

US EPA ARCHIVE DOCUMENT

This paper reflects preliminary agency thoughts and ideas and the options presented have not been thoroughly analyzed for legal defensibility

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Guidance for 8-hour Attainment Demonstrations

Issue: What should the guidance for the 8-hour attainment demonstration address?

Background

- EPA has developed draft guidance on the use of models and other analyses in attainment demonstrations for the 8-hour ozone and PM_{2.5} NAAQS.
- Some states have applied the DRAFT 8-hour attainment guidance to multi-state areas.
- Regional haze planning organizations will be performing regional scale modeling for visibility.
- Same transport and chemical mechanisms interplay between PM_{2.5} and ozone. Therefore the photochemical model used must be able to simulate both pollutants.

Assumptions:

- There will be different classifications based on severity of the problem.
- There will be different attainment dates for each classification
- Mandatory measures increase with increasing classification
- To some extent all areas could rely on regional scale modeling used to review national control programs.

Issue 1: Which areas are required to do an attainment demonstration?

OPTION 1: Areas with early attainment dates (within three years of designation) would not be required to do an attainment demonstration. These areas would rely solely on EPA's national modeling and/or emissions inventory assessments. Areas with later attainment dates like 2007 would be required to do an attainment demonstration. This option alleviates the burden on areas with early attainment dates and works well if the national modeling is available and shows attainment for these areas.

Issue 2: What should be the technical requirements of an attainment demonstration?

OPTION 1: All areas need photochemical grid modeling and technical analyses as described in "Draft Guidance on the use of Models and other analyses in Attainment Demonstrations for the 8-Hour Ozone NAAQS", regardless of classification. Advantages include: providing consistency and allows ongoing or recent modeling efforts to be used. Disadvantages include the need to revised the existing draft guidance and the amount of time needed for areas to model, particularly

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those with earlier mandated attainment dates.

OPTION 2: All areas need photochemical grid modeling, except areas close to the level of the 8-hour NAAQS. These areas would perform inventory or contribution assessments or rely on existing regional/national modeling. The advantage is that it avoids extra time-consuming work for areas that are close to the standard. The disadvantage is that there are technical limitations for the simpler analyses.

Issue 3: What additional guidance topics need to be addressed, if multi-state areas are required to do regional scale modeling?

- Establishing and setting up regional scale application with nested grids; includes issues like regional episode selection, number of days to model and subregional model performance.
- EPA role with multi-state areas to coordinate technical analyses and facilitate communications similar to the RPO efforts for regional haze, including trans-regional transport.
- Transport for areas outside of or beyond the NO_x SIP call (e.g., gulf coastal, Midwest, California), including guidance to address transport within and among the multi-state areas.
- Impacts from international sources.
- Use of different episode days being used in each multi-state area.

Issue 4: How do we deal with modeling a domain which has different attainment dates? This will be more of an issue with the 8-hour because it appears there will be more nonattainment areas close to one another. This means more states may have to work together on analysis to address different attainment dates.

OPTION 1: Model all attainment years through regional scale modeling with nested local area grids, as needed. This is likely to be the most technically sound, although resource intensive.

OPTION 2: Develop attainment strategy based on modeling the farthest attainment date and make sensitivity runs using emissions levels for earlier years. This would not require as many resources or time, but provides far less information to develop strategies for the intermediate years.

OPTION 3: EPA performs national modeling to address transport. EPA would model the earliest attainment year and develop national strategy to address transport. This does minimize the burden on individual States but requires coordination among the states involved.

Issue 5: Additional guidance topics needed if “one-atmosphere” modeling is recommended/required so that ozone and PM planning can be integrated. [See related issue

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on safeguards to ensure ozone controls will not preclude optimal controls for PM2.5/regional haze.]

- Episode Selection—given that ozone and PM may have different episodes
- Model Performance Evaluation (given that a whole year may be modeled for PM)
- Attainment test—number of days to be modeled
- Modeling Domain—grid size
- Documentation (sensitivity results, model performance, attainment-screening tests, episode representativeness, weight of evidence, etc)
- Protocol to address both 8-hour ozone and PM2.5 and submitted simultaneously

Issue 6: Is additional guidance needed if a mid-course review is recommended/required?

Link to Other Issues:

The resolution of this issue on guidance for 8-hour attainment demonstrations has implications for other issues, including: integration of air quality designations and classifications for the 8-hr ozone and PM2.5 NAAQS, how to classify 8-hr ozone standard nonattainment areas, attainment dates, and transport.