ORAL ARGUMENT NOT SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

COMMONWEALTH OF KENTUCKY, et al., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al. Respondents.	No. 24-1050 (and consolidated cases)

On Petition for Review of Final Agency Action of the
United States Environmental Protection Agency

MOVANT-INTERVENOR STATES' UNOPPOSED MOTION FOR LEAVE TO INTERVENE IN SUPPORT OF RESPONDENTS

Pursuant to Federal Rule of Appellate Procedure (FRAP) 15(d) and D.C. Circuit Rule 15(b), the States of California (by and through Attorney General Rob Bonta and the California Air Resources Board), Arizona, Connecticut, Illinois, Maryland, Michigan, Minnesota, New Jersey, New York, Oregon, Rhode Island, Vermont, Washington, and Wisconsin; the Commonwealths of Massachusetts and Pennsylvania; the District of Columbia; and the City of New York (collectively, Movant-Intervenor States) hereby move to intervene in the above-captioned case in support of

Respondents the United States Environmental Protection Agency (EPA) and Administrator Michael S. Regan.[1]

Petitioners challenge EPA's final rule entitled "Reconsideration of the National Ambient Air Quality Standards for Particulate Matter," published at 89 Fed. Reg. 16,202 (Mar. 6, 2024) (PM NAAQS Rule or the Final Rule). EPA promulgated the Final Rule pursuant to its authority under sections 108 and 109 of the Clean Air Act, 42 U.S.C. §§ 7408, 7409. The Final Rule reduces the upper limit on the concentration of fine particulate matter ($PM_{2.5}$) in the air to the level EPA has determined is necessary to protect public health with an adequate margin of safety. EPA estimates that the first year alone of full attainment with the Final Rule will result in massive public health benefits, including avoiding 4,500 premature deaths, 800,000 cases of asthma symptoms, and 290,000 lost workdays.[2] Additionally, EPA estimates

[1] Pursuant to D.C. Circuit Rule 15(b), this motion also constitutes a motion for leave to intervene in all petitions for review of the challenged Final Rule, except for any petitions that may be filed challenging the Final Rule as insufficiently stringent.

[2] EPA, Final Regulatory Impact Analysis for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (Regulatory Impact Analysis), p. 17, tbl. ES-6, *available at* https://www.epa.gov/system/files/documents/2024-02/naaqs_pm_reconsideration_ria_final.pdf.

that the monetized net benefit of the Final Rule will be up to $46 billion.[3] Many of these expected benefits will be concentrated in Movant-Intervenor States' jurisdictions.

Movant-Intervenor States have a compelling interest in defending the Final Rule as a means of protecting their residents from the negative health effects of $PM_{2.5}$ and, by virtue of the Clean Air Act's cooperative-federalism structure, securing new tools to address $PM_{2.5}$ pollution. These legally protected quasi-sovereign and sovereign interests of the States are distinct from Respondents' interests and are not adequately represented by any party. This motion is also timely. Accordingly, Movant-Intervenor States satisfy the requirements for intervention and respectfully request that the Court grant this motion.

BACKGROUND

PM refers to a mixture of solid particles and liquid droplets found in the air. Traditional subcategories of PM include: $PM_{2.5}$, which refers to PM with diameters that are generally 2.5 micrometers and smaller; and PM_{10}, which refers to PM with diameters that are generally 10 micrometers and smaller. While exposure to elevated concentrations of either subcategory can cause a

[3] *Id.* at p. 26.

variety of negative health effects—including asthma, heart attack, and premature death—exposure to $PM_{2.5}$ is generally understood to pose the greatest risk to health because it can travel deep into the lungs and even into the bloodstream. EPA, *Health and Environmental Effects of Particulate Matter (PM)*, EPA.GOV, https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm (last updated Aug. 23, 2023). These effects grow worse at higher concentrations and with repeated exposure, and are particularly dangerous for children, older adults, and people with pre-existing respiratory and cardiovascular disease. *Id.* Additionally, there is strong evidence that Black and Hispanic populations are exposed to higher $PM_{2.5}$ concentrations than non-Hispanic White populations, and that communities with lower socioeconomic status are exposed to higher $PM_{2.5}$ concentrations than those with higher socioeconomic status. PM NAAQS Rule, 89 Fed. Reg. at 16,204.

I. STATUTORY AND REGULATORY BACKGROUND

In order to ensure that Americans can safely breathe the air in their communities, Congress directed EPA to set National Ambient Air Quality Standards (NAAQS) for all criteria pollutants—including PM—at levels requisite to protect public health and welfare with an adequate margin of safety. *See* 42 U.S.C. §§ 7401, 7409. A NAAQS must include specific

standards for the protection of both public health and welfare (known as "primary" and "secondary" standards, respectively), and may include specific standards for pollutant subcategories (e.g., $PM_{2.5}$ and PM_{10}) or for different time periods (e.g., 24-hour or annual standards). *Id.* at § 7409(b)(d). Congress further directed EPA to complete a thorough review of these standards every five years (or less at its discretion), and to revise the standards as necessary to accomplish their purpose. *Id.* at § 7409(d)(1).

EPA first promulgated a PM NAAQS in 1971, and has revised it periodically since that time to reflect developments in scientific understanding. *See*, EPA, *Timeline of Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS)*, EPA.GOV, https://www.epa.gov/pm-pollution/timeline-particulate-matter-pm-national-ambient-air-quality-standards-naaqs (last updated Feb. 7, 2024). In 1997, EPA first included a primary annual $PM_{2.5}$ standard of 15 micrograms per cubic meter ($\mu g/m^3$). *Id*. In 2013, EPA strengthened this standard to 12 $\mu g/m^3$. *Id*. In 2020, EPA declined to strengthen the existing PM NAAQS. 85 Fed. Reg. 82,684 (Dec. 18, 2020) (2020 Final Rule).

II. THE FINAL RULE

The primary effect of the Final Rule is to tighten the annual primary $PM_{2.5}$ standard from 12.0 $\mu g/m^3$ to 9.0 $\mu g/m^3$. PM NAAQS Rule, 89 Fed.

Reg. at 16,203. The Final Rule also makes relatively minor changes to the $PM_{2.5}$ sub-index of the Air Quality Index, and to data calculation and ambient air monitoring requirements. *Id.* at 16,205. The Final Rule retains the pre-existing standards for primary 24-hour $PM_{2.5}$, primary 24-hour PM_{10}, and secondary PM. *Id*. at 16,203.

Although EPA is prohibited from considering implementation costs when setting a NAAQS, *Whitman v. American Trucking Associations*, 531 U.S. 457, 465–71 (2001), EPA prepared a Regulatory Impact Analysis in line with its traditional practice to provide the public with information on the potential costs and benefits of attaining several alternative $PM_{2.5}$ standard levels. PM NAAQS Rule, 89 Fed. Reg. at 16,206. The Regulatory Impact Analysis estimates that the first year alone of full attainment with the Final Rule will result in significant public health benefits, including avoiding 4,500 premature deaths, 1,960 emergency room visits, 5,700 new cases of asthma, 800,000 cases of asthma symptoms, 290,000 lost workdays, and 1,000 hospital admissions for Alzheimer's/Parkinson's diseases. EPA, Regulatory Impact Analysis at p. 17, tbl. ES-6, *supra* note 2.

III. MOVANT-INTERVENOR STATES HAVE LONG ADVOCATED FOR STRENGTHENING THE PM NAAQS

Movant-Intervenor States participated extensively in the regulatory and judicial proceedings leading to EPA's adoption of the Final Rule. In response to EPA's previous review and decision to leave the existing PM NAAQS unchanged in the 2020 Final Rule, California and the majority of other Movant-Intervenor States filed a petition for review in this Court. *State of California et al. v. EPA*, D.C. Cir. Case No. 21-1014, filed Jan. 13, 2021 (consolidated with *American Lung Ass'n., et al. v. EPA*, D.C. Cir. Case No. 21-1027, and *Center for Biological Diversity, et al. v. EPA*, D.C. Cir. Case No. 21-1054; currently in abeyance). California and the majority of other Movant-Intervenor States also filed a petition for reconsideration of the 2020 Final Rule directly with EPA. California et al., *Petition for Reconsideration of the 2020 Final Rule*, REGULATIONS.GOV COMMENT ID EPA-HQ-OAR-2015-0072-1241 (2021). On June 10, 2021, EPA announced its decision to reconsider the 2020 Final Rule because "the available scientific evidence and technical information indicate that the current standards may not be adequate to protect public health and welfare, as required by the Clean Air Act." EPA, *EPA to Reexamine Health Standards for Harmful Soot that Previous Administration Left Unchanged*, EPA.GOV (June 10, 2021),

https://www.epa.gov/newsreleases/epa-reexamine-health-standards-harmful-soot-previous-administration-left-unchanged.

