March 28, 2023

Michael S. Regan, Administrator
U.S. Environmental Protection Agency
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Washington, D.C 20460

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Submitted To: Docket No. EPA-HQ-OAR-2015-0072.

Re: Proposed Reconsideration of the National Ambient Air Quality Standard for Particulate Matter.

Dear Administrator Regan:

The Midwest Ozone Group ("MOG")[1] is pleased to offer these comments on the proposal by the U.S. Environmental Protection Agency ("EPA") to lower the level of the primary annual PM2.5 National Ambient Air Quality Standard ("NAAQS"). 88 Fed. Reg. 5,558 (January 27, 2023). The comment period on this proposal closes on March 28, 2023.

MOG is an affiliation of companies and associations that draws upon its collective resources to seek solutions to the development of legally and technically sound air quality programs that may impact on their facilities, their employees, their communities, their contractors, and the consumers of their products. MOG's primary efforts are to work with policy makers in evaluating air quality policies by encouraging the use of sound science. MOG has been actively engaged in a variety of issues and initiatives related to the development and implementation of air quality policy, including the revision of the ozone and particulate matter NAAQS, development of transport rules (including the Revised CSAPR Update and the 2015 ozone NAAQS federal implementation plan), nonattainment designations, petitions under Sections 126, 176A and 184(c) of the Clean Air Act ("CAA"), NAAQS implementation guidance, the development of Good

[1] The members of and participants in the Midwest Ozone Group include: Alcoa, Ameren, American Electric Power, American Forest & Paper Association, American Iron and Steel Institute, American Wood Council, Appalachian Region Independent Power Producers Association, Associated Electric Cooperative, Big Rivers Electric Corp., Buckeye Power, Inc., Citizens Energy Group, City Water, Light & Power (Springfield IL), Cleveland Cliffs, Council of Industrial Boiler Owners, Duke Energy Corp., East Kentucky Power Cooperative, ExxonMobil, FirstEnergy Corp., Indiana Energy Association, Indiana-Kentucky Electric Corporation, Indiana Municipal Power Agency, Indiana Utility Group, Hoosier Energy REC, LGE/ KU, Marathon Petroleum Company, National Lime Association, North American Stainless, Nucor Corporation, Ohio Utility Group, Ohio Valley Electric Corporation, Olympus Power, Steel Manufacturers Association, and Wabash Valley Power Alliance.

Neighbor State Implementation Plans ("SIPs") and related regional haze and climate change and environmental justice issues. MOG Members and Participants own and operate numerous stationary sources that are affected by air quality requirements including the particulate matter NAAQS.

Specifically, EPA proposes to revise the primary annual National Ambient Air Quality Standard (NAAQS)2.5 standard for particulate matter with diameters generally less than 2.5 microns in diameter (PM2.5) by lowering the level from 12.0 μg/m3 to within the range of 9.0 to 10.0 μg/m3 and taking comment on alternative annual standard levels down to 8.0 μg/m3 and up to 11.0 μg/m3 . In addition, EPA proposes to retain the current primary 24-hour PM2.5 standard (at a level of 35 μg/m3) while taking comment on revising the level as low as 25 μg/m3 ; to retain the primary 24-hour NAAQS for particulate matter with diameters generally less than 10 microns in diameter (PM10), without revision; and, not to change the secondary particulate matter (PM) standards at this time, while taking comment on revising the level of the secondary 24-hour PM2.5 standard as low as 25 μg/m3.

For reasons set out below, MOG supports EPA's proposal to retain the current primary 24-hour PM2.5 standard at a level of 35 μg/m3; to retain the primary 24-hour PM10 standard, without revision; and, not to change the secondary PM standards. However, MOG opposes EPA's proposal to lower the annual PM2.5 standard from its current level of 12.0 μg/m3.

1. MOG supports the Administrator's proposed conclusion that there is a lack of scientific evidence to support changing the current 24-hour and annual secondary PM2.5 standards and 24-hour PM10 standard.

MOG supports EPA's recent 2020 conclusion that expanded research and studies do not call into question the 24-hour PM10 standard. CASAC determined that was reasonable to retain the primary 24-hour PM10 standard given the available scientific evidence, including PM10 as an appropriate indicator. MOG supports the rulemaking proposal to retain the standard, without revision. The PM10 standard continues to provide protection against effects associated with short-term exposure to thoracic coarse particles. EPA has retained the 24-hour PM10 standard to address visibility and non -visibility welfare effects. The decision in 2020 supports this proposal that the scientific information available supports retention of the primary PM10 standard as providing public health protection against PM10-2.5 exposures, regardless of location, source of origin, or particle composition. The proposal to retain the 24-hour standard represents protection of public health with an adequate margin of safety and accordingly the proposal is sufficiently protective, but not more stringent than necessary.

MOG acknowledges the lack of clear scientific evidence and information relative to any change to the primary 24-hour PM2.5 standard. This is supported by the fact that EPA has proposed taking comment on two ranges of potential reduction. EPA is unable to recommend a single range for the standard highlights the lack of scientific direction. More thorough and targeted assessment of existing research by EPA of the different species of PM2.5 must be included in the record and become part of any final proposal. As the record reflects, the CASAC did not reach a consensus on revision to the primary 24-hour standard. MOG supports the proposal to retain the 24-hour PM2.5 standard. EPA's previous decision in 2020 to retain the primary 24-hour standard continues

to be supported by current research. The record supports the conclusion that the 24-hour standard (with its 98th percentile form) is more directly tied to short-term peak PM2.5 concentrations, and more likely to appropriately limit exposures to such concentrations.

Retention of the current secondary PM standards is well supported by the scientific evidence to date. The secondary PM standards were affirmed in 2020 based on the scientific and technical information available at that time, as well as the Administrator's judgments regarding the available welfare effects evidence, the appropriate degree of public welfare protection for the existing standards, and available air quality information on visibility impairment that may be allowed by such a standard. Updated analyses of the science and quantitative analysis supports the proposal relative to the secondary PM standard.

2. Compliance with the current annual PM NAAQS should not provide the basis for a further tightening of that standard.

As justification for development of the NAAQS, the Clean Air Act sets the regulatory action as one based on scientific and quantitative evidence of protection of human health and the environment to an adequate margin of safety. Recent ambient PM2.5 concentrations reflect the monitored and modeled attainment of the PM NAAQS. These results reflect protection of public health and welfare as derived by assessment of science and policy by the U.S. Environmental Protection Agency. The record reflects substantial reductions that have occurred across much of the U.S. From 2000 to 2019, national annual average PM2.5 concentrations declined from 13.5 μg/m3 to 7.6 μg/m3, a 43%. These declines have occurred at urban and rural monitoring sites. EPA's data indicates trends across the country that demonstrate no significant change since 2000 at most sites. The data indicates that local sources are often implicated in elevated readings.

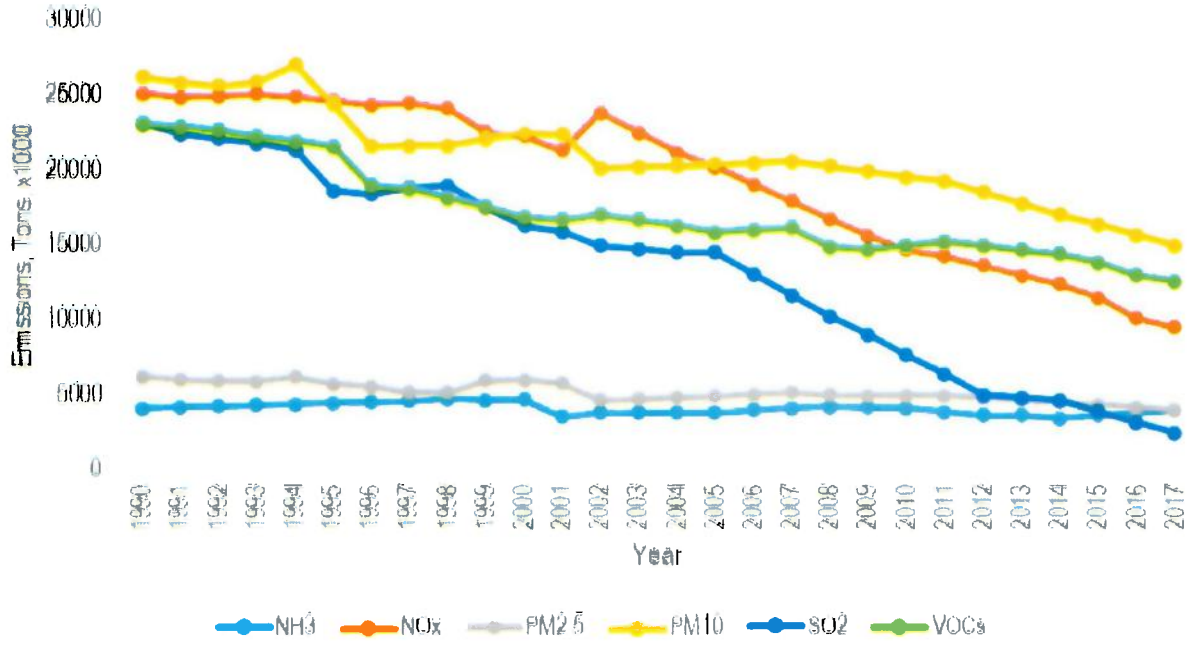
EPA is reminded of the goal of the NAAQS is not attainment and then revision upon attainment to set a new goal. It is imperative that the NAAQS is based upon science indicating inadequate margins of safety that guides the policy decision. The lack of consensus among CASAC members illustrates the varied nature of the research. MOG supports thoughtful application of the research and questions the merit in revising the standard at this point in time. Members of the CASAC stated that the ``risk assessment indicates that the annual standard is the controlling standard across most of the urban study areas evaluated and revising the level of the 24-hour standard is estimated to have minimal impact on the PM2.5-associated risks." The comments from the CASAC took note of uncertainties that remain in this reconsideration of the primary PM2.5 standards and they identified a number of additional areas for future research and data gathering that would inform future reviews of the primary PM2.5 NAAQS. MOG urges the agency to take the opportunity and investment of public and private funds to more appropriately develop, review and refine its ongoing assessment of the need to revise the PM/PM2.5 NAAQS, rather than completing this rulemaking proposal to modify the annual PM2.5 standard by lowering the level from 12.0 μg/m3 to within the range of 9.0 to 10.0 μg/m3.

