


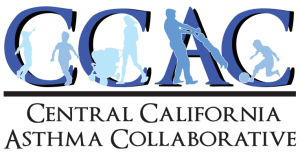

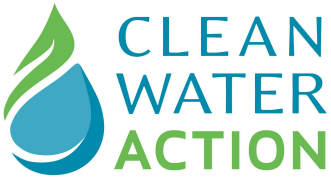

September 22, 2021

Chair Randolph and Board members
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Submitted electronically

Re: Agenda item 21-9-3: Update on the 2018 PM2.5 State Implementation Plan for the San Joaquin Valley and Consider a State Implementation Plan Revision for the 15 µg/m3 Annual PM2.5 Standard

Chair Randolph and members of the Air Resources Board,

On behalf of the undersigned, we submit these comments regarding agenda item 21-9-3: Public Meeting to Hear an Update on the 2018 PM2.5 State Implementation Plan for the San Joaquin Valley and Consider a State Implementation Plan Revision for the 15 µg/m3 Annual PM2.5 Standard. Since 2003, the Central Valley Air Quality Coalition has been a watchdog of the San Joaquin Valley's planning process to restore clean air to our region, also known as State Implementation Plans (SIPs) to meet health protective National Ambient Air Quality Standards (NAAQS). Collectively, CVAQ members have contributed to numerous improvements in measures and plans, and yet there are still outstanding opportunities to improve the proposal before you and do more to reduce harmful PM 2.5 pollution in the Valley. The San Joaquin Valley air basin is in serious jeopardy of continuing to fail the 1997 annual standard and the subsequent, more stringent 2006 and 2012 standards. The regulatory process has moved so

quickly that CARB has not held even 1 public workshop to discuss why we failed to meet the standard and what the next steps are to assure timely and sustainable reductions. The proposal before you demands a closer look at the issues and potential solutions left on the table.

Given the rushed process for such a weighty decision, **we request that the Board:**

1) **Extend consideration of this item by at least 30 days. This time will allow for additional discussion and analysis on how to address the deficiencies in the Plan;**
2) **Direct Staff to hold at least 1 public workshop; and**
3) **Direct Staff to draft and within 90 days come back to the Board with a roadmap for how this plan will be fixed, with measurable objectives and a proposed timeline.** The roadmap must specifically address outstanding requirements for an updated inventory, modeling, precursor analysis, and contingency measures as well as oversight and enforcement at the top stationary sources of direct PM 2.5 pollution (further details below).

This letter does not endeavor to provide a comprehensive review of what is needed to attain the 1997 annual standard for PM 2.5; please refer to the attached April 2020 letter to USEPA for additional suggestions. Ultimately, the plan should be improved in the following ways:

1. **Update the emissions inventory using the more current and accurate EMFAC2017 model.** Since the plan was passed, CARB has revised the EMFAC model used to estimate mobile source emissions (EMFAC 2014 versus EMFAC 2017), but CARB is declining to use the revised model to develop a new emissions inventory, which is central to the entire planning exercise. In dissecting what went wrong in the plan's failure to achieve the predicted results, inventory inputs must be reviewed and the latest available data used. That is not only a legal requirement of the federal Clean Air Act, it is also just common sense.

2. **Analyze and include additional control measures to ensure expeditious attainment and compliance with Clean Air Act requirements.**
    a. As stated by EPA in their proposed disapproval of the 1997 annual standard, any control strategy in the state's updated SIP must include "additional measures (beyond those already adopted in previous SIPs for the area as RACM/RACT, . . . (BACM/BACT), and most stringent measures [MSM]."[1] Despite the Valley being subject to all of the above requirements, including MSM, the Valley's revised SIP does not analyze the availability or feasibility of new control measures as required under the Clean Air Act. Furthermore, the revised plan does not propose any new controls for the Valley beyond rules already on the books. Instead, this revised

[1] EPA, *Partial Approval and Partial Disapproval of Air Quality Implementation Plans: California; San Joaquin Valley Serious Area and Section 189(d) Plan for Attainment of the 1997 Annual PM2.5,* 86 FR 38652, 38656.

plan merely moves the attainment deadline back three years while relying on the same insufficient attainment strategy that has already failed to reach expeditious attainment with this 24-year old standard.

b. The plan must include newer, more stringent controls measures, including but not limited to: the Indirect Source Review rule recently adopted by South Coast; capping dairies' allowable herd sizes, the electrification of new household appliances such as boilers and furnaces; the lowering or elimination of burn thresholds for wood burning devices except in cases in which there are no other sources of household heating; significantly lowering the threshold of allowable industrial PM2.5 pollution, direct regulation of agricultural equipment rather than the current reliance on an incentives based strategy; new controls on precursors including ammonia and soil NOx.

3. **Contingency measures are needed; future commitments are not satisfactory.**
    a. Contingency measures are required, and urgently necessary in an air basin with such a severe problem. The Valley failed to attain the 1997 standard by the prescribed deadline of December 31, 2020. The implementation of contingency measures should already be well underway to provide some immediate emission reductions to Valley residents, but because of the agencies' planning failures and continued resistance to complying with this legal requirement, no measures have been implemented and Valley residents are paying the price.
    b. The apparent strategy of relying on future commitments and unfunded incentive measures provides no assurance of actual emission reductions, no concrete means of enforcing these commitments, and no way to suggest these emission reductions are surplus to the reductions provided by control measures already part of the attainment demonstration.

4. **The precursor analysis is insufficient and should be improved; the role of ammonia should be considered and is under-regulated.**
    a. There are numerous issues with the precursor analysis, including the failure to account for potentially high levels of NOx emissions from soil, and the refusal to consider the cost-effectiveness of ammonia controls in addition to that of NOx controls.
    b. Without a valid current and accurate inventory, EPA cannot claim that the 5 percent requirement has been met for NOx, PM, or any other precursor.
    c. Compared to NOx, which has already been heavily regulated, ammonia has been historically under-regulated and represents the cheapest opportunity for emission reductions.

5. **CARB has not followed through on its promises to increase oversight of stationary sources by auditing compliance at the top PM 2.5 emitters and addressing insolvency in the Valley's ERC program.** When the combined PM plan was adopted in early 2019, CARB directed staff to undertake two additional efforts: a review of the top 27 stationary sources of PM2.5 (this request has not been acted upon); and a review of the Emissions Reduction Credit (ERC) program managed by the San Joaquin Valley Air District. The latter review has been completed but there has been no resolution of the failures identified. We continue to ask that CARB increase oversight of stationary sources, from permitting to enforcement, and ensure that the biggest polluters are meeting mandated requirements.

Truly improving this plan requires additional time to analyze shortfalls, identify additional sources of direct reductions and control measures, review the best available strategies, and host public engagement opportunities. With deadlines for the 2006 and 2012 standards approaching, the San Joaquin Valley urgently needs additional reductions; the health and lifespan of Valley breathers is at stake.

Sincerely,

Dr. Catherine Garoupa White, Executive Director
Central Valley Air Quality Coalition

Nayamin Martinez, Executive Director
Central California Environmental Justice Network

Matt Holmes, Environmental Justice Director
Little Manila Rising

Paul Cort, Senior Attorney and Director, Right to Zero Campaign
Earthjustice

Thomas Helme, Co-founder
Valley Improvement Projects (VIP)

Theresa Zamora, Active California State Director
Mi Familia Vota

Kimberly McCoy, Project Director
Fresno Building Healthy Communities

Lourdes Herrera, Director
Madera Coalition for Community Justice

Shyada Azamian, Climate Policy Coordinator
Leadership Council for Justice and Accountability

Mark Rose, Sierra Nevada Program Manger
National Parks Conservation Association

Destiny Rodriguez, Regional Community Relations Manager
The Climate Center

Bill Magavern, Policy Director
Coalition for Clean Air

Janet DietzKamei, CVAQ Member
Speaker for Asthma Population

Jesus Alonso, Kern Organizer
Clean Water Action

Kevin Hamilton, RRT, Co-Founder and Co-Director
Central California Asthma Collaborative

Cc:
Richard Corey, Executive Officer
Chanell Fletcher, Deputy Executive Officer for Environmental Justice
Michael Benjamin, Air Quality Planning and Science Division Chief
Todd Sax, Enforcement Division Chief
Daniela Simunovic, Senior Advisor on Environmental Equity
Jaime Callahan, Chair's Chief of Staff
Samir Sheikh, Executive Director/APCO, San Joaquin Valley Air Pollution Control District

April 27th, 2020

VIA ELECTRONIC SUBMITTAL

Re: EPA's Proposed Approval of the 2006 Fine Particulate Matter Nonattainment Area Requirements for California's San Joaquin Valley (Docket # EPA-R09-OAR-2019-0318).

On behalf of National Parks Conservation Association (NPCA), Earthjustice, Central Valley Air Quality Coalition (CVAQ), Coalition for Clean Air (CCA), Central California Environmental Justice Network (CCEJN, The Climate Center, and Central California Asthma Collaborative (CCAC), we thank you for this opportunity to comment on the U.S. Environmental Protection Agency's (EPA) proposed approval of the 2006 fine particulate matter nonattainment area requirements for California's San Joaquin Valley (Valley). The Valley's 2006 35 µg/m^3 24-hour fine particulate matter (PM2.5) State Implementation Plan (SIP) does not meet the requirements of the Clean Air Act. The California Air Resources Board (CARB) and San Joaquin Valley Air Pollution Control District (SJVAPCD or District) must remedy the significant deficiencies identified in the comments below. If these deficiencies cannot be remedied, EPA must deny the 5-year extension and submit a finding that the San Joaquin Valley has failed to attain the 2006 PM2.5 standard for Serious areas.

I. The Current Valley PM2.5 Plans Cannot be Approved Because They are Built on Modeling that Assumes Emission Reductions from Measures EPA has Invalidated.

EPA's proposal is arbitrary and capricious because EPA knew, even at the time it issued this proposal, that EPA itself had undermined the plans and all their reasonable further progress (RFP) and attainment modeling. These plans are all premised on the continued implementation of California's Advanced Clean Cars program, including California's greenhouse gas vehicle standards and zero-emissions vehicle mandate. On September 27, 2019, EPA withdrew the waiver EPA had previously granted to these requirements, finding these standards void *ab initio*.[1] EPA notes that "future year emissions projections in the SJV PM2.5 Plan assume implementation of CARB's Zero Emissions Vehicle (ZEV) sales mandate and greenhouse gas (GHG) standards" and that EPA had withdrawn California's waiver for these standards,[2] but then inexplicably suggests EPA will assess

[1] 84 Fed. Reg. 51310, 51338 (Sept. 27, 2019).
[2] 85 Fed. Reg. at 17390 n. 80.

changes to the motor vehicle programs if and when EPA finalizes its rollback of the federal GHG standards, which EPA did on March 30, 2020.

While commenters believe the withdrawal of California's waiver is unlawful, it nonetheless infects the entire plan because the affected vehicle standards are built into the EMFAC2014 model used to predict future mobile source emissions. Those projections are used to demonstrate reasonable further progress and attainment, and to calculate the motor vehicle emission budgets used for transportation conformity.[3] With EPA's decision, EPA can no longer claim that these emission limitations are enforceable or that California continues to have a program to provide for their enforcement.[4]

As CARB explained to EPA, "If California's programs to achieve reductions from the light-duty sector are invalidated, the inventories based on EMFAC 2014 would no longer be valid, and EPA would disapprove SIPs and associated motor vehicle emission budgets (MVEB) used to demonstrate transportation conformity, as the budgets derived from EMFAC2014 would include the effects of regulations no longer valid."[5]

The decision to "void" California's standards will increase PM-related pollution in three direct ways: increased tailpipe emissions, increased upstream emissions from refineries, and increased emissions from fuel distribution systems.[6] EPA accounts for none of these changes.