As part of EPA's reconsideration of its 2020 Final Rule, Movant-Intervenor States submitted multiple detailed comments to EPA based upon their extensive experience implementing the NAAQS, as well as their quasi-sovereign and sovereign interests in protecting their residents and securing new tools to address $PM_{2.5}$ pollution. *See, e.g.*, Attorneys General for the Movant-Intervenor States, *Comments on the PM NAAQS Rule*, REGULATIONS.GOV COMMENT ID EPA-HQ-OAR-2015-0072-2307 (2023). Movant-Intervenor States also submitted additional scientific studies documenting the effects of PM, including some that were developed by the Movant-Intervenor States themselves. *See, e.g.*, Cal. Air Res. Bd. et al., *Comments on the PM NAAQS Rule*, REGULATIONS.GOV COMMENT ID EPA-HQ-OAR-2015-0072-2337 (2023).

IV. THE PRESENT LITIGATION

On March 6, 2024, in response to EPA's promulgation of the Final Rule on the same day, the Commonwealth of Kentucky and 23 other States filed their petition for review of the Final Rule (D.C. Cir. Case No. 24-1050). Additionally, the U.S. Chamber of Commerce and 7 other industry groups (D.C. Cir. Case No. 24-1051), the State of Texas and Texas

Commission on Environmental Quality (D.C. Cir. Case No. 24-1052), and the President of the Arizona State Senate, Speaker of the Arizona House of Representatives, and Arizona Chamber of Commerce and Industry (D.C. Cir. Case No. 24-1073), also filed petitions for review of the Final Rule. On March 27, 2024, Citizens for Pennsylvania's Future, Conservation Law Foundation, Natural Resources Defense Council, Northeast Ohio Black Health Coalition, Rio Grande International Study Center, and Sierra Club (collectively, Movant-Intervenor Health, Environmental, and Community Groups) moved to intervene in support of Respondents in the above cases. Before filing this motion, counsel for the State of California contacted the parties to these consolidated cases for their position on this motion. Counsel for Respondents and counsel for Petitioners in Case Nos. 24-1050, and 24-1051 took no position; counsel for Petitioners in Case No. 24-1073 stated that they do not oppose the motion; counsel for Movant-Intervenor Health, Environmental, and Community Groups consented to the motion.

LEGAL STANDARD

FRAP 15(d) authorizes intervention in circuit court proceedings reviewing agency actions. A party seeking such intervention must file a motion containing "a concise statement of interest of the moving party and the grounds for intervention" "within 30 days after the petition for review."

In determining whether to grant such an intervention motion, this Court draws on the policies underlying Federal Rules of Civil Procedure (FRCP) 24. *See Mass. Sch. of Law at Andover, Inc. v. United States*, 118 F.3d 776, 779 (D.C. Cir. 1997). Under FRCP 24, courts require a party requesting intervention as of right to satisfy four criteria:

> 1) timeliness of the application to intervene; 2) a legally protected interest; 3) that the action, as a practical matter, impairs or impedes that interest; and 4) that no party to the action can adequately represent the potential intervenor's interest.

Crossroads Grassroots Pol'y Strategies v. FEC, 788 F.3d 312, 320 (D.C. Cir. 2015); *see also Old Dominion Elec. Coop. v. FERC*, 892 F.3d 1223, 1232–33 (D.C. Cir. 2018) (looking "to the timeliness of the motion to intervene and whether the existing parties can be expected to vindicate the would-be intervenor's interests").

A court may also grant permissive intervention when a movant makes a "timely application" and the "applicant's claim or defense and the main action have a question of law or fact in common." Fed. R. Civ. P. 24(b)(1); *see EEOC v. Nat'l Children's Ctr., Inc.*, 146 F.3d 1042, 1045 (D.C. Cir. 1998). In addition, a court may permit intervention by a state governmental officer or agency where any party's claim or defense is based on "a statute or executive order administered by the officer or agency" or "any regulation,

order, requirement or agreement or made under the statute or executive order." Fed. R. Civ. Proc. 24(b)(2).

ARGUMENT

I. MOVANT-INTERVENOR STATES ARE ENTITLED TO INTERVENTION AS OF RIGHT

A. Movant-Intervenor States Have Article III Standing and Have Legally Protected Interests that Would Be Impaired if the Petition Is Granted

The standing inquiry for an intervenor-respondent is the same as for a petitioner: the intervenor must show injury in fact, causation, and redressability. *Crossroads Grassroots*, 788 F.3d at 316. This Court has held that if the potential loss of benefits resulting from a challenged agency action is sufficient to establish injury for the intervenor-respondent, it necessarily follows that the injury is "directly traceable" to the challenge, and that the intervening-defendant can "prevent the injury" by defeating the challenge. *Id.* "Put differently, if [the intervenor-respondent] can prove injury, then it can establish causation and redressability." *Id.*

Here, the Movant-Intervenor States' potential loss of benefits from the Final Rule resulting from Petitioners' challenges is sufficient to establish injury in fact. This Court's "cases have generally found a sufficient injury in fact where a party benefits from agency action, the action is then challenged

in court, and an unfavorable decision would remove the party's benefit." *Crossroads Grassroots*, 788 F.3d at 317. As detailed in the Final Rule, its supporting documents, and the attached declarations, the Final Rule benefits Movant-Intervenor States in myriad ways, all of which will be significantly impaired or lost entirely if Petitioners were to succeed in their challenges.[4]

First, Movant-Intervenor States have a demonstrated interest in protecting their residents from the harmful effects of $PM_{2.5}$, and associated financial impacts on their healthcare systems. $PM_{2.5}$ has a causal relationship with cardiovascular and respiratory mortality and other devastating health outcomes such as heart disease, lung cancer, reduced cognitive function in older adults, cardiovascular or respiratory hospitalizations, emergency room visits, and development of asthma. PM NAAQS Rule, 89 Fed. Reg. at 16,203, 16,225–36. The Final Rule tightens the annual primary $PM_{2.5}$ standard to a level that would help protect Movant-Intervenor States' residents from these harms. *Id.* For example, EPA estimates that the first year alone of full attainment with the Final Rule will result in massive public

[4] Indeed, this Court has routinely permitted States to intervene to help defend EPA's previous promulgation of NAAQS. *See, e.g.*, *Am. Trucking Ass'ns, Inc. v. Env't Prot. Agency*, 175 F.3d 1027 (D.C. Cir. 1999); *Mississippi v. Env't Prot. Agency*, 744 F.3d 1334 (D.C. Cir. 2013); *Murray Energy Corp. v. Env't Prot. Agency*, 936 F.3d 597 (D.C. Cir. 2019).

health benefits, including avoiding 4,500 premature deaths, 2,000 emergency room visits, 5,700 cases of asthma onset, 800,000 cases of asthma symptoms, 290,000 lost workdays, and 1,000 hospital admissions for Alzheimer's/Parkinson's diseases. EPA, Regulatory Impact Analysis at p. 17, tbl. ES-6, *supra* note 2. Much of these benefits will occur in areas projected to be in nonattainment for the newly adopted PM NAAQS, and a significant number of those areas are located in Movant-Intervenor States. *See id.* at p. 95, Fig. 2-29. Losing these benefits because the Final Rule is vacated or set aside would impair Movant-Intervenors States' quasi-sovereign and sovereign interests in protecting their residents. Vanderspek Decl. ¶¶ 6, 14-18; Holmes-Gen Decl. ¶¶ 5, 18. It would also impose financial harms on Movant-Intervenor States in their roles as administrators of healthcare and public insurance programs for low-income people and seniors who—absent the benefits of the Final Rule—would require higher levels of assistance. *See, e.g.*, EPA, Regulatory Impact Analysis at p. 19, tbl. ES-8, *supra* note 2. Premature deaths, missed work days, and missed school days resulting from $PM_{2.5}$ pollution would also harm Movant-Intervenor States' interests as employers and as administrators of schools. *Id.*

