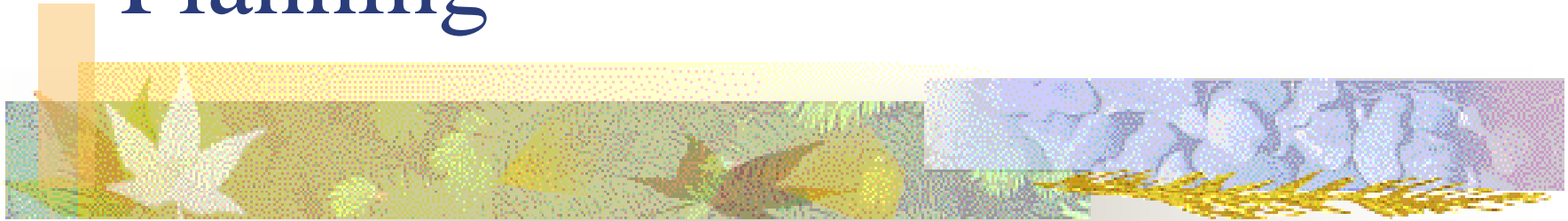


SIP Summit: A Case For Change: Single vs. Multi-Pollutant Planning



Columbia, SC

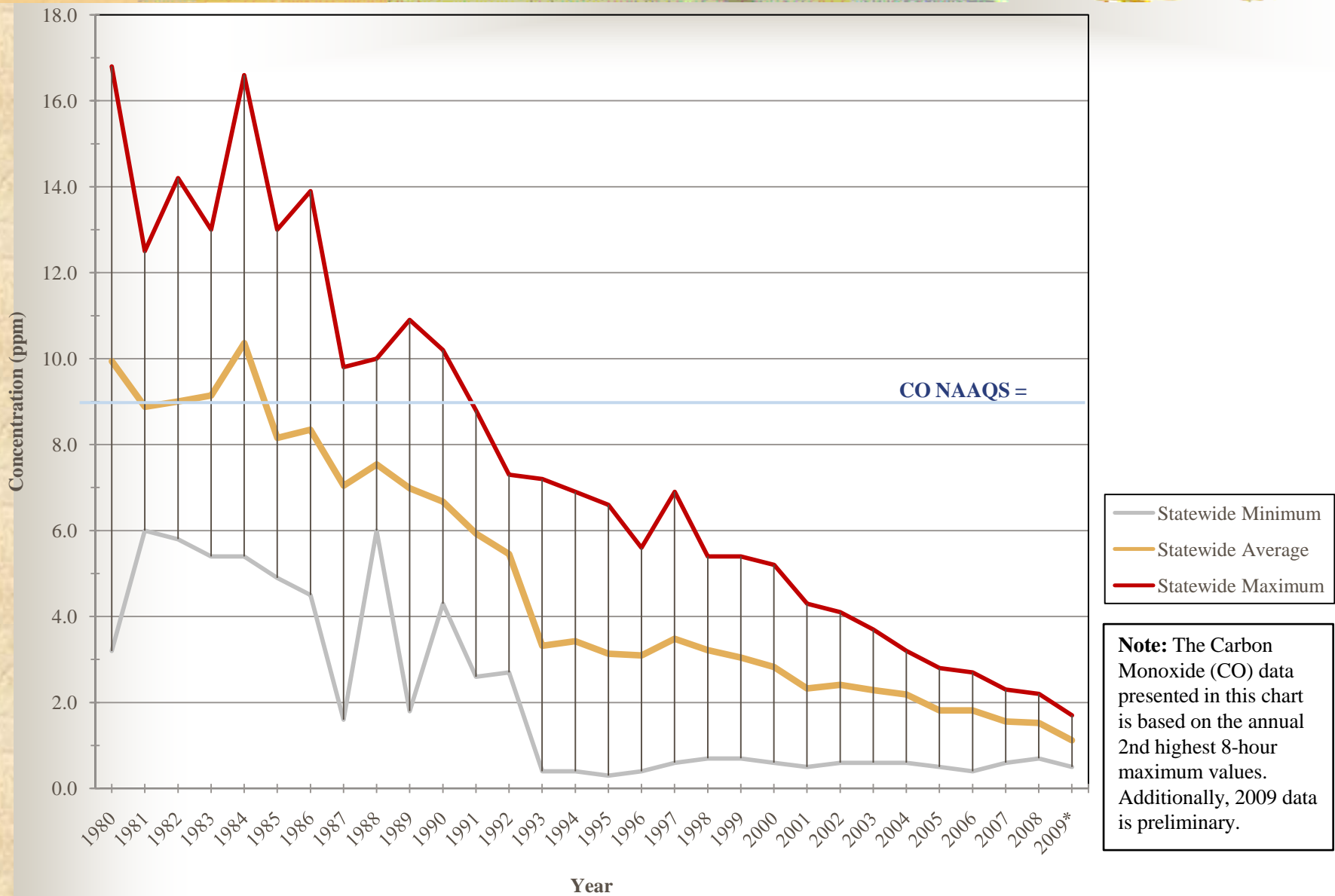
September 10, 2009



The Clean Air Act has worked,

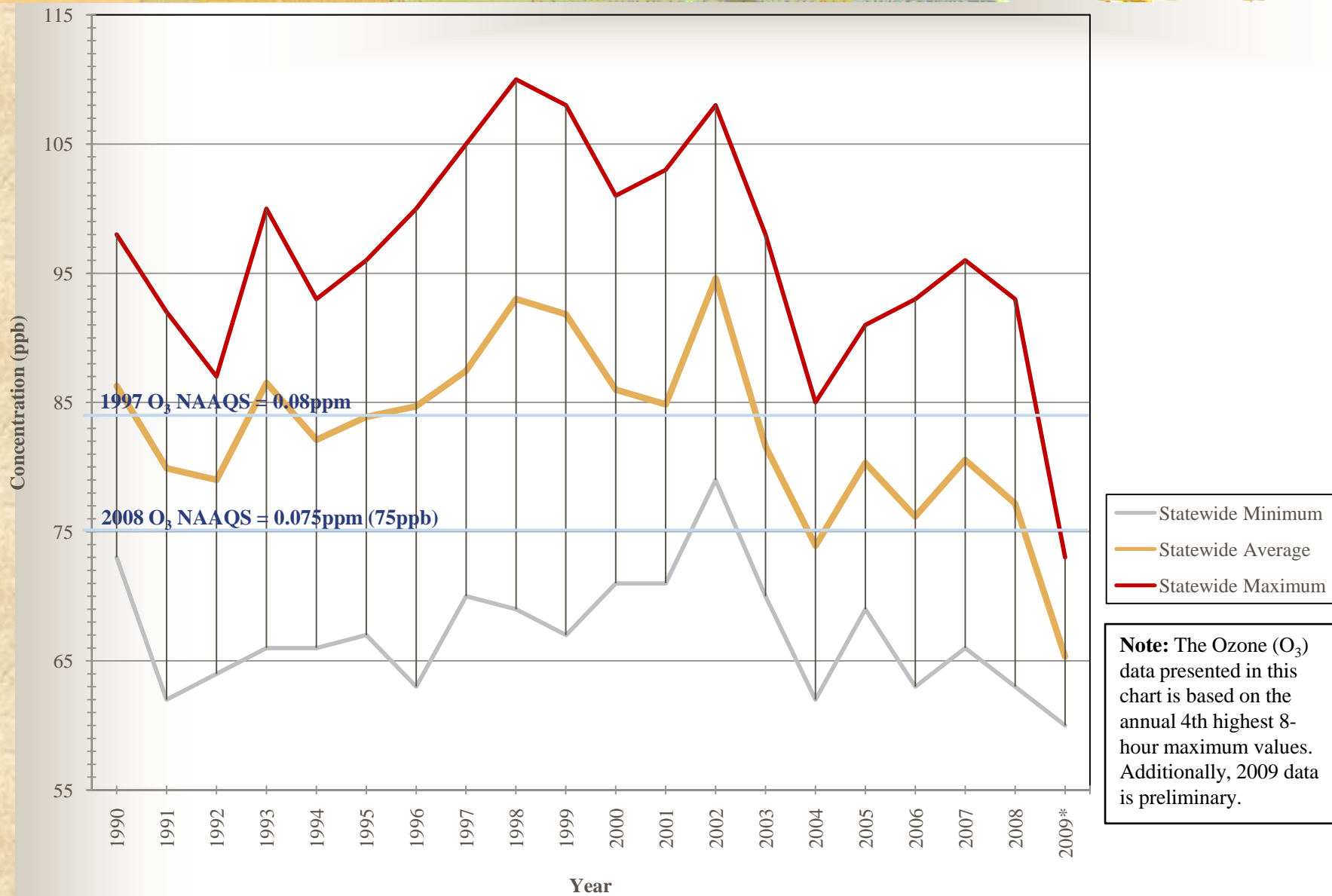
- Resulting in lower levels of pollution of all criteria and pre-cursor pollutants.
- However, challenges remain for future standards, and resources are shrinking, so we must find a more efficient way to manage air quality in the future.