EPA's refusal to address this issue in the proposed approval appears to be an attempt to undermine meaningful public participation. In its 2019 withdrawal of the California waiver, "EPA acknowledges that its action in this document may have implications for certain prior and potential future EPA reviews of and actions on state SIPs that may incorporate certain aspects of California's state program, either California's own SIPs, or SIPs from states that have adopted one or more aspects of California state program . . . . EPA will consider whether and how to address those implications, to the extent they exist, in separate actions."[7]

Despite this acknowledgement, EPA's proposal here includes no discussion of the withdrawal, and implies in a footnote that it is of no consequence, unless and until the federal rollback is finalized. Both EPA itself and CARB have acknowledged the potential problems in plans that rely on California's now "voided" mobile source regulations, yet EPA's proposal ignores these concerns. To the extent EPA believes the plan built on the EMFAC2014 modeling remains valid and approvable, EPA has provided no explanation allowing for a public response. The new federal standards are also not included in EMAC2014. No matter where the federal standards landed, EPA knew the modeling underlying this SIP was flawed. Regardless, EPA's excuse for delaying that assessment—the final rollback of the federal standards—is now also no longer legitimate. EPA cannot simply finalize its action based on conclusions that have never been subject to public review and comment. EPA must

[3] See, e.g., 85 Fed. Reg. at 17389-80, 17426-28.
[4] 42 U.S.C. § 7410(a)(2)(A) and (C).
[5] CARB, "Analysis in Support of Comments of the California Air Resources Board on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks" at 289 (Oct. 26, 2018) (available at: https://ww2.arb.ca.gov/sites/default/files/2018-10/2018-10-26%20FINAL%20CARB%20Detailed%20Comments%20on%20SAFE%20NPRM.pdf).
[6] *See id.* at 287-88 (explaining in part, "[m]ore gasoline consumption means more diesel tanker trucks trips to community gasoline stations, and therefore higher diesel PM emissions and refueling evaporative losses").
[7] 84 Fed. Reg. at 51338 n. 256.

disapprove this submittal and direct the State and District to revise the plans to account for EPA's actions.

II. EPA's Approval of the Plan's Aggregate Commitments is Arbitrary and Capricious.

The SJV PM2.5 plans rely on a CARB commitment to achieve aggregate emission reductions of 32 tons per day (tpd) of NOx and 0.9 tpd of PM2.5 emissions by 2024, and a District commitment to achieve aggregate reductions of 1.88 tpd of NOx and 1.3 tpd of PM2.5 by "2024/2025."[8] The vast majority of these commitments are to be achieved through incentive programs to accelerate the turnover of mobile sources.[9] Despite this fact, most of EPA's discussion for finding these commitments reasonable focuses on the rulemaking commitments that provide relatively little toward meeting these aggregate tons of emission reductions. The bulk of these commitments rely on unfunded incentive measures that EPA proposes to approve with no record to support their likelihood of success.

A. The Aggregate Emission Reduction Commitments Are Not Enforceable.

Clean Air Act section 110(a)(2)(A) requires SIPs to include "enforceable" emission limitations and other control measures.[10] To be "enforceable" a measure must be enforceable by the State, EPA and citizens. As EPA has explained: "A core principle of the CAA is that by taking action to approve an emission limitation into a SIP, the EPA thereby makes those emission limitations a federally enforceable component of the SIP that the State, the EPA, or citizens can thereafter enforce in the event of alleged violations."[11]

Mere approval into the SIP, however, does not convert an unenforceable provision into an enforceable one. EPA's SIP approval must explain how the proposed measure can be enforced. "SIP provisions that operate to preclude enforcement by the EPA or citizens for violations, whether through impermissible exemptions or other SIP provisions that function to bar effective enforcement, not only undermine the enforcement structure of the Clean Air Act (CAA) in a technical sense but undermine effective enforcement."[12]

EPA's proposed approval of the aggregate emission reduction commitment is not supported by any analysis of how this commitment is enforceable. EPA must answer the following:

(i) *What is the violation?*

Citizens and EPA can only enforce "violations." Citizens can commence civil actions for "a violation of . . . an emission standard or limitation under this chapter or . . . an order issued by the Administrator or a State with respect to such a standard or limitation."[13] EPA can enforce a "violation of any requirement or prohibition of an applicable implementation plan . . . ."[14]

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[8] 85 Fed. Reg. at 17413.
[9] *See id.* at 17414, Tables 7 and 8 (e.g., 23 of CARB's 32 tpd of NOx, and 1.07 of the District's 1.88 tpd of NOx).
[10] 42 U.S.C. § 7410(a)(2)(A).
[11] EPA, Memo to Docket for rulemaking: "State Implementation Plans: Response to Petition for Rulemaking; Finding of Substantial Inadequacy; and SIP Calls to Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown, and Malfunction" (EPA-HQ-OAR-2012-0322) ("SSM Memo") at 7 (Feb. 4, 2013) at 7.
[12] SSM Memo at 24.
[13] 42 U.S.C. § 7604(a)(1).
[14] *Id.* § 7413(a)(1).

The first question EPA must therefore answer is: what would constitute a violation of the SIP provisions being approved here. EPA suggests that the agency and citizens can enforce the commitments to achieve emission reductions, but EPA cannot explain what exactly would constitute a violation.[15] CARB's commitment, for example, is to achieve 32 tpd of NOx emission reductions. Nothing in this "commitment" specifies where these emission reductions must come from nor whether they must be the result of some action by the agency or merely the result of favorable economic conditions, which is exactly how CARB has claimed compliance with similar "commitments" in the past. There is no way for EPA or citizens to look at the entire emissions inventory for the San Joaquin Valley (which is not actually specified as the correct standard for measuring compliance) on December 31, 2024 and determine whether CARB has achieved these emission reductions. Even if overall emissions increase between 2018 and 2024, CARB could still claim that but for some unspecified reason, those total emissions would have been 32 tpd higher. There is simply no way to prove that CARB has not achieved 32 tpd of NOx reductions. The commitment fails to define any possible violation and is not practicably enforceable.

The plan suggests, but does not actually commit, that most of these emission reductions will come from the accelerated turnover of mobile sources, but nothing in the rule commits CARB to achieve *any* truck or other equipment replacements. Allowing this sort of "commitment" means that a SIP becomes nothing more than an open-ended commitment to figure out how to reduce emissions, with no actual enforceable commitment to action. EPA's approach circumvents Clean Air Act section 110(k)(4), which limits this sort of promise to adopt enforceable measures in the future. The purpose of the SIP program is to compel States to identify the specific, enforceable actions they will take to reduce emissions. It is not enough for the State to merely promise to reduce emissions somehow and offer that citizens can sue the State if it fails.

(ii) *How could citizens independently verify compliance with these requirements?*

As noted above, the lack of defined violations makes independent verification impossible. Moreover the "commitment" includes no requirement to monitor or report on compliance. Even if CARB says it is "monitoring" implementation, there is no way for EPA or citizens to independently verify or prove otherwise.

This commitment suffers from an even more fundamental problem around verification. The emission reductions to be achieved (in theory) will come from projects that neither EPA nor citizens can independently verify because they involve voluntary incentive projects that are a matter of contract between the project applicant and the State or District. State enforceability alone, however, is not sufficient to demonstrate enforceability under the Act. These emission reductions must be independently verifiable by EPA and citizens.

The goal of the aggregate emission reduction commitment in the plan is to remove the requirement for enforceability against the actual sources by making CARB responsible for the emission reductions. The problem with this theory is that the "emission reductions" that CARB commits to achieve are measured only by CARB and the District and cannot be verified by anyone else. If CARB claims that it has satisfied its 32 tpd commitment because the incentive programs worked, there is no way for EPA or others to confirm that claim is in fact true. EPA and citizens cannot compel the

[15] 85 Fed. Reg. at 17416 n. 348.

trucking companies to support the data submitted to CARB and the District. EPA and citizens must trust that CARB and the District have done their due diligence in verifying the data themselves, which may not be in the interest of these agencies because they do not want to be on the hook for making up any shortfall. Likewise, if CARB claims that its *substitute* measures reduce emissions by whatever the shortfall, again, there is nothing in the rule that ensures anyone else could verify that claim.

EPA's approach separates the emission reduction obligation from the emitter and makes the (theoretically) liable party in charge of determining compliance. There is no way that compliance with the emission reduction commitment can be independently verified by EPA or citizens. CARB is given the ability to deem itself in compliance with no possibility for others to challenge that determination.

(iii) *What is the penalty for noncompliance?*

The lack of defined violations is most apparent when trying to describe what penalties could be assessed or what corrective action could be compelled by a court. For example, assume somehow CARB were found in violation of the 32 tpd commitment, would CARB be subject to daily penalties until it achieved that reduction? Could it be compelled to adopt some replacement measure by the court? How would such a suit in equity be handled under the 11th Amendment? Is EPA the arbiter of whether the substitute measures are adequate? If so, there is effectively no penalty for violating the 32 tpd commitment. The only recourse for the Public is to repeatedly challenge EPA for arbitrarily letting CARB and the District fail to clean the air, which is not subject to remedies under 113.

EPA should explain exactly how a violation of these various commitments could be proved and enforced, and what the judicial remedy would be for citizens bringing an enforcement action. In doing so, EPA should explain why no one has ever been able to enforce similar State emission reduction commitments in the past and why this rule is different.

B. Under EPA's Three Factor Test, Approval of the Aggregate Commitments is Unreasonable.

EPA outlines a three-part test for determining whether to approve the enforceable commitment: (a) does the commitment address a limited portion of the CAA requirement; (b) is the State capable of fulfilling its commitment; and (c) is the commitment for a reasonable and appropriate period of time.[16] EPA's analysis of these factors is conclusory and contrary to the record.

EPA acknowledges that 13.8 percent of the necessary NOx reductions and over a quarter of the necessary PM2.5 reductions will supposedly come from these new aggregate commitments. *The level of these commitments is unprecedented and far from "limited*." EPA offers no record of support for its conclusion. EPA does not explain why these large percentages constitute a "limited portion of the total emission reductions needed" but instead points to the difficulty in identifying additional measures and suggests it is "reasonable for the State and District to seek additional time to adopt the last increment of emission reductions . . . ."[17] EPA's conclusion regarding the need for more time has nothing to do with whether the commitments represent a limited portion of the needed

[16] 85 Fed. Reg. at 17416.
[17] 85 Fed. Reg. at 17416.