3. Air quality for PM has improved significantly in recent years resulting from a reduction in PM related emissions.

Long-term reductions in ambient PM2.5 concentrations have been occurring for decades. This downward trend in air quality is directly related to a downward trend in emissions from rules that are already "on-the-books" which are projected to continue for years to come. This has been demonstrated by air quality modeling performed by EPA and documented with the NPR. EPA's own analysis demonstrates the significant reduction that has occurred at most monitors in the continental US.

EPA's latest emission trends reports[2] support that since 1970, implementation of the Clean Air Act and technological advances from American innovators have dramatically improved air quality in the U.S. Since that time, the combined emissions of criteria and precursor pollutants have dropped by 78%, including a 40% reduction in direct PM2.5 since 1990.

The reductions in PM2.5 concentrations correspond to the reductions in PM2.5 precursor emissions illustrated in Figure 1. Among the PM2.5 precursors (i.e., SO2, NOx, VOC, and ammonia), the largest emission reductions occurred for SO2 and NOx. SO2 emissions decreased by 84% between 2002 and 2017, and NOx emissions decreased by 60%. Reductions in SO2 emissions were relatively large from stationary sources in the Eastern U.S. NOx emission reductions were driven by reduced emissions from mobile and stationary sources. Compared with SO2 and NOx, emissions of primary PM2.5 and ammonia have been relatively flat in recent decades. The small changes in primary PM2.5 emissions in this Figure are likely due to changes in emission estimation methods for source sectors over time.



[2] https://gispub.epa.gov/air/trendsreport/2022/#naaqs_trends

Figure 1. National Emission Trends of PM2.5, PM10, and Precursor Gases from 1990 to 2017

Figure 2 presents a two-decade trend of annual, direct PM2.5 emissions as reported by EPA that is commensurate with the improvements in annual PM2.5 concentrations seen in Figure 3 over the same period.

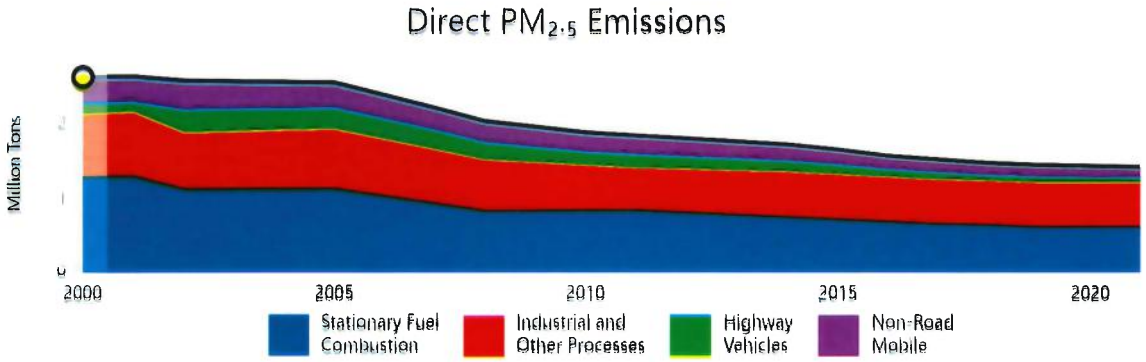


Figure 2. Direct PM2.5 annual emission trends by major category (2000-2021).

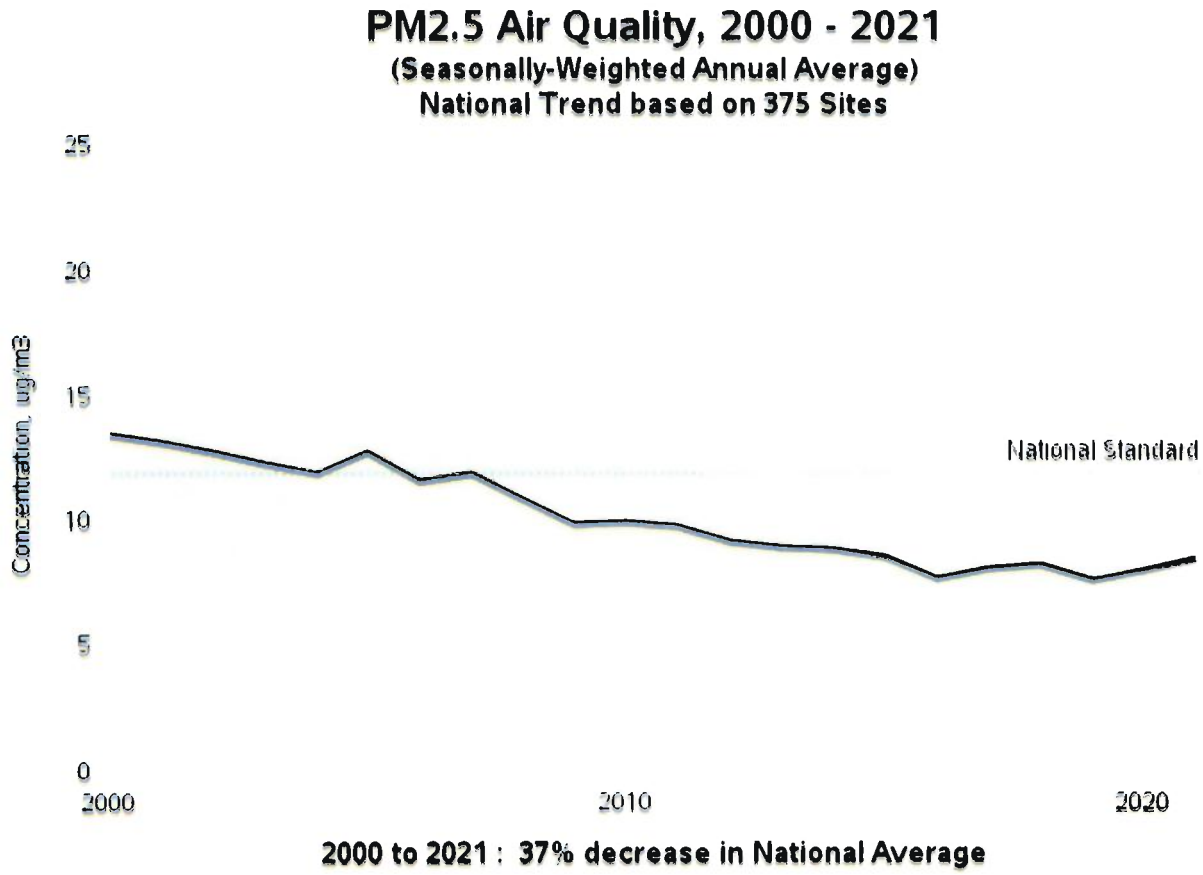


Figure 3. Decrease in national average annual PM2.5 concentrations (2000-2021).

This is further evidenced by the fact that geographic trends of annual PM2.5 concentrations are improving nationwide during these two decades. As presented in Figure 4, annual PM2.5 concentrations were once largely, on average, above the current national standard of 12 μg/m3. These concentrations have now fallen below the national standard at most monitors. Current 2021 design values are presented in Figure 5, notably with only limited monitors above the current NAAQS and concentrated in the western US and influenced by recent wildfire events.