Carbon Monoxide (CO) Trend In North Carolina (1980-2009)



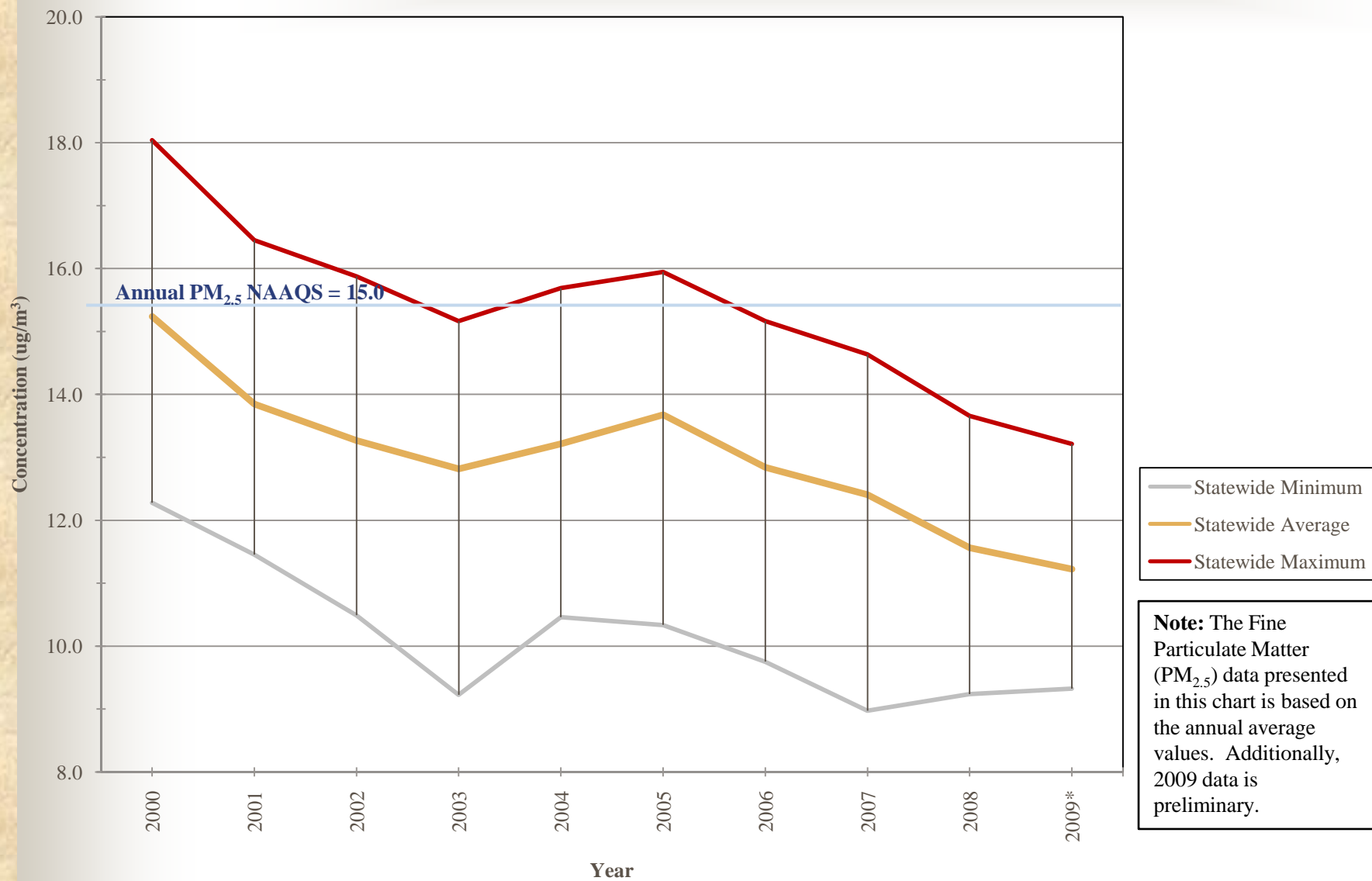
Note: The Carbon Monoxide (CO) data presented in this chart is based on the annual 2nd highest 8-hour maximum values. Additionally, 2009 data is preliminary.

Ozone (O₃) Trend In North Carolina (1990-2009)



Note: The Ozone (O₃) data presented in this chart is based on the annual 4th highest 8-hour maximum values. Additionally, 2009 data is preliminary.