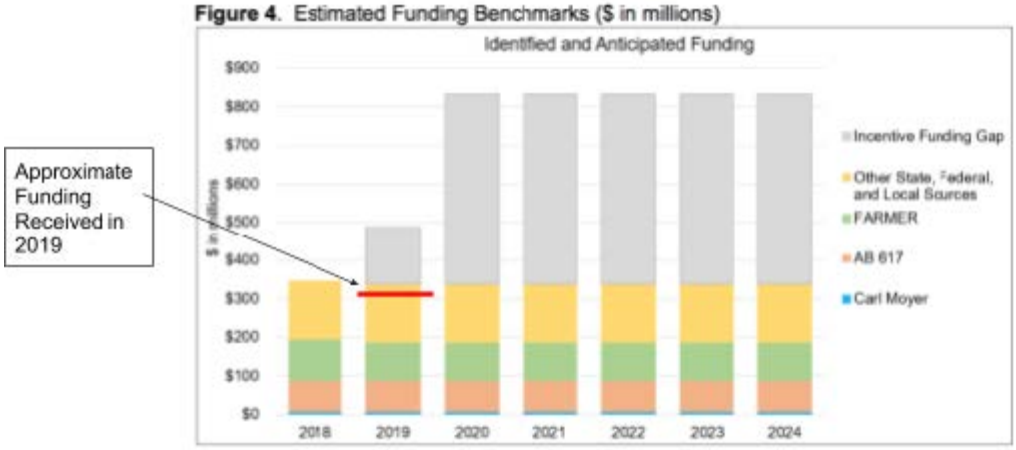
reductions. These percentages far exceed guidance on the use of voluntary measures, and the ton-per-day levels of aggregate tonnage are beyond the levels of commitments approved in any prior SIP. This expectation that even larger tonnage reductions than have previously been approved in a SIP can magically be found is inconsistent with EPA's own conclusion that additional measures are more difficult to find. Indeed, EPA's conclusion is an admission that the State and District have not identified the necessary measures. Unlike plans for ozone, the Clean Air Act does not allow PM2.5 plans to include this sort of "black box" that permits plans to put off identification of measures.[18] EPA's approval undermines the Act's basic planning requirements by suggesting that a plan need only include a blanket commitment to achieve necessary reductions, even if there is no identified path to actually doing so.

EPA's analysis of the second factor regarding the State's capacity to fulfill its commitments is even more unreasonable. The bulk of EPA's discussion focuses on the progress to adopt the identified control measures, while the bulk of the commitment strategy relies on incentives to achieve voluntary turnover in specified categories of mobile sources. For EPA to conclude that the State is capable of fulfilling its commitment, EPA must conclude that this incentive-dependent strategy, which is the only one the Plan identifies, is reasonable. For this strategy to work, CARB and the District must first be able to find the necessary funding, must then be able to use that money to achieve the level of turnover described, and finally must demonstrate that the specified level of turnover will result in the emission reductions anticipated. EPA cannot reasonably conclude that the State has demonstrated that it is capable of achieving any of this.

EPA notes that the plan identifies a total funding need of $5 billion, including $3.3 billion for heavy-duty trucks and buses, and $1.4 billion for agricultural equipment.[19] EPA lists the various funding programs and characterizes them as "well-funded."[20] EPA provides no analysis of how these programs line up with the funding need, or any assessment of whether the State is capable of fulfilling these targets. The 2018 CARB Staff Report shows that incentive funding streams at the time were capable of providing roughly $350 million per year over the next seven years, far below the roughly $850 million per year needed.[21]

[18] *Cf.* 42 U.S.C. § 7511a(e)(5).
[19] 85 Fed. Reg. at 17417.
[20] *Id.*
[21] CARB, *Staff Report Review of the San Joaquin Valley 2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards*, at 27 (Fig. 4) (Dec. 21, 2018). *Available at* https://ww3.arb.ca.gov/planning/sip/sjvpm25/2018plan/2018pm25staffreport.pdf.

Figure 4. Estimated Funding Benchmarks ($ in millions)



[22]

When looking at the lifespan of just this Plan, the gap between what CARB and the District asked for in incentive funds versus what they are likely to receive is on track to grow to billions of dollars short of what the 2018 Plan specifies is needed for the Valley to reach attainment by 2024. For instance, as seen in the graph above, California's first year ask for 2019 was $487 million dollars, of which, CARB and the District received roughly $150 million less than expected, and approximately $50 million less than what was previously granted in 2018 State appropriations.

CARB offers no strategy for making up that shortfall. In fact, that shortfall has only grown over time. A recent presentation on CARB's Mobile Source Strategy shows that, as of March 2020, the State has not made up any of the shortfall in 2018 or 2019 and continues to fall well short of the needed incentives.[23] The CARB presentation further shows that the incentive funding deficit is even larger for the South Coast Air Basin – meaning that the State shortfall is not just the $550 million per year for San Joaquin, but an additional $800 million for South Coast.

Moreover, when taking into account the current COVID-19 crisis and anticipated economic fallout, the California Legislature will likely have significantly less funding available over the course of the next 5 years due to funding shortfalls in the State's greenhouse gas reduction fund (GGRF), general budget, and other sources these incentive grant programs rely upon. Most of the remaining State funding will likely be channeled to COVID-relief efforts and other State priorities. These circumstances certainly do not result from a lack of effort by CARB, the District, impacted industries, and even environmental and public health advocates—all of whom have lobbied the California legislature extensively for additional funds to help fulfill the State's clean air commitments.[24]

Because there is no reason to think that all new sources of funding would go to the San Joaquin Valley, EPA must explain why it is reasonable to believe that the State is capable of finding *an additional* $1.3 billion per year in new incentive funding (nearly 3 times as much as currently achieved by the State's existing programs). The simple answer is that EPA cannot. Any realistic

[22] *Id.* "Approximate Funding Received in 2019" added.
[23] CARB Webinar Slides, "2020 Mobile Source Strategy: A Vision for Clean Air" at Slide 47 (Mar. 25, 2020) (available at: https://ww3.arb.ca.gov/planning/sip/2020mss/pres_marwbnr.pdf).
[24] *See generally*, 2019 and 2020 coalition sign-on letters to the California legislature requesting addition clean air incentive funding for the Valley, included as Appendix A.

review would declare that there is no reasonable basis for believing this strategy will work, or that the State is capable of pulling off such a miracle.

EPA nonetheless points to a September 2019 CARB meeting where these incentives shortfalls were shared with the Board and suggests that the Board's recommendation to develop a "Plan B" is evidence that CARB is capable of fulfilling its commitment. Far from demonstrating any likelihood of success, the Board meeting is evidence of the recognition that the strategy outlined in the Plan is already failing and will not work.[25] EPA can point to no new plan that came out of the Board's directive to staff, because to date there is none. It is also worth noting that, to date, neither CARB nor the District have held or scheduled any workshops to "discuss additional reduction opportunities" despite Board direction to do so.[26] Thus, EPA proposes to approve a Plan that has no strategy that the State is capable of fulfilling.[27]

Even if the State were capable of finding the money that is the foundation of its commitment, which it is not, the scale of "voluntary" replacement that it assumes is equally absurd. For example, the "plan" is to use $3.3 billion over 6 years (2019-2024) to achieve 10 tpd of NOx reductions from the accelerated turnover of trucks and buses. The San Joaquin Valley Plan suggests incentives will replace 33,000 heavy-duty vehicles with newer technologies to achieve that level of emission reductions.[28] This means that over a dozen truck owners *per day*, *every day for the next seven years* will voluntarily choose to retire their trucks and replace them with advanced technology. Add to these numbers, thousands of pieces of agricultural and other off-road equipment being replaced every year, and it's not even clear that the agencies could process this many applications.

To put this in perspective, over the entire life of the Proposition 1B program, approved by voters almost 15 years ago, and the District's Truck Voucher Program, which was "designed to provide an alternative source of incentive funding for heavy-duty truck operators that were unable to obtain funding through the proposition 1B program," the District has replaced 4,500 trucks (roughly 300 per year, or less than one per day).[29] The best year for South Coast's passenger vehicle scrappage program was 2,600 vehicles.[30]

There is no basis for believing that this level of voluntary turnover, which must be above and beyond natural turnover for trucks in the Valley, is realistic. EPA should have at least compared these numbers to truck population numbers and turnover rates in the Valley to see if an additional 15,000 trucks per year is plausible.[31] EPA needs to provide a rational basis for concluding that the State can

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[25] *See* J&K Court Reporting LLC, "Meeting, State of California Air Resources Board," at 101-102 (Sept. 19, 2019) (statement of Dr. John Balmes, noting that "when we did approve the current SIP a lot of people talked about the need for a plan B, if the incentive monies did not appear as we'd hoped. And I think I agree with some of the witnesses it's time to consider a plan B.").

[26] 85 Fed. Reg. at 17418

[27] *See also*, 42 USC § 7410(E), requiring that a SIP must "provide (i) necessary assurances that the State . . . or a regional agency designated by the State . . . will have adequate personnel, *funding*, and authority under State (and, as appropriate, local) law to carry out such implementation plan." (Emphasis added).

[28] SJVUAPCD, Attachment A - Supplement to the 2016 State Strategy for the SIP, at 24 (available at: http://www.valleyair.org/pmplans/documents/2018/pm-plan-adopted/attachment-A.pdf).

[29] SJVAPCD, *2018 Plan for the 1997, 2006, and 2012 Pm2.5 Standards*, (hereinafter 2018 Plan or Plan), at E-9.

[30] *See*, South Coast ACMD, *Rule 1610 – Old Vehicle Scrapping*. Available at, http://www.aqmd.gov/home/programs/community/community-detail?title=ovs.

[31] *See*, *e.g.*, ACT Market Segment Analysis provided at CARB's Feb. 25, 2019 ACT Workshop (available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks/act-meetings-workshops).

fulfill its strategy for achieving this level of voluntary turnover, even if it miraculously found the money.

In fact, the District has a demonstrated track record of failing to use funds to achieve emissions reduction mitigation commitments. Pursuant to the 2015 Environmental Impact Report for Kern County's revised oil and gas ordinance and an accompanying "Oil and Gas Emission Reduction Agreement (OGERA)" signed by the county and District, the District—through November 2019—received almost $89 million in fee monies to be spent on pollution reduction projects intended to compensate for otherwise unregulated oil and gas emissions.[32] The District, however, has struggled to spend these funds. For example, the District's most recent annual report indicates that it received almost $43 million from the OGERA and other emission reduction agreements for the period from July 1, 2018 to June 30, 2019, but was only able to spend $12.5 million and encumber another $6.6 million.[33] This shortfall in spending and encumbrances left the District with an ending unencumbered balance of more than $48 million—reflecting an ever-growing failure of the District to spend OGERA and other emission reduction agreement receipts. The period-ending unencumbered balance for 2018 was $13.6 million and $6.4 million for 2017.[34] Meanwhile, these shortfalls in spending mean that air pollution from new oil and gas drilling is increasing unabated and worsening air quality.

Finally, there is no reasonable basis for concluding that CARB and the District, even if they found the money and achieved the level of turnover, could achieve the emission reductions committed to in the plan. As noted above, CARB and the District have been using incentive money for years to replace old mobile sources. As that turnover has occurred, the mobile sources left on the road (or off the road) are cleaner and cleaner. As the low-hanging fruit is picked, the emission reductions that this turnover can achieve become smaller and smaller per vehicle, and the cost per ton of reduction becomes higher and higher. EPA needs to provide some analysis showing that the targeted level of turnover can fulfill the aggregate emission reductions assuming lower marginal reductions and higher marginal costs.

The scale of the funding shortfall and the turnover required also undermines EPA's conclusion under the third factor of its three-part test – the commitment for a reasonable and appropriate period of time. EPA's conclusory analysis again looks only at the specific *rule* commitments with no discussion of the main part of the Plan's strategy.[35] Any such analysis would have shown that CARB and the District are already falling short on their funding targets, meaning they will need even more money in the future and they will need to achieve even greater levels of turnover in the years that are left. There is simply not enough time to make up the ground that has already been lost. Nor is it reasonable to believe that CARB and the District can wait any longer to develop a Plan B to achieve the emission reduction commitment. To achieve this level of reduction by 2024 means rules must

[32] Kern County Oil and Gas Permitting Program Annual Progress Report (December 1, 2018 to November 30, 2019) at 7, 9-10 (available at https://psbweb.co.kern.ca.us/planning/pdfs/oil_gas/kern_oil_gas_annual_progress_report_2019.pdf).