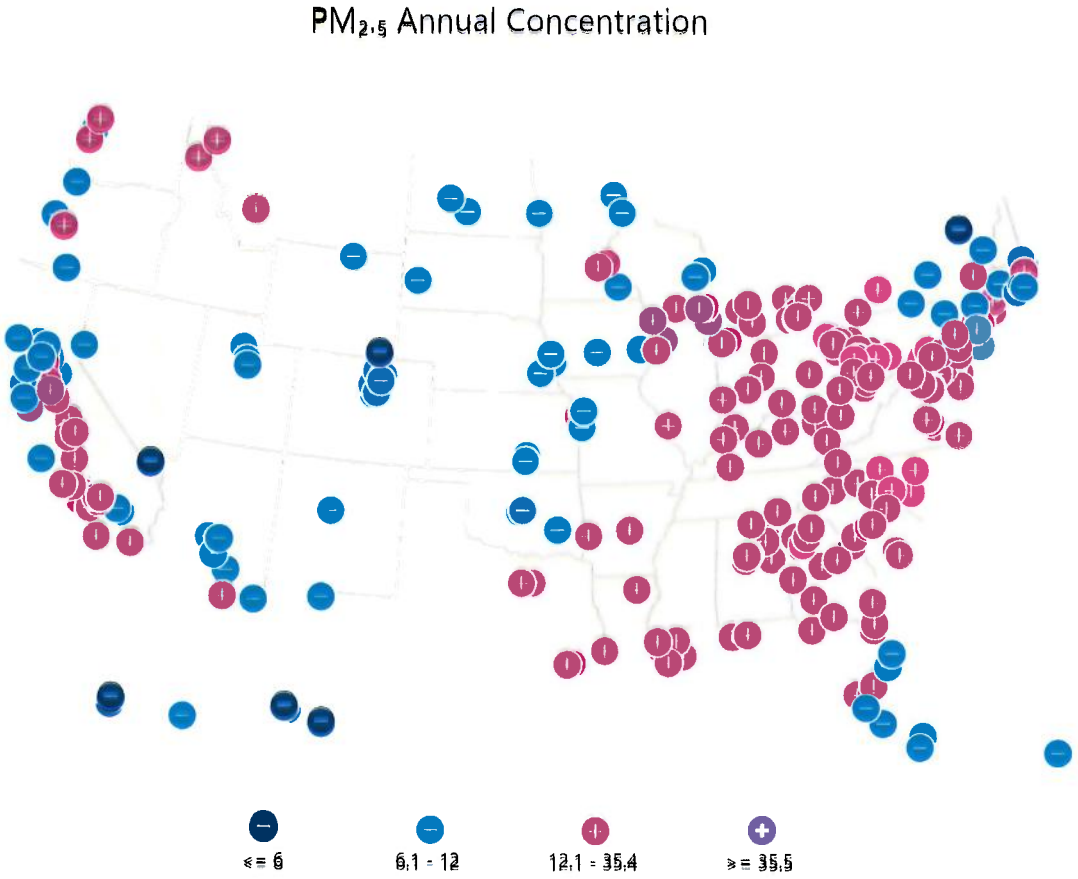


Figure 4. Annual 2000 PM2.5 concentrations by monitor.

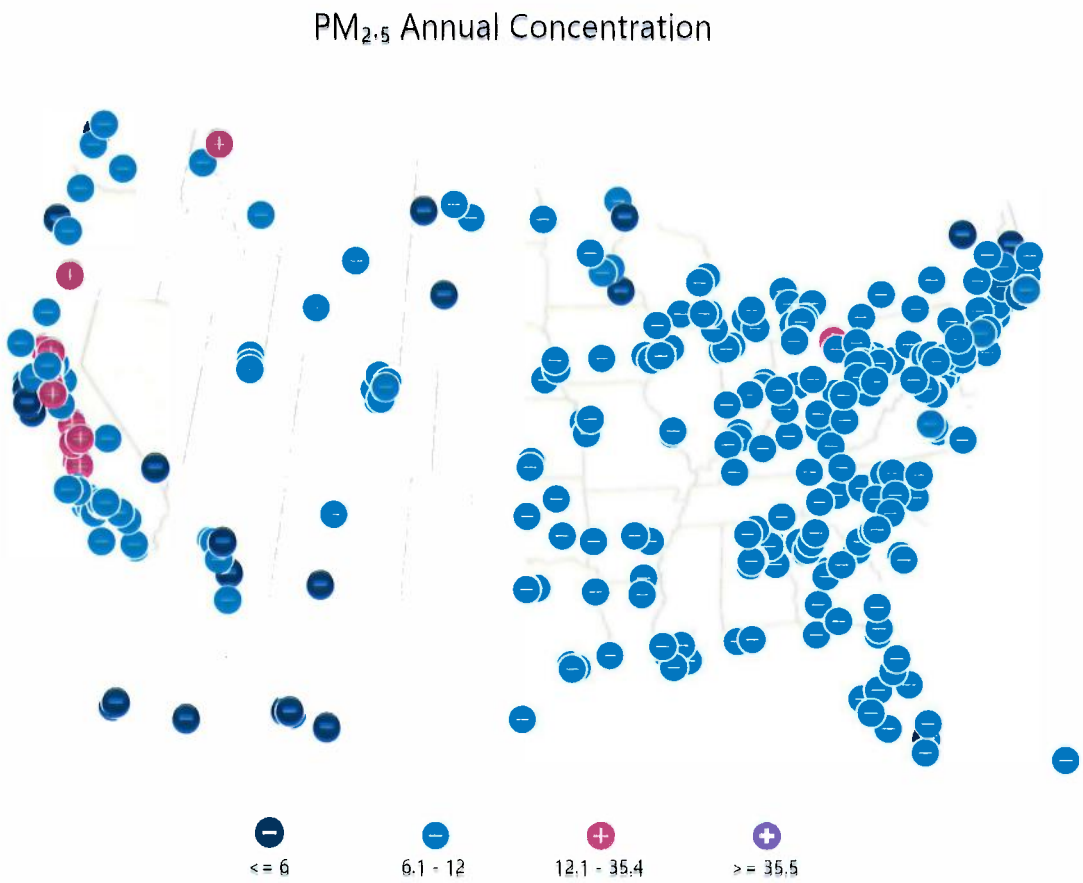


Figure 5. Annual 2021 PM2.5 concentrations by monitor.

4. EPA should delay promulgation of the rule until it releases the revised 2032 modeling platform so that future projections can be assessed, and on-the-books controls have been included.

On February 13, 2023, EPA published a disapproval of Good Neighbor SIPs for 19 states (88 Fed. Reg. 9,336). In its disapproval notice, EPA provided a "Background on the EPA's Ozone Transport Modeling Information." *Id* at 9,338.

Within that background discussion, EPA described the iterations of its emissions, beginning with the CSAPR rulemakings in 2011, and continuing through revisions up to and including the revisions used to support the disapprovals of the Good Neighbor SIPs of the 19 states affected by the rulemaking. EPA notes that, "[f]ollowing the final Revised CSAPR Update, the EPA made further updates to the 2016-based emissions platform to include updated onroad mobile emissions from Version 3 of the EPA's Motor Vehicle Emission Simulator (MOVES) model (MOVES3) and updated emissions projections for electric generating units (EGUs) that reflect the emissions reductions from the Revised CSAPR Update, recent information on plant closures, and other inventory improvements," creating updated emissions platform, 2016v2. *Id.* at 9,339.

EPA adds that it

> invited and received comments on the 2016v2 emissions inventories and modeling that were used to support proposals related to 2015 ozone NAAQS interstate transport... In response to these comments, the EPA made a number of updates to the 2016v2 inventories and model design to construct a 2016v3 emissions platform which was used to update the air quality modeling. The EPA made additional updates to its modeling in response to comments as well. The EPA is now using this updated modeling to inform its final action on these SIP submissions." (emphasis added),

The Regulatory Impact Analysis (RIA) for this proposed PM NAAQS reconsideration rule "presents estimates of the costs and benefits of applying illustrative national control strategies in 2032 after implementing existing and expected regulations and assessing emissions reductions to meet the current annual and 24-hour particulate matter NAAQS (12/35 μ/m3)." (88 Fed Reg 5563) EPA has yet to publish projected emissions for the 2032 date using its most advanced and up to date emissions inventory, the 2016v3 platform. Until such time as the 2016v3 platform, which presumably would incorporate not only inventory updates but also the results of reductions provided by on the books controls, is available for projecting emissions to 2032 period, MOG requests that EPA delay promulgation of the rule until it has utilized the revised 2016v3 modeling platform to project emissions and made the results available and subject to public notice and comment.

5. International studies should not be included in the reconsideration because they are not Comparable to the US Studies Considered in and Applicable to the Standard Setting Process Under the Clean Air Act.

In the proposed rule, EPA solicits comments on the relevance and limitations of international studies. The proposed NAAQS reconsideration at 88 Fed. Reg. 5,567 notes the inclusion of Canadian epidemiologic studies in the summary of the process for reconsideration of the 2020 PM NAAQS decision as follows:

> Building on the rationale presented in section 1.2.1, the ISA Supplement considers peer-reviewed studies published from approximately January 2018 through March 2021 that meet the following criteria:
>
> Health Effects
>
> - U.S. and Canadian epidemiologic studies for health effect categories where the 2019 ISA concluded a "causal relationship" (i.e., short- and long-term PM2.5 exposure and cardiovascular effects and mortality).
> - U.S. and Canadian epidemiologic studies that employed alternative methods for confounder control or conducted accountability analyses (i.e., examined the effect of a policy on reducing PM2.5 concentrations).

Welfare Effects

- U.S. and Canadian studies that provide new information on public preferences for visibility impairment and/or developed methodologies or conducted quantitative analyses of light extinction.

Key Scientific Topics

- Experimental studies (i.e., controlled human exposure and animal toxicological) conducted at near-ambient PM2.5 concentrations experienced in the U.S.
- U.S.- and Canadian-based epidemiologic studies that examined the relationship between PM2.5 exposures and severe acute respiratory syndrome coronavirus 2 (SARS–CoV–2) infection and coronavirus disease 2019 (COVID– 19) death.

At-Risk Populations:

U.S.- and Canadian-based epidemiologic or exposure studies examining potential disparities in either PM2.5 exposures or the risk of health effects by race/ethnicity or socioeconomic status (SES).