Fine Particulate Matter (PM_{2.5}) Trend In North Carolina (1999-2009)



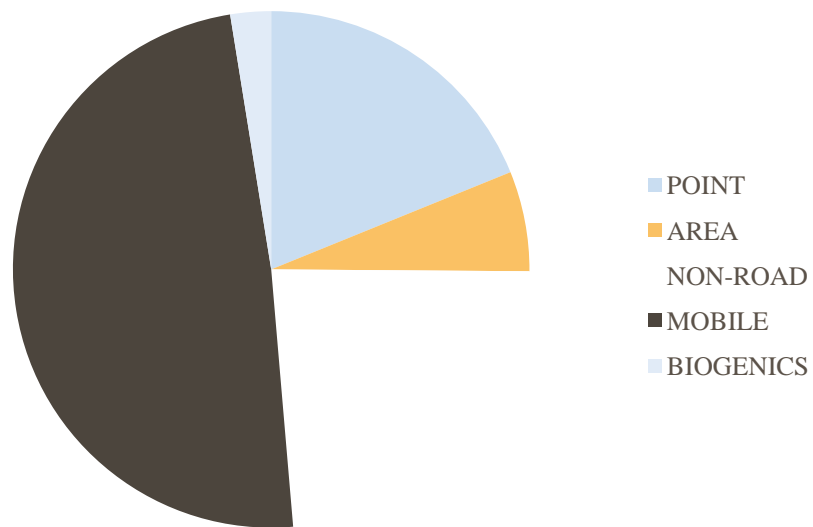


Much has changed since 1990

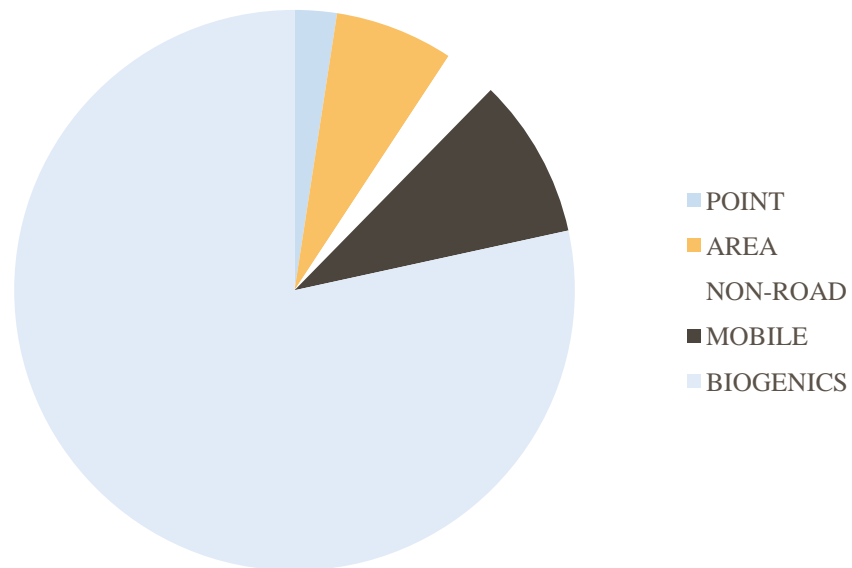
- From a southeastern perspective, one of the major developments in understanding ozone formation was the identification of the role of biogenic emissions.
- The first biogenic emissions model led to a better grasp of the scope of naturally occurring emissions in the Southeast.
- CAA still requires prescriptive controls for VOC – reasonable further progress, RACT, Stage II Vapor Control, etc.