Second, Movant-Intervenor States have quasi-sovereign and sovereign interests in preventing harm to the ecosystems, state-owned parks, and other

public lands within their boundaries from harmful $PM_{2.5}$ pollution. *See Massachusetts v. Envtl. Prot. Agency*, 549 U.S. 497, 519 (2007) (citing *Georgia v. Tennessee Copper Co.*, 206 U.S. 230, 237 (1907)). While not specifically quantified in the Regulatory Impact Analysis, EPA concluded that the scientific evidence reasonably supports the inference that reducing $PM_{2.5}$ concentrations will yield numerous ecological benefits, including increased productivity and biodiversity in terrestrial, freshwater, estuarine, and wetland ecosystems, as well as improved visibility. EPA, Regulatory Impact Analysis at pp. 294–96, *supra* note 2. Again because a significant portion of the $PM_{2.5}$ emission reductions expected to result from the Final Rule will occur in Movant-Intervenor States, it is reasonable to expect that the Final Rule will therefore result in a significant benefit to the ecosystems, parks, and other public lands of Movant-Intervenor States. These too would be lost if the Final Rule was vacated or set aside. Vanderspek Decl. ¶ 15.

Third, due to the cooperative-federalism structure of the Clean Air Act, the Final's Rule limitation on $PM_{2.5}$ pollution will be implemented—and its benefits achieved—largely through the actions of Movant-Intervenor States in their sovereign regulatory capacity. Those regulatory actions are in some cases required by the Final Rule and in other cases made possible (or more effective) by it, making Movant-Intervenor States both "the object[s] of" the

Final Rule, *see West Virginia v. Envtl. Prot. Agency*, 597 U.S. 697, 719 (2022), and its beneficiaries.

The ways in which the NAAQS benefits States in their capacity as air quality regulators are laid out in more detail in the attached Declarations of Sylvia Vanderspek and Bonnie Holmes-Gen. In order, the process triggered by the Final Rule will:

- Require Movant-Intervenor States to reject applications for Clean Air Act permits to build new or reconstructed major stationary sources of $PM_{2.5}$ unless the permit applicant can show that operating the facility will not cause an exceedance of the limits in the Final Rule, 42 U.S.C. § 7475(a);

- Lead to EPA designating areas in Movant-Intervenor States as in or out of attainment with the new standards, thereby triggering Movant-Intervenor States' authority to impose further permit restrictions in those areas, 42 U.S.C. § 7407(d), qualifying Movant-Intervenor States for certain federal grants aimed at reducing air pollution in those areas, *e.g.* 23 U.S.C. 149(b), 42 U.S.C. § 7505, and entitling Movant-Intervenor States whose nonattainment is caused by pollution in upwind states to redress in the form of reduction of upwind emissions, 42 U.S.C. § 7410(a)(2)(D)(i);[5]

- Require Movant-Intervenor States to develop policies to attain or maintain the standards that, once approved by EPA into the State Implementation Plans (SIPs), will become enforceable in federal court, 42 U.S.C. § 7604(a), and require the federal government to ensure that its activities do not conflict with the plan or otherwise impede attainment, *id.* § 7506(c).

[5] Because $PM_{2.5}$ is a non-threshold pollutant, Movant-Intervenor States will benefit from reductions of upwind pollution even if those reductions are not required for attainment in the downwind States. *See* Holmes-Gen Decl. ¶¶ 12-13.

Movant-Intervenors thus have a sovereign interest in their capacity as air quality regulators in being able to take advantage of these tools that flow from the Final Rule. Should the Final Rule be vacated or set aside, the resulting loss of these tools will make it significantly more difficult for Movant-Intervenor States to address their air quality problems and protect their residents and resources. Vanderspek Decl. ¶¶ 15-18.

Because Movant-Intervenor States can therefore demonstrate injury in fact if the Final Rule were to be vacated or set aside, they meet the other requirements for Article III standing as well. *See Crossroads Grassroots*, 788 F.3d at 316 ("[I]f [intervening-defendant] can prove injury, then it can establish causation and redressability.").

For the same reasons, Movant-Intervenor States also meet the FRCP 24(a) requirements for legally protected interests that may be impaired or impeded by this litigation. This Court has observed that the requirements of FRCP 24(a) overlap substantially with Article III standing. *Roeder v. Islamic Republic of Iran*, 333 F.3d 228, 233 (D.C. Cir. 2003) (citing *Sokaogon Chippewa Cmty. v. Babbitt,* 214 F.3d 941, 946 (7th Cir. 2000) for its holding that "any person who satisfies Rule 24(a) will also meet Article III's standing requirement"). As discussed above, if Petitioners are successful in their efforts to vacate or set aside the Final Rule, Movant-Intervenor States'

interests in the health and welfare of their residents, as well as their air quality regulatory systems, will be substantially impaired. Vanderspek Decl. ¶¶ 6, 14-18; Holmes-Gen Decl. ¶¶ 5, 18. Movant-Intervenor States thus satisfy the interest requirements for intervention as of right under FRCP 24(a), as well as the requirements for Article III standing.

B. Movant-Intervenor States' Interests Are Not Adequately Represented in This Case

No existing party in this case can vindicate or adequately represent Movant-Intervenor States' interests. *See Old Dominion*, 892 F.3d at 1232–33 (Court looks to "whether the existing parties can be expected to vindicate the would-be intervenor's interests"); *see also* Fed. R. Civ. P. 24(a)(2) (considering whether "existing parties adequately represent" the would-be intervenor's interests). The requirement is "not onerous," and a "movant ordinarily should be allowed to intervene unless it is clear that" existing parties "will provide adequate representation." *Crossroads Grassroots*, 788 F.3d at 321. "[G]eneral alignment" between would-be intervenors and existing parties that a rule is lawful is not dispositive. *Id.*

Movant-Intervenor States more than meet this minimal burden. Although Movant-Intervenor States would be joining EPA in defending the Final Rule in the litigation, the parties' respective interests are distinct

because they are differently situated. The Final Rule directly regulates and imposes obligations on States that it does not impose on EPA itself. Specifically, while EPA is responsible for promulgating and periodically reviewing the NAAQS, 42 U.S.C. § 7409, States are responsible for developing SIPs that contain adequate measures to actually attain the NAAQS. *Id.* at § 7410. These SIPs must be submitted to EPA for approval, and the agency can require revisions or impose a federal implementation plan if a SIP is inadequate. *Id*. Pursuant to this framework, Movant-Intervenor States have developed extensive experience in implementing the NAAQS that is distinct from that of EPA. *See* Vanderspek Decl. ¶¶ 1-3, 13.

As noted above, Movant-Intervenor States also have sovereign and quasi-sovereign interests in attaining or maintaining the NAAQS in their respective States. *See Alfred L. Snapp & Son, Inc. v. Puerto Rico, ex rel., Barez*, 458 U.S. 592, 607–08 (1982) ("[A] State has a quasi-sovereign interest in the health and well-being—both physical and economic—of its residents in general," as well as "assuring that the benefits of the federal system are not denied to its general population."); *New Jersey v. Envtl. Prot. Agency*, 989 F.3d 1038, 1045 (D.C. Cir. 2021) (recognizing that New Jersey has "quasi-sovereign interests" in reducing air pollution). These State interests are distinct from EPA's interests in defending its Final Rule, and in

protecting the health and welfare of all Americans in general, even if Movant-Intervenor States and EPA are generally aligned in contending that the petitions should be denied. Vanderspek Decl. ¶ 13. As a result, EPA and Movant-Intervenor States may choose to advance different arguments or make different strategic choices in this litigation.

C. The Motion is Timely

Finally, this motion is timely under D.C. Circuit Rule 15(d), because it is filed within 30 days of the petition for review in Case No. 24-1050. ECF Doc. No. 2043656. Movant-Intervenor States therefore satisfy all the requirements for intervention as of right.

