Comments of Paul Billings – As Prepared for Delivery
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On The U.S. Environmental Protection Agency's Reconsideration of the National Ambient Air Quality Standards for Particulate Matter
Docket ID No. EPA-HQ-OAR-2015-0072

February 21, 2023

I am Paul Billings, National Senior Vice President, Public Policy for the American Lung Association.

Particulate matter air pollution kills tens of thousands of people each year and it kills people of color at higher rates than white Americans. The Clean Air Act promises to protect the public from the harm from air pollution and it is EPA's obligation to set standards that are requisite to protect public health- with an adequate margin of safety.

The EPA proposed revision to the annual standard falls short of the Clean Air Act requirements and ignores the science that show that a level of 8 micrograms per cubic meter ($\mu g/m^3$) would be far more protective of public health. The Clean Air Scientific Advisory Committee (CASAC) reviewed this science, and a clear majority of these independent experts supported a range that included 8 $\mu g/m^3$.

The failure, yes, the failure of EPA to strengthen the 24 hour standard by ignoring the evidence and the recommendations of a majority CASAC to propose a range that includes 25 $\mu g/m^3$ is negligent.

There is a strong and compelling record that supports the American Lung Association's recommendation that the annual standard be set at 8 $\mu g/m^3$ and the 24 hour standard be set at 25 $\mu g/m^3$.

The record shows that there is strong and consistent evidence of premature deaths with levels at or below 8 $\mu g/m^3$.[1]

The 2022 CASAC review concluded that recent epidemiologic studies in the US and Canada show associations with mortality at concentrations below 8 $\mu g/m^3$.[2,3,4,5,6,7]

A meta-analysis of 53 studies shows mortality associations down to 5 $\mu g/m^3$.[8]

CASAC concluded the estimated health risks for Black communities are still higher than for majority White communities. The risk assessment predicts a substantial risk reduction for Black residents with a decrease in the level of the annual standard to 9 $\mu g/m^3$ or lower. The RIA shows that that an annual standard of 8 $\mu g/m^3$ saves seven times more Black lives per every 100,000 individuals, every year, from air pollution-related mortality than a standard of 10 $\mu g/m^3$.[9,10]

To be clear, setting the standard at 8 μg/m^3 will reduce the PM death rate for Black people much more than setting the standard at 9 μg/m^3 or 10 μg/m^3.

On the 24 hour standard, the majority of CASAC was clear, there is "substantial epidemiologic evidence from both morbidity and mortality studies that the current standard is not adequately protective." [11] They indicated the controlled human exposure studies are not a good indicator because these studies include healthy adults, not higher risk individuals and the exposures are shorter than 24 hours. We urge EPA to place more weight on the epidemiologic studies.[12]

The majority of CASAC cited several studies to support a more protective 24 hour standard. One that shows cardiovascular effects from short term exposures of 25 μg/m^3 or lower,[13] another that show mortality effects at levels below 25 μg/m^3 [14] and a third that shows hospital admissions at levels below 25 μg/m^3.[15,16]

The majority found that the annual standard IS NOT PROTECTIVE for communities who experience elevated PM levels due to residential wood burning and that the annual standard alone is not protective of these communities.[17]

The 24 hour standard is the key indicator for the Air Quality Index. A 24 hour standard of 35 μg/m^3 fails to warn the public when daily exposures are above the levels of 25 μg/m^3 where there is strong evidence of significant health risk including premature death.

I want to reiterate that primary NAAQS are health standards and by law must be based solely on what is requisite to protect health. The cost or feasibility of attaining the standards or the impact of exceptional events including prescribed fires cannot - by law - be considered in the standard setting process. These issues can only be addressed in implementation rules and guidance.

In conclusion, the public wants and deserves air that is safe and healthy to breathe. That is the promise of the Clean Air Act. The scientific evidence supports a more protective annual standard of 8 μg/m^3 and 24- hour standard of 25 μg/m^3.

[1] Shi I., et al. 2016. Low Concentration PM2.5 and mortality; estimating acute and chronic effects in population-based study. Environmental Health Perspectives, 124(1)46-52; Szyszkowicz M. 2009. Air pollution and ED visits for chest pain, American Journal of Emergency Medicine. 27(2): 165-168; Steib DM, et al. 2009 Air pollution and emergency department visits for cardiac and respiratory conditions: A Multi-city time series analysis. Environmental Health: A Global Science Access Source. 8(25):25; Weichenthal S. et al. 2016 Ambient PM2.5 and risk of emergency room visits from myocardial infarction: Impact of regional PM2.5 oxidative potential: a case-crossover study. Environmental Health. 15:46.; Weichenthal et al., 2016. "PM 2.5 and emergency room visits for respiratory illness: effect modification by oxidative potential." AJRCCM. 194(5): 577-586.