2009 Episode Emission Summaries for Metrolina Counties (tons/summer day)

Total Metrolina NO_x Emissions

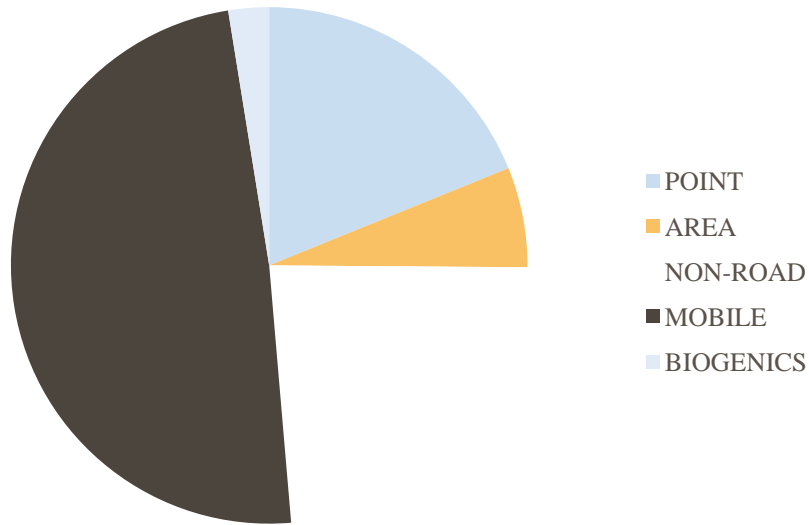


Total Metrolina VOC Emissions

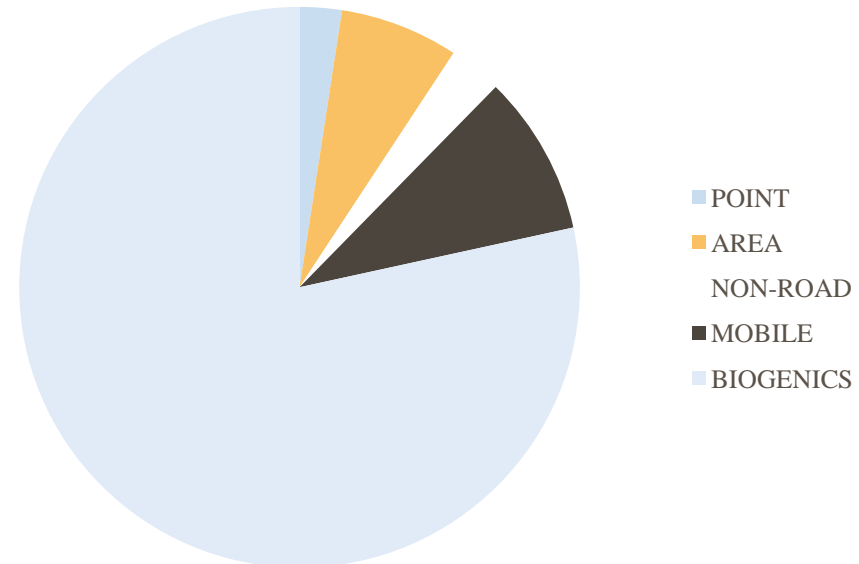


2009 Episode Emission Summaries for Metrolina Counties (tons/summer day)

Total Metrolina NO_x Emissions



Total Metrolina VOC Emissions





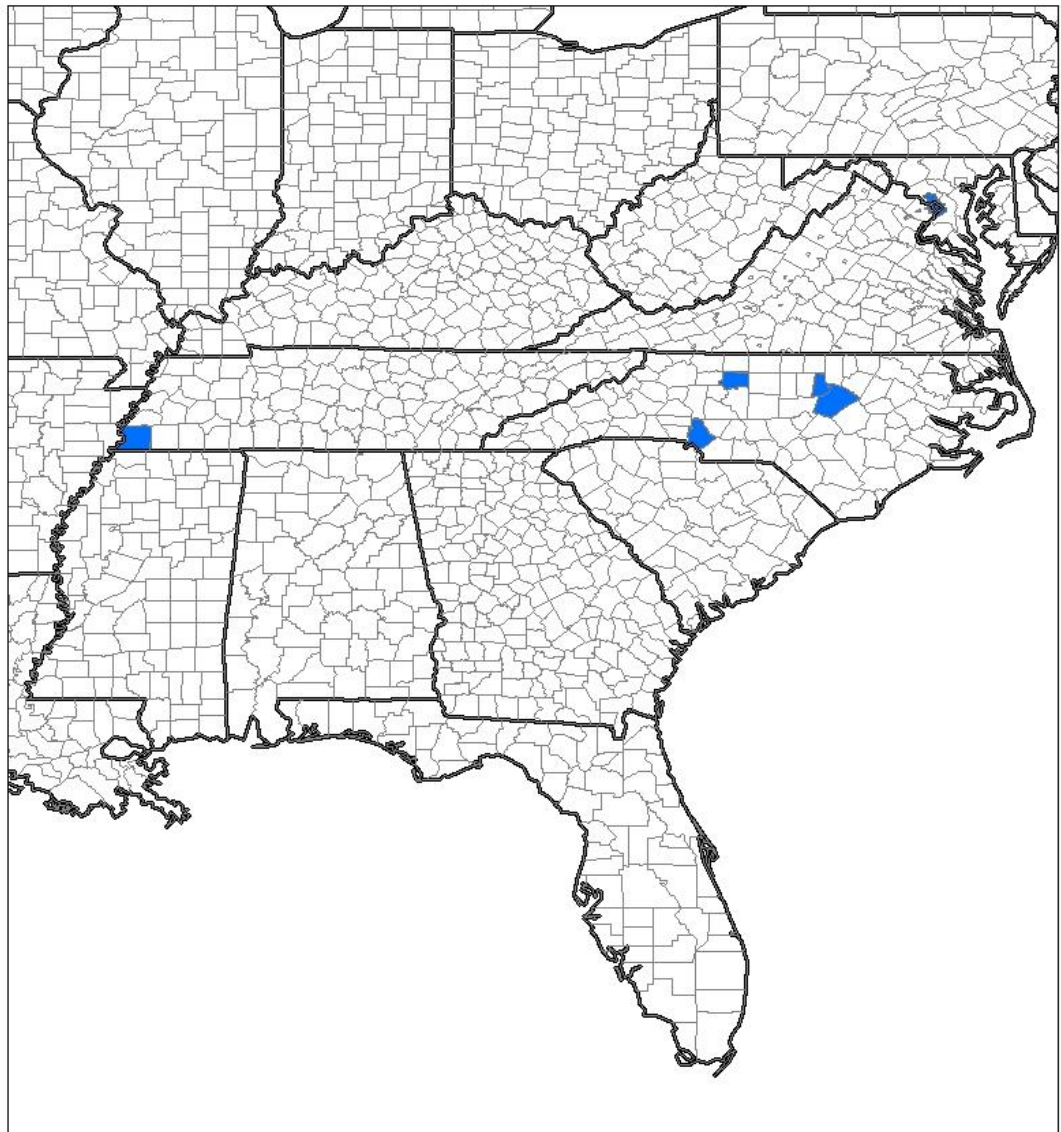
Air Quality Challenges In 1990

