

**BOUNDARIES  
SUPPLEMENTAL PAPER**

**AQM Subcommittee Meeting**

**September 12, 2006**

# Current Approach to Drawing Boundaries Has Had its Successes

- The current system has lead to:
  - substantial improvements in air quality
  - greater public awareness of the adverse public health effects of air pollution
  - greater public awareness of how daily activities contribute to air pollution

# However, a Review of How Boundaries are Applied is Warranted

- The current boundary scheme was designed for localized pollution problems. It does not work as well for air pollution problems with a substantial background or regional component.
- Boundaries are currently set based on geopolitical boundaries, not necessarily science:
  - The designated nonattainment area as a whole may not include the full geographic area where air quality is poor
  - The designated area as a whole may not include all areas that contribute to poor air quality

# Review of Boundaries Approach is Warranted (cont.)

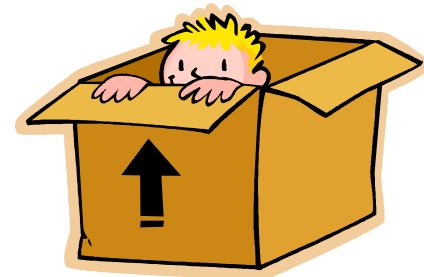
- Many states feel that there is a stigma associated with “nonattainment” status
  - They cite adverse impacts on economic development due to the mandatory requirements for nonattainment areas
  - In some areas of the country, there has been a tendency to define nonattainment areas as small as possible

# Some Consequences Include:

- Reluctance to add air quality monitors in currently unmonitored areas due to risk of expanding nonattainment designation
- Development pushed just outside county or urban core boundaries
  - Contributes to urban sprawl
  - Does not maximize brownfields redevelopment
- Unequal treatment for areas with transported pollution versus their upwind contributors
  - Areas affected by transport with few or no local emissions sources are subject to full nonattainment control requirements, whereas upwind contributing sources may be located in attainment areas and thus not required to control emissions
  - Does not facilitate regional improvements in air quality

# Before we plunge in....

- Our ideas are challenging - step outside the box with us.
- Our ideas are conceptual - there are many details that would need to be considered, but we are trying to stay at 30,000 feet for now. Please stay up here with us.



# Concepts and Desired Endpoints

1. Set boundaries based on science and what is appropriate and necessary to achieve clean air
2. Better define sources that contribute to NAAQS violations and have a system that naturally includes those sources in the area subject to control requirements.
3. Address pollution transport in situations where emissions in upwind areas contribute significantly to violations elsewhere.
4. Recognize the increasing necessity for regional programs for which states must work cooperatively and ensure accountability.
5. Recognize the increasing need for national measures and ensure accountability.

# Concepts and Desired Endpoints (continued)

6. Respect state/tribal rights and balance local and regional control programs with supportive and complementary national control programs.
7. Do not punish areas where air quality is poor if they have taken appropriate and reasonable steps to reduce local emissions.
8. Reduce the incentive to define nonattainment areas as small as possible.
9. Minimize disincentives for monitoring.
10. Ensure that areas with contributing sources are involved in the initial SIP planning process.



# Focus Regions

- Based on these concepts and building from FACA work in the 1990s on Areas of Violation and Influence (AOV and AOI), the AQM Boundaries Group recommends that EPA expand upon its conventional application of nonattainment area boundaries through a concept of “control regions.”
  - Maximizes the effectiveness and equity in implementing air pollution controls needed to bring areas that violate the NAAQS into attainment.

# Focus Regions – (continued)

- **“Areas of Violation” (AOVs)** refer to areas where air quality does not meet the NAAQS.
- **“Control Regions”** refer to areas where emissions contribute to those violations
  - In many cases, the area of violation will be contained within the control region, though there will be situations in which there is partial or even no overlap.
- Once such geographic regions are finalized, regional control strategies (through Air Quality Management Plans) would be developed and incorporated in individual enforceable SIPs/TIPs.

# Areas of Violation (AOVs)

- AOVs should reflect areas with poor enough air quality to violate the NAAQS for a pollutant.
- The existence of this area triggers:
  - the need for enhanced monitoring and public outreach/notification,
  - a certain level of local air pollution control requirements,
  - the development of an associated control regions and SIPs/TIPs.

# Control Regions

- A broader area of control is recommended for the control region in order to provide the vast majority of the necessary emission reductions needed to bring the area of violation into attainment.
- Control regions would start with a default oversized airshed, reflecting an area that is likely to contain the vast majority of the culpable emissions.
- These default regions could then be refined into smaller and more scientifically defined regions through an exercise conducted in a state, multi-state, and tribal collaboration that could be moderated by multi-state organizations and with the assistance of EPA.

# Control Regions (cont.)

- **Control Region Zones** (where appropriate)
  1. **Inner Zone** – Would be focus for most intensive and nonattainment area triggered controls.
  2. **Outer Zone**- Would be targeted for certain basic controls and additional controls as needed.

# Large Source Inclusion

To prevent the Control Region from sprawling to unmanageable sizes, very large sources located outside of the Control Region boundaries that can be shown to contribute to AOVs, can be included for consideration based on:

- formula considering size of source, distance from and likely contribution to an area of violation
- application threshold for source size (major?)
- modeled contribution similar to Regional Haze Rule

# Periodic Review

- The appropriateness of area of violation and control region boundaries should be periodically reviewed with a technical analysis to ensure appropriate coverage and adequate progress is made toward attainment.

# Key Elements for Areas of Violation

- Monitoring
- Public advisories/education/outreach
- LAER with offsets OR alternative that provides for no net emissions increase
- BACT for smaller sources
- Very good controls for existing sources greater than 100 tpy actual emissions
- Conformity
- SIP/TIP and regular progress towards meeting emission reduction goals



# Key Elements for Control Regions

- Monitoring
- Public advisories, etc. as warranted
- LAER for new major sources [offsets or no net increase alternative]
- BACT for new smaller sources
- Very good controls for existing sources greater than 100 tpy actual emissions
- Conformity, if overlap with MPO region
- SIP/TIP and regular progress towards meeting emission reduction goals