[33] SJVAPCD 2019 Annual Report - Indirect Source Review Program at 9 (available at https://www.valleyair.org/ISR/Documents/2019-Annual-Report.pdf).

[34] See SJVAPCD 2018 Annual Report - Indirect Source Review Program at 10 (available at https://www.valleyair.org/ISR/Documents/2018-Annual-Report.pdf); SJVAPCD 2017 Annual Report - Indirect Source Review Program at 7 (available at https://www.valleyair.org/ISR/Documents/2017-ISR-Annual-Report.pdf).

[35] 85 Fed. Reg. at 17418.

be in place beforehand, which means rulemaking must be occurring now. A disapproval of these aggregate commitments will trigger that required effort, hopefully with enough time to meet the attainment deadline.

EPA has provided none of the necessary analysis to reasonably conclude that the plan provides any strategy for achieving the massive aggregate emission reduction commitments in the SIP, and no such support exists in the record. What the State has submitted is not a "plan"—it is an unenforceable promise with no basis for believing it can be kept. This is not what the Clean Air Act requires. EPA should disapprove the Plan and direct CARB and the District to submit a plan that outlines a strategy that does not rely on unrealistic voluntary incentives. If accelerated turnover is what is required, CARB and the District should adopt rules to mandate that turnover and use their limited funds to assist with that compliance burden rather than making people who deserve clean air and the success of the plan the ones to pay for any funding shortfall.

III. The State's Plan Fails to Meet Requirements for the Approval of a Serious Area Attainment Plan.

EPA proposes to approve of the San Joaquin Valley's Serious area attainment planning requirements for the 2006 PM2.5 standard. Under the CAA, Serious area SIP's are required to meet numerous criteria, including: "[b]ase year and attainment projected emissions inventory requirements in 40 CFR 51.1008(b) . . . most stringent measure requirement in 40 CFR 51.1005(b)(1)(iii) and 51.1010(b), and best available control measures not previously submitted . . . reasonable further progress [RFP] requirements in 40 CFR 51.1012; . . . quantitative milestone requirements in 40 CR 51.1013; . . . [and] contingency measure requirements in 40 CFR 51.1013.[36] For the following reasons, we believe that the State's Serious area planning requirements for the Valley were not met, and, thus, EPA should reject the Valley's 2006 PM2.5 SIP and require the SIP to be significantly revised prior to approval.

A. The State's Emissions Inventories are Inaccurate.

CAA § 172(c)(3) requires SIPs to include a comprehensive emissions inventory for both the selected baseline year, as well as for the projected attainment year and each RFP milestone year.[37] As noted above in section I, the inventories are not approvable because they rely on the EMFAC2014 model, which does not account for EPA's decision to void California's GHG and ZEV standards. The inventory is also flawed because CARB and the District did not fully account for sources such as NOx emissions from soil—especially as it relates to manmade soil NOx emissions from sources like fertilizer treatments and how additional soil NOx interacts with existing ammonia emissions. Moreover, we foresee significant defects with the State's forecasted inventories due to issues such as the lack of incentive funding and inability of agencies to achieve mobile source turnover at the levels included in the plan.

B. Additional Enforceable Commitments are Needed to Achieve Consistency with Reasonable Further Progress and Quantitative Milestone Requirements.

Many of the same concerns we have identified above are also relevant to determining whether the State has demonstrated compliance with RFP and quantitative milestone requirements.

[36] 85 Fed. Reg. at 17386.
[37] *See also*, 40 CFR 51.1004, 1008, 1011, and 1012.

Specifically, issues such as the lack of funding for incentive-based measures and unspecified aggregate emission reduction commitments create far too much uncertainty in terms of what progress the San Joaquin Valley will be able to achieve moving forward. Even where CARB and the District have committed to developing or updating regulatory measures, the timing for implementation of those measures remains a concern. For instance, the implementation of regulatory measures related to District Rules 4311, 4306, and 4320 are listed in the 2018 PM2.5 plan as beginning in 2023, however, in hearings to solicit scoping comments on these rules the District has now specified that implementation for all three of these rules is likely to begin in 2024, not 2023.[38] EPA expressly requests comments on whether "additional enforceable commitments for regulatory action to implement emissions controls" are necessary for the RFP interim years of 2022/2023. We strongly recommend that EPA require additional enforceable regulatory actions in 2022 and 2023 to ensure attainment prior to the 2024 attainment deadline and that those actions should consist of specific regulatory control measures as opposed to the aggregate tonnage commitments.

C. The 2006 Serious Area Attainment Plan Lacks Adequate Contingency Measures.

Under CAA section 172(c)(9), a State must address "contingency measure[s] to be implemented if the area fails to meet RFP or attain by the applicable attainment date."[39] As stated in the proposed rulemaking, "The EPA is not, at this time, proposing to act on those portions of the ''2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards'' or the ''San Joaquin Valley Supplement to the 2016 State Strategy for the State Implementation Plan'' that pertain to the 1997 PM2.5 NAAQS, the 2012 PM2.5 NAAQS, or *Serious area contingency measures.*"[40] Absent approval of the contingency measures included in the State's 2018 PM2.5 plan, we must conclude that this rulemaking falls short of qualifying as full approval of the State's SIP for the 2006 standard. Therefore, we expect final approval of the 2006 SIP is still forthcoming. Looking ahead, we advise EPA to consider the following when looking to approve of contingency measures included in the 2006 PM2.5 SIP:

- Existing contingency measures included in the 2018 Plan (such as those requiring increased enforcement of existing measures) are not likely to be enough to make up for the significant shortfalls in this plan, e.g. the lack of incentive funding.
- Additional contingency measures should be required and must take the form of clearly defined regulatory measures (i.e. a Plan-B) that ensures timely attainment—as opposed to ambiguous aggregate tonnage commitments.
- The District's contingency measure to expand "hot spot" requirements to other counties in the Valley is a feasible measure and should be required prior to attainment failure, or, at the very least, upon failure to meet RFP or quantitative milestones.

IV. The State's Plan Fails to Meet Requirements for Areas Seeking a 5-year Extension of a Serious Area Attainment Date.

[38] 85 Fed. Reg. at 17424. *See also generally*, Scoping presentations for District Rules 4311, 4306, and 4320. Available at, https://www.valleyair.org/Workshops/public_workshops_idx.htm. *See also*, Scoping comments by CVAQ, et.al. Included as Appendix B.
[39] *See also*, 85 Fed. Reg. At 17385.
[40] 85 Fed. Reg. At 17384 FN. 18.

Under section 188(e) of the CAA, a state may apply to the EPA for a single extension of the Serious area attainment date by up to five years.[41] In requesting a 5-year extension, a state must meet several requirements, including, (a) compliance with "all requirements and commitments pertaining to the area in the implementation plan;" (b) inclusion of "the most stringent measures that are achieved in practice in any state and are feasible for the area;" and (c) "a demonstration of attainment by the most expeditious alternative date practicable."[42] We believe California has failed to meet CAA requirements for approval of a PM2.5 Serious area attainment extension request for the following reasons.

A. Inconsistent Methodologies Have Made It Unclear Whether the Valley Has Met Previous Requirements and Commitments.

Part 3 of the 5-part test for a state to be granted a 5-year extension in attainment requires that a state must "demonstrate that it has complied with all requirements and commitments pertaining to the area in the implementation plan."[43] In this proposed rulemaking, EPA has drawn attention to and seeks comment upon CARB's use of inconsistent methodologies to arrive at emissions estimates and to make comparisons between yearly average contribution of residential wood-burning to PM2.5 emissions over time. These comparisons are necessary to determine whether SJV and CARB have fulfilled their commitment to reduce residential wood burning by 1.9 tons per day by 2017, as committed to in the adopted "2012 PM2.5 Plan and Supplement."[44]

As EPA has detailed, when consistent methodologies are used to arrive at annual average tpd emissions estimates for the contribution of residential wood-burning to direct PM2.5 in the Valley, the District clearly has not fulfilled the emission reductions committed to in the 2012 SIP—having only achieved reductions of .86 tpd by 2017. For the purpose of comparison, a consistent method of estimating how many residents are using a wood-burning appliance would be preferred and should be employed to ensure an accurate measure of whether the Valley has met its previous commitments.

If the SJVAPCD and CARB are to be guided and informed by the narrow sample obtained by the 2014 Residential Wood Combustion User Activity Survey conducted on the District's behalf by Gomez Research—and if EPA is to accept survey methodology for determining the extent of residential wood-burning in the Valley—available evidence from a comparison of the 2014 survey to a second district survey conducted in 2017 should be considered. This comparison shows that over the relevant period when the stronger curtailment thresholds were first imposed beginning in November of 2014, residential wood burning had actually *increased* by 2017, with fewer residents reporting no use of a wood-burning device and more residents reporting the use of a wood-burning device several times a week. (See graph below). This calls into question what emission reductions, if any, may have been achieved—or, rather, if residential wood-burning emissions might have increased, as a comparison of the two surveys indicates.

[41] 42 USC §7513(e)
[42] I*d.*
[43] 40 CFR 51.1005(b)
[44] 85 Fed. Reg. at 17415.

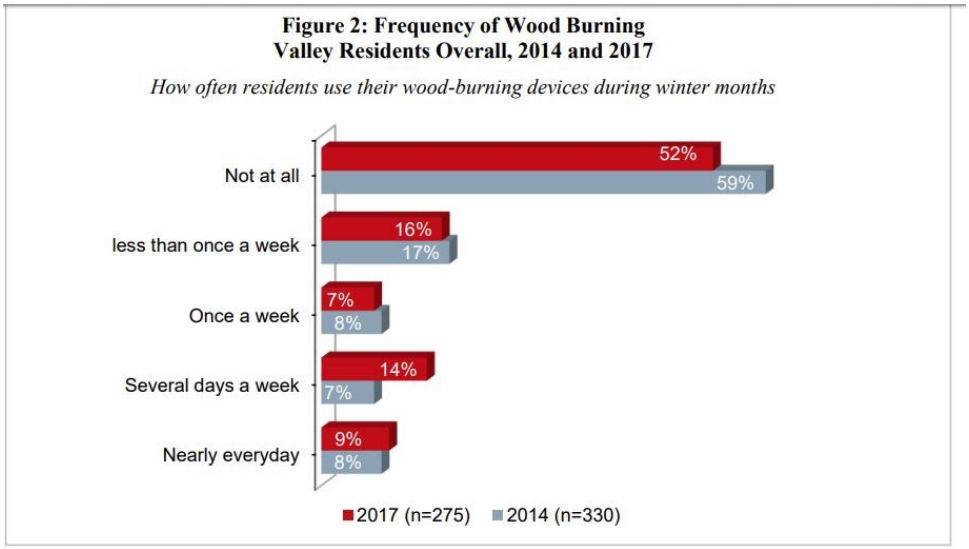

*Figure based on Q5: "How often do you use your fireplace/stove in the winter? Nearly every day, several days a week, once a week, less than once a week, or not at all?" Don't know/refused not charted.