At page 88 Fed Reg 5627, there is a discussion of the results of "international studies" in Section II.D.3.b, styled "Consideration of Alternative Primary Annual PM2.5 Standard Levels," which relates only to Canadian epidemiological studies as follows:

> The Administrator also takes into consideration the long-term mean PM2.5 concentrations reported in Canadian epidemiologic studies that, in the context of the larger body of available evidence, provided support for causal or likely to be causal determinations between PM2.5 exposure and health effects, as summarized in the 2019 ISA and ISA Supplement. He notes that the study-reported means from these Canadian studies tend to be somewhat lower than those reported from the key epidemiologic studies in the U.S. ranging from 6.9–13.3 μg/m3 for the monitor-based studies and 5.9–9.8 μg/ m3 for the hybrid model-based studies. However, the Administrator is also mindful that there are important differences between the exposure environments in the U.S. and Canada and that interpreting the data (e.g., mean concentrations) from the Canadian studies in the context of a U.S.-based standard may present challenges in directly and quantitatively informing decisions regarding potential alternative levels of the annual standard, as detailed above. He additionally notes that the majority of the CASAC pointed to the Canadian studies as supporting their recommendation to revise the annual standard level to within the range of 8.0–10.0 μg/m3. Based on this, the Administrator is not excluding Canadian studies from his consideration in this

reconsideration, but he is considering them in light of the limitations and challenges presented. (emphasis added)

References to results of Canadian and other international studies are found at 88 Fed. Reg. 5,583:

> Taken together, the 2019 ISA and the ISA Supplement conclude that recent multicity studies conducted in the U.S., Canada, Europe, and Asia continue to provide consistent evidence of positive associations between short-term PM2.5 exposures and total mortality across studies that use different approaches to control for the potential confounding effects of weather (e.g., temperature) (U.S. EPA, 2019a, section 1.4.1.5.1; U.S. EPA, 2022a, section 3.2.1.2).

Additional references are found at 88 Fed. Reg. 5,598:

> Additionally, epidemiologic studies outside of the U.S. and Canada generally reflect higher PM2.5 concentrations in ambient air than are currently found in the U.S. and are less relevant to informing questions about adequacy of the current standards. However, and as noted above, the PA also recognizes that while information from Canadian studies can be useful in assessing the adequacy of the annual standard, there are still important differences between the exposure environments in the U.S. and Canada and interpreting the data (e.g., mean concentrations) from the Canadian studies in the context of a U.S.-based standard may present challenges in directly and quantitatively informing questions regarding the adequacy of the current or potential alternative the levels of the annual standard. Lastly, the PA emphasizes multicity/multistate studies that examine health effect associations, as such studies are more encompassing of the diverse atmospheric conditions and population demographics in the U.S. than studies that focus on a single city or state. Figures 3–4 through 3–7 in the PA summarize the study details for the key U.S. and Canadian epidemiologic studies (U.S. EPA, 2022b, section 3.3.3.2.1).74 (emphasis added)

MOG notes that the Administrator takes great pains to clarify that the Canadian and other foreign epidemiologic studies are not directly comparable to US epidemiologic studies for a number of valid reasons cited in the proposed rule by the Administrator. For those reasons, MOG believes that the international epidemiologic studies discussed and cited in the proposed rule should not be included in the reconsideration because they are not comparable to the US epidemiologic studies considered in and applicable to the standard setting process under the Clean Air Act.

6. **Lowering the annual particulate matter standard will result in significant implications for permitting sources and source sectors in the US economy that are already stressed.**

EPA currently estimates that there will be 50 monitored counties in nonattainment with a potential new NAAQS of 10.0 µg/m3 using annual PM2.5 2021 design values (DVs)[3] and this number is predicted to decrease to 24 monitored counties in their most recently released 2032 projections[4]. Similarly, the number of monitored counties in nonattainment at 9.0 µg/m3 is 112 with 2021 DVs and decreases to 51 in EPA's 2032 modeling.

For establishing nonattainment designations, EPA will look not only at counties violating the standard, but also examine nearby areas that may contribute to the violation in the nonattaining area. In most instances, after identifying a violating county, the states, will look at surrounding counties within the metropolitan area (e.g., Core Based Statistical Area (CBSA)) in which the violating monitor is located. Designation also takes into consideration that measured ambient PM2.5 concentrations across urban-scale distances tend to highly correlate with emissions (both primary and secondary) from sources within these urban areas. In other words, urban area air quality issues are largely related to emission sources in nearby counties. Ultimately, the agencies will look at multiple other parameters, including air quality, emissions, meteorology, geography, and jurisdictional boundaries, to eventually designate nonattainment areas. [5]

If the number of counties is expanded to include all counties in CBSAs associated with violating monitors, the 24 counties projected to be in violation of a 10.0 µg/m3 standard in 2032 becomes 45 counties and the 51 counties modeled in violation of 9.0 µg/m3 become 162. All these counties, if designated, would be subject to additional emission control requirements to be included in State Implementation Plans (SIPs) prepared for EPA review. SIPs would require lower emissions at multiple facilities within the nonattainment area and a review, including possible retrofit of new controls for existing sources. At these locations, multiple decisions will need to be considered regarding cost of control, both existing and retrofit, as well as the remaining useful life of each facility.

Major new projects, including new or planned facilities and modifications to existing facilities, will require controls to meet the Lowest Achievable Emission Rate (LAER) instead of Best Available Control Technology (BACT) controls. Emissions offsets will also be required, not only for directly emitted particulate matter, but also for pollutants that can create particulate matter in the atmosphere (e.g., nitrogen dioxide and sulfur dioxide). An immediate impact of a lower PM2.5 NAAQS is that new or expanded manufacturing and other industrial projects may become too costly in areas defined as nonattainment and either not be pursued, or projects may be relocated to attainment areas. Based on the current projections, large swaths of the country will be impacted.

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[3] https://www.epa.gov/system/files/documents/2022-05/PM25_DesignValues_2019_2021_FINAL_05_24_22.xlsx

[4] 88 Fed. Reg. 5558

[5] *Initial Area Designations for the 2012 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*; U.S. Environmental Protection Agency; 16 April 2013; https://www.epa.gov/sites/default/files/2016-08/documents/april2013guidance.pdf

Industry in areas that are in attainment, but close (1-3 μg/m3) to the proposed standard alternatives will also need to consider how close their area is to the new NAAQS. Prevention of Significant Deterioration (PSD) applies to new major sources or major modifications at existing sources for pollutants where the area the source is located is in attainment or unclassifiable with the NAAQS. It requires installation of BACT, an air quality analysis, an additional impacts analysis, and public involvement.

A proposed NAAQS lower than 11 μg/m3 would likely have significant impact across most of the United States. Reducing the PM standard will lower the compliance threshold in situations where air quality dispersion modeling is used to document compliance with the NAAQS, such as new air permit applications. However, even with all known, cost-effective control technologies expended in EPA's analysis, emission reductions from existing sources will not be enough to reach levels of attainment at the lower end of the proposed range for the NAAQS. And while EPA's responsibility in setting revised levels of NAAQS does not include consideration of economic factors to achieve those standards, the impacts of costs, benefits, and efficiency are considered by the States and industry when they make decisions regarding what timelines, strategies, and policies are appropriate to attain them.

7. Revising the PM NAAQS will have a negative impact on the nation's economy raising questions about EPA's authority under the ruling of the Supreme Court in *WV v EPA*.

This proposal to revise the PM/PM2.5 NAAQS qualifies as an "economically significant regulatory action" and was submitted to OMB for review. EPA's Regulatory Impact Analysis indicates the estimated costs and benefits from the control strategies result in a significant net benefit for alternative standard levels (as much at $17B for 10/35 μg/m3 and $43B for 9/35 μg/m3 in 2032). The costs are estimated to range from $95 (millions of 2017$) to $1,800 (millions of 2017$). To illustrate the areas where emissions reductions are still needed for a standard set at 9/35 μg/m3, EPA lists 125 counties located across the country. (61 in Eastern States, 30 in Western States, and 34 in California).

EPA does not engage in assessment of the broader economic impacts of arbitrarily setting a new reduced NAAQS. For example, EPA fails to acknowledge the Bipartisan Infrastructure Law (BIL) and its goals for economic development that will be significantly adversely impacted by this proposal. President Biden promised to work across the aisle to deliver results and rebuild crumbling infrastructure and yet Administrator Regan delivers this proposal. This Bipartisan Infrastructure Deal is an effort to rebuild America's roads, bridges and rails, expand access to clean drinking water, ensure every American has access to high-speed internet, tackle the climate crisis, advance environmental justice, and invest in communities that have too often been left behind. Arbitrary reduction of the PM2.5 NAAQS directly and significantly impacts the BIL goals of Congress.

