

# Comments and Suggestions on EPA's CSAPR Framework

Presented by:

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On behalf of:

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# EPA's CSAPR Framework

- CSAPR provides a 4-step process to address interstate transport of certain air pollutants:
  1. Identifying downwind receptors that are expected to have problems attaining or maintaining clean air standards (i.e., NAAQS);
  2. Determining which upwind states contribute to these identified problems in amounts sufficient to “link” them to the downwind air quality problems;
  3. Identifying upwind emissions that significantly contribute to nonattainment or interfere with maintenance of a standard by quantifying appropriate upwind emission reductions and assigning upwind responsibility among linked states; and
  4. Reduce the identified upwind emissions via permanent and enforceable requirements (e.g., regional allowance trading programs).

## **STEP 1**

Identifying downwind receptors that are expected to have problems attaining or maintaining clean air standards (i.e., NAAQS)

# EPA's Approach

- Projected Nonattainment Areas
  - $RRF \times DV_{AVG} > NAAQS$
  - RRF is the relative response factor from the model
  - $DV_{AVG}$  is the average of three design values
    - $[(2009-2011\ DV)+(2010-2012\ DV)+(2011-2013\ DV)]/3$
- Projected Maintenance Areas
  - $RRF \times DV_{AVG} \leq NAAQS$  and  $RRF \times DV_{MAX} > NAAQS$
  - $DV_{MAX}$  is the maximum of three design values
    - $MAX[(2009-2011\ DV), (2010-2012\ DV), (2011-2013\ DV)]$
- Projected Attainment Areas
  - $RRF \times DV_{MAX} \leq NAAQS$

# Comments & Suggestions: Downwind Receptors

- Only receptors located in areas that have been designated nonattainment for the applicable standard (e.g., 2015 ozone NAAQS) should be considered as downwind receptors in the transport analysis.
- Receptors in areas that were never designated nonattainment for the applicable standard should be exempt from the transport analysis. It is inappropriate to project an area to be nonattainment or maintenance if that area was never designated nonattainment in the first place.
- For areas designated nonattainment, only those monitors that currently have design values above the applicable standard should be considered as downwind receptors. Monitors with design values currently below the applicable standard should be removed from the analysis.
- Only receptors identified above should be included in the calculations to determine future nonattainment and maintenance areas.

# Comments & Suggestions: Worst-Case Scenario

- If EPA disagrees with the previous approach and insists on including maintenance receptors that were never designated nonattainment in their transport analysis, EPA should revise its worst-case scenario for calculating the future design value with a more realistic scenario.
- For example, the projected future year design value can be significantly higher than the current design value (based on the most recent measurements).
  - If the modeled future design value is higher than the current design value, the current design value should be used in lieu of the modeled future design value.

# Comments & Suggestions: Model Performance

- EPA's methodology of identifying 'problem' downwind receptors uses raw model concentrations in the future year.
- If the model has a high bias on a particular day or days, these poor performing days will be included in the subset of days used to calculate the contributions and will skew the resulting contributions.
- Poor performing model days should be omitted from the calculation of contributions.
- Alternately, the contributions can be adjusted upward to account for under predictions at the monitor or adjusted downward to account for over predictions at the monitor.

## **STEP 2**

Determining which upwind states contribute to these identified problems in amounts sufficient to “link” them to the downwind air quality problems



# EPA's Approach

- EPA uses CAMx photochemical grid modeling with Anthropogenic Precursor Culpability Assessment (APCA).
- APCA contributions are compared to a threshold value to determine if the contributions are significant.
- For ozone, EPA has used one percent (1%) of the NAAQS as the threshold.
  - 70 ppb NAAQS → threshold value = 0.70 ppb

# Comments & Suggestions: Contribution Tools

- EPA should allow the following tools to be used to determine the contribution from upwind states to downwind receptors:
  - Anthropogenic Precursor Culpability Assessment (APCA)
  - Ozone Source Apportionment Technology (OSAT)
  - Decoupled Direct Method (DDM), and
  - Zero-out brute force (BF) sensitivity runs

# Comments & Suggestions:

## Significant Contribution Threshold

- EPA's selection of a 1% threshold value is arbitrary and has never been supported by any scientific analysis.
- Recently, EPA performed a detailed analysis in their 2016 draft *Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program*.
  - In that guidance document, EPA recommends an ozone Significant Impact Level (SIL) value of **1.0 ppb**, based on an air quality variability analysis and the 4<sup>th</sup> highest daily maximum 8-hour concentration (averaged over three years).
  - EPA's technical analysis of this SIL "provides a basis for a permitting authority to conclude that concentration increases below this SIL do not cause or contribute to violations of the relevant NAAQS or PSD increments."
  - In addition, EPA references their SIL guidance in their 2016 draft *PM<sub>2.5</sub> Precursor Demonstration Guidance* document. This demonstrates that the SIL values included in the SIL guidance document are appropriate for SIP planning purposes as well as permitting purposes.
- For the 2015 ozone NAAQS, EPA should change the significance threshold to **1.0 ppb** to be consistent with the results of their recent air quality variability analysis.

## **STEP 3**

Identifying upwind emissions that significantly contribute to nonattainment or interfere with maintenance of a standard by quantifying appropriate upwind emission reductions and assigning upwind responsibility among linked states

# EPA's Approach

- Upwind state contributions to downwind nonattainment areas are treated identical to upwind state contributions to downwind maintenance areas.
- If an upwind state significantly contributes to a downwind nonattainment or maintenance area, the upwind state must reduce emissions.

# Comments & Suggestions: Maintenance Areas

- EPA inappropriately treats projected maintenance areas identical to projected nonattainment areas.
- When a state containing a nonattainment area submits a redesignation request and maintenance SIP to EPA, that state commits to maintain emissions at or below the current emission levels for at least 10 years after redesignation to a maintenance area. The state is not required to implement additional emission controls beyond the current controls.
- However, EPA's current approach for interstate transport requires upwind states that are determined to be significantly contributing to a maintenance area to implement additional emission controls although the area is projected to be in attainment.
- EPA's approach results in over-control of NO<sub>x</sub> emissions in the upwind states.

# Comments & Suggestions: Primary Responsibility

- Section 107(a) of the Clean Air Act states:
  - “Each State shall have the primary responsibility for assuring air quality within the entire geographic area comprising such State by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained within each air quality control region in such State.”
- Thus, putting emission reduction obligations on an upwind state that contributes to a maintenance area is in direct conflict with Section 107(a), especially if that downwind area was never designated nonattainment and thus has no emission reduction obligations.

# Comments & Suggestions:

## NOx Budgets for Maintenance Areas

- The upwind state NOx budget should be set at a level needed to maintain attainment.
- If the projected downwind maintenance area currently has clean data (all monitors at or below the NAAQS), all states that significantly contribute to this area should have a NOx budget set equal to the average annual NOx emissions that occurred during the three year period where the area achieved clean data.
- If the projected downwind maintenance area does not currently have clean data, each state that significantly contribute to this area should have a NOx budget set equal to the future NOx emissions that were modeled for their state to demonstrate maintenance of the NAAQS.
- The upwind states would be required to keep their emissions at (or below) those levels for the next 10 years.



## **STEP 4**

Reduce the identified upwind emissions via permanent and enforceable requirements (e.g., regional allowance trading programs)

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**In general, TN/GA/NC agree.**

# Contact Information

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