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The survey indicates greater reported use of a wood-burning fireplace or stove in the winter of 2017 in comparison to 2014. If survey data is to be deemed a determinative reflection of the extent of residential wood-burning, then the evident increase in residential wood-burning over the relevant period would indicate a statistically significant failure of the stronger Rule 4901 control measures imposed to have curtailed the use of wood-burning devices and reduce PM2.5 emissions. Further, it is difficult to see any improvement in PM2.5 values, for instance, see the graph below displaying the 98th percentile values as observed in Fresno County over the relevant period. If this is indeed the case, there does not appear to be a reasonable basis for believing prior commitments in the 2012 plan have been met.

Air Resources Board

iADAM

Select 8 Summary

FAQs

Monitoring Sites	PM2.5 National 98th Percentile						
	2012	2013	2014	2015	2016	2017	2018
	Fresno County						
Fresno-Garland	52.6	63.8	66.7	52.0	42.7	68.0	63.5

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B. The State Failed to Demonstrate That the Plan Includes the Most Stringent Measures, as well as the Best Available Control Measures for all Sources in the San Joaquin Valley.

EPA has defined most stringent measures (MSM) as "any permanent and enforceable control measure that achieves the most stringent emissions reductions in direct PM 2.5 emissions and/or emissions of PM 2.5 plan precursors from among those control measures which are either *included in the SIP for any other NAAQS, or have been achieved in practice in any state*, and that can feasibly be implemented in the relevant PM 2.5 NAAQS nonattainment area."[47] Additionally, EPA interprets

[45] SJVAPCD, *2017 Residential Wood Combustion (RWC) User Activity Survey, Final Report*, p.6. Available at http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2018/January/final/10.pdf.

[46] CARB, ADAM: Air Quality Data Statistics: Select 8 Summary. Available at, https://www.arb.ca.gov/adam/select8/sc8display.php.

[47] 40 CFR 51.1000

the CAA's MSM provision to require states to reanalyze BACM/BACT requirements to see if they are more feasible in an area given the longer attainment date sought under section 188(e) of the CAA.[48] We believe the State has failed to demonstrate MSM and BACT/BACM for each of the following sources.

1. **Mobile Sources**:

Achieving the necessary NOx reductions from mobile sources requires a dramatic acceleration of turnover from high-polluting engines to zero- and near-zero emission technologies. Yet the Plan's reliance on voluntary incentives to accelerate fleet and equipment turnover is a clear failure to implement most stringent measures for the Valley's largest source of NOx. CARB's mobile source measures include:

- Accelerated Turnover of Trucks and Buses
- Accelerated Turnover of Agricultural Equipment
- Accelerated Turnover of Off-Road Equipment

While the availability of funding to enable these incentive-based strategies is in question, the availability of the technology is obviously not. Zero- and near-zero emission technologies are available and used in practice in the Valley for each of the mobile sources that require faster turnover. The Plan could straightforwardly increase the stringency of these measures by mandating necessary turnover, yet, provides no consideration for this approach.

Accelerated Turnover of Trucks and Buses: The Plan's proposed action is to use funding to increase penetration of near-zero and zero-emission heavy-duty trucks with significant activity in the Valley and accelerate the turnover of approximately 33,000 heavy-duty diesel trucks.[49] CARB already requires accelerated turnover of the in-use fleet to cleaner, but not cleanest, emission control and engine technologies. CARB should have evaluated a mandate to accelerate turnover of heavily polluting vehicles and increased penetration of zero-emission trucks.

Zero-emission heavy-duty vehicles offer the greatest emission reduction benefit, both because they have zero-tailpipe emissions of NOx and because they reduce upstream emissions from petroleum drilling and refining, a substantial source of PM in the southern San Joaquin Valley.[50] Their technological feasibility is well-supported by CARB research. A wide range of ZE trucks are commercially available today and virtually all established manufacturers—Cummins, Ford, Freightliner, Peterbilt, Navistar, and Volvo, have ZE commercialization plans prior to 2024.[51] CARB's own assessment finds that nearly 40 percent of identified truck markets are highly suitable for ZE vehicles (i.e. have a suitability score of 1 or 2 out of 10).[52] Average trucks in the San Joaquin

[48] 85 Fed. Reg. at 17387.
[49] 2018 Plan, Attachment A – Supplement to the 2016 State Strategy for the SIP, at 24 https://www.valleyair.org/pmplans/documents/2018/pm-plan-adopted/Attachment-A.pdf
[50] California Energy Commission, Air Quality Implications of an Energy Scenario for California Using High Levels of Electrification, (June 2019) at18 https://ww2.energy.ca.gov/2019publications/CEC-500-2019-049/CEC-500-2019-049.pdf.
[51] CARB, Zero-Emission Fleet Rule Workshop Advanced Clean Truck Fleets, (Feb 12. 2020) at Slide 25 https://ww2.arb.ca.gov/sites/default/files/2020-02/200212presentation_ADA.pdf.
[52] CARB, Advanced Clean Truck Regulation, Appendix E – Zero Emission Truck Market Assessment (Oct. 2019) https://ww3.arb.ca.gov/regact/2019/act2019/appe.pdf.

Valley are particularly ripe for electrification, with frequent stops and routes averaging between 48 and 71 miles.[53]

Moreover, the economic feasibility of requiring fleets to transition to zero-emission trucks is supported by their lower operating and maintenance costs. CARB's 2018 cost analysis demonstrates that in certain truck classes, ZE trucks already had favorable total cost of ownership compared to diesel trucks, and by 2024, battery-electric trucks will have neutral or positive total cost of ownership compared to diesel in each of the cases examined.[54] Even in edge cases where upfront capital costs for zero-emission vehicles and infrastructure outweigh their superior operating and maintenance costs, CARB could require, rather than solely incentivize, the purchase of ultra-low NOx trucks that meet standards of .1, .05, and .02 g/bhp-hr. These trucks are also available today--in the past two years, CARB has already certified trucks that meet the .02 g/bhp-hr of NOx standard in their Optional Low-NOx regulation.[55]

Accelerated Turnover of Agricultural Equipment: The Plan's proposed action is to rely on unidentified and unsecured incentive funding to accelerate the turnover of 12,000 tier 0, tier 1 and tier 2 agricultural equipment to the cleanest available technology (either tier 4 of zero-emission).[56] For reference, between 2016 and 2018, funding from both the USDA's Natural Resource Conservation Service grant program [57] and the District's incentive program have collectively funded just 1,000 projects. If the District achieved 1,000 replacements over 2 years, it is difficult to believe that 12,000 replacements could happen in 4 years with funding that is yet to be identified or secured.

The Cleaner In-Use Agricultural Equipment measure, which CARB refers to as a "backstop" rule, only requires equipment in the Valley to be Tier 2 by 2030. For the rule to truly act as a backstop, the Plan should have amended the measure so that in-use fleets be Tier 2 or cleaner by the attainment deadline in 2024. The Plan provides no consideration of this common-sense approach, nor any justification for relying on the obviously less-stringent backstop date of 2030. The Plan only notes that there are financial barriers for small farmers to acquire cleaner engines, but this is a completely insufficient basis to reject additional regulatory backstops. The Plan could have addressed potential economic barriers by targeting only larger farms or farms earning revenues above a certain level. Indeed, setting appropriate mandates for in-use emission reductions would allow CARB and the District to reserve their limited pot of incentives for smaller farms which are able to demonstrate their need for assistance to meet compliance. None of these potential measures are considered.

Accelerated Turnover of Off-Road Equipment: The Plan's proposed action is to accelerate the turnover of an unspecified number of off-road equipment such as transportation refrigeration units (TRUs), construction equipment, forklifts, and drilling rigs to zero- or near-zero emission engines. CARB already has an off-road regulation that requires accelerated penetration of the cleanest

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[53] Resource System Group, Inc., San Joaquin Valley Model Improvement Program Freight Forecasting Models (Oct 2013) at 17 https://rsginc.com/files/publications/SJV%20freight%20forecasting%20models%20documenation.pdf.
[54] CARB, Appendix H - Draft Advanced Clean Trucks Total Cost of Ownership Discussion Document (Feb. 22, 2019) at 2 https://ww3.arb.ca.gov/regact/2019/act2019/apph.pdf.
[55] CARB, Heavy-Duty Low NOx Program Proposed Heavy-Duty Engine Standards, (Sept. 26, 2019) at Slide 11 https://ww3.arb.ca.gov/msprog/hdlownox/files/workgroup_20190926/staff/01_hde_standards.pdf?_ga=2.139910579.1074750982.1579278859-1763121676.1571767087.
[56] SJVUAPCD, Attachment A – Supplement to the 2016 State Strategy for the SIP, https://www.valleyair.org/pmplans/documents/2018/pm-plan-adopted/Attachment-A.pdf at 26.
[57] *Id.* At 29.

equipment by requiring owners to modernize their fleets and replace older engines with newer, cleaner models. Yet, it provides no analysis for amending this regulation to expand and increase the rate of turnover that CARB says is necessary. This omission is inexplicable, given that many available zero-emission alternatives are not only likely to be cost-effective, but cost saving. For example, CARB notes that battery-electric forklifts are already in operation throughout California and in the Valley,[58] and they "offer reduced maintenance requirements, lifetime cost savings, and cleaner tailpipe emissions."[59] These acknowledgements undermine any implication that a measure mandating accelerated turnover to zero-emission forklifts does not even merit evaluation.

The Plan's MSM for mobile sources fails overall because it includes no discussion of mandating the accelerated turnover to the cleanest technologies currently being incentivized—an approach that would obviously be more stringent than reliance on voluntary turnover. To the extent that CARB and the District believe the economic infeasibility of mandates is implicit, their position is not reconciled with their own research demonstrating the cost-advantages of zero-emission technologies in many instances.

The Plan could have entertained a number of policy designs to overcome financial barriers, e.g. by setting up revolving loan funds that generate new revenue from charging infrastructure for additional investment, targeting regulations to larger fleets and farmers, and reserving limited funds for the most under-resources operators. In any event, they failed to explain and support the position they have defaulted to, which is to allow Valley residents to continue to breathe harmful levels of PM2.5 unless and until $5 billion in incentive funds are made available and deployed at record-speed.

2. Stationary and Area Sources:

Community groups and stakeholders have repeatedly detailed the ways in which the San Joaquin Valley Air District could improve controls on stationary and area sources of air pollution to achieve more expeditious attainment of air quality standards.[60] Unfortunately, the following sources remain inadequately controlled under the San Joaquin Valley SIP.

Open Burning: Next to residential wood burning, agricultural burning is the second largest source of directly emitted PM2.5 in the San Joaquin Valley. Burning of agricultural waste was standard practice prior to the 1990s. This included burning of whole trees upon orchard removal as well as branches from regular tree and vineyard pruning.[61] While cogeneration facilities that converted woody waste into electricity were a reliable option in the ensuing decades, these power plants are being phased out in California and have proven to be major stationary sources of PM2.5 pollution themselves. With that change, farmers have started shifting to a new technique: whole orchard recycling. The failure to require whole orchard recycling and/or require significant reductions in open burning in the Valley is a failure to ensure the most stringent measure is met for this source category.

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[58] *Id*. at 32.
[59] 2018 Plan, Appendix D: Mobile Source Analyses at D-68.
[60] *See generally*, CVAQ coalition comments submitted to CARB and the District on the 2018 PM2.5 SIP on September 30th, 2018, January 22nd, 2019, September 17, 2019 included as Appendices C, D, and E respectively. *See also generally*, January 31st, 2020 CVAQ et.al. Scoping Comments to the District included as Appendix B.
[61] Almond Board of California, *2025 Goals*, *Zero Waste*. *Available at*, http://www.almonds.com/sites/default/files/Goals%20Roadmap%202019%20-%20Waste%20Page.pdf.