[2] CASAC Review of the EPA's Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – October 2021) (PDF)

[3] Wei, Y; Wang, Y; Wu, X; Di, Q; Shi, L; Koutrakis, P; Zanobetti, A; Dominici, F; Schwartz, JD. (2020). Causal effects of air pollution on mortality in Massachusetts. Am J Epidemiol 189: 1316–1323. http://dx.doi.org/10.1093/aje/kwaa098;

[4] Wang, B; Eum, KD; Kazemiparkouhi, F; Li, C; Manjourides, J; Pavlu, V; Suh, H. (2020). The impact of long-term PM2.5 exposure on specific causes of death: exposure-response curves and effect modification among 53 million U.S. Medicare beneficiaries. Environ Health 19: 20. http://dx.doi.org/10.1186/s12940-020-00575-0

[5] Christidis, T; Erickson, AC; Pappin, AJ; Crouse, DL; Pinault, LL; Weichenthal, SA; Brook, JR; van Donkelaar, A; Hystad, P; Martin, RV; Tjepkema, M; Burnett, RT; Brauer, M. (2019). Low concentrations of fine particle air pollution and mortality in the Canadian Community Health Survey cohort. Environ Health 18: 84. http://dx.doi.org/10.1186/s12940-019-0518-y

[6] Pappin, AJ; Christidis, T; Pinault, LL; Crouse, DL; Brook, JR; Erickson, A; Hystad, P; Li, C; Martin, RV; Meng, J; Weichenthal, S; van Donkelaar, A; Tjepkema, M; Brauer, M; Burnett, RT. (2019). Examining the Shape of the Association between Low Levels of Fine Particulate Matter and Mortality across Three Cycles of the Canadian Census Health and Environment Cohort. Environ Health Perspect 127: 107008. http://dx.doi.org/10.1289/EHP5204

[7] Pinault, LL; Weichenthal, S; Crouse, DL; Brauer, M; Erickson, A; Donkelaar, AV; Martin, RV; Hystad, P; Chen, H; Finès, P; Brook, JR; Tjepkema, M; Burnett, RT. (2017). Associations between fine particulate matter and mortality in the 2001 Canadian Census Health and Environment Cohort. Environ Res 159: 406-415. http://dx.doi.org/10.1016/j.envres.2017.08.037

[8] Vodonos, A., Awad, Y. A., & Schwartz, J. (2018). The concentration-response between long-term PM2.5 exposure and mortality; a meta-regression approach. *Environmental Research*, *166*, 677–689. https://doi.org/10.1016/j.envres.2018.06.021

[9] CASAC Review of the EPA's Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – October 2021) (PDF)

[10] EPA $PM_{2.5}$ NAAQS (Dec 2022). Regulatory Impact Analyses, EPA-452/P-22-001; Fig 6-15 (page 6-28

[11] CASAC Review of the EPA's Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – October 2021) (PDF)

[12] CASAC Review of the EPA's Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – October 2021) (PDF)

[13] deSouza, P, Braun, D, Parks, RM, Schwartz, J, Dominici, F and Kioumourtzoglou, MA (2021). Nationwide Study of Short-term Exposure to Fine Particulate Matter and Cardiovascular Hospitalizations Among Medicaid Enrollees. Epidemiology 32(1): 6-13.

[14] Di, Q, Dai, L, Wang, Y, Zanobetti, A, Choirat, C, Schwartz, JD and Dominici, F (2017). Association of short-term exposure to air pollution with mortality in older adults. JAMA: Journal of the American Medical Association 318(24): 2446-2456.

[15] Wei, Y, Wang, Y, Di, Q, Choirat, C, Wang, Y, Koutrakis, P, Zanobetti, A, Dominici, F and Schwartz, JD (2019). Short term exposure to fine particulate matter and hospital admission risks and costs in the Medicare population: time stratified, case crossover study. BMJ (Clinical Research Edition) 367: l6258.

[16] CASAC Review of the EPA's Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – October 2021) (PDF)

[17] CASAC Review of the EPA's Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – October 2021) (PDF)