



January 20, 2010

MEMORANDUM

SUBJECT: CASAC Review of *Particulate Matter Urban-Focused Visibility Assessment – Second External Review Draft*

FROM: Lydia N. Wegman, Director /s/
Health and Environmental Impacts Division (C504-02)
Office of Air Quality Planning and Standards
United States Environmental Protection Agency

TO: Holly Stallworth
Designated Federal Officer
Clean Air Scientific Advisory Committee
EPA Science Advisory Board Staff Office

Attached is the second draft assessment document: *Particulate Matter Urban-Focused Visibility Assessment – Second External Review Draft* (Visibility Assessment, January 2010), prepared by the Environmental Protection Agency's (EPA) Office of Air Quality Planning and Standards (OAQPS) staff as part of EPA's ongoing review of the secondary (welfare-based) national ambient air quality standards (NAAQS) for particulate matter (PM). This document will be one of the documents to be reviewed by the Clean Air Scientific Advisory Committee (CASAC) PM NAAQS Review Panel (the CASAC PM Panel) at a public meeting to be held in Chapel Hill, NC on March 10-11, 2010. I am requesting that you forward this draft document to the CASAC PM Panel to prepare for the March meeting.

We are also preparing two other draft documents associated with the PM NAAQS review for review by the CASAC PM Panel. I expect to send the *Quantitative Health Risk Assessment for Particulate Matter – Second External Review Draft* to you by the end of January for review at the March 10-11, 2010 meeting. The other draft document, *Policy Assessment for the Review of the Particulate Matter National Ambient Air Quality Standards: First Draft*, will take somewhat longer to prepare than had been planned, such that I expect to send that document to you by the end of February. This schedule provides that the CASAC PM Panel will have had the opportunity to have an initial look at the first draft Policy Assessment document prior to their meeting to review the other two documents, although we believe it is appropriate for the CASAC PM Panel to have additional time to review this document. It is my understanding that you are now scheduling a public teleconference, targeted for the end of March, for the Panel to review the first draft Policy Assessment.

The first draft of the Visibility Assessment was reviewed by CASAC at an October 5-6, 2009 meeting in Chapel Hill, NC. Comments from the CASAC PM Panel (Samet, 2009) as well as public comments were considered in developing this second draft assessment document being released at this time. For example, based on CASAC comments, OAQPS staff has expanded the analyses to include consideration of a 98th percentile form of a light extinction-based alternative standard. Additional analyses have also been done based on lowering the relative humidity limit from 95% to 90% and using this limit as a screen instead of a cap to more clearly exclude weather events like fog or precipitation from the analyses. In addition, a logit analysis of the results of the urban preference studies has been conducted for four cities to provide statistical support for the conclusions based on those results, as requested by CASAC. A technical memorandum is now being prepared that details the further application of the logit analysis to the four city preference study results, the insights gained from its use, and the strengths and limitations associated with using this statistical approach in this context. We expect to send this memorandum to the CASAC PM Panel by the end of January as supplemental material to be reviewed in conjunction with the review of the second draft Visibility Assessment. We will take comments from the CASAC PM Panel and the public on the second draft assessment document and related materials into consideration in finalizing the Visibility Assessment.

Document Availability

This second draft Visibility Assessment is being made available to the CASAC PM Panel in the form of an attached electronic file. The document is also available from the EPA website at http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_2007_pd.html. Printed copies of this document will be sent to CASAC PM Panel members via Federal Express. We will mail a printed copy of the main body of the document only. The appendices can be accessed electronically as noted above and printed copies of the appendices will be made available to Panel members upon request.

Charge to the CASAC PM Review Panel

We ask the CASAC PM Panel to focus on the charge questions listed below in their review of the *Particulate Matter Urban-Focused Visibility Assessment – Second External Review Draft* (Visibility Assessment, January 2010).

Chapter 1 of this draft document discusses the current scope of the visibility assessment, including modifications based on CASAC consultation and information provided through public comment. Chapter 2 presents the results of the reanalysis of the urban visibility preference studies. Chapters 3 and 4 describe the methods used to evaluate recent PM_{2.5} air quality and light extinction levels, with PM_{2.5} air quality concentrations simulated to just meet alternative PM light extinction standards as well as current and alternative PM_{2.5} standards, including key results and observations from the evaluations. Throughout these chapters, associated issues and uncertainties are discussed.

- 1) In general, what are the Panel's views on the level of detail provided in the body of the report and associated appendices? Does the Panel agree that all of this information is useful to retain or is there material that the Panel would recommend deleting? Does the

Panel have any suggestions regarding the organization and distribution of information throughout the document and in the appendices?

- 2) In the Panel's view, to what extent does the logit analysis presented in Chapter 2 of the second draft Visibility Assessment and further expanded and described in the supplemental memorandum add value to the urban visibility preference study analysis and provide additional support for combining and comparing the results from the four cities, as shown in Figure 2-16? What are the Panel's views on the clarity and adequacy of the descriptions associated with such a combined assessment and on the conclusions that can be drawn from the assessments? Please provide comments on any additional insights that might be drawn from these analyses or on any additional caveats that should be considered.
- 3) What are the Panel's views on the extent to which the analysis of the frequency of co-occurrences of hourly relative humidity values below and above 90 percent with other meteorological events such as rain or fog (Chapter 3, section 3.3.5; Table 3-6) provides scientific support for consideration of how to address relative humidity in defining the form of a standard based on a PM light extinction indicator?
- 4) In response to CASAC recommendations, descriptions of current conditions and results of just meeting NAAQS scenarios that considered all daylight hours were added to those based on maximum daily 1-hour indicators. The 98th percentile form was also included along with the 90th and 95th percentiles. Tile plots of hourly PM light extinction (Figure 3-12) and composition bar graphs of the top 10% of days for maximum daily 1-hour and aggregated individual daylight hours (Figure 3-13) were shown in part to help illuminate the similarities and differences between these various indicators with respect to current conditions. Similarly, additional figures and table entries were generated to illustrate the characteristics of various PM light extinction NAAQS scenario forms (Tables 4-2, 4-3, 4-5, and 4-7; Figures 4-1 through 4-3).

What are the Panel's views regarding EPA staff interpretations of these displays included in the text? Are there supplemental or alternative interpretations the Panel would suggest? Are there additional approaches the Panel would suggest regarding ways to summarize, display, or assess the results of these analyses, including similarities and differences between the various scenarios?

We look forward to discussing these issues with the CASAC PM Panel at our upcoming meeting. Should you have any questions regarding this draft document, please contact Ms. Vicki Sandiford (919-541-2629; email sandiford.vicki@epa.gov).

Attachments

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