

05-23-16 Preliminary Draft Comments from Clean Air Scientific Advisory Committee (CASAC) Particulate Matter Panel. These preliminary pre-meeting comments are from individual members of the Panel and do not represent CASAC consensus comments nor EPA policy. Do not cite or quote.

**Preliminary Comments from Dr. Peter Adams on
EPA’s Integrated Review Plan for the National Ambient Air Quality Standards
for Particulate Matter (External Review Draft – April 2016)
05-23-16**

Comments on Chapter 2 (Key Policy-Relevant Issues in the Current Review)

To what extent does the Panel find that Chapter 2 clearly articulates the decisions made in the last review of the primary (sections 2.1.1, 2.1.2) and secondary (sections 2.2.1, 2.2.2) PM standards, and the rationales supporting those decisions?

I was not involved in the last review, but it appears that, in general, Chapter 2 is a clearly written and informative summary of that process.

On p. 2-19, there is a paragraph (lines 3-15) arguing that a “number of uncertainties in the scientific information” existed and that “that there was 12 insufficient information available to base a national ambient standard on climate impacts 13 associated with ambient concentrations of PM or its constituents”.

This surprises me. The actual physical mechanisms (scattering, absorption, and cloud activation) by which particles affect climate are well established. Uncertainties in estimates of radiative forcing do not appear to me to be larger than uncertainties in concentration-response functions. The statement is probably an accurate summary of justifications offered in the last review and the Administrator’s decision process, so there is no need to revise. However, I wonder if it isn’t more accurate to say that health effects have an immediacy and urgency that make them different than climate considerations.

To what extent does the Panel find that the policy-relevant questions presented in sections 2.1.3 (primary) and 2.2.3 (secondary) appropriately characterize the key scientific and policy issues for consideration in the current review? Are there additional issues that should be considered?

In general, I find that the policy-relevant questions presented are appropriate and reasonably thorough.

It seems to me that the question about alternative indicators on p. 2-17,

“Do the available health effects evidence and air quality information provide support for 11 consideration of indicators for fine and thoracic coarse particles in addition to, or in place of, 12 PM_{2.5} and PM₁₀, respectively? Does the evidence support an alternative approach for 13 defining particle pollution, including in terms of other size fractions, specific components, 14 source-related mixtures, or specific environments?”

could be moved up a tier because the answer to this would support or call into question the adequacy of current standards. However, this concern is partly addressed on p. 2-16, which includes a question about “other indicator of PM” being associated with health effects at PM levels meeting current standards.

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There is a useful summary of existing monitor networks, but it seems that there should be a policy-relevant question related to the adequacy of the current monitoring networks. There are a number of appropriate questions about whether or not existing evidence indicates health effects that need addressing beyond the existing NAAQS. However, we are obviously limited in what we can say based on existing monitors and exposure assessment. A question about “to what extent are existing monitoring networks adequate for epidemiological studies that would inform the appropriate indicators, averaging times, forms, and levels of the NAAQS?” Perhaps this issue has been omitted because it falls under the purview of another committee?

Other comments:

The discussion of how “adequate margin of safety” (in Chapter 1) has been and may be applied in the context of setting the NAAQS is a useful one.

Section 2.3 provides a useful, and reasonably thorough, discussion of existing monitoring networks for the NAAQS indicators (PM10 and PM2.5) as well as some other indicators. The section on “Additional PM Metrics”, however, could be supplemented in some ways. In particular, I feel that the discussion of particle count measurements could include additional details such as the number of sites near roadways and elsewhere, technology deployed, time periods covered, etc.

Given evidence that living near major roadways is associated with negative health effects, EPA’s move to establish monitor networks near roadways is a good one. Although PM2.5 measurements are likely useful, the document notes that “particle counts are one of several measurements identified as being a secondary priority”. Most data I have seen indicate the following: PM2.5 is only modestly elevated near roadways, other pollution indicators including particle number are more strongly elevated, vehicles emit a large number of ultrafine particles that do not contribute much to PM mass levels. Given this, it seems that near roadway monitors should place a primary, not secondary, priority on measures besides PM mass.