American Lung Association.

December 14, 2021

Elizabeth A. Sheppard, Chair
Clean Air Scientific Advisory Committee
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington D.C. 20460

Re: Docket No. EPA-HQ-OAR-2015-0072

Dear Dr. Sheppard:

The American Lung Association is the oldest voluntary public health association in the United States, representing the millions of individuals with or at risk of lung disease. The Lung Association is the leading organization working to save lives by improving lung health and preventing lung disease through research, education and advocacy. We appreciate the opportunity to provide comment on the external review draft of the Policy Assessment for Reconsideration of the National Ambient Air Quality Standard for Particulate Matter (Docket No. EPA-HQ-OAR-2015-0072).

The American Lung Association applauds the diligence and thoroughness of the EPA staff in preparing this comprehensive document. In general, we find much to support in their assessment. They have attempted to provide a full, extensive review, including addressing the shortcomings of the previous review that precipitated the need for this reconsideration.

As a science-based organization, the Lung Association is pleased and relieved that since the previous review EPA has revised its process for this reconsideration of the PM standards, with an emphasis on science. In particular, we appreciate the reconstitution of the CASAC chartered panel, the reinstatement of the PM Panel and the examination of some of the literature that has been published in the last four years on the health harms from this deadly pollutant.

Particle pollution trending worse, especially in the western U.S.

Thanks to the Clean Air Act, the nation has made considerable progress in cleaning up particle pollution, particularly in the eastern U.S. This progress is clearly presented in the draft Policy Assessment and can be seen as well in the American Lung Association's annual *State of the Air* report, which has tracked trends in air pollution by county for the last 22 years. In many parts of the country, the trend lines for pollution

levels show a downward trend from the first report in 2000 until three or four years ago, when levels started climbing again.

Heat and drought caused by climate change are leading to more spikes of unhealthy levels of particle pollution over time. In the *State of the Air 2021* report, we found that for the three years from 2017 to 2019, close to 54.4 million people living in 88 counties experienced unhealthy spikes in particulate matter air pollution. This represented an increase of more than 1 million people living in areas with unhealthy levels of short-term particle pollution compared to last year's report. Many cities reached their highest number of days with unhealthy levels of $PM_{2.5}$ ever reported.

As climate change worsens, this trend can be expected to continue, undoing much of the progress that has been made in cleaning up particle pollution and exposing a growing number of people in more parts of the country to the associated risk of health harms and premature death. Strong protective standards for both annual and short-term $PM_{2.5}$ are overdue, and critically needed.

Evidence base for decision-making excludes vulnerable groups

We appreciate that in the draft Policy Assessment, EPA included an examination of the relationship between $PM_{2.5}$ exposure and health outcomes with both a *causal* and *likely to be causal* relationship. However, we believe that the fact that the supplement to the 2019 ISA does not include more recent findings about respiratory health, cancer and nervous system effects may have limited the assessment in ways that will hamper the ability to fully evaluate the policy implications of the evidence.

The failure to take a full accounting of morbidity outcomes results in a disproportionately limited view of the effect of particle pollution on communities of color. People of color are more likely than white people to be living with one or more chronic conditions that make them more vulnerable to the health impacts of air pollution, including asthma, diabetes and heart disease. Recent scientific literature about these health outcomes would be useful in assessing the nature of health disparities.

Restricting the evidence review in the supplement to the 2019 ISA to cardiovascular outcomes and mortality also almost completely excludes children from this reconsideration. We have strong evidence of the deleterious effect of $PM_{2.5}$ exposure on the developing lungs in children, putting them at increased risk of a lifetime of compromised health. They deserve to be taken into consideration when determining the adequacy of the standards that will affect their future.

The Lung Association recognizes the important public health benefit of moving forward with this reconsideration on an aggressive timeline and is not recommending taking the

time to overhaul the methodology used in the supplement to the ISA. However, we urge CASAC and EPA to keep the needs of these under-represented vulnerable populations in mind when making decisions about possible alternative standards that would be truly protective of their health.

Current standards are inadequate to protect public health

The evidence included does clearly demonstrate the potential for public health benefit from more stringent standards. The risk assessment in the draft PA calculates that more than 45,000 deaths in 2015 were attributable to long-term $PM_{2.5}$ exposure despite meeting the current annual standard. The risk estimate for at-risk populations provides valuable insight into the positive impact of tightening the standards on reducing the disparities in exposure and risk experienced by communities of color. It finds that Blacks, the population group that suffers the most from particle pollution, will experience proportionally greater benefit from successively lower annual standards than other groups. This would surely be a welcome outcome, and one that is in line with the Administration's priorities.

Treating the 24-hour standard as a supplement to the annual standard puts communities at risk

Given the growing body of research finding adverse health effects at $PM_{2.5}$ levels well below the current 24-hour standard, we urge EPA to recognize that the short-term standard set in 2006 fails to adequately protect public health. We do not believe that it is appropriate or sufficiently protective to treat the 24-hour standard as a supplement to the annual standard.