II. ALTERNATIVELY, MOVANT-INTERVENOR STATES ARE ENTITLED TO PERMISSIVE INTERVENTION

Movant-Intervenor States also satisfy the requirements for permissive intervention. Courts may "permit anyone to intervene who . . . has a claim or defense that shares with the main action a common question of law or fact" if the motion is timely and intervention will not "unduly delay or prejudice the rights of the original parties." Fed. R. Civ. P. 24(b)(1)(B), (3). As explained above, this motion is timely and, accordingly, Movant-Intervenor States' intervention at this early stage will not cause undue delay or prejudice the rights of the original parties.

Movant-Intervenor States also will have claims or defenses that share common questions of law and fact with those of Petitioners, as evidenced by the parties' respective comments in the underlying rulemaking process. For example, Petitioners may raise challenges about whether the PM NAAQS should be protective of sensitive populations, whether the previous standard was adequately protective, and whether EPA's adoption of a new primary annual $PM_{2.5}$ standard should have been delayed. *See*, EPA, Responses to Significant Comments on the 2023 Proposed Rule for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter, *available at* https://www.epa.gov/system/files/documents/2024-02/pm-naaqs_response-to-comments-document_final.pdf. Movant-Intervenor States' anticipated claims or defenses in support of EPA's Final Rule share common questions of law and fact with these potential arguments. *Id.*

Moreover, because at least some of Petitioners' claims will likely be based upon one or more of the Movant-Intervenor States' SIPs, or other statutes, regulations, or administrative orders, Movant-Intervenor States are eligible for permissive intervention under FRCP 24(b)(2). *See generally Nuesse v. Camp*, 385 F.2d 694, 704–06 (D.C. Cir. 1967) (summarizing the effect of FRCP 24(b)(2) as "expand[ing] the concept of 'claim or defense' insofar as intervention by a governmental officer or agency is concerned,"

and thereby "consider[ing] the governmental application with a fresh and more hospitable approach"). For example, in its comments on the Final Rule, the U.S. Chamber of Commerce (a petitioner in D.C. Cir. Case No. 24-1051) argued that EPA should not strengthen the PM NAAQS because "the agency has not articulated a feasible path to compliance" in States such as California. Comments of the U.S. Chamber of Commerce (Feb. 23, 2023), EPA-HQ-OAR-2015-0072-1856 at p. 3. Other petitioners claimed that compliance in general—including in Movant-Intervenor States—will be too costly or otherwise difficult. *See, e.g.,* Comments of National Association of Manufacturers (Feb. 22, 2023), EPA-HQ-OAR-2015-0072-2196 at p. 2. However, as noted above, it is up to each State to first identify its preferred emission control measures in their respective SIPs for attaining or maintaining the NAAQS. 42 U.S.C. § 7410. Accordingly, Petitioners' arguments effectively attack the future regulatory choices of the Movant-Intervenor States in administering the Clean Air Act. The Court should therefore grant permissive intervention to Movant-Intervenor States to allow them to defend the development and implementation of their respective SIPs, and to explain why potential compliance challenges do not warrant further delaying the strengthening of the PM NAAQS to the level requisite to protect public health.

CONCLUSION

For the foregoing reasons, Movant-Intervenor States respectfully request that this Court grant them intervention as of right or, in the alternative, permissive intervention.

Dated: April 5, 2024

Respectfully submitted,

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CERTIFICATE AS TO PARTIES AND AMICI

Pursuant to D.C. Circuit Rules 27(a)(4) and 28(a)(1)(A), I hereby certify the parties and amici are as follows:

Petitioners: Petitioners in Case No. 24-1050 are the Commonwealth of Kentucky, the State of West Virginia, the State of Alabama, the State of Alaska, the State of Arkansas, the State of Florida, the State of Georgia, the State of Idaho, the State of Indiana, the State of Iowa, the State of Kansas, the State of Louisiana, the State of Mississippi, the State of Missouri, the State of Montana, the State of Nebraska, the State of North Dakota, the State of Ohio, the State of Oklahoma, the State of South Carolina, the State of South Dakota, the State of Tennessee, the State of Utah, and the State of Wyoming.

Petitioners in Case No. 24-1050 are the U.S. Chamber of Commerce, American Chemistry Council, American Forest & Paper Association, American Petroleum Institute, American Wood Council, National Association of Manufacturers, National Mining Association, and Portland Cement Association.

Petitioners in Case No. 24-1051 are the State of Texas and Texas Commission on Environmental Quality.

Petitioners in Case No. 24-1073 are the President of the Arizona State Senate Warren Peterson, Speaker of the Arizona House of Representatives Ben Toma, and Arizona Chamber of Commerce and Industry.

Respondents: Respondents are the United States Environmental Protection Agency and Michael S. Regan, Administrator, United States Environmental Protection Agency.

Intervenors: On March 27, 2024, Citizens for Pennsylvania's Future, Conservation Law Foundation, Natural Resources Defense Council, Northeast Ohio Black Health Coalition, Rio Grande International Study Center, and Sierra Club moved to intervene in support of Respondents in Case No. 24-1050 and other consolidated cases. ECF No. 2047121. On April 5, 2024, Alliance of Nurses for Healthy Environments, American Lung Association, Environmental Defense Fund, and Harris County, Texas moved to intervene in support of Respondents in Case No. 24-1050 and other consolidated cases.

Rulings Under Review. Petitioners seek review of the final action of respondent United States Environmental Protection Agency titled "Reconsideration of the National Ambient Air Quality Standards for Particulate Matter" (PM NAAQS Rule or the Rule) published at 89 Fed. Reg. 16,202 (Mar. 6, 2024).

Amici Curiae: On April 5, 2024, Government Accountability & Oversight moved for leave to file an amicus curiae brief in support of the Petitioners in Case No. 24-1050 and other consolidated cases.

Dated: April 5, 2024

/s/ Corey M. Moffat
COREY M. MOFFAT

CERTIFICATE OF COMPLIANCE

I hereby certify that the motion complies with the type-volume limitations of Fed. R. App. Pr. 27(d)(1)(E) & 27(d)(2)(A) because it has been prepared in 14-point Times New Roman font and contains 4,274 words, excluding the parts of the motion exempted under Fed. R. App. P. 32(f), according to the count of Microsoft Word.

Dated: April 5, 2024

/s/ Corey M. Moffat
COREY M. MOFFAT

CERTIFICATE OF SERVICE

I hereby certify that the foregoing motion was filed on April 5, 2024, with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit through the Court's CM/ECF system, and that, therefore, service was accomplished upon counsel of record by the Court's system.

Dated: April 5, 2024

/s/ Corey M. Moffat
COREY M. MOFFAT

ORAL ARGUMENT NOT SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

COMMONWEALTH OF KENTUCKY, et al., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al. Respondents.	Case No. 24-1050 (and consolidated cases)

On Petition for Review of Final Agency Action of
the United States Environmental Protection

DECLARATION OF SYLVIA VANDERSPEK IN SUPPORT OF MOTION FOR LEAVE TO INTERVENE

I, Sylvia Vanderspek, hereby declare as follows:

1. I have been employed with the California Air Resources Board (CARB) from 1989 to 1993, and from 1999 to today. In my short separation from the CARB, I was employed by the Department of Toxic Substances Control and the Bureau of Automotive Repair. In total, I have approximately 24 years of experience working on state implementation plans (SIPs) for National Ambient Air Quality Standards (NAAQS). I have a Bachelor of Science degree in Agricultural

Engineering from California Polytechnic State University, San Luis Obispo. A copy of my resume is attached at Exhibit A.

2. I am currently a Branch Chief with CARB, where I oversee the agency's Air Quality Planning Branch in the Air Quality Planning and Science Division. Section 39602 of the California Health and Safety Code designates CARB responsible for preparing SIPs as required by the Clean Air Act to attain the NAAQS. The staff I supervise and I, working with California's local air districts, oversee development of California's SIPs to attain NAAQS, including the particulate matter (PM) NAAQS at issue in this matter.

3. I have worked on each of the three past designation processes for the fine particulate matter ($PM_{2.5}$) standards the U.S. Environmental Protection Agency (EPA) has promulgated, as well as California's resulting SIPs. A SIP is required by the Clean Air Act for areas designated as nonattainment because they do not meet the NAAQS, and describes how those NAAQS will be met by their attainment deadline. In addition, I oversaw the development of CARB's 2016 State SIP Strategy[1] and 2022 State SIP Strategy,[2] which established CARB's emission reduction strategy to reduce criteria emissions and meet NAAQS across California.