- Limited CO Nonattainment
- More widespread 1-Hour Ozone Nonattainment

1991 Carbon Monoxide Designations

5 Areas

- 7 Whole Counties
- 0 Partial Counties



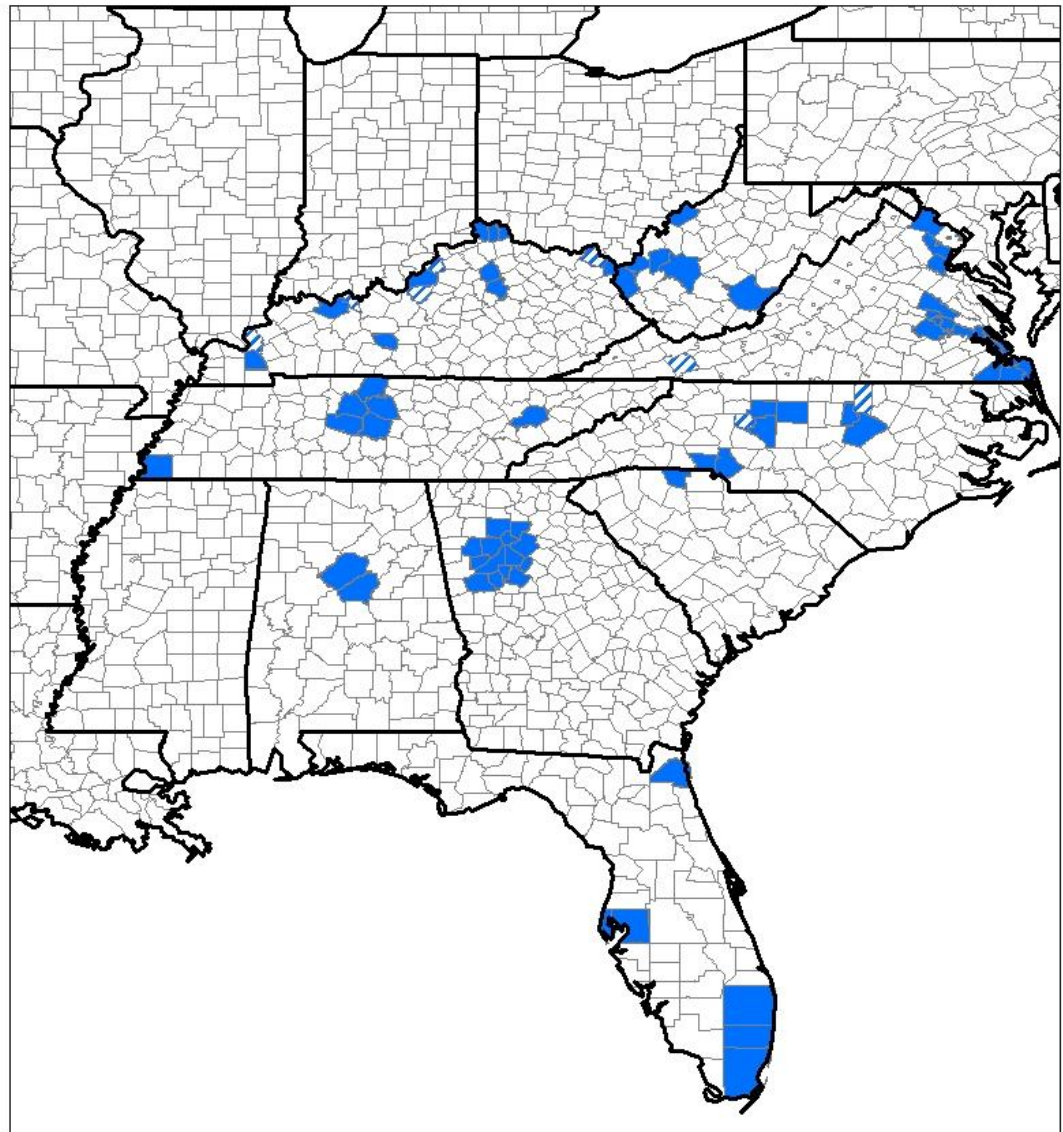
Legend

 Carbon Monoxide (CO) Nonattainment and Maintenance Areas

1991 1-hour Ozone Standard Designations

27 Areas


- 83 Whole Counties
- 8 Partial Counties



Legend

1 - hour Nonattainment and Maintenance Areas (1991 standard)

