



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

March 1, 2023

MEMORANDUM

SUBJECT: CASAC Review of the document titled *Policy Assessment for the Reconsideration of the Ozone National Ambient Air Quality Standards, External Review Draft, Version 2*

FROM: Erika N. Sasser, Director
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Office of Air Quality Planning and Standards
United States Environmental Protection Agency

TO: Aaron Yeow, Designated Federal Officer
Clean Air Scientific Advisory Committee
EPA Science Advisory Board Staff Office

Attached is the document titled *Policy Assessment for the Reconsideration of the Ozone National Ambient Air Quality Standards, External Review Draft, Version 2* (draft PA) prepared by the Environmental Protection Agency's (EPA) Office of Air Quality Planning and Standards (OAQPS) as part of EPA's ongoing reconsideration of the 2020 decision on the ozone (O₃) national ambient air quality standards (NAAQS). The document is also available from the EPA website at <https://www.epa.gov/naaqs/ozone-o3-standards-policy-assessments-current-review>, under "Policy Assessments from Current Review." The draft PA will be reviewed by the Clean Air Scientific Advisory Committee (CASAC) at public meetings scheduled for March 29 and 30, 2023. I am requesting that you forward this document to the Committee to prepare for the March meetings.

The draft PA for this reconsideration considers key policy-relevant issues in light of the available evidence assessed in the 2020 *Integrated Science Assessment for Ozone and Related Photochemical Oxidants* (ISA) and quantitative air quality, exposure and risk analyses based on that evidence, including some analyses updated for this reconsideration. The 2020 ISA (available here: <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=348522>) remains the scientific assessment of the health and welfare effects evidence¹ for this reconsideration, consistent with the CASAC finding in its November 22, 2022 letter that the ISA provides a scientifically sound foundation for the Agency's reconsideration of the 2020 NAAQS decision. The enclosed document (draft PA, V2) is a revision of the draft PA document provided to the CASAC last April, in consideration of the CASAC's November 22, 2022 letter on its review of the 2020 ISA.

¹ The EPA's provisional consideration of two sets of studies that were published after the cutoff date for the 2020 ISA concluded that the limited new information identified in these groups of studies does not materially change the broad scientific conclusions of the ISA, providing support to the EPA's decision not to reopen the air quality criteria to supplement the 2020 ISA.

Attached to this memorandum is a short document providing background and specific charge questions to guide the CASAC's review of this draft PA. We look forward to discussing the draft PA with the CASAC at our upcoming meetings. Should you have any questions regarding the document, please contact me (919-541-3889; email sasser.erika@epa.gov) or my staff Ms. Leigh Meyer (919-541-5587; email meyer.leigh@epa.gov) or Dr. Mary Hutson (919-541-0715; email Hutson.mary@epa.gov).

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Attachments:

Background and charge questions for the CASAC review of the *Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Ozone, External Review Draft, V2*

PDFs

Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Ozone, External Review Draft, V2 (pdf)

**Background and charge questions for the CASAC review of the
*Policy Assessment for the Reconsideration of the Ozone National Ambient Air Quality
Standards, External Review Draft, V2***

On October 29, 2021, the EPA announced that it will reconsider the 2020 decision to retain the primary (health-based) and secondary (welfare-based) Ozone (O₃) National Ambient Air Quality Standards (NAAQS) established in 2015. The draft Policy Assessment (PA) for the reconsideration of the current primary (health-based) and secondary (welfare-based) O₃ NAAQS is being transmitted to CASAC for review. The PA is prepared by the Office of Air Quality Planning and Standards (OAQPS). When final, the PA provides an evaluation, for consideration by the EPA Administrator, of the policy implications of the currently available scientific information assessed in the ISA, of any quantitative air quality, exposure or risk analyses based on the ISA findings, and related limitations and uncertainties.

On April 28, 2022, an initial version of the draft PA was released for public comment and for review by the CASAC. In May 2022, the Panel issued a memo indicating that the Panel would pause its review of the PA in order to have a fuller discussion of the scientific evidence presented in the 2020 ISA, as well as two sets of studies that EPA provisionally considered that were published after the cutoff date for the 2020 ISA (Luben et al., 2020; Duffney et al., 2022), prior to reviewing the draft PA, v.1 (Sheppard, 2022a). Based on their discussion in a series of public meetings, the CASAC determined “that the existing scientific evidence summarized in the 2020 ISA provides a scientifically sound foundation for the Agency’s reconsideration of the 2020 Ozone NAAQS decision” and stated “that the CASAC was not recommending that the 2020 ISA be reopened or revised” (87 FR 41309, July 12, 2022; 87 FR 60394, October 5, 2022; Sheppard, 2022b). This conclusion supports the Agency’s reliance on the 2020 ISA in this reconsideration.

Thus, this draft PA reassesses the policy implications of the scientific evidence for ozone-related health and welfare effects described in the 2020 ISA as well as related air quality, and exposure and risk analyses first presented in the 2020 PA. Accordingly, this document draws heavily on information presented in the 2020 PA, with some updates to include more recent air quality information. Additionally, in the PA’s consideration of the secondary standard, air quality and exposure analyses have been expanded to include analyses performed after completion of 2020 PA in response to public comments, but included in the final 2020 decision, and updated with recent ozone air quality measurements. Further, this draft PA has been developed in consideration of comments that referenced the PA among the comments made by the CASAC in its review of the 2020 ISA (Sheppard, 2022b). In particular, for the primary standard this document includes an expanded discussion of the health effects evidence regarding exposure conditions associated with effects. In light of the CASAC’s recommendation in its November 22 letter, this draft PA has also incorporated consideration of an additional recent publication on exposure-response relationships for tree seedlings (Lee et al., 2022).