Research conducted in 2006-2008 compared whole orchard recycling to burning and incorporating the ash. Ultimately, greater yields, significantly more soil nutrients, organic matter, and total carbon were observed in the grind treatment when compared to the burn. Cumulative yields from 2011-2017 found the grind treatment were greater than the burn by 1,587 pounds/acre, and leaf petiole analysis revealed higher nutrient levels in trees growing in the grind treatment.[62]

The Almond industry in California's San Joaquin Valley is a great example of not only the promise of, but the reality of whole orchard recycling. Almonds are California's second largest acreage crop and the State's most valuable agricultural export.[63] The Almond Board – which represents 6,800 almond growers and 100 processors in California – funded research that estimates over 20,000 acres in CA have been ground and incorporated in the last three years (2016-2018).[64] In fact, by 2025, the California almond growing community has committed to achieve zero waste in orchards, a commitment that includes the practice of whole orchard recycling.[65]

Funding for whole orchard recycling has also increased and is now available from federal, state and regional pots. Funding sources include the federal Conservation Stewardship Program, the federal Environmental Quality Incentives Program, the California Healthy Soils Program, and the San Joaquin Valley Air District's Alternatives to Open Burning of Agricultural Burn Materials Pilot Program. In November 2018, the Valley Air District authorized up to $1,000,000 in funding for the Alternatives to Open Burning Program. The purpose of this program was to demonstrate the feasibility of utilizing chipped agricultural material for soil incorporation or as a surface application as an alternative to open burning. Since opening the program in December 2018, the level of interest from the agricultural community has been very strong.[66] To meet the demand in the program, the District Board authorized an additional $1,000,000 in April 2019, and then another $1,500,000 as part of the Incentive Spending Plan adopted as part of the District's FY 2019-20 Budget. Since opening the program, the District received eligible applications requesting up to $3.47 million in incentive funding representing nearly 6,700 acres of orchard and vineyard removals. In September of 2019, an additional $1,500,000 was allocated to match the level of interest for the program.

Research has shown that whole orchard recycling is beneficial to both the environment and industry's bottom line, the almond industry has embraced the practice, and now funding is available to match the strong demand. Given the availability of practicable alternatives to open burning, such as whole orchard recycling, we believe the District's rule 4103 fails to achieve MSM and BACM/BACT by not requiring burn alternatives, like whole orchard recycling. Under section 188(e), whole orchard recycling is a more stringent measure "achieved in practice . . . [that] can feasibly be implemented in the area." Moreover, we disagree with the premise of EPA's assessment that Rule 4103 'as a whole' is the most stringent measure in the nation. As stated in comments to EPA on the proposed approval of the District's rules for wood fireplaces and heaters, we believe

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[62] Almond Board of California & University of California Cooperative Extension, *Almond Orchard Recycling. Available at*, https://rd.almondboard.com/files/Almond%20Orchard%20Recycling%20%285%29.pdf.
[63] Almond Board of California, *ABOUT. Available at* http://www.almonds.com/consumers/about-the-almond-board/overview.
[64] Almond Board of California & University of California Cooperative Extension, *Almond Orchard Recycling. Available at* https://rd.almondboard.com/files/Almond%20Orchard%20Recycling%20%285%29.pdf.
[65] Almond Board of California, *2025 Goals, Zero Waste. Available at* http://www.almonds.com/sites/default/files/Goals%20Roadmap%202019%20-%20Waste%20Page.pdf.
[66] San Joaquin Valley Air Pollution Control District, *September 2019 Board Meeting: Item 11*, page 2. *Available at* https://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2019/September/final/11.pdf.

this 'holistic' approach violates the CAA by analyzing MSM and BACM/BACT requirements for the rule as a whole as opposed to individual source categories, i.e. the District is required to implement the most stringent measures for all individual open burning source categories, not just for open burning as a whole.[67]

Boilers, Steam Generators, and Process Heaters Greater Than 5.0 Million British Thermal Units per Hour (MMBtu/hr): There are multiple ways in which rules on boilers, steam generators and process heaters fail to meet Clean Air Act requirements. For instance, the SJVAPCD provides a loophole that results in less stringent measures than what is seen in other air districts by allowing owners and operators of boilers and steam generators to pay an annual emissions fee in lieu of complying with emission limits. Conversely, the South Coast Air Quality Management District's rule 1146 for boilers, steam generators, and process heaters equal or greater than 5 MMBtu/hr requires full compliance with limits without the option of paying an emissions fee. In order for this rule to meet the MSM standard required under the CAA, the District must eliminate annual emission fees as an alternative to full compliance with the standards proposed.

Furthermore, additional NOx controls could be mandated. Boilers and steam generators generate tons of oxides of nitrate (NOx), (a gaseous precursor that when combined with ammonia or oxides of sulfate create ammonium nitrate and ammonium sulfate, both of which are fine particulates). There are number of boilers and steam generators in the San Joaquin Valley that employ ultra-low NOx technology, such as Clearsign Duplex Burners, to reduce NOx emissions. For instance, this technology has been installed at two refineries and one oilfield production facility in the Valley.[68] The facilities have indicated the potential to achieve NOx emissions less than 5 ppmv @ 3% CO2. MSM requires all boilers and steam generators would need to be held to this standard, as this practice has been achieved in practice and has already been implemented in the Valley

Flares: Due to the recent adoption of Rule 1118.1 by the South Coast Air Quality Management District (SCAQMD), the San Joaquin Valley Air District's Rule 4311 is not the most stringent measure for flaring. To achieve consistency with the SCAQMD Rule, the District must expand emission reduction efforts to include "non-refinery facilities, including, but not limited to, oil and gas production facilities, wastewater treatment facilities, landfills, and organic liquid handling facilities," so that emissions from flaring produced gas, digester gas, landfill gas, and other combustible gases or vapors are reduced and alternatives to flaring are encouraged.[69]

Additionally, there exists a new class of NOx emission control devices identified by the District in the Stationary Source Control Measure Analysis. VOC deconstruction devices offer ultra-low NOx emissions of approximately 0.018-0.025 lb-NOx/MMbtu and would allow significant emissions below the current rule's requirement of 0.068 lb-NOx/MMbtu.[70] This technology has been achieved in practice. One 'Permit to Operate' and at least eight 'Authority to Construct' permits

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[67] *See*, Appendix F at 1-2.

[68] San Joaquin Valley Air Pollution Control District. *2018 PM 2.5 Plan: Appendix C: Stationary Source Control Measure Analysis*, page C-79. *Available at* https://www.valleyair.org/pmplans/documents/2018/pm-plan-adopted/C.pdf.

[69] South Coast Air Quality Management District. *Rule 1118.1*. Available at https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/R1118-1.pdf?sfvrsn=9.

[70] San Joaquin Valley Air Pollution Control Distrcit. *2018 PM 2.5 Plan: Appendix C Stationary Control Measure Analyses, pg. C-156, Avlaibile at*. https://www.valleyair.org/pmplans/documents/2018/pm-plan-adopted/C.pdf

have been issued in the Valley.[71] Furthermore, thermal incineration controls, such as steam injection for NOx emissions controls, are also being achieved in practice in various facilities and should therefore be held as the standard to meet MSM requirements where applicable.[72]

Solid Fuel-Fired Boilers: Owner-operators of solid fuel-fired boilers in states and countries across the world have achieved more stringent emission controls than those in the San Joaquin Valley. Biomass-fired boilers in the Valley are old and predominantly use electrostatic precipitators for PM control. This equipment is geared more toward reducing large particles, not PM2.5. Baghouses are better designed to reduce PM2.5 emissions and are thus the more stringent technology. Baghouse controls have been achieved in practice in facilities across the globe. For instance, the Quillayute Valley School District Biomass Boiler in Forks, Washington uses a combination of advanced Metals cyclones and Filter Technology baghouses.[73] Precision Energy Services designed a baghouse emission control technology for a solid fuel fired boiler for Atlantic Packaging in Ontario, Canada.[74] Two boilers at the University of Iowa utilize baghouses.[75] The Redecam Group, which previously supplied baghouse emission controls for the Lisahally Biomass Plant in Derry/Londonderry, Northern Ireland, was contracted to create similar baghouse controls for two biomass energy plants by Burmeister & Wain Scandinavian Contractor A/S in Merseyside, England, and The Snetterton project in East Anglia, England.[76] The US EPA has already documented the feasibility, costs and efficiencies of baghouses for industrial coal and wood-fired boilers.[77] By not mandating the cleanest technologies, the Valley Air District is not meeting the MSM and BACM/BACT requirements for PM2.5 on solid fuel-fired boilers.

Additionally, District Rule 4352 contains a NOx emissions limit exemption that allows NOx emissions limits to not apply during startups and shutdowns.[78] This is an exemption not found in the Sacramento Air Quality Management District 's Rule 411.[79] This exemption undermines MSM requirements.

Glass Melting Furnaces: The District is not meeting MSM and BACM/BACT requirements as they pertain to glass manufacturing. In the same vein as solid fuel-fired boilers, the South Coast Air Quality Management District's (SCAQMD) BACT guidelines for glass furnaces identified a

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[71] San Joaquin Valley Air Pollution Control District. *2018 PM 2.5 Appendix C: Stationary Source Control Measure Analyses. Pg. C-156. Avaliable at.* https://www.valleyair.org/pmplans/documents/2018/pm-plan-adopted/C.pdf

[72] Alon Bakersfield Refining; Permit S-33-18-11, S-33-64-5, S-33-65- California Resources Production Corp, Permit S-40-3-9.

[73] Washington Statewide Wood Energy, *CASE STUDY: Quillayute Valley School District Biomass Boiler, at page 3. Available at* http://sustainablenorthwest.org/uploads/general/2016_April_Forks_WA_biomass_case_story_final.pdf.

[74] Biomass Magazine, *PES: New combustions systems benefit 2 Toronto-area paper mills. Available at* http://biomassmagazine.com/articles/14977/pes-new-combustions-systems-benefit-2-toronto-area-paper-mills.

[75] University of Iowa, *University of Iowa Power Plant. Available at* https://www.facilities.uiowa.edu/sites/www.facilities.uiowa.edu/files/wysiwyg_uploads/ppbrochure_1.pdf.

[76] Redecam Group, *Redecam Awarded Two Contracts by BWSC for Biomass Plants in England. Available at* http://www.redecam.com/2015/03/redecam-awarded-two-contracts-by-bwsc-for-biomass-plants-in-england/.

[77] United States Environmental Protection Agency, *Air Pollution Control Technology Fact Sheet. Available at* https://www3.epa.gov/ttnchie1/mkb/documents/ff-pulse.pdf.

[78] San Joaquin Air Pollution Control District, *Rule 4352. Available at* https://www.valleyair.org/rules/currntrules/r4352.pdf.