We remind EPA of the WV. v. EPA U.S. Supreme Court decision which cautions against administrative actions that reach beyond its statutory authorities. It is not appropriate to point to vague language in the Clean Air Act designed to regulate National Ambient Air Quality Standards to give the agency substantial governing authority over American energy production. Such a

drastic change runs afoul of the Supreme Court's "major questions" doctrine. WV v. EPA, 142 S.Ct. 2587, 2610 (2022). The same is true for this proposed rule which has as its basis vague goals such as climate, energy production, and environmental justice. As if to shrug the impact of this marginally justified proposal, EPA offers "The action does not prescribe specific pollution control strategies by which these ambient standards and monitoring revisions will be met. Such strategies will be developed by states on a case-by-case basis, and the EPA cannot predict whether the control options selected by states will include regulations on energy suppliers, distributors, or users. Thus, the EPA concludes that this proposal does not constitute a significant energy action as defined in Executive Order 13211." This thin assessment is better informed by the expansive list of sources and emissions summary provided in this proposal as follows, "Sources and emissions of PM are discussed in more detail the PA (U.S. EPA, 2022b, section 2.1.1). Briefly, anthropogenic sources of PM include both stationary (e.g., fuel combustion for electricity production and other purposes, industrial processes, agricultural activities) and mobile (e.g., diesel- and gasoline-powered highway vehicles and other engine-driven sources) sources. Natural sources of PM include dust from the wind erosion of natural surfaces, sea salt, wildfires, primary biological aerosol particles (PBAP) such as bacteria and pollen, oxidation of biogenic hydrocarbons, such as isoprene and terpenes to produce secondary organic aerosol (SOA), and geogenic sources, such as sulfate formed from volcanic production of SO2. Wildland fire, which encompass both wildfire and prescribed fire, accounts for over 30% of emissions of primary PM2.5 emissions (U.S. EPA, 2021)."

The low level proposed for the primary PM2.5 NAAQS will have a significant impact on the economy of the United States. The "major questions" doctrine requires that for "agency decisions of vast economic and political significance," *Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 324 (2014) (cleaned up) ("UARG"), Congress must clearly confer the authority to take such action—a "merely plausible textual basis" is not enough, West Virginia, 142 S. Ct. at 2609." This proposal has "vast economic and political significance" and must not be finalized.

8. More time is needed (e.g., 24 months from plan approval and/or January 1, 2027) for new or moved PM2.5 monitoring sites to be implemented and fully operational.

EPA is "proposing to modify the PM2.5 ambient monitoring network design criteria to add a provision pertaining to sub-populations identified as at increased risk for PM2.5 exposures and health risks associated with PM2.5 ("at-risk communities")." (88 Fed. Reg. 5,673) The proposal would result in the addition or relocation of PM2.5 monitors, and EPA notes that "[t]he addition of this requirement will also lead to enhanced local data that will allow regulatory air quality agencies to assist communities to reduce exposures and to help inform future implementation and reviews of the NAAQS." *Id.* To implement this requirement, EPA is "proposing that any new or moved sites would be required to be implemented and fully operational no later than 24 months from the date of approval of a plan or January 1, 2027, whichever comes first..." *Id* at 5676 However, EPA is seeking comments regarding whether "less time is needed (e.g., 12 months from plan approval and/or January 1, 2026)..." for state and local agencies to either move monitors or install new monitors.

MOG understands that state and local agencies are burdened with unfunded mandates without this new requirement to move monitors or install new monitors. Indeed, as recently as

November of 2020, a Government Accountability Office (GAO) report titled "AIR POLLUTION, Opportunities to Better Sustain and Modernize the National Air Quality Monitoring System" (GAO-21-38) found that "Officials from EPA and selected state and local agencies identified challenges related to sustaining the monitoring system. For example, they said that infrastructure is aging while annual EPA funding for state and local air quality management grants, which cover monitoring, has decreased by about 20 percent since 2004 after adjusting for inflation." The GAO report adds that "[o]fficials we interviewed from EPA and all of the selected state and local agencies and regional air quality associations said they faced challenges in managing the national ambient air monitoring system that affect their ability to sustain it. Primarily, federal funding for state and local monitoring programs has declined by nearly 20 percent in real terms over the past 16 years, and state and local funding for these programs has also generally declined. At the same time, EPA and state and local agencies face increasing demands on these limited resources, including (1) aging monitoring infrastructure, (2) expanded and low-value monitoring requirements, and (3) rising operating costs and competing priorities." In addition, "Officials we interviewed from EPA and all of the selected state and local agencies and regional air quality associations said that they face significant challenges with funding for their programs, from both federal and nonfederal sources." Finally, the GAO report confirms that "[o]fficials and representatives we interviewed from all of the selected state and local agencies and all of the nation's regional air quality associations said that the current funding levels for air monitoring make it a challenge to sustain their monitoring programs and the level of service their networks provide."

As a result of these and other agency resource limitations, MOG believes that, unless and until the state and local agencies are provided the resources necessary to implement the requirement to move monitors or install new monitors, more time is needed rather than less time to implement this requirement.

9. There are significant errors in the base case inventory used to project attainment based on EPA database used for projecting nonattainment for 9.0 and 10.0 µg/m3 annual primary PM2.5 standard.

EPA utilized the 2016v2 emissions modeling platform with projections to 2032 to support air quality modeling and to inform the proposed revised NAAQS review[6]. In late 2021, EPA requested inventory review and updates to correct errors that existed in that platform, the one currently cited for the proposed PM NAAQS revision. EPA has since updated this modeling platform[7] to include some of the received comments from states and stakeholders and other updates in methods and data, many which could significantly alter air quality projections of annual and daily PM2.5.

As example, Table 1 below presents EPA's reporting on state-major sector PM2.5 emission differences between the 2016v2 platform and 2016v3 for categories with ±500 PM2.5 tons per year difference between the two.

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[6] https://www.epa.gov/system/files/documents/2023-01/naaqs-pm_ria_proposed_2022-12.pdf

[7] https://www.epa.gov/system/files/documents/2023-03/2016v3_EmisMod_TSD_January2023_0.pdf

		Annual PM2.5 Emissions (Tons)		
State	**Sector**	**2016fj (v2)**	**2016gf (v3)**	**16gf-16fj (v3-v2)**
Alabama	nonpt	10,339	8,751	(1,588)
Arizona	nonpt	4,377	4,982	605
California	nonpt	23,671	22,717	(954)
Colorado	nonpt	3,464	2,863	(601)
Colorado	np_oilgas	424	1,498	1,074
Florida	nonpt	19,080	21,687	2,606
Georgia	nonpt	26,080	27,440	1,360
Georgia	ptnonipm	10,768	11,662	894
Illinois	onroad	3,537	4,059	522
Indiana	nonpt	8,441	9,400	958
Iowa	nonpt	4,049	5,773	1,723
Kentucky	ptnonipm	9,339	7,627	(1,712)
Maryland	nonpt	6,591	8,239	1,648
Michigan	nonpt	19,344	19,899	555
Minnesota	nonpt	6,062	7,098	1,037
Mississippi	ptnonipm	7,439	6,881	(558)
Missouri	nonpt	9,321	9,937	617
Nebraska	nonpt	1,870	2,960	1,091
Nevada	nonpt	1,717	2,400	683
New Jersey	nonpt	4,405	5,758	1,354
New York	nonpt	17,090	21,136	4,046
North Carolina	nonpt	7,349	8,546	1,196
North Dakota	nonpt	788	5,127	4,339
Ohio	nonpt	15,858	16,959	1,101
Ohio	onroad	4,131	4,634	503
Oklahoma	nonpt	7,345	8,070	725
Oklahoma	np_oilgas	1,685	1,029	(657)
Oregon	nonpt	4,247	6,101	1,854
Pennsylvania	nonpt	25,591	26,406	814
South Carolina	nonpt	17,335	17,874	539
Tennessee	nonpt	16,555	15,966	(589)
Texas	nonpt	22,709	23,851	1,142
Texas	onroad	8,307	9,147	840
Virginia	nonpt	17,572	18,722	1,150
Wisconsin	nonpt	16,181	16,700	519
Wyoming	ptnonipm	6,319	6,899	580

Table 1. Annual PM2.5 emission changes of ±500 tpy between v2 and v3 modeling platforms.

Any one of these emission deltas at the state-sector combination level could impact modeled air quality in either the base year or the projection year of 2032. Location of these

emissions, temporal distribution of emissions, or speciation of these emissions could potentially and significantly change the proposed modeled concentrations, nonattainment designations, and required incremental emission reductions necessary for areas to attain proposed lower levels of the NAAQS.

Furthermore, it has been identified that major inconsistencies in state-to-state reporting of emission categories of PM2.5 still exist in the modeling platforms. As an example, it has been identified that unpaved road dust emissions as represented in EPA's 2023v2 emissions platform[8], a source category that the Agency also includes for significant additional emission reductions for areas to achieve lower levels of the proposed PM NAAQS, are disparately reported across states in the modeling platform. Figure 6 below shows this disparity in modeled emissions for this category. Of note, Missouri has the largest reported unpaved road dust PM2.5 emissions in the continental US (104,000 tpy), over 70% more than Texas, while Indiana has zero reported unpaved road dust PM2.5 emissions in this same platform.