[1] Revised Proposed 2016 State Strategy for the State Implementation Plan (Mar. 7, 2017).

[2] 2022 State Strategy for the State Implementation Plan (Sept. 22, 2022).

I have also overseen the development of California's 1st and 2nd Regional Haze SIPs which address California's obligations pertaining to visibility as required by the Clean Air Act. A key element of the Regional Haze SIPs is coordinating with neighboring states since the SIP must not only show that a state is improving its own visibility, but also that it is reducing its impact on downwind states. California participates in the Western Regional Air Partnership, which is a voluntary partnership of states, tribes, federal land managers, local air agencies and the EPA. The purpose of the partnership is to understand current and evolving regional air quality issues, including Regional Haze, and to develop the technical elements for the Regional Haze SIPs.

4. I submit this declaration in support of the Motion for Leave to Intervene of the States of California, Arizona, Connecticut, Illinois, Maryland, Michigan, Minnesota, New Jersey, New York, Oregon, Rhode Island, Vermont, Washington, and Wisconsin; the Commonwealths of Massachusetts and Pennsylvania; the District of Columbia; and the City of New York seeking to defend EPA's 2024 PM NAAQS final rule (the "2024 PM NAAQS Rule").

5. Unless otherwise noted, the statements made in this declaration are based on my own experience and my review of various publicly available records, including those prepared by EPA and others that appear in the administrative record for the 2024 PM NAAQS Rule.

6. Based on my review of the 2024 PM NAAQS Rule and relevant scientific evidence found in publicly available records, I conclude that if the 2024 PM NAAQS Rule is not upheld and implemented, the State of California will suffer injury stemming from the effects of higher $PM_{2.5}$ concentrations on its natural resources and the health and welfare of its employees and citizens.

7. On February 7, 2024, EPA revised the annual $PM_{2.5}$ NAAQS from a level of 12.0 ug/m^3 to a level of 9.0 ug/m^3.

8. Once EPA promulgates a new NAAQS, California and other states must review their respective air quality data and make recommendations within one year to EPA specifying their "nonattainment areas," i.e., areas of the State that do not meet the NAAQS or contribute to a nearby area that does not meet the NAAQS. EPA must then designate areas—as "nonattainment," "attainment" or "unclassifiable"–within two years of promulgating a NAAQS. In the case of PM, the nonattainment area designation date establishes the timing of new source review requirements, SIP promulgation, and attainment.

9. After EPA has designated areas as "nonattainment" for a NAAQS, the Clean Air Act requires states to develop and enforce SIPs for those areas. Nonattainment areas have air pollution surpassing levels the federal government has deemed requisite to protect public health and welfare based on a metric called the "design value."

10. The NAAQS for PM is particularly relevant in California, which suffers from some of the worst air pollution in the nation. Of the five areas in the nation still considered nonattainment for the previous 12 $\mu g/m^3$ annual $PM_{2.5}$ NAAQS, four of them are in California, and California has the only three areas that have not met the first attainment deadline and thus, require new SIPs. While California has some of the highest $PM_{2.5}$ levels in the country, it has made significant progress reducing $PM_{2.5}$ levels. For example, in 2001, California's South Coast Air Basin recorded an annual $PM_{2.5}$ design value of 29.8 ug/m^3, twice the level of the contemporary standard. In 2022, the South Coast Air Basin recorded an annual $PM_{2.5}$ design value of 14 ug/m^3, an over 50% reduction. The reduction in $PM_{2.5}$ levels in California can be directly associated with the SIP process that required and supported emission reduction measures from both CARB and the South Coast Air Quality Management District. The SIP planning process assures that all levels of governments play a role. For example, in the South Coast Air Basin, the South Coast Air Quality Management District developed controls on ammonia sources as part of the SIP process under the $PM_{2.5}$ NAAQS. Once approved into the SIP, those controls became federalized, and—along with controls on State Sources—directly led to improved $PM_{2.5}$ air quality. For local controls, the NAAQS is the driver.

11. Based on projected design values, multiple new areas in California are expected to have $PM_{2.5}$ levels above EPA's new annual NAAQS, and these areas

range from large urban areas to small rural areas. For all of these newly anticipated nonattainment areas, California will need to develop SIPs that demonstrate through enforceable commitments how it will meet the revised $PM_{2.5}$ standard. $PM_{2.5}$ pollution is complex since the pollution is a combination of directly emitted $PM_{2.5}$, such as woodsmoke and diesel particulate, and $PM_{2.5}$ secondarily formed in the atmosphere, such as ammonium nitrate and ammonium sulfate, via precursors. The level and composition of $PM_{2.5}$ varies throughout the State. Further, for secondarily formed $PM_{2.5}$, understanding which precursor to control is critical to improving air quality as quickly as possible. The $PM_{2.5}$ SIP for each nonattainment area in California will be tailored to the sources causing the elevated levels in each respective area. Usually, the enforceable controls include both State and local commitments, and are defined in the $PM_{2.5}$ SIP and supported by air quality modeling. These enforceable controls specific to each nonattainment area define the path to meeting the applicable $PM_{2.5}$ NAAQS and providing public health benefits to that area.

12. SIPs are developed at the local level with support from CARB. The Clean Air Act requires $PM_{2.5}$ SIPs to include an emission inventory, provisions to ensure that reasonably available control measures are in place four years after designations, quantitative milestones every three years, and an attainment demonstration including air quality modeling that shows attainment by the

attainment date or that it is impracticable. CARB works with the local air district to develop a SIP that identifies the controls needed to show attainment as quickly as possible and meets the requirements of the Clean Air Act. Once the SIP is adopted through a public process at the local level, CARB, as the official air quality agency of the State, submits the SIP to EPA for review. CARB and the local district work closely with EPA to resolve any SIP approvability issues. EPA can either approve, conditionally approve, or disapprove all or portions of the SIP. If EPA disapproves a SIP, the state has 18 months to resolve the disapproval before the first of two sanctions—two to one offsets on new stationary sources—are imposed. Under this sanction, new stationary sources or stationary sources that are making modifications to their facilities will need to offset their emissions by two to one through credits. After 24 months from the disapproval date, if the disapproval has not been resolved, the federal government may also temporarily withhold funding for highway expansion projects in the affected area. At that time, EPA is also required to implement a Federal Implementation Plan (FIP). The FIP addresses the disapproval but does not stop the sanctions from being implemented. EPA does not do SIP planning.

13. California, and other states, have the distinct role of preparing SIPs, which is different from EPA's role in approving them. The states are responsible for all of the technical elements of the SIP and the control strategy to reach attainment of the

NAAQS. In contrast, EPA's role is establishing the guidance for developing SIPs and determining whether state SIPs comply with the guidance and the Clean Air Act. In rare cases, EPA does develop FIPs.

14. With respect to California's natural resources, EPA's 2019 PM Integrated Science Assessment stated that "it is well known that light extinction from pollution is primarily due to $PM_{2.5}$, resulting in the 2019 PM ISA concluding there is a causal relationship between PM and visibility impairment, which was consistent with the conclusions of the 2009 PM ISA (Table 2-3). This conclusion was based on additional characterization of the effect of PM size and composition on light extinction. The relationship between PM and light extinction has been well documented (2019 PM ISA, Section 13.2.2)." (EPA, Supplement to the 2019 Integrated Science Assessment for Particulate Matter, EPA/600/R-22/028| May 2022 p 2-38;). National parks and wilderness areas in California are known for their extensive vistas and striking views of the natural landscape. Views of these natural landscapes are diminished when pollutants such as $PM_{2.5}$ from man-made and natural sources scatter and absorb light, reducing clarity, color, and overall visibility. Out of the 156 national parks and wilderness areas known for their stunning views, California has 29 Class 1 areas, more areas than any other state and include such national treasures as Yosemite and Joshua Tree. California is improving visibility at all of these areas and is required to bring these national

parks and wilderness areas to natural conditions by 2064 via the State's Regional Haze SIP. Higher $PM_{2.5}$ levels could mean that California will not be able to reach the goal of natural conditions by 2064.

15. A strong annual $PM_{2.5}$ NAAQS is critical to capturing these significant public health, environmental, and economic benefits for California. Weakening the NAAQS, or delaying its implementation will, on the other hand, impair California's ability to protect its citizens, make it more difficult for the state to secure resources to do so, and complicate and damage state planning processes.