 Partial County

 Whole County



Air Quality Management Challenges Grew in Late 1990's

- Change in the form of the ozone standard resulted in more geographic coverage, as well as more transport issues
- Annual PM_{2.5} standard also resulted in more transport concerns
- Regional haze rule led to more regional planning
- Tools evolved to allow for multi-pollutant evaluation

1997 8-hour Ozone Standard

32 Total Areas

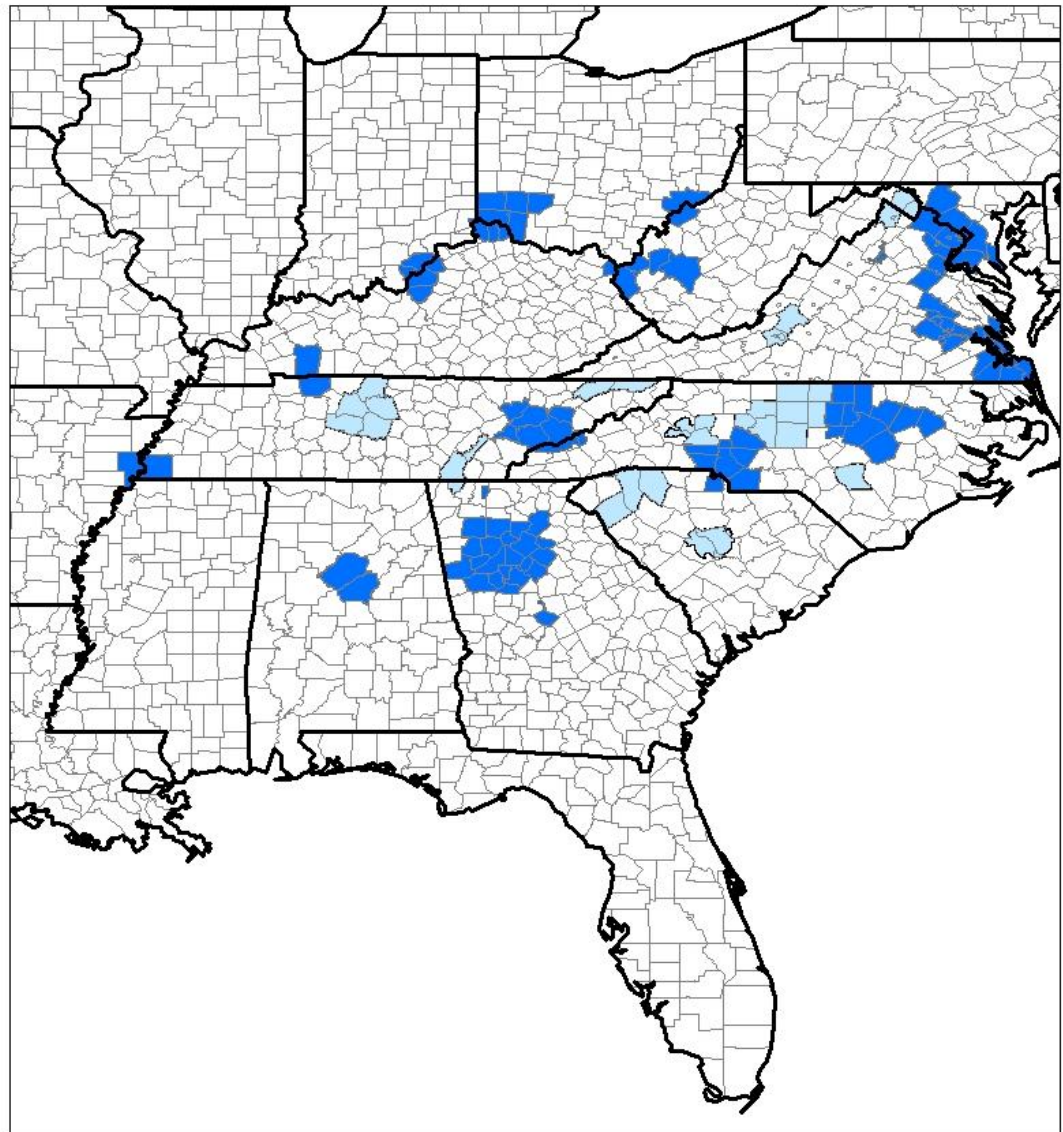
- 130 Whole Counties
- 14 Partial Counties

