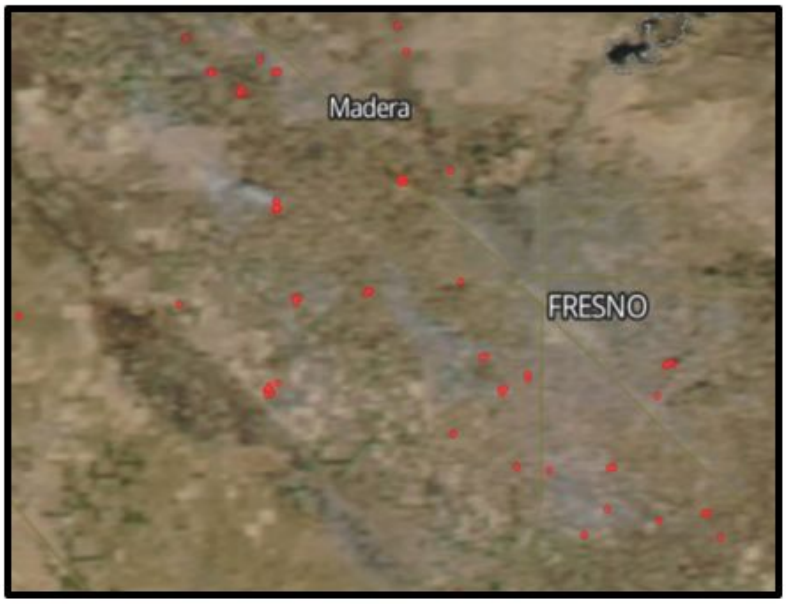


Source: San Joaquin Valley Air District's Summit on Alternatives to Open Burning of Agricultural Waste (2017)
http://valleyair.org/cvsummit/documents/presentations/Session02-Jessica-Olsen.pdf

In December 2015, CARB staff concurred with the San Joaquin Valley Air District's *2015 Agricultural Burning Review* which effectively granted the District a five-year exemption to the law governing the phase-out of agricultural burning. The District is allowed this exemption if CARB concurs with the determination that (1) there is no economically feasible alternative means of eliminating the waste, (2) there is no long-term federal or state funding commitment for the development of alternatives to burning, *and* (3) the issuance of burn permits will not substantially contribute to a violation of a federal ambient air quality standard.

CARB's concurrence was based on information provided by the District, including statements that total acreage of agricultural materials burned had been greatly reduced since 2002 and that there was no funding available for alternatives to burning. However, by 2016, the permitting of agricultural burns surpassed 2005 levels, and is expected to rise further (see Table 1 above). Also, funding for alternatives has increased over the past few years and is available from federal, state and now regional pots, including the federal Conservation Stewardship Program, the federal Environmental Quality Incentives Program, and the state Healthy Soils Program.

The CARB Board has the authority to increase oversight over agricultural burning in the San Joaquin Valley. At a minimum, it can ask staff to bring the next formal review, slated for mid 2020, before the Board for discussion and approval. The Board could also direct staff to expedite the review process. In the face of significantly increased agricultural burning, and further increases expected due to the turnover of annual leafy crops for perennial orchard crops, CVAQ and partners are in favor of an expedited review and for the item to be brought back before the Board in six months time.



Source: NASA Worldview satellite imagery of fires and thermal anomalies taken December 21, 2017

D. Assessment of Ammonia-Reduction Strategies

Ammonia combines with oxides of nitrate and oxides of sulfate to form approximately 60% of the mass of PM2.5 in the San Joaquin Valley when values are at their highest (Meeting PM2.5 Standards in the San Joaquin Valley, 2016). Ammonia is therefore one of the most influential precursors to PM2.5 in the Valley. A 30% reduction to ammonia has been shown to have significant effects on reducing overall PM2.5 levels (Appendix G: Precursor Demonstration, 2018).

If the proposed Plan works as modeled, and NOx levels lower as predicted over the coming decade, modeled reductions to ammonia are shown to be insignificant in reducing overall PM2.5 levels (Appendix G: Precursor Demonstration, 2018). However, expected NOx reductions are not guaranteed, and new evidence suggests that NOx levels in San Joaquin Valley are significantly undercounted, perhaps by 50% (Almaraz, 2018). If this is the case, ammonia reductions would have a significant impact on overall pollution levels, especially in Kern County. CARB should direct their staff to continue with their analysis of ammonia and thoroughly evaluate the feasibility and costs of strategies to reduce ammonia in the San Joaquin Valley. This information will be vital in the future if current controls are not working as expected.

III. Conclusion

Reaching attainment of health-based standards for PM2.5 on the timeline required by the federal Clean Air Act is unlikely, however, there remains significant opportunities for emission reductions. The CARB Board should direct their staff to conduct more oversight - especially as it relates to the largest stationary sources of PM2.5, the ERC system, agricultural burning and ammonia - and come back in six months to discuss the findings. If the PM2.5 Plan is not achieving the reductions required for timely attainment, the Board would have the information necessary to resolve the problem.

Sincerely,

Genevieve Gale,
Central Valley Air Quality Coalition

Pastor Trena Turner,
Faith in the Valley

Thomas Helme,
Valley Improvement Projects

Ivanka Saunders,
Leadership Counsel for Justice and Accountability

Catherine Garoupa-White,
Californians Against Fracking

Nayamin Martinez,
Central California Environmental Justice Network

Tom Frantz,
Association of Irritated Residents

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Almanac Emission Projection Data (published in 2013), 2020 Estimated Annual Average Emissions*,* San Joaquin Valley Air Pollution Control District <https://www.arb.ca.gov/app/emsinv/2013/emseic1_query.php>

Appendix B: Emissions Inventory, 2015 Plan for the 1997 PM2.5 Standard, San Joaquin Valley Unified Air Pollution Control District, 16 April. 2015

Appendix G: Precursor Demonstration, San Joaquin Valley Air Pollution Control District 2018 PM2.5 SIP, 2018 < http://www.valleyair.org/pmplans/documents/2018/pm-plan/G.pdf>

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