16. In my experience, the NAAQS and other requirements in the Clean Air Act are the primary federal drivers for reducing concentrations of $PM_{2.5}$ and other air pollutants in the ambient air. The federal program drives state law and policy development to meet federal standards in accordance with the cooperative federalism design of the Clean Air Act. Federal planning deadlines, federal air quality grants, and state rule development are all closely coordinated with schedules to attain the NAAQS. Were the NAAQS to be weakened, delayed, or otherwise altered, California's ability to protect its citizens, and to coordinate planning processes, rulemakings, and grants and other resources to do so, would be significantly impaired. Nor could California readily replicate the federal structure expeditiously and completely as a state law matter; significant rulemaking work

would be needed, and the outcome of any such process is uncertain–and existing programs and policies would be disrupted in the interim, if not indefinitely.

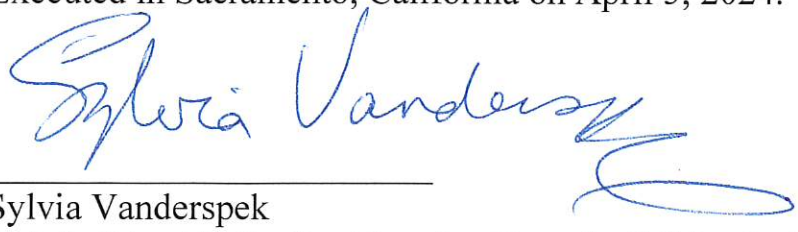
17. As noted above, $PM_{2.5}$ air pollution is complex. $PM_{2.5}$ SIP planning is not a one size fits all metric and must consider sources, economies, and resources with an emphasis on local planning. For example, the city of Portola in Plumas County is one of the areas designated nonattainment for 12 $\mu g/m^3$ annual $PM_{2.5}$ NAAQS with the sole source of pollution coming from smoke from residential woodstove heating. Portola is a poor mountain community where residents rely on woodstoves to heat their homes. Most of the woodstoves were old and did not meet EPA standards. Due to this area being designated nonattainment, the local district received a targeted air shed grant from EPA to pay for the replacement of these dirty stoves. Due to the economics in the community, the targeted air shed grant paid for the entire cost of replacing the dirty woodstoves with new EPA certified woodstoves. In contrast, the South Coast Air Basin $PM_{2.5}$ air quality improvement I mentioned earlier was a result of local ammonia controls on dairies coupled with State mobile source emission standards and California low-sulfur diesel fuel standards that were included in the $PM_{2.5}$ SIP. After EPA approved this SIP, these controls became enforceable via citizen suit in federal court. As recounted above, it is my general observation that PM NAAQS are effective drivers for improving air quality and public health. Also, as shown in the Portola example, NAAQS

nonattainment can provide resources that would not have otherwise been realized. Also, NAAQS nonattainment requires general conformity that ensures actions taken by federal agencies do not interfere with a state's plans to attain and maintain national standards for air quality further protecting the public.

18. In my experience working with other states, the federal NAAQS, and especially the PM NAAQS, are an important policy driver and planning tool for them as well, with many air quality programs generally structured around and supported by the federal NAAQS.. Accordingly, California and other states would be injured if the 2024 PM NAAQS Rule were not upheld.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed in Sacramento, California on April 5, 2024.



Sylvia Vanderspek
Chief of the Air Quality Planning Branch, California Air Resources Board

Exhibit A

Sylvia Vanderspek

OBJECTIVE: Improve air quality to meet federal standards

WORK EXPERIENCE:

California Air Resources Board
Sacramento, CA (05/13 to present) Air Resources Supervisor II
- Supervise three managers who oversee SIP development, evaluating the causes and sources or air pollution.
- Expert on Clean Air Act SIP planning.
- Develops policy related to SIP development.
- Works with local districts and other states on SIP planning.

California Air Resources Board
Sacramento, CA (2/06 to 05/13) Air Resources Supervisor I
- Supervised six staff who develop SIPs and provide technical support related to particulate matter air pollution for the California Air Resources Board.
- Planned, organized, and scheduled work for the Section.
- Developed and implemented policy related to PM and ozone SIPs.

California Air Resources Board
Sacramento, CA (11/99 to 2/06) Air Resources Engineer
- Managed the development of the 2003 San Joaquin Valley PM10 SIP.
- Lead on federal PM2.5 designations, Sacramento air quality planning and smog check.

Department of Consumer Affairs, Bureau of Automotive Repair
Sacramento, CA (7/95 to 11/99) Air Quality Engineer
- Reorganized and revised California Smog Check Inspection Manual.
- Managed Gold Shield and Gross Polluter Certification Pilot Programs.

Department of Toxic Substance Control
Glendale & Long Beach, CA (8/93-6/95) Hazardous Substance Scientist
- Coordinated mitigation and reuse of closing military bases.
- Inspected hazardous waste facilities for compliance with regulations.

California Air Resources Board
El Monte, CA (9/89-8/93) Air Resources Engineer Associate
- Aided in the development of electric vehicle retrofit regulation.
- Evaluated aftermarket automotive products and alternative fuel retrofit systems for compliance with applicable air pollution laws.

EDUCATION: California Polytechnic State University, San Luis Obispo
Major: Agricultural Engineering
Bachelor of Science Degree: March 1988

ORAL ARGUMENT NOT SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

COMMONWEALTH OF KENTUCKY, et al., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al. Respondents.	Case No. 24-1050 (and consolidated cases)

On Petition for Review of Final Agency Action of
the United States Environmental Protection

DECLARATION OF BONNIE HOLMES-GEN IN SUPPORT OF MOTION FOR LEAVE TO INTERVENE

I, Bonnie Holmes-Gen, hereby declare as follows:

1. I have been employed with the California Air Resources Board (CARB) from 2020 to today. Prior to my employment with the CARB, I was employed by the California Department of Toxic Substances Control and the American Lung Association in California. In total, I have more than 30 years of experience working on air quality and health-related issues in the public and non-profit sectors. I have a Bachelor of Science degree in Environmental Policy Analysis and Planning from the University of California, Davis. A copy of my resume is attached at Exhibit A.

2. I am currently a Branch Chief with CARB, where I oversee the agency's health research program to continually update information on the health effects of air pollution and climate change. I also oversee the agency's work on health analysis of air pollution control rules and programs that go before CARB for approval. As part of my responsibilities, I review and analyze health literature, oversee development of health research contracts, and oversee analysis of health literature and health programs in our branch, including the development of comments on the health impacts of proposed updates to National Ambient Air Quality Standards (NAAQS).

3. I submit this declaration in support of the Motion to Intervene of the States of California, Arizona, Connecticut, Illinois, Maryland, Michigan, Minnesota, New Jersey, New York, Oregon, Rhode Island, Vermont, Washington, and Wisconsin; the Commonwealths of Massachusetts and Pennsylvania; the District of Columbia; and the City of New York seeking to defend the 2024 NAAQS for particulate matter (the "2024 PM NAAQS Rule").

4. Unless otherwise noted, the statements made in this declaration are based on my own experience and my review of health studies and information incorporated by me and my staff in comments provided by CARB to inform the U.S. Environmental Protection Agency (EPA) on CARB's position on the 2024 PM NAAQS Rule.

5. Based on my review of the 2024 PM NAAQS Rule and relevant scientific evidence found in publicly available records, I conclude that if the 2024 PM NAAQS Rule is not upheld and implemented, the State of California will suffer injury stemming from the effects of higher fine particulate matter ($PM_{2.5}$) concentrations on the health and welfare of its employees and residents.

6. On February 7, 2024, EPA revised the annual $PM_{2.5}$ standard from a level of 12.0 µg/m³ to a level of 9.0 µg /m³ based on scientific evidence to provide a greater level of public health protection.

7. I led the development of three comment letters stating that health research supports the update of the annual $PM_{2.5}$ standard to a level of 8 µg/m³. My branch collaborated with health experts at the Office of Environmental Health Hazard Assessment (OEHHA) and the California Occupational Safety and Health Administration (Cal/OSHA) in writing these letters. The letters include the following and should all be included in the administrative record:

1) CARB, OEHHA and Cal/OSHA's joint comments on the U.S. EPA's Proposed Rule for PM NAAQS, submitted on March 28, 2023, EPA-HQ-OAR-2015-0072-2337.
2) CARB and OEHHA's joint comments on the Supplement to the 2019 Integrated Science Assessment for PM External Review Draft, September 2021, submitted on November 29, 2021, EPA-HQ-ORD-2014-0859-0056.