[79] Sacramento Air Quality Management Distrcit. *Rule 411. Available at.* http://www.airquality.org/ProgramCoordination/Documents/rule411.pdf#search=Rule%20411

baghouse as the best control technology application for PM,[80] yet, most facilities in the San Joaquin Valley do not utilize them. Baghouses should be considered MSM and BACM/BACT and applied to glass melting furnaces in the region. Looking forward, some facilities in the Valley are more advanced, and, thus, set the standard for what is feasible. A review of facility permits of glass facilities in the San Joaquin Valley revealed that Gallo Glass Company, located in Modesto, CA contains an Electric Glass Melting Furnace.[81] The operation of electric furnaces eliminates on-site emissions of PM2.5 and reduces multiple PM precursors when compared to gas-fired furnaces. Electric furnaces for glass melting must be considered MSM and BACM/BACT.

Stationary IC Engines: The District Agricultural Pump Replacement program currently provides funding to replace diesel, natural gas or propane engines with electric motors. Potential amendments to Rule 4702 would also seeks to replace spark-ignited agricultural engines with electric motors where access to electricity is available. To maintain stringency, the replacement of conventional internal combustion (IC) engines with electric engines would have to apply to agricultural *and* non-agricultural IC engines, including those used on oil fields.

In a similar fashion, past amendments to Rule 4702 established lower NOx limits for *non*-agricultural engines between 25-50 parts per million volume (ppmv) (rich-burn) and 65-75 ppmv (lean-burn). A proposed amendment to Rule 4702 seeks to further reduce NOx from 11 ppmv to 5 ppmv. Because non-agricultural IC Engines have demonstrated an ability to lower NOx levels to 11 ppmv, all IC Engines should be held to the same standard, including agricultural engines. Exemptions for agricultural IC engines undermines the most stringent measures requirement.

Furthermore, for PM2.5 control of stationary IC engines, Diesel Oxidation Catalysts (DOCs) could be used. DOCs convert the soluble organic fraction (SOF) of diesel particulate matter (PM) into carbon dioxide and water. DOCs can also reduce smoke emissions and virtually eliminate the characteristic odor associated with diesel exhaust. DOCs are relatively maintenance free, only requiring periodic inspection by the owner. Additionally, DOCs have been shown to be effective with units using biodiesel and emulsified diesel fuels, ethanol/diesel blends, and other diesel alternatives.[82] Engine manufacturers have used DOCs in different in-use applications for many years, and DOCs are widely used as a retrofit technology because of their simplicity and limited maintenance requirements.[83] Wall-Flow Diesel Particulate Filters (DPFs) also remove particulate matter in diesel exhaust by filtering the exhaust from the engine. DPFs verified by EPA and CARB are typically effective at reducing emissions of PM by 85 to 90 percent or more.[84] For units that are not able to immediately become electric, DOCs and/or DPFs should be required in order to reduce particulate matter emissions, especially for units using diesel fuel as they emit a relatively high amount PM.

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[80] South Coast Air Quality Management District. *Best Available Control Technology Guidelines. Pg. 69*, *Avalaible at* http://www.aqmd.gov/docs/default-source/bact/bact-guidelines/part-d---bact-guidelines-for-non-major-polluting-facilities.pdf

[81] San Joaquin Valley Air Pollution Control Distrcit. *Gallo Glass Company: Permit N-1662-8-10*

[82] Manufacturers of Emissions Control Association. *Emissions Control for Stationary Internal Combustion Engines.* Available at http://www.meca.org/resources/MECA_stationary_IC_engine_report_0515_final.pdf.

[83] EPA, *Technical Bulletin: Diesel Oxidation Catalyst. Available at* https://www.epa.gov/sites/production/files/2016-03/documents/420f10031.pdf.

[84] EPA, *Technical Bulletin Diésel Particulate Filters. Available at* https://www.epa.gov/sites/production/files/2016-03/documents/420f10029.pdf.

Conservation Management Practices: Fugitive dust produced by agricultural operations account for a statistically significant amount of year-round PM2.5 pollution; specifically, 9% of winter PM2.5 and 21% of summer PM2.5. District Rule 4550 requires agricultural operations comprised of 100 acres of contiguous or adjacent land to adopt a Conservation Management Plan (CMP) in order to address fugitive dust emissions. Farm owners must choose a few strategies from a list of practices. For instance, some farmers chose to place a layer of gravel with enough depth to minimize dust generated from vehicle movement while others chose to restrict public access to private roads. Overall, farmers have shown that all practices are feasible and achievable, and each strategy has an emission reduction benefit. To meet the MSM requirements, however, *all farmers* must be required to implement all of the specified dust mitigation practices where feasible rather than being allowed to choose only the least stringent.

***Wood Burning Fireplaces and Wood Burning Heaters*:** In response to EPA's findings that the curtailment thresholds in woodburning Rule 4901 are the most stringent in the nation, we refer you to the comments submitted on behalf of Earthjustice, NPCA, and CCAC on February 20, 2020, attached as Appendix F. These comments clarify our position that EPA's "holistic" approach to analyzing Rule 4901 is inconsistent with the CAA, individual measures within Rule 4901 are less stringent than control measures implemented in other air districts, and the District's "hot spot" strategy is inconsistent with the CAA's MSM requirements.

***Underfired Charbroiling*:** Emissions from commercial cooking are the third-largest source of combustion carbon in the Valley. Emissions are concentrated in urban areas, especially around the cities of Stockton, Modesto, Fresno and Bakersfield.[85] The PM2.5 Plan seeks to reduce emissions from under-fired charbroilers through a combination of incentives and regulatory measures, however, the District is using a "hot-spot" approach; the measures will only affect cities within Fresno, Madera and Kern Counites, and ignore the cities of Stockton and Modesto. Including these cities and other areas impacted by cooking emissions would expedite attainment of the Valley's federal health standards. Additionally, as stated in comments to EPA on the proposed approval of the District's wood burning fireplace and heaters rule, we believe the hot spot strategy as a whole violates MSM requirements by requiring more stringent measures in individual counties as opposed to within the Valley Air District as a whole.[86]

3. Additional Stationary or Area Sources not Identified by EPA

In addition to the mobile, stationary, and area sources included above, on many occasions throughout the State's SIP rulemaking process advocates identified numerous additional emission reduction opportunities not included in the 2018 Plan.[87] We believe this proposed rulemaking fails to properly analyze whether all sources and source categories in the Valley meet MSM and BACM/BACT requirements for PM2.5 emission reductions. Instead this proposal focuses its attention only upon rules that the State proposes to update, without properly analyzing opportunities for strengthening existing baseline emission sources or regulating sources yet to be

[85] California Air Resources Board, *UPDATE ON PM2.5 SIP DEVELOPMENT FOR THE SAN JOAQUIN VALLEY California Air Resources Board Meeting May 25, 2017*, Page 15. Available at https://www .arb.ca.gov/board/books/2017/052517/17-5-3pres.pdf.

[86] *See*, Appendix F at 9-10.

[87] *See Generally*, CVAQ comments on the 2018 SIP attached as Appendices C, D, and E.

controlled. These additional emission reduction opportunities include, but are not limited to, the following.

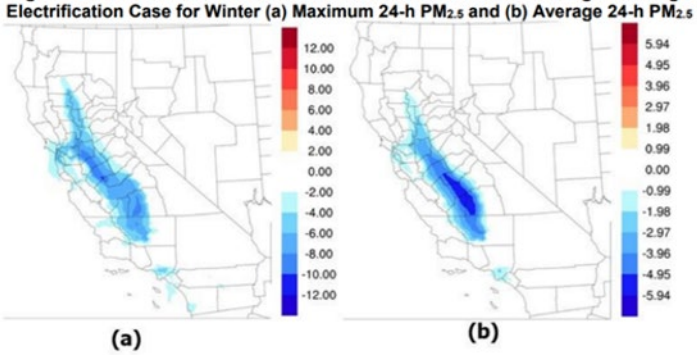
***Residential Fuel Combustion**:*

The District failed to seriously examine the potential to further control NOx emissions from Residential Natural Gas Combustion (collectively representing emissions from residential space heating, water heating, cooking, and "other").[88]

Residential fuel combustion is the largest area-wide source of NOx in the San Joaquin Valley— emitting more NOx emissions than emissions from all light-duty passenger vehicles— and a significant source of direct PM2.5. (Appendix B Emission Inventory Table B-2). Based on 2018 census data, 12,000 new residential units are added in the Air District per year, the majority of which are likely to use gas, increasing the level of NOx emissions with each new gas-operating building.

In determining MSM and BACM for residential fuel combustion for PM2.5, the District should have considered setting a zero-NOx standard for new buildings and for appliance replacements in existing buildings. In effect, this standard, while specific to NOx, would require that new buildings are constructed to operate without natural gas combustion and that all replacements of appliances in existing buildings are with zero-emission space and water heaters, stoves, and dryers, thus simultaneously reducing PM2.5. The air quality benefits of building electrification are evident across California, but studies point to the particularly notable benefits to winter PM2.5 peaks in the San Joaquin Valley.[89] The figure below demonstrates that high-levels of building electrification yield average 24-hour PM2.5 reductions of -5.9 ug/m3 relative to the reference case.[90] This reduction corresponds only with electrification of current natural gas building use and does not assume any changes in emissions from other residential fuel sources such as wood burning.

Figure F-7: Difference From the Reference Case Predicted for the High Buildings Electrification Case for Winter (a) Maximum 24-h $PM_{2.5}$ and (b) Average 24-h $PM_{2.5}$



Source: UCI APEP [91]

[88] Emission Inventory 2006 Area Source Emission Inventory Methodology 610 – Residential Natural Gas Combustion http://www.valleyair.org/Air_Quality_Plans/EmissionsMethods/MethodForms/Current/ResidentialNG2006.pdf.

[89] See , e.g. California Energy Commission, The Challenge of Retail-Gas in California's Low-Carbon Future, (April 2020) "Building electrification is found to improve outdoor air quality and public health outcomes, particularly in the winter, when nitrogen oxide emissions create secondary fine particulate matter (PM 2.5) pollution in the Central Valley" at 5.

[90] Appendix F: Air Quality Impacts of Future of Natural Gas Scenarios: *The Challenge of Retail Gas in California's Low-Carbon Future Appendices*, at F-10.

[91] *Id.*

In its BACM assessment of Rule 4902 (emission limits for residential water heaters), the District claims that staff "did not find any additional measures currently available or will be available prior to the 2025 attainment deadline date that could improve the effectivity of this rule." But the point is contradicted by the District's own acknowledgement that "the potential opportunity would be to replace natural gas and propane water heaters with units that run on electricity."[92] The District admits that "[w]hile the lifetime cost of an electric water heater is higher than that of propane and natural gas, the emissions benefits may make converting to electric water heating a viable control strategy." Yet they fail to provide any justification for why such a control strategy should not be adopted.

A zero-NOx appliance standard or all-electric new building requirement is both technologically and economically feasible and is the best way to reduce PM2.5 emissions. Notwithstanding the District's assertion about higher lifetime costs, several studies show that residential building electrification is not only a cost-effective air pollution control, but that it is actually cost-*saving*. A California-specific study found all-electric new construction yields lifecycle cost savings of $130-$540/year over mixed-fuel new homes based on "commonly available technology, without incentives or intervening policies."[93] Furthermore, all-electric requirements are being used in practice to control emissions (as well as to deliver public safety, greenhouse gas mitigation, and greater energy efficiency) by several jurisdictions across California and in other states. As of March 27th, 2020, 30 cities or counties across California have set building codes that require some or all new buildings to either eliminate or reduce their reliance on gas.[94] The measures range from requirements on only low-rise residential buildings to requirements for all classes of both residential and commercial buildings. Some are limited only to space and water heating while others eliminate the use of any gas combustion. The City of Cupertino's definition of an all-electric requirement even applies to water heaters for outdoor pools and spas.[95]

Even though the District acknowledges fuel switching to electric water heating is potentially cost-effective, they offer no explanation for rejecting such a control measure for the benefits they would have in reducing PM2.5 emissions. Moreover, in their BACM assessment for *Rule 4905 (Natural Gas-Fired, Fan-Type Central Furnaces)*, they fail to mention the availability of high-efficiency electric heat pumps to deliver cost-effective, zero-emission space heating. While the cost-effectiveness of zero-emission space and water heaters, cook-stoves, and clothes-dryers may be a matter of discussion (we remain confident in their potential to deliver overall cost-savings in most instances), the fact that these control technologies are available and used as controls by other jurisdictions is indisputable. The District failed to seriously evaluate them for one of the largest sources of NOx emissions in the Valley despite them being an economically and technologically feasible measure that is achieved in practice across the US.