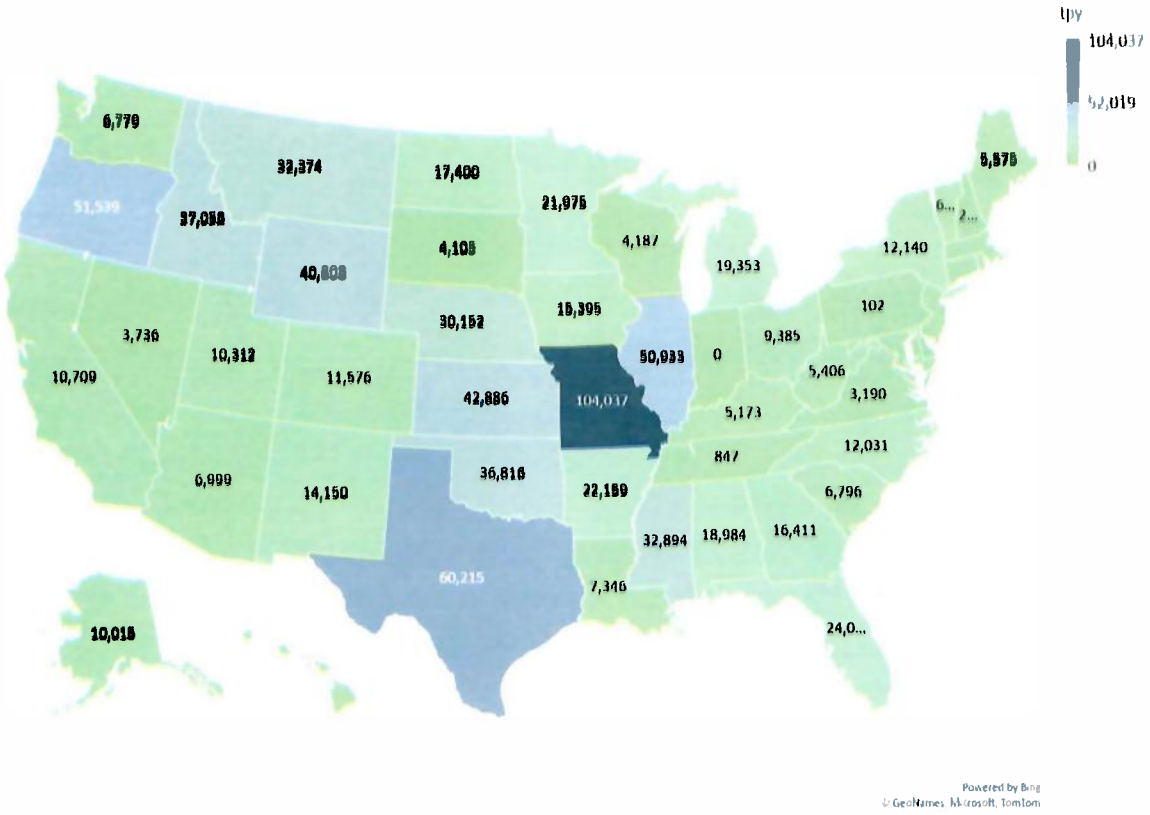

Figure 6. 2023v2 annual PM2.5 emissions for the unpaved road dust category.

Until changes are incorporated, and errors are corrected and remodeled for updated air quality concentrations, EPA should not rely on modeling that inaccurately reflects emissions in either the base or projection year analyses.

[8] 2023fj in "US_inventory_state_SCC_2016v2_2016v1_20aug2021.xlsx" from https://www.epa.gov/air-emissions-modeling/2016v2-platform

10. EPA has failed to include appropriate on-the-books controls in its future year modeling projections.

EPA notes it its proposal that local and regional impacts on PM air quality are significant and relevant. As EPA engages in its iterative study of the ambient air quality through monitoring and modeling, the agency has the burden and obligation to assess existing state and local regulatory programs that are actively managing particulate emissions. The modeling for this proposal fails to provide a wholistic assessment of such emissions control programs.

States and regulated entities are on an ever-changing path to manage the complex implementation of emissions reductions programs to address local and regional impacts on ambient air quality. EPA's modeling of applicable emission control programs to assess attainment strategies supports the iterative nature of these programs. 87 Fed. Reg. 20054. Private sector and government investments in emission reduction strategies are considerable. As EPA engages in developing a revised PM NAAQS, the agency has the burden and obligation to assess emissions reductions programs promulgated and expected to be enforced by the attainment dates of the NAAQS. The modeling relied upon for this proposal fails to provide a wholistic assessment of these emission control requirements; both for direct PM, but also for PM precursor controls on NOx and SO2.

The following examples are illustrative of the types of emission control programs that EPA must include in the emission inventory that modeled to support the revised NAAQS proposal:

- On April 7, 2022, EPA announced its intent to make findings that certain states have failed to submit regional haze implementation plans for the second planning period. The delay in implementing the Regional Haze program results in delay in emission reductions for SO2, NOx, and Particulate Matter. But for those plans submitted there are references to emissions reductions programs that must be reviewed and included in development of an emission inventory to ambient air quality assessments and modeling with respect to a revised PM NAAQS.

- On December 20, 2022, EPA finalized national clean air standards to cut smog- and soot-forming emissions (NOx, particulate matter, VOCs, air toxics, and carbon monoxide (CO)) from heavy-duty trucks. The new standards, which are the first update to clean air standards for heavy duty trucks in more than 20 years, are reportedly more than 80% stronger than current standards. This final rule will purportedly deliver significant and needed public health benefits through ambitious standards that are feasible for the trucking industry, with appropriate consideration to cost and other factors. By final implementation, this final rule will reduce NOx emissions from the in-use fleet of heavy-duty trucks by almost 50% and would result in widespread air quality improvements across the U.S., especially in areas already overburdened by air pollution and diesel emissions.

- The Illinois Environmental Protection Agency, as reflected on its website, is currently promulgating several new and older Cook County (ozone nonattainment) pending permit applications (Title V and Federally Enforceable State Operating Permits) to address gas-fired generators, to include emergency generators that had previously not been permitted

or recently had been replaced. In certain instances, enforcement actions were initiated to bring the emergency and demand response generators within the regulatory program. EPA does not explain its assessment methodology for these types of emissions reductions relative to Good Neighbor SIP review and assessment. In addition, it appears that EPA did not take into account "The Illinois Energy Law, AKA, Climate and Equitable Jobs Act (CEJA) "as an applicable control program. This new law became effective in September 2021 and significantly limits the emissions of NOx from all existing gas fired EGUs in Illinois. Each unit >25 MW cannot exceed its 3-year (2018-2020) baseline actual emissions on a 12-month rolling basis beginning Oct. 1, 2021. Significantly, the law also requires all coal fired plants to retire no later than 2030.

- The New York State Department of Environmental Conservation ("NYDEC") has developed recent controls for simple cycle and regenerative combustion turbines ("SCCT"), or "peaking units" noted by the agency as being inefficient and approaching 50 years of age. Yet, while the agency has estimated controls will result in significant air quality improvement to ozone nonattainment monitors within the New York Metropolitan Nonattainment Area (NYMA), implementation is delayed until 2025 and beyond. NYDEC also recently has imposed NOx controls on distributed generation units, which as with peaking units, has been structured to delay implementation of controls beyond the applicable attainment date as part of the attainment plan proposed for approval by EPA. 87 Fed. Reg. 4,530 (Jan. 28, 2022).

- The Wisconsin Department of Natural Resources, Air Management Program has initiated several permitting actions in response to designation of Kenosha County as serious ozone nonattainment. Many of those actions have been implemented as recently as the last 24 months imposing new NOx and VOC emission reductions. It is also noteworthy that some regulated facilities are seeking relief from additional nonattainment reductions in advance of EPA approval of a partial redesignation of Kenosha County as attainment for the 2008 ozone standard. EPA does not explain its methodology for assessing these types of downwind emissions reduction strategies relative to review of a revied PM NAAQS.

EPA's failure to have considered such programs that may have been adopted after 2021, and failure to provide an opportunity to address such programs as they are implemented exceeds the legal obligation to provide balance.

MOG strongly objects to EPA's failure to incorporate on-the-books programs into its assessment of particulate matter related ambient air quality. When such regulatory programs are unaccounted for in the scientific and qualitative analysis, improperly selected agency decisions will occur in violation of the Clean Air Act.

11. The effect of international emissions on ambient air quality must be considered.

EPA is dismissive of the impact of international emissions as noted in the proposal, "Contributions from intercontinental events have also been documented (e.g., transport from dust storms occurring in deserts in North Africa and Asia), but these events are less frequent and represent a relatively small fraction of background PM in most of the U.S. (U.S. EPA, 2022b,

section 2.4)." MOG urges more detailed assessment of the impact of international emissions from a long-range transport perspective and a more local perspective. It is well understood that new international sources of PM are being constructed and operated. EPA notes frequently through the proposal that local anthropogenic and natural sources have a measurable impact on PM2.5 measurements and concentrations. MOG suggests assessment of transboundary impacts from local sources could serve to inform the agency of sources and therefore potential strategies for managing such impacts. EPA's discussion of monitor locations may need to be informed by an assessment of local transboundary sources and emissions.

12. There are significant potential impacts from the proposed revisions to PM2.5 monitoring network design criteria related to the proposal to add a provision pertaining to sub-populations identified as at increased risk for PM2.5 exposures and health risks associated with PM2.5 (''at-risk communities'').