Lowering the annual average standard will reduce chronic exposures, but it is not sufficient to protect against peak daily concentrations that have been linked to serious harms to human health. Studies of short-term exposure demonstrate that $PM_{2.5}$ air pollution increases the risk of hospital admissions for heart and lung problems even when days with pollution concentrations at or above the current daily standard of 35 $\mu g/m^3$ are excluded. Daily concentrations must be capped at lower levels to protect against peak exposure days that occur due to local and seasonal sources of emissions. For communities in Alaska, parts of the West and parts of New England, shorter term exposures pose the primary risk because of the episodic emissions from woodstoves and other sources. Nearly all these areas have year-round concentrations that are well below the annual standard.

The inadequate 24-hour standard is the basis for EPA's Air Quality Index (AQI) that is used to communicate daily air pollution levels to the public. Using EPA's AirNow tool or similar communications from state and local air pollution agencies, the public is informed about air quality forecasts and pollutant levels in their community. The Air Quality Index suggests that only exposures of more than 35.5 $\mu g/m^3$ are unhealthy for sensitive groups and designated code orange. Days with $PM_{2.5}$ levels from 12.1 $\mu g/m^3$ to as high as 35.4 $\mu g/m^3$ are labeled "moderate" or code yellow days. This provides an inaccurate picture of the health risks of daily exposure to $PM_{2.5}$.

EPA's official caution for a code yellow moderate day for $PM_{2.5}$ is

> "Who Needs to be Concerned? Some people who may be unusually sensitive to particle pollution."
>
> What Should I Do? **Unusually sensitive people**: *Consider reducing* prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. **Everyone else**: It's a good day to be active outside."[1]

Further, in order for the warning level to be elevated to code red or "unhealthy", meaning that everyone needs to take precautions, the daily $PM_{2.5}$ levels must exceed 55.5 $\mu g/m^3$. Setting a more protective 24-hour standard will not only drive pollution cleanup, but also provide more accurate information so individuals, teachers, coaches and others can make decisions to reduce or prevent exposures to $PM_{2.5}$ at levels that threaten health.

	AQI Category	Index Values	Breakpoints ($\mu g/m^3$, 24-hour average)
Green	Good	0 - 50	0.0 – 12.0
Yellow	Moderate	51 - 100	12.1 – 35.4
Orange	Unhealthy for Sensitive Groups	101 – 150	35.5 – 55.4
Red	Unhealthy	151 – 200	55.5 – 150.4
Purple	Very Unhealthy	201 – 300	150.5 – 250.4
Maroon	Hazardous	301 – 400	250.5 – 350.4
		401 – 500	350.5 – 500

[1] https://www.airnow.gov/sites/default/files/2021-03/air-quality-guide_pm_2015_0.pdf

We also urge EPA to reconsider the *form* of the short-term standard; specifically, to recognize that the 98th percentile form fails to protect public health. That form dates to 1997 and allows 21 days in the three-year review period to reach levels well above the standard, not including the additional days exempted as exceptional events such as wildfires. The 24-year old form allows excessive exposure under a standard that was established to recognize the harm from daily exposures.

Further, the Lung Association urges the consideration of a rolling 24-hour standard, rather than one that covers the 24 hours of a single calendar day. As one of the main sources of 24-hour PM spikes, woodstove smoke often peaks during shorter, overnight periods that may not be appropriately captured in the split that occurs at midnight.

Recommendations for setting stricter standards

The American Lung Association has a long-standing commitment to the powerful principles embedded in the Clean Air Act, including the requirement that the primary National Ambient Air Quality Standards be set at a level protective of public health with an adequate margin of safety. This margin of safety is intended to protect the health of sensitive groups while accounting for scientific uncertainties, technological short-comings and health hazards not yet identified.

The Lung Association and its scientific and medical advisors have called for revising the $PM_{2.5}$ standards below the current levels in the past two NAAQS review cycles. In 2012 we recommended an annual standard of 11 µg/m^3 and a 24-hour standard of 25 µg/m^3 using the 99th percentile. With the accumulation of more health effects evidence, in 2019 we recommended an annual standard of 8 µg/m^3 and a 24-hour standard of 25 µg/m^3 using the 99th percentile. Since that time the evidence of multiple health harms at lower levels of exposure has only continued to grow.

We agree with the conclusion stated in the draft Policy Assessment (p. 3-188) that the current $PM_{2.5}$ annual standard of 12 µg/m^3 and the daily (24-hour) standard of 35 µg/m^3 are not protective of public health based on scientific evidence. Based on the information in the draft Supplement to 2019 ISA and the draft Policy Assessment, the Lung Association urges EPA to strengthen the annual $PM_{2.5}$ standard to 8 µg/m^3 and a rolling 24-hour standard set at 25 µg/m^3 using the 99th percentile.

The public has a right to know when air pollution in their community threatens their health and the health of their loved ones. Revised air quality standards have the potential to alleviate and prevent death, disease and human suffering to an enormous degree, but only if they are set at levels that are protective of public health. Millions of Americans have pre-existing health conditions or other vulnerabilities that make them

particularly susceptible to harm from particulate air pollution. Please act assertively and with all due speed. Lives are at stake.

Thank you for this opportunity to comment.

Sincerely,

Harold P. Wimmer
National President and CEO

cc. Aaron Yeow, Designated Federal Officer, CASAC