Ultimately, a final decision in this reconsideration will reflect the judgments of the Administrator. The role of the PA is to help “bridge the gap” between the Agency’s scientific assessment in the ISA and the quantitative analyses, and the judgments required of the EPA Administrator in determining whether it is appropriate to retain or revise the standards. Review of the draft PA is also intended to facilitate CASAC advice to the Agency and recommendations to the Administrator on the adequacy of the existing standards or revisions that may be appropriate to consider, as provided for in the CAA.

Specific Charge Questions for Review of the Draft PA

Chapter 1 – Introduction: Chapter 1 provides introductory information including a summary of the legislative requirements for the NAAQS, an overview of the history of the O₃ NAAQS and the decisions made in prior reviews, and a summary of the scope and approach for the reconsideration of the 2020 final decision, including the evidence base for this reconsideration.

1. To what extent does the Panel find that the information in Chapter 1 is clearly presented and provides useful context for this reconsideration?

Chapter 2 –Air Quality: Chapter 2 describes the major emissions sources of O₃ precursors; the atmospheric chemistry related to O₃ in ambient air; the O₃ monitoring network; trends of O₃ concentrations in ambient air; and a modeling analysis of O₃ from background sources.

1. To what extent does the Panel find that the information in Chapter 2 is clearly presented and that it provides useful context for the reconsideration?

Chapter 3 – Review of the Primary Standard: Chapter 3 summarizes key aspects of the health effects evidence and quantitative exposure/risk analyses that are particularly relevant to considering the adequacy of the current primary standard. Further, the chapter presents the preliminary staff conclusion that, collectively, the scientific evidence and quantitative exposure and risk analyses can reasonably be viewed as supporting retention of the current standard. Lastly, the chapter also identifies key areas for additional research and data collection to inform future reviews.

1. What are the Panel's views on the approach to considering the health effects evidence and the risk assessment to inform preliminary conclusions on the primary standard? To what extent is the evaluation of the available information, including the key considerations as well as associated limitations and uncertainties, technically sound and clearly communicated?
2. In the Panel's view, does the discussion in section 3.5 provide an appropriate and sufficient rationale to support staff's preliminary conclusions with respect to the current primary standard and associated considerations regarding conclusions on a range of supported levels?
3. What are the Panel's views regarding the areas for additional research identified in section 3.6? Are there additional areas that should be highlighted?

Chapter 4 –Review of the Secondary Standard: Chapter 4 summarizes key aspects of the welfare effects evidence and quantitative air quality and exposure analyses that are particularly relevant to considering the adequacy of the current secondary standard. Further, the chapter presents the preliminary staff conclusion that, collectively, the scientific evidence and quantitative exposure and risk analyses can reasonably be viewed as supporting retention of the current standard. Lastly, the chapter also identifies key areas for additional research and data collection to inform future reviews.

1. What are the Panel's views on the approach to considering the evidence for welfare effects and quantitative air quality/exposure analyses to inform preliminary conclusions on the secondary standard? To what extent is the evaluation of the available information, including the key considerations as well as associated limitations and uncertainties, technically sound and clearly communicated?

2. In the Panel's view, does the discussion in section 4.5 provide an appropriate and sufficient rationale to support staff's preliminary conclusions with respect to the current secondary standard and associated considerations regarding conclusions on potential alternative options?
3. What are the Panel's views regarding the areas for additional research identified in section 4.6? Are there additional areas that should be highlighted?

References:

- Duffney, PF, Brown, JS, and Stone, SL (2022). Memorandum to the Review of the Ozone National Ambient Air Quality Standards (NAAQS) Docket Identifier (EPA-HQ-ORD-2018-0279). Re: Provisional Evaluation of Newly Identified Controlled Human Exposure Studies in the context of the 2020 Integrated Science Assessment for Ozone and Related Photochemical Oxidants. April 15, 2020. Corrected January 2023
- Lee EH, Andersen CP, Beedlow PA, Tingey DT, Koike S, Dubois JJ, Kaylor SD, Novak K, Rice RB, Neufeld HS, Herrick JD. (2022). Ozone exposure-response relationships parametrized for sixteen tree species with varying sensitivity in the United States. *Atmos Environ* 284: 1-16.
- Luben, T, Lassiter, M and Herrick, J (2020). Memorandum to Ozone NAAQS Review Docket (EPA-HQ-ORD-2018-0279). RE: List of Studies Identified by Public Commenters That Have Been Provisionally Considered in the Context of the Conclusions of the 2020 Integrated Science Assessment for Ozone and Related Photochemical Oxidants. December 2020. Docket Document ID: EPA-HQ-OAR-2018-0279-0560.
- Sheppard, EA (2022a). Letter from Elizabeth A. Sheppard Chair, Clean Air Scientific Advisory Committee, to CASAC Ozone Review Panel Members. Re: CASAC Ozone Review Panel Meeting. May 13, 2022. Available at: https://casac.epa.gov/ords/sab/f?p=105:19:17341438189034:::19:P19_ID:972#materials
- Sheppard, EA (2022b). Letter from Elizabeth A. Sheppard Chair, Clean Air Scientific Advisory Committee, to Administrator Michael S. Regan. Re: CASAC Review of the EPA's Integrated Science Assessment (ISA) for Ozone and Related Photochemical Oxidants (Final Report - April 2020). November 22, 2022. EPA-CASAC-23-001. Available at: https://casac.epa.gov/ords/sab/f?p=105:18:8476900499267:::RP,18:P18_ID:2614.