In this proposal, EPA references the PA for discussion about at-risk analysis that "indicates that Black populations may experience disproportionally higher exposures and risk under air quality conditions just meeting the current primary annual PM2.5 standard in the study areas, as compared to White populations. Risk disparities include exposure disparities, as well as the relationship between exposure and health effect and baseline rates of the health effect. While risk disparities may be a more meaningful metric, they are also subject to additional uncertainties." At risk demographic groups, including minority populations, must be provided an appropriate and equitable assessment of the adequate margin of safety required by the Clean Air Act when establishing National Ambient Air Quality Standards. EPA notes that, "While the at-risk analyses provide additional insight on the estimated exposures and risks for certain demographic groups, it is not clear how the results would vary if: (1) analyses included populations that were younger than 65 years old, (2) the analyses were conducted areas that are demographically different than the 47 study areas included in this analysis, and (3) the air quality adjustments reflected source-specific emissions reduction strategies. Therefore, in light of the limitations and uncertainties associated with the at-risk analyses, the results should be considered within the context of the full risk assessment."

In furtherance of the "at-risk" dilemma, EPA proposes amendment to the PM2.5 monitoring network design criteria to address "at-risk communities." MOG is supportive of an objective and scientific approach that will enhance the development and implementation of the NAAQS.

EPA has proposed, "to modify our PM2.5 monitoring network design criteria to include an environmental justice factor that accounts for proximity of populations at increased risk of adverse health effects from PM2.5 exposures to sources of concern. Specifically, the EPA proposes to modify our existing requirement (40 CFR part 58, appendix D, section 4.7.1(b)(3)): ``For areas with additional required SLAMS, a monitoring station is to be sited in an area of poor air quality," to additionally address at-risk communities with a focus on anticipated exposures from local sources of emissions." The EPA is proposing that communities with relatively higher proportions of sub-populations at greater risk from PM2.5 exposure within the jurisdiction of a state or local monitoring agency should be considered ``at-risk communities" for these purposes. MOG has been a long-standing proponent of managing local sources as a key strategy for attaining and

maintaining the NAAQS and shares in the perspective that local controls will benefit local communities. MOG urges the EPA to include similar concerns about impacts on at-risk communities as it implements the Good Neighbor Provision of the Clean Air Act, recognizing that local controls are often the answer to poor air quality as opposed to a broadly stated and modeled transport theory with a significance threshold that has little or no ambient air quality benefit. MOG agrees and reiterates EPA's comment, "this requirement will also lead to enhanced local data that will allow regulatory air quality agencies to assist communities to reduce exposures and to help inform future implementation and reviews of the NAAQS."

13. **Significant potential impacts result from the proposed revised analytic approach to combine data collected from multiple PM10 monitors collocated at a site to obtain a single set of daily PM10 concentration data for that site (FEM v FRM).**

EPA invites public comment on the scientific validity of combining data across PM10 monitors and the merits of the proposed approach for combining data across multiple PM10 monitors collocated at a site and on the merits of the proposed process for approving site combinations to obtain valid design values for the PM10 NAAQS.

EPA proposes to revise Appendix K to Part 50 to "provide for monitoring agencies to designate in their annual network plan one monitor as the primary monitor for each site.", stating, "[o]nce a primary monitor has been determined for a site, missing daily PM10 concentrations for the primary monitor would be substituted from any other monitors located at the site. In the event of two or more monitors operating at the same site, missing daily PM10 concentrations for the primary monitor would be substituted with daily values averaged across the other collocated monitors. The EPA notes that at the time of this proposal, there were more than 100 sites nationwide with two or more monitors operating simultaneously." (88 Fed. Reg. 5,662)

Although the stated purpose of the proposed revision to Appendix K is consistency with data interpretation methods for PM2.5, MOG believes that combining data from Federal reference method (FRM) monitors and Federal equivalent method (FEM) monitors is not appropriate. FRM monitors use a different measurement technique than do FEM monitors. Significantly, FRM monitors measure PM10 concentrations once every three days while the FEM measurements are made hourly. Regardless of the process of averaging data or gap filling missing FRM data with data from FEMs, MOG believes that data from FEMs has a significant likelihood of being biased high in comparison to FRM data. Accordingly, the proposed revisions amount to imposition of a more stringent PM10 standard and are not appropriate.

14. **The integration of the exceptional events exclusion process with lower PM NAAQS must be included in the reconsideration of the NAAQS.**

CAA §319 (42 U.S. Code § 7619) requires that EPA promulgate regulations that remove the impact of air quality data that is affected by what is known as "exceptional events." The following statutory requirements are established in Section 319 (b) (2)(B):

> Not later than 1 year after the date on which the Administrator publishes proposed regulations under subparagraph (A)...the Administrator shall promulgate final

> regulations governing the review and handling o[f] air quality monitoring data influenced by an exceptional event that are consistent with paragraph (3)....
>
> (3)(A) ...In promulgating regulations under this section, the Administrator shall follow—
>
> ...
>
> (v)the principle that air quality data should be carefully screened to ensure that events not likely to recur are represented accurately in all monitoring data and analyses.

EPA has published three guidance documents describing the process by which the impacts of exceptional events are to be managed. In 2018, a memorandum by Peter Tsirigotis, Director of Office of Air Quality Planning and Standards on the development of Good Neighbor SIPs provided a discussion of exceptional events and the importance of downwind states seeking available regulatory relief before turning to upwind states. Consideration of exceptional events allows certain monitoring data impacted by exceptional events to be removed from inclusion in the determination of design values related to determining compliance with the NAAQS.

In April of 2019, Richard Wayland, the Director of the Air Quality Assessment Division, and Anna Marie Wood, Director of the Air Quality Policy Division, published a memorandum titled "Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events." Their memo notes that the "2016 Exceptional Events Rule specified that it applies to the treatment of monitoring data showing exceedances or violations of any NAAQS for the purpose of [a number of] types of regulatory determinations by the Administrator," including "other actions on a case-by-case basis as determined by the Administrator." The memorandum also noted that "EPA included 'other actions on a case-by-case basis'... to provide a degree of flexibility for addressing other possible regulatory determinations," adding that "the case-by-case provision is not intended to serve as a data-exclusion mechanism for determinations by the Administrator not influenced by exceedances or violations of the NAAQS, nor for non-regulatory purposes."

The Wayland, Wood memo provided guidance to EPA Regions and state agencies regarding three types of determinations and analyses under which the exclusion, selection, or adjustment of air quality monitoring data may be appropriate. Significantly, one of the types of determinations and analyses is certain modeling analyses using EPA's Guideline on Air Quality Models (see 40 CFR Part 51, Appendix W) ...estimating base and future year design values for ozone and PM2.5 SIP attainment demonstrations.

On August 8, 2019, Scott Mathias, Acting Director of the Air Quality Policy Division and Richard Wayland, Director of the Air Quality Assessment Division published a memorandum titled "Exceptional Events Guidance: Prescribed Fire on Wildland that May Influence Ozone and Particulate Matter Concentrations," that provided guidance to all EPA Regions regarding the manner in which ozone monitoring data measured on days impacted by both prescribed fires and wildfires, should be analyzed. The guidance recognized that exceptional event data may be affected by fire events and therefore improperly bias ozone design values.

In the NPR, EPA used ambient PM2.5 measurements from the 2014-2018 period centered on the 2016 modeling period to project PM2.5 DVs. PM2.5 species measurements from the IMPROVE and CSN networks during 2015–2017 were used to disaggregate the measured total PM2.5 concentrations into components. In addition to exclusion of EPA-concurred exceptional events, limited exclusion of wildfire and fireworks influence on PM2.5 concentrations was applied to the 2014-2018 PM2.5 monitoring data. Monitoring data were evaluated (i.e., screened) for potential wildfire and fireworks influence because PM2.5 concentrations are influenced by atypical, extreme, or unrepresentative events such as wildfires or fireworks that may be appropriate for exclusion as described in EPA's memorandum *Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events*[9].

The steps applied in implementing the limited screening of major wildfire and fireworks influence on PM2.5 concentrations are as follows.

Step 1. An extreme-concentration cutoff of 61 µg/m3 was identified based on the 99.9th percentile value from all daily PM2.5 concentrations across all sites in the long-term AQS observations (2002-2018).

Step 2. Specific states and months where wildfires frequently occur were screened for instances of monitors exceeding the cutoff concentration. Potential wildfire periods were identified as those with PM2.5 concentrations above the cutoff concentration in June-October in CA, WA, OR, MT, ID, and CO.

Step 3. For potential wildfire periods, the presence of visible wildfire smoke was examined using satellite imagery from NASA's Worldview platform[10]. Timeseries of PM2.5 concentrations at individual sites were also examined to confirm that the PM2.5 enhancements are temporally consistent with wildfire events.

Step 4. For wildfire periods confirmed by the satellite imagery and timeseries analysis, PM2.5 concentrations above the cutoff concentration of 61 µg/m3 occurring during the identified wildfire episode window at impacted sites were excluded. If the satellite imagery and timeseries analysis did not corroborate the wildfire event, data from the period were retained.

Step 5. In addition to the screening criteria above, data for the Camp Fire in northern CA during November 2018 and the Appalachian Fires in NC, TN, and GA during November 2016 were evaluated for exclusion if concentrations exceeded the extreme value threshold of 61 µg/m3. These large fire episodes produced obvious PM2.5 concentration impacts across multiple monitors and were clear in satellite imagery.

Step 6. In addition to the limited exclusion of major wildfire influence, data were evaluated to identify days for potential exclusion due to the influence of isolated fireworks events on PM2.5

[9] https://www.epa.gov/sites/default/files/2019-04/documents/clarification_memo_on_data_modification_methods.pdf
[10] https://worldview.earthdata.nasa.gov

concentrations. The 99.9th percentile concentration of 61 μg/m3 was applied as the cutoff value across all sites for New Year's Eve and the Fourth of July.