3) CARB and OEHHA's joint comments on the U.S. EPA's Proposed Rule for PM NAAQS, submitted on June 29, 2020, EPA-HQ-OAR-2015-0072-0975.

8. The health of California residents is seriously impacted now by $PM_{2.5}$ pollution and has historically been seriously impacted. Californians suffer from high levels of pollution-related illnesses and deaths. The health burden of $PM_{2.5}$ pollution includes over 5,000 premature deaths annually and thousands of hospitalizations for heart and lung diseases and emergency room visits for asthma in California. Marginalized communities face the largest toll from the health impacts of particle pollution. Research finds that children, the elderly, and racial and ethnic subgroups are particularly vulnerable to the health effects of particle pollution.

9. The burden of asthma is seriously impacting communities in California, and the burden of asthma is worsened by exposure to $PM_{2.5}$ pollution (Fan et al. 2016). According to the 2017 CA asthma surveillance report (CDPH, 2017), over 5 million Californians (including 1.2 million children) have been diagnosed with asthma, and over 3 million Californians (including 851,000 children) have current asthma. Asthma does not impact all Californians equally. School-aged children and some racial and ethnic

subgroups such as Blacks, American Indians/Alaska Natives, Puerto Ricans, Filipinos, and Japanese have especially higher prevalence than others. For example, Black Californians suffer more from asthma than white Californians. About 1 in 5 Black Californians have asthma and Black Californians have 5 times more emergency room visits, 5 times more hospitalization, and 2 times more deaths from asthma than Whites (CDPH, 2024).

10. Individuals living in low-income communities or communities with large numbers of pollution sources and individuals with existing respiratory or chronic illnesses are disproportionately impacted by $PM_{2.5}$ pollution. CARB staff analysis has shown that more vulnerable communities (as measured by an environmental justice score) in California were exposed to higher $PM_{2.5}$ concentrations (Lee and Park 2020). A recent study (Bennett et al. 2019) of US counties with mean $PM_{2.5}$ concentrations between 2.8 $\mu g/m^3$ and 13.2 $\mu g/m^3$ demonstrated that "at any $PM_{2.5}$ concentration, life expectancy loss was, on average, larger in counties with lower income and higher poverty rate than in wealthier counties." Similarly, in another study of a Canadian cohort exposed to low mean $PM_{2.5}$ concentrations (3-year mean of 6.3 $\mu g/m^3$), those who were not employed, had not completed high school,

and were in the lowest income quintile had significantly greater risk of mortality than their respective comparison groups (Pinault, Tjepkema et al. 2016). And, in a study done in North Carolina, heart failure patients exposed to levels of $PM_{2.5}$ even below the previous NAAQS had increased risk for mortality (Ward-Caviness, Weaver et al. 2020).

11. Climate change is contributing to increased emissions and worsening health effects from $PM_{2.5}$ pollution in California through, among other things, increased heat, longer and more severe drought, and greater risk of wildfire. These conditions put communities in California at risk for increased health effects. The projected increase in air pollution due to climate change could have an increased impact on the elderly and those with pre-existing heart or lung disease due to their increased sensitivity (Analitis et al. 2014, Bernstein and Rice, 2013, Rice et al. 2014).

12. $PM_{2.5}$ pollution, even at levels below the previous annual standard of 12 $\mu g/m^3$, has resulted in increases in premature mortality as verified by multiple studies. Causal associations have been found between $PM_{2.5}$ levels below the previous EPA standard of 12 $\mu g/m^3$ and premature mortality in multicity key epidemiological studies in the U.S. and Canada (Crouse et al. 2012, Di et al. 2017, Shi et al. 2016, Wang et al. 2017, Zeger et al. 2008, Wu

et al. 2020). These studies are representative of the overwhelming body of research that demonstrates mortality and morbidity impacts at annual $PM_{2.5}$ levels below the previous EPA standard. In the Wu et al. 2020 study, a team of Harvard researchers tracked deaths and $PM_{2.5}$ exposures among more than 68 million Medicare enrollees over 16 years and found that lowering the annual $PM_{2.5}$ standard to 10 $\mu g/m^3$ would save over 140,000 lives in one decade. Several studies reveal associations in areas with an average concentration less than 10 $\mu g/m^3$ (Shi et al. 2016, Wu et al. 2020). A 2017 study by Di et al. showed an almost linear relationship between $PM_{2.5}$ and mortality with no signal of threshold down to 5 $\mu g/m^3$. All these studies are included in the EPA's Integrated Science Assessment documentation for the 2024 PM NAAQS Rule, EPA-HQ-OAR-2015-0072-1586 (2019) and EPA-HQ-OAR-2015-0072-1585 (2023).

13. Recent studies provide more evidence for a supra-linear concentration-response relationship between $PM_{2.5}$ and long-term mortality, meaning there is more risk per unit of $PM_{2.5}$ air pollution at lower levels (that many people experience) when compared to a higher, more well-known linear, no-threshold approach. Both sets of evidence support the need to strengthen the annual standard. A study by Bennett et al., 2019, emphasized

that long-term exposure in excess of very low levels (3 μg/m³) can lower life expectancy for both men and women. In another study of heart failure patients who were living in locations above and below the previous annual $PM_{2.5}$ standard of 12 μg /m³, researchers found an almost 1 year of life lost among those exposed to higher concentrations over the annual $PM_{2.5}$ standard. The authors reported that exposure to $PM_{2.5}$ over the previous annual standard is a "significant mortality risk." (Ward-Caviness et al. 2020)

14. Long-term exposure to $PM_{2.5}$ pollution has resulted in increases in cardiovascular and respiratory illnesses as verified by multiple studies. A retrospective cohort study by Liao et al. 2021 demonstrated consistent, positive associations between long-term $PM_{2.5}$ exposure and cardiovascular mortality. Adults with a history of cardiovascular disease are susceptible to the effects of $PM_{2.5}$ exposure, particularly cardiovascular mortality. A 10 μg/m³ increase in 1-year mean $PM_{2.5}$ exposure was associated with an increase in risk of cardiovascular mortality (hazard ratio, 1.20). A cohort study by Jin et al., 2022 found that long-term exposures to $PM_{2.5}$ were associated with increased incidence of cardiovascular diseases and such associations were consistent and even stronger when pollutant concentrations were below previous EPA standards. Strong associations

were observed for $PM_{2.5}$ concentrations below 10 $\mu g/m^3$ and 8 $\mu g/m^3$. Black people and people with diabetes were found to be vulnerable populations. A study by Yazdi et al., 2022 found $PM_{2.5}$ was associated with increased hospital admissions with cardiovascular and respiratory disease. Specifically, for each one $\mu g/m^3$ increase in two-year average levels, there is a significant increase in the absolute rate of annual admissions with cardiovascular disease by 47.71 admissions per 100,000 person-years, myocardial infarction by 7.44 admissions per 100,000 person-years, and 18.58 respiratory admissions per 100,000 person-years.

15. $PM_{2.5}$ pollution is contributing to adverse health impacts including adverse birth outcomes, brain degenerative illnesses, neurodevelopmental delays, adverse impacts to metabolic systems, and other health effects. The epidemiological studies reviewed in the 2019 ISA provide sufficient support for a stronger PM NAAQS, with effects on both neurologic and psychiatric outcomes at long-term average $PM_{2.5}$ concentrations around 12 $\mu g/m^3$. For instance, $PM_{2.5}$ exposure was associated with Alzheimer's disease or Parkinson's diseases at annual average $PM_{2.5}$ concentrations around 12 $\mu g/m^3$ (Kioumourtzoglou et al. 2016). An association with anxiety was also reported in areas with average $PM_{2.5}$ concentrations below 12 $\mu g/m^3$ (Power

et al. 2015). Epidemiological evidence for $PM_{2.5}$ health effects has been accumulating rapidly in the years since the 2019 ISA and continues to support the ISA's conclusion that long-term exposure to $PM_{2.5}$ is "likely to be causal" for nervous system effects. For example, a study in North Carolina found elevated risk of death from Alzheimer's disease among people exposed to annual $PM_{2.5}$ concentrations of 10 $\mu g/m^3$ and above compared to people exposed to concentrations up to 7.61 $\mu g/m^3$ (Rhew et al. 2021).

