



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

MAY 12 2022

THE ADMINISTRATOR

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

Dear Dr. Sheppard:

I would like to thank you for your March 18, 2022, report conveying the U.S. Environmental Protection Agency's Clean Air Scientific Advisory Committee's comments and recommendations on the EPA's *Supplement to the 2019 Integrated Science Assessment for Particulate Matter (External Review Draft)* (herein referred to as the Draft PM Supplement), released in September 2021 for public comment and peer review. The EPA greatly appreciates the thorough review and constructive comments provided in this report by the fully constituted CASAC Particulate Matter review panel and chartered CASAC.

My staff is carefully considering your comments and recommendations as well as the comments we received from the public. We appreciate the thorough, positive report from the committee regarding the characterization of the scientific evidence presented within the draft PM Supplement and are revising the document to address both consensus and individual CASAC comments. As we develop the *Supplement to the 2019 Integrated Science Assessment for Particulate Matter (Final)*, we are paying particular attention to several important points raised by the committee, including:

- revisions to further clarify the criteria for the types of studies considered for inclusion in the PM Supplement, the process for developing the PM Supplement and the organizational structure of the PM Supplement;
- revisions to highlight the narrow scope of the PM Supplement with respect to evaluating evidence for health effect categories, specifically that the PM Supplement only discusses categories where the 2019 PM Integrated Science Assessment concluded there was a causal relationship;
- revisions to emphasize that the scope of the PM Supplement is unique to the reconsideration of the 2020 PM NAAQS and does not set precedent for the full development of future ISAs following the established procedure outlined in the Preamble to the Integrated Science Assessments providing adequate time for CASAC review;

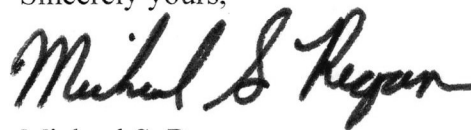
- revision of the language around studies often referred to as causal inference or causal modeling methods throughout the supplement to improve clarity;
- revision to clarify that study-specific details requested by the CASAC for the recent epidemiologic studies evaluated in the PM Supplement are provided in tables in the appendix;
- revision to more clearly characterize language around race/ethnicity while providing a clear link to language used in the 2019 PM ISA for continuity and language used in the individual studies for reporting accuracy;
- revision to the discussion on visibility effects to clarify the cut-off between unacceptable and acceptable levels for atmospheric light extinction, the inclusion of additional data on light extinction trends, and the inclusion of the evolution of light extinction equations in the Appendix; and
- revision to the health effects and welfare effects sections to improve clarity, language, consistency and readability based on individual panelists' comments.

In reviewing the comments provided by the committee, we recognize that some comments are broader than the focus of the PM Supplement, which is an extension of the scientific record extensively detailed in the 2019 PM ISA that is being used to reconsider the 2020 PM NAAQS. These important comments will be considered in the development of future ISAs as the agency continuously strives to improve the presentation and integration of scientific evidence within the NAAQS review process.

I also acknowledge the ongoing work by the National Academies of Sciences, Engineering and Medicine to provide input to the EPA on approaches used to assess causality from multidisciplinary evidence bases. The results of this input will also be carefully considered along with CASAC's advice in evaluating potential revisions to the causal framework that will ultimately be used in developing future ISAs. In the meantime, we are pleased the committee unanimously supports the use of the current causal framework for this review.

On behalf of everyone at the EPA, I offer my sincerest thanks to you and the CASAC panel members for your hard work in reviewing the draft PM Supplement. We recognize that our efforts to protect human health and the environment can only be as good as the science upon which they are based. Independent critical reviews like yours help ensure that we use the best science to protect public health and our nation's environment. Please accept my appreciation for your hard work and thoughtful review.

Sincerely yours,



Michael S. Regan