The excluded site-day combinations represent a small fraction (0.4%) of the total site-day combinations for the flagged sites. Since the cutoff value (61 μg/m3) is much greater than the 24-hour and annual standard levels, wildfire contributions to PM2.5 concentrations above the standard levels likely persists in the data following screening. EPA notes that comprehensive identification and exclusion of such wildfire impacts would require detailed analyses that are beyond the scope of this national assessment.

Given the obvious legal and technical implications of exceptional events, MOG urges EPA to include a comprehensive assessment of exceptional events in any final rule it may issue assessing the implications of a change in the PM2.5 NAAQS.

15. EPA should provide guidance to states on addressing the Good Neighbor Provisions of the CAA to assure that the responsibilities of upwind and downwind states are balanced as required by judicial mandates.

EPA offers the following narrative on the Good Neighbor Provisions of the Clean Air Act,

> One of the required infrastructure SIP elements is that each state's SIP must contain adequate provisions to prohibit, consistent with the provisions of title I of the CAA, emissions from within the state that will significantly contribute to nonattainment in, or interfere with maintenance by, any other state of the primary or secondary NAAQS. This element is often referred to as the ``good neighbor'' or ``interstate transport'' provision. The provision has two prongs: significant contribution to nonattainment (prong 1) and interference with maintenance (prong 2). The EPA and states must give independent significance to prong 1 and prong 2 when evaluating downwind air quality problems under CAA section 110(a)(2)(D)(i)(I). Further, case law has established that the EPA and states must implement requirements to meet interstate transport obligations in alignment with the applicable statutory attainment schedule of the downwind areas impacted by upwind-state emissions. Thus, the EPA anticipates that states will need to address interstate transport obligations associated with any revised PM NAAQS, if finalized, in alignment with the provisions of subpart 4 of part D of the CAA, as discussed in more detail in section VIII.C below. Specifically, states must implement any measures required to address interstate transport obligations as expeditiously as practicable and no later than the next statutory attainment date, i.e., for this NAAQS revision, if finalized, as expeditiously as practicable but no later than the end of the sixth calendar year following nonattainment area designations. See CAA section 188(c).

MOG recommends EPA's careful assessment of the term "alignment" and raises concerns about the local emissions management programs that are not typically factored in by EPA when assessing non-attainment. The failure to manage the importance of upwind and downwind obligations on par with one another shifts the regulatory burden to many at risk communities while ignoring the needs of local at-risk citizens.

EPA's statutory duty is to synchronize the "Good Neighbor" Provision of the CAA, §110(a)(2)(D)(i), with nonattainment and maintenance requirements of CAA including §172 such that compliance burdens are mutually and equitably aligned among upwind and downwind states. MOG urges EPA to address the timing of the implementation of upwind controls relative to downwind controls thereby managing unnecessary and excessive emissions controls to be required by the upwind sources. The CAA directs synchronization/alignment of upwind and downwind emission reduction requirements. Synchronization as applied means if a downwind state delays action, then the upwind state would accordingly take Good Neighbor action on a schedule that mirrors the downwind implementation strategy. To accomplish this emissions control program any other way means that either the upwind or downwind state could be obligated to implement emissions control far beyond what they otherwise might have to implement as part of a synchronized/aligned program.

The *Wisconsin* remand concluded that EPA exceeded its statutory authority under the Good Neighbor Provision "by issuing a Rule that does not call for upwind States to eliminate their substantial contributions to downwind nonattainment in concert with the attainment deadlines." *Wisconsin v. EPA*, 938 F.3d 303 at 318. The *Wisconsin* remand directed EPA to address the downwind state "deadline" in such a manner as to "harmonize" the deadlines of upwind and downwind states and to apply "parallel timeframes." Id. at 312, 314. The D.C. Circuit repeatedly has explained the CAA directive to "harmonize" and manage the relationship described as parallel between the Good Neighbor obligations for upwind states and statutory attainment deadlines for downwind areas. That relationship is one of "par," using the Court's term, meaning to be judged on a common level with the other.

The D.C. Circuit described its *North Carolina* ruling in the *Wisconsin* remand as follows:

> We explained that EPA needed to "harmonize" the "Phase Two deadline for upwind contributors to eliminate their significant contribution with the attainment deadlines for downwind areas." . . . Otherwise, downwind areas would need to attain the NAAQS "without the elimination of upwind states' significant contribution.

Wisconsin, 938 F.3d at 314 (emphasis added).

The *Wisconsin* remand explained, "In sum, under our decision in North Carolina, the Good Neighbor Provision calls for elimination of upwind States' significant contributions on par with the relevant downwind attainment deadlines." Id. at 315 (emphasis added). The Wisconsin opinion explains further:

> The Good Neighbor Provision, as North Carolina emphasized, requires upwind States to eliminate their significant contributions to downwind pollution "consistent with the provisions of this subchapter," i.e., Title I of the Clean Air Act. 42 U.S.C. §7410(a)(2). One of the "provisions of this subchapter" is §7511(a)(1), which in turn requires downwind areas in moderate non-attainment to attain the NAAQS by July 20, 2018.

Id. at 315-16.

The Wisconsin remand summarizes that "it is the statutorily designed relationship between the Good Neighbor Provision's obligations for upwind states and the statutory attainment deadlines for downwind areas that generally calls for parallel timeframes." Id. at 316. Put simply the obligation to coordinate cuts both ways. Upwind and downwind obligations must have view of what each is required to accomplish and coordinate the implementation plans accordingly.

EPA must develop a clear and concise guidance that incorporates case law and statutory law into the implementation of the NAAQS.

16. EPA has erroneously calculated the air quality ratios used to develop incremental reduction requirements and has treated all PM2.5 as the same in this application.

In addition to the earlier identified major inconsistencies in state-to-state reporting of emission categories of PM2.5 still exist in EPA's modeling platforms, EPA has estimated the tons of emissions reductions needed to reach attainment of the existing and proposed alternative standard levels, by calculating air quality ratios based on how modeled concentrations changed with changes in emissions use brute force CMAQ sensitivity modeling[11]. This sensitivity modeling and associated air quality ratio development was not conducted with the 2032 platform used to develop the proposed future year design values of this proposal, but with an earlier version of the CMAQ model (version 5.2.1) and a 2028 modeling case inconsistent with the emission projections of this proposed rule.

EPA correctly notes that "the responsiveness of air quality at a specific monitor location to primary PM2.5 emission reductions depends on several factors including the specific meteorology and topography in an area and the nearness of the emissions source to the monitor" yet fails to address the issue that different sources of PM and PM precursor emissions have different relative contribution to PM concentrations at downwind receptors. EPA cites the work conducted with the 2028 platform for use in regional haze[12] analysis where they used source apportionment techniques (Particulate Source Apportionment Technology or PSAT) to estimate the relative contribution of primary and secondarily formed PM from multiple individual categories to individual monitors. They didn't do this because each source category had the same impact as every other category. They did so because each individual category's emissions combined to have a unique emission to air quality ratios in the modeled PM concentration calculations.

Tools like PSAT have been developed to provide geographic and source-category-specific PM source apportionment[13]. PM source apportionment information from PSAT is useful for:

- understanding model performance and thereby improving model inputs/formulation,

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[11] https://www.epa.gov/system/files/documents/2023-01/naaqs-pm_ria_proposed_2022-12.pdf, Section 2.3

[12] https://www.epa.gov/sites/default/files/2019-10/documents/updated_2028_regional_haze_modeling-tsd-2019_0.pdf

[13] Yarwood, G., Morris, R. E., Wilson, G. M., 2004; Particulate Matter Source Apportionment Technology (PSAT) in the CAMx Photochemical Grid Model. Presented at the International technical Meeting. Banff, Canada. October.

- performing culpability assessments to identify sources that contribute significantly to PM pollution, and
- designing the most effective and cost-effective PM control strategies

Like arguments made elsewhere related to ozone concentration estimates[14], the failure to account for the unique characteristics of PM emissions by source group using photochemical modeling undercuts the technical certainty in EPA's air quality ratio calculations and in turn the expected emission reductions necessary to achieve lower levels of a proposed PM NAAQS. To base a NAAQS revision and the cost and benefits of such a significant change in policy appears inconsistent with the science used to support the change in the first place.

17. Because this rulemaking involves reconsideration, EPA is obligated to assess costs and burdens as part of the justification of the rule.

As EPA concedes on its proposal, this rulemaking involves the reconsideration of a NAAQS – not simply the promulgation of a NAAQS. Accordingly, EPA is obligated to justify its discretionary reconsideration by offering a reasoned justification of the proposal which assesses the cost of the rule. Clean Air Act §109(d).

Therefore, we urge that EPA withdraw this proposal and undertake a more comprehensive analysis that could be submitted for public review and comment.

18. **Conclusion.**

As these comments demonstrate, EPA's proposal to lower the annual PM2.5 NAAQS is fatally flawed both legally and technically and should be withdrawn.

Very truly yours,

Kathy G. Beckett
Legal Counsel
Midwest Ozone Group

Cc: Lars Perlmutt
Health and Environmental Impacts Division
Office of Air Quality Planning and Standards
US Environmental Protection Agency

[14] EPA-HQ-OAR-2021-0668-0323; pg. 93.