16. Findings from epidemiological and toxicological studies provide consistent evidence, particularly for birth outcomes, to demonstrate the need for a lower annual $PM_{2.5}$ standard based on effects at concentrations of 8.9-11.9 $\mu g/m^3$ in the human and 12.9 $\mu g/m^3$ in the rodent. The epidemiological studies reviewed in the 2019 ISA provide consistent evidence for associations between $PM_{2.5}$ exposure and reproductive and development effects, particularly for adverse birth outcomes. One study found associations in areas with an average $PM_{2.5}$ concentration of 11.9 $\mu g/m^3$ (Hyder et al. 2014). Several published after the 2019 ISA further support this finding. For example, prenatal $PM_{2.5}$ exposure was associated with lowered term birth weight at an annual mean $PM_{2.5}$ concentration of 8.9

$\mu g/m^3$ (Yitshak-Sade et al. 2021). Among toxicological studies, a new sub-chronic mouse study published after the literature review cut-off of the 2019 ISA demonstrated that exposure of male mice to a time weighted average $PM_{2.5}$ concentration of 12.9 $\mu g/m^3$ for four months was toxic to the reproductive system, with reductions in both sperm count and testosterone levels (Qiu et al 2018). In another study, exposure of pregnant mice during gestation to a time-weighted average of 12.92 $\mu g/m^3$ resulted in decreased fetal birth weight, while the combination of exposure during gestation and weaning resulted in altered heart development in the offspring (Gorr et al. 2014).

17. Reductions in levels of $PM_{2.5}$ have known lung health benefits for children. An analysis in the Children's Health Study (Urman et al. 2014) demonstrated that both regional PM pollution and local near-roadway exposures affect children's health independently, resulting in reduced lung function. An examination of the long-term health trends in the Children's Health Study participants have found that reductions of air pollution in the South Coast Air Basin in California are associated with significantly reduced bronchial symptoms and clinically significant positive effects on lung-function growth in these children (Gauderman et al. 2015, Berhane et al.

2016). These studies help to demonstrate how reduced exposure to transportation pollution emissions can result in health benefits in one of our most sensitive groups, our children.

18. A strong annual $PM_{2.5}$ standard, as well as federal and state actions to attain the standard, are critical to provide important public health benefits to residents of California as soon as possible. Weakening the PM NAAQS, or delaying its implementation will, on the other hand, reduce the state's ability to protect public health from the impacts of $PM_{2.5}$.

19. I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed in Sacramento, California on April 5, 2024.

Bonnie Holmes-Gen
Chief of the Health Exposure and Assessment Branch,
California Air Resources Board

Exhibit A

BONNIE R. HOLMES-GEN

Professional Experience:

California Air Resources Board Research Division
Branch Chief, Health and Exposure Assessment Branch (Air Resources Supervisor II) (1/15/2020 – present)
Lead Health and Exposure Assessment Branch programs in Research Division (RD) to provide a strong health foundation for CARB's regulations, programs, and plans.

- Develop and implement branch priorities and strategies to support health research and analysis.
- Supervise three section managers and oversee staff teams working to achieve branch goals.
- Oversee and direct branch programs on quantitative and qualitative health analysis, indoor air quality and building decarbonization, wildfire emergency preparedness, climate health impacts, vulnerable populations, air cleaner certification and library services.
- Oversee and manage health research planning and development, implementation of research contracts to support the health mission of the agency and science consultants to advise on health analysis approaches.
- Develop public messaging on health research topics and coordinate with public information office.
- Coordinate branch work with RD leadership team, with other divisions and offices in CARB, and externally with other state and local agencies.
- Prepare written documents and presentations to communicate branch research and priorities for internal and external stakeholders.
- Implement agency human resources and administrative policies related to staff supervision and project management.

Department of Toxic Substances Control, Sacramento, CA
Senior Environmental Scientist (6/2018-1/15/2020)
Project Manager for "Permit Protections for Vulnerable Communities" program to implement SB 673 (Lara).

- Planned and implemented outreach to multiple stakeholders including community, business, and local government stakeholders.
- Planned and conducted public workshops, working groups and meetings to engage diverse stakeholders.
- Managed contracts with both scientific and academic experts to assist in regulatory development and public process.
- Conducted ongoing outreach to public stakeholders to provide updates and maintain external interest and engagement in the regulatory development process.
- Wrote briefing papers for senior management and the department director to assist in policy and regulatory development.
- Conducted complex research of cumulative impacts and community vulnerability to develop scientific basis for regulatory concepts.
- Developed regulatory language with input from internal and external stakeholders.
- Coordinate4d with DTSC legal, public participation, equity and permitting staff in regulatory development process as well as other agencies including Cal-EPA, OEHHA and CARB.

American Lung Association in California (ALA in California), Sacramento, CA
Senior Director, Air Quality and Climate Change (1/00-6/2018)
Led air quality and climate projects to further the mission of the American Lung Association to protect lung health and prevent lung disease, including regulatory, policy, research, and outreach activities.

- Managed and implemented legislative and regulatory priorities for the association.
- Managed and performed advocacy work including tracking and analyzing legislation, regulations, amendments, staff reports and analyses on environmental health issues and presenting testimony regularly before legislative bodies and state agencies.
- Prepared letters, position papers, articles, research reports and other communications to inform legislative offices, regulatory agencies, stakeholders and the public on air quality, climate, and environmental health issues.
- Coordinated with state and local officials, community, health, and environmental stakeholders.
- Conducted conference calls, meetings and webinars to train lung association staff and volunteers.
- Prepared annual grant proposals and oversaw grant funded scientific research and policy projects to support implementation of the Climate Change 2030 Scoping Plan, advanced clean cars and zero emission vehicle regulations, sustainable communities' strategies, and other programs.
- Interpreted air pollution data and prepared reports quantifying air quality and health benefits of clean transportation including the "Clean Air Future" report.
- Regularly developed and conducted presentations, air quality public education and outreach activities on air quality and environmental health issues, including presentations on the annual ALA "State of the Air" report.

Sierra Club California, Sacramento, CA
Senior Legislative Representative (1/96-12/99)
Represented the Sierra Club's environmental advocacy positions in the State Legislature and key environmental agencies.

- Analyzed and advocated for legislation and regulations addressing air and water pollution, clean transportation, air toxics, children's health, environmental justice, and hazardous waste.
- Established and carried out legislative priorities and strategies in coordination with members of the Sierra Club's California Legislative Committee and volunteer leadership.
- Advocated legislation establishing the "Children's Environmental Health Protection Act."
- Conducted media outreach on key environmental legislative and administrative issues.

V. John White Associates, Sacramento, CA
Senior Associate (9/89-9/95)
Conducted legislative and administrative advocacy and monitoring services on behalf of public and private sector clients.

- Conducted legislative analysis, bill tracking services and policy research including writing periodic reports of legislative activity and annual reports on enacted legislation.
- Represented client Sierra Club California on air toxics and hazardous waste legislation.
- Clients of the firm included local government agencies, air pollution control districts, environmental organizations, and corporate clients.

Sierra Club Angeles Chapter, Los Angeles, CA
Conservation Coordinator (10/87-8/89)
Managed the conservation activities of the Angeles Chapter that includes Los Angeles/Orange Counties.

- Conducted advocacy on a wide range of urban air pollution, transportation, energy, coastal and natural resource issues.
- Developed and presented skills-training programs for volunteers as well as education programs on key environmental issues.
- Coordinated with other public interest organizations and environmental activists in Los Angeles.

American Lung Association of Sacramento-Emigrant Trails, Sacramento, CA
Air Conservation/Environmental Health Program Coordinator (4/84-6/87)
Implemented air quality advocacy and education programs with volunteer leadership of the Association.

- Advocacy on regional air quality/transportation plans at the city and county level.
- Developed rice-straw burning policy document and issue conference.
- Volunteer recruitment and management.

Education:
Bachelor of Science, Environmental Policy Analysis and Planning, University of California, Davis, June 1982.
Master of Arts, Christian Studies, New College Berkeley, Berkeley, August 1993.