Manmade NOx from fertilized fields: Advocates and researchers alike have identified manmade NOx emissions from soil as an unexplored and under-regulated source contributing to PM2.5 pollution

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[92]Appendix C: Stationary Source Control Measure Analyses at C-288

[93]Energy and Environmental Economics, Residential Building Electrification in California – Consumer Economics, Greenhouse Gases and Grid Impacts (April 2019) At viii.

[94] Matt Gough, "California's Cities Lead the Way to a Gas-Free Future" (Mar. 27, 2020) https://www.sierraclub.org/articles/2020/03/californias-cities-lead-way-gas-free-future.

[95] City of Cupertino, City Council Staff Report (Jan 21, 2020) available at http://cupertino.legistar.com/gateway.aspx?M=F&ID=5ca87afb-cc24-4227-85aa-778a08d835f3.DOCX.

in the Valley. For instance, researchers working with CARB identified soil NOx as the likely culprit in the search for a large amounts of unaccounted for NOx emissions found in central California.[96] Moreover, recent research found that NOx levels in the Central Valley could be as much as 20-51% higher than currently included in the State's NOx budget when accounting for the contribution soil NOx.[97]

CARB's current position on soil NOx is that 100% soil NOx emissions in the Valley are natural and, therefore, no soil NOx emissions in the Valley are the result of influences such as man-made nitrogen-based fertilizer treatments. We believe this position significantly underestimates the amount of NOx emissions that could be controlled through better management practices. Even if the overall NOx budget is not higher than currently estimated, it still seems highly likely that man-made fertilizer treatments account for at least a portion of soil NOx emissions in the Valley. Yet, there are no proposed control measures for soil NOx in the State's plan.

To proceed with a plan that writes off 100% of soil NOx emissions as natural abdicates EPA and the State's duty to reduce all sources of PM2.5 using the most stringent measures available. Before approval of the extension request, EPA should require the State to research the levels of manmade NOx pollution coming from soils in the Valley and develop control measures to reduce NOx emissions from sources such as fertilizer treatments.

Ammonia: Because of its contribution in the formation of ammonium nitrate, ammonia is a significant contributor to PM2.5 pollution in the Valley. Yet, EPA is proposing to approve of the State's precursor analysis that leaves this source completely unregulated. As stated in 40 CFR 51.1006(a)(1), "A comprehensive precursor demonstration must show that emissions of a particular precursor from all existing stationary, area, and mobile sources located in the nonattainment area *do not contribute significantly to PM2.5 levels that exceed the standard in the area*" (emphasis added). The State's precursor analysis tries to get around this significant contributor requirement by stating that ammonia is NOx limited in the Valley, and thus controlling it is not cost-effective when compared with controls for NOx and direct PM2.5 emissions. We disagree with this assessment on several fronts.

First, A 30% reduction to ammonia has been shown by the State to have noticeable effects on reducing overall PM2.5 levels, (by as much as 0.9 to 3.3 μg/m^3 for the 2013 baseline year).[98] Given the current lack of incentive funding and the increasingly costly price tag and diminishing returns associated with achieving additional NOx reductions from categories such as mobile sources, we believe significant ammonia reductions are indeed necessary to meet the aggregate reductions committed to by the State. Next, as noted above, if soil NOx levels in San Joaquin Valley are in fact significantly undercounted, then the calculation for whether ammonia is truly NOx limited would change.[99] For instance, if the higher end estimates from the research are correct and the State's NOx budget is truly as much as 51% higher than currently thought, then the cost to benefit ratio for

[96] Michael Kleeman, et. al., *CARB Presentation: Particulate Nitrate Modeling in the San Joaquin Valley*, June 26, 2019 at 19:00-25:15. Available at https://www.youtube.com/watch?v=VGNH46rlzsc&feature=youtu.be.
[97] Maya Almaraz, et. al. *Agriculture is a major source of NOx pollution in California*, Science Advances Vol. 4, No. 1 (2018). Available at, https://advances.sciencemag.org/content/4/1/eaao3477.
[98] SJVAPCD, Precursor Demonstrations for Ammonia, SOx, and ROG at 7. Available at www.valleyair.org/pmplans/documents/2018/pm-plan/G.pdf. *See also*, 85 Fed. Reg. 17392.
[99] Maya Almaraz, et. al. *Agriculture is a major source of NOx pollution in California*, Science Advances Vol. 4, No. 1 (2018). Available at, https://advances.sciencemag.org/content/4/1/eaao3477.

controlling ammonia would be completely different when considering the elevated levels of NOx available to form ammonium nitrate.

While we recognize that more research needs to be done to fully understand the contributions of ammonia and soil NOx to PM2.5 formation, sufficient data substantiates the contribution of ammonia to PM2.5 formation in the Valley. Likewise, with few other options available to make up the aggregate emission reductions committed to by the State, we believe ammonia control measures are necessary to achieve MSM requirements.

4. Current District Rules Do Not Satisfy MSM and BACM/BACT Requirements Because of Loopholes allowing for Noncompliance.

While numerous rules adopted by the SJVAPCD may appear on paper as meeting MSM or BACM/BACT requirements, numerous loopholes in how the District implements their rules for a number of sources allow polluters to avoid compliance, thus, affecting the actual stringency of such rules when compared to what is required or what has been achieved elsewhere. For instance, the District continues to issue permits for new or expanded operations of polluting facilities utilizing Emission Reduction Credits (ERCs) for criteria air pollutants, despite determinations from EPA and CARB that some of these credits are invalid or grossly overestimated.[100] CVAQ and other advocates have raised serious concerns about the overall validity of the credits contained in the ERC banks, as well as concerns about the lack of transparency in how the equivalency demonstration is determined. In response to CVAQ's concerns, CARB's enforcement division is currently reviewing the program. While the review is underway, inaccuracies and loopholes in these ERC banks have serious implications for the San Joaquin Valley air basin's ability to reach attainment. Oil and gas production companies located in Kern County are the largest stationary sources of PM2.5, nitrogen oxides (NOx), and carbon dioxide (CO2) in the San Joaquin Valley.[101] These companies also own the majority of Emission Reduction Credits.

The oil industry enjoys further exemptions in Rules 4623 (Storage of Organic Liquids) and 2020 (Authority to Construct or Permit to Operate Exemptions), for operators that produce "an average of less than 6000 barrels per day of crude oil from all operations within the county."[102] According to data from the State Division of Oil, Gas, and Geothermal Resources (DOGGR), recently renamed California Geologic Energy Management (CalGEM), there are currently about 40,000 active oil and gas wells in the counties making up the APCD.[103] We are unaware of any independent monitoring and verification to attain the classification of being a small producer other than self-reporting by the regulated entities themselves. Furthermore, emissions from these sources are quantified using emissions factors rather than from on-site data collection. These data limitations make it virtually impossible to determine any trends or averages in emissions from tanks and, in turn, the pollution impact of the tanks of small producers exempt from Rule 4623. The continued exemptions in District rules for emissions from operators using tanks with limited throughput is a missed opportunity for pollution reduction. In addition, the exemptions effectively mean that there is no enforceable mechanism to reduce pollution from an entire class of emission sources.

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[100] Earthworks, Undeserved Credit: https://earthworks.org/cms/assets/uploads/2018/11/CA-ERC-Report-Earthworks-10-31-18.pdf).

[101] *See*, Appendix D at 4-5.

[102] *See*, https://www.valleyair.org/rules/currntrules/r4623.pdf. *See also*, Section 6.6.12 of San Joaquin Valley Air District Rule 2020, http://www.valleyair.org/rules/currntrules/R2020Rule.pdf.

[103] *See*, Well Search database at https://secure.conservation.ca.gov/WellSearch. Counties include Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare, and part of Kern).

C. State Fails to Show Attainment as Expeditiously as Practical.

CAA obligations governing both Serious area SIPs and attainment deadline extensions require a demonstration that the Plan will reach attainment "as expeditiously as practicable."[104] For the reasons stated above, the State has failed to demonstrate expeditious attainment because control measures for various sources that are less stringent than what is required by MSM and BACM/BACT. Furthermore, as specified by EPA in this proposed rulemaking, to accomplish expeditious attainment, the State must implement MSM "no later than the beginning of the year containing the attainment date identified by the State in its extension request, i.e. in this case, by January 1, 2024"[105] When looking at the 2018 PM2.5 plan, it becomes clear that many of CARB and SJVAPCD's measures will not be implemented until after January 1, 2024, and thus should not be counted towards attainment with the 2006 SIP or extension request. Furthermore, as stated in the above section on RFPs and quantitative milestones, several of the District's rules outlined in the 2018 plan and included in this proposal (specifically District Rules 4311, 4306, and 4320) set implementation dates in 2023. However, scoping presentations for those rules have now listed implementation dates for those measures as beginning in 2024.

V. EPA's Limited Comment Period Has Significantly Limited Public Engagement During the COVID-19 National Emergency.

As detailed in separate coalition letters to EPA authored by NPCA and CVAQ, we believe that EPA's limited 30-day comment period for this proposal has drastically diminished the ability of the public to engage with this rulemaking process and is contrary to public participation requirements at the heart of the CAA and Administrative Procedures Act.[106] In the midst of one of the worst public health crises in American history—one that disproportionally impacts those already forced to breathe unhealthy air—it is reckless for EPA to push through such a poorly supported proposal without further opportunities for public engagement. We again ask for additional time to provide public comments on this proposal so we have time to engage more with affected members of the public and include addition details about how the 2018 plan can be improved.

VI. Conclusion

As organizations representing residents of the dirtiest air basin in the nation for PM2.5 air pollution, we cannot afford 5 more years of delay in achieving clean air.[107] We need a plan that will guarantee clean air for San Joaquin Valley communities and nearby public lands immediately—not a plan that offers assurances that the State is incapable of fulfilling.

For the above stated reasons, we request that EPA use its authority to require CARB and the Valley Air District to remedy the significant deficiencies we have identified prior to granting approval of the 2006 SIP requirements and 5-year extension request. If these deficiencies cannot be remedied in time, we advise EPA to deny the 5-year extension and submit a finding that the San Joaquin Valley has failed to attain the 2006 PM2.5 standard for Serious areas.

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[104] CAA § 188(c)(2) & 189(b)(1)A). *See also*, CAA § 188(e).
[105] 85 Fed. Reg. at 17397.
[106] *See generally,* Appendix G.
[107] *See*, American Lung Association, 2020 State of the Air Report: Most Polluted Cities. *Available at*, http://www.stateoftheair.org/city-rankings/most-polluted-cities.html.

Sincerely,

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Central Valley Air Quality Coalition

Bill Magavern
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