

Questions for Non-Member Consultants on the PM PA from Dr. James Boylan

Chapter 2 – PM Air Quality

- Is the discussion on sources of emissions accurate and complete? If not, what additional information needs to be included?
- Is the discussion on ambient monitoring accurate and complete? If not, what additional information needs to be included?
- Is the discussion on ambient measurement correlations and trends accurate and complete? If not, what additional correlations and trends need to be included?
- To what extent are biases associated with PM₁₀, PM_{2.5}, and ultrafine measurements discussed? How would differing PM_{2.5} biases associated with FRM vs. FEM continuous measurements (e.g., FEMs typically show higher PM_{2.5} concentrations compared to FRMs) impact the evidence-based and risk-based PM_{2.5} assessments in Chapter 3?
- Is the discussion on hybrid modeling approaches accurate and complete? If not, what additional information needs to be included?
- Is the discussion on performance methods for evaluating hybrid modeling methods accurate and complete? If not, what additional information needs to be included?
- Is the discussion on background concentrations accurate and complete? If not, what additional information needs to be included?

Chapter 3 – Review of the Primary PM_{2.5} Standards

- Is the evidence-based analysis presented in Chapter 3 scientifically sound?
- Is the risk-based analysis presented in Chapter 3 and Appendix C scientifically sound?
- Is the discussion on following topics adequate and complete? If not, what additional information needs to be included?
 - Study area selection,
 - Health outcomes (e.g., decision to focus on mortality and ignore cardiovascular and respiratory effects),
 - Concentration-response functions,
 - PM_{2.5} air quality scenarios evaluated,
 - Model-based approach to adjusting air quality,
 - Linear interpolation/extrapolation to additional annual standard levels, and
 - Characterization of variability and uncertainty in the risk estimates.
- Are the areas for additional research adequate and complete? If not, what additional areas need to be included?

Appendix C – Supplemental Information Related to the Human Health Risk Assessment

- Is the air quality modeling approach to projecting PM_{2.5} concentrations to correspond to just meeting the NAAQS (AQS, CMAQ, Downscaler, SMAT-CE, project monitors to just meet NAAQS, project spatial fields to correspond to just meeting the NAAQS) scientifically sound? If not, what are your concerns and how should they be addressed?
- Is the CMAQ model configuration and input files used in the air quality modeling appropriate for this application? If not, what updates are recommended?
- Are the CMAQ model performance metrics that were evaluated appropriate and adequate for this application? Are there any concerns with the model performance in any of the study areas used in the human health risk assessment? If so, how should these concerns be addressed in the health risk assessment?

- Is the health risk modeling approach using BenMAP-CE appropriate for this application? If not, what are your concerns?
- Do the risk summary tables showing the impact of alternative PM_{2.5} standards and graphical plots showing the distribution of risk across ambient PM_{2.5} levels clearly and accurately summarize the results of the health risk analysis? If not, what additional information should be included?