11 EAC Areas

- 32 Whole counties
- 5 Partial Counties



21 Nonattainment Areas

- 98 Whole Counties
- 9 Partial Counties



Legend

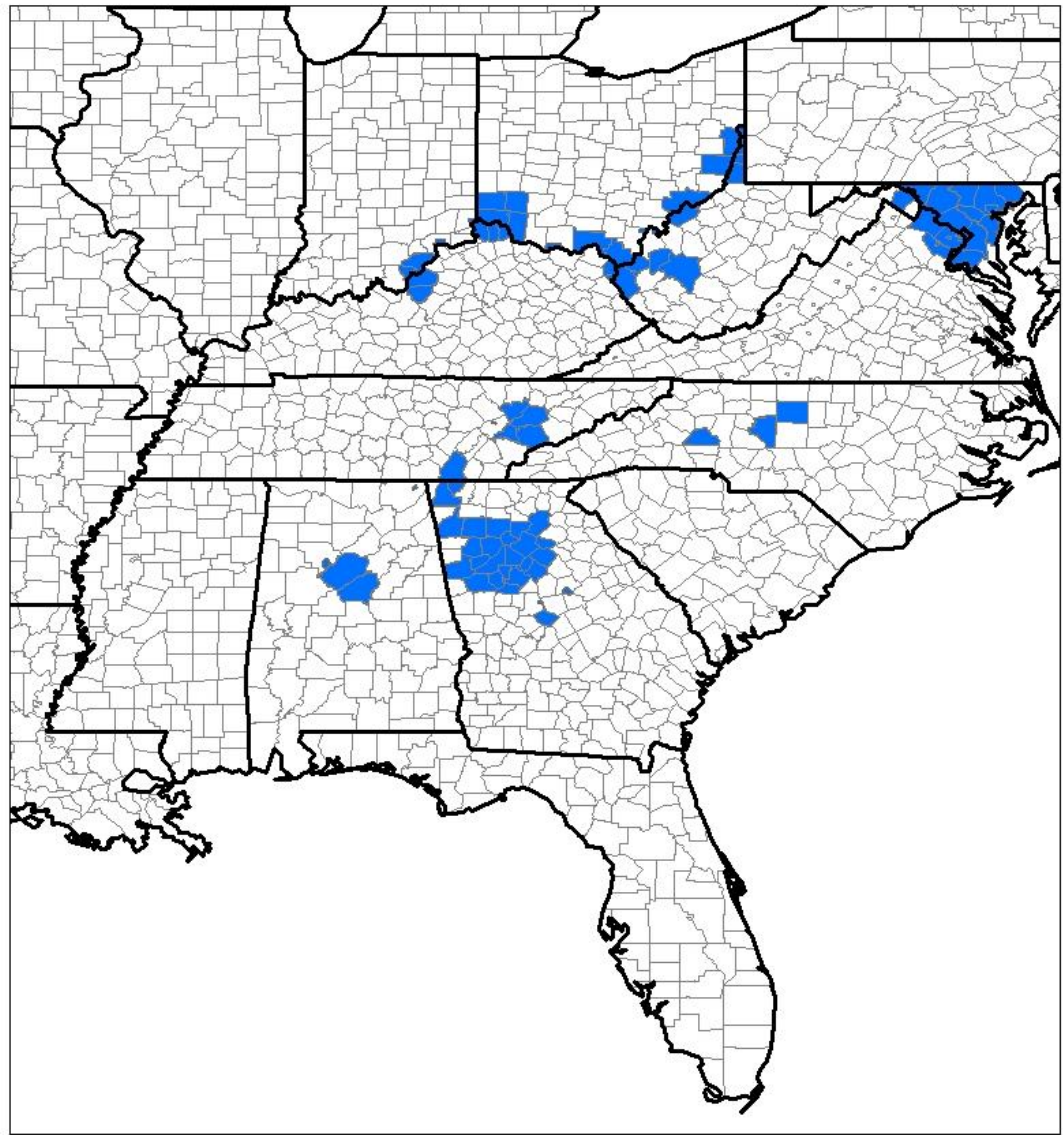
8 - hour Ozone Nonattainment and Maintenance Areas (1997 Standard)

-  EAC
-  Nonattainment


1997 Annual PM2.5 Standard

18 Areas

- 59 Whole Counties
- 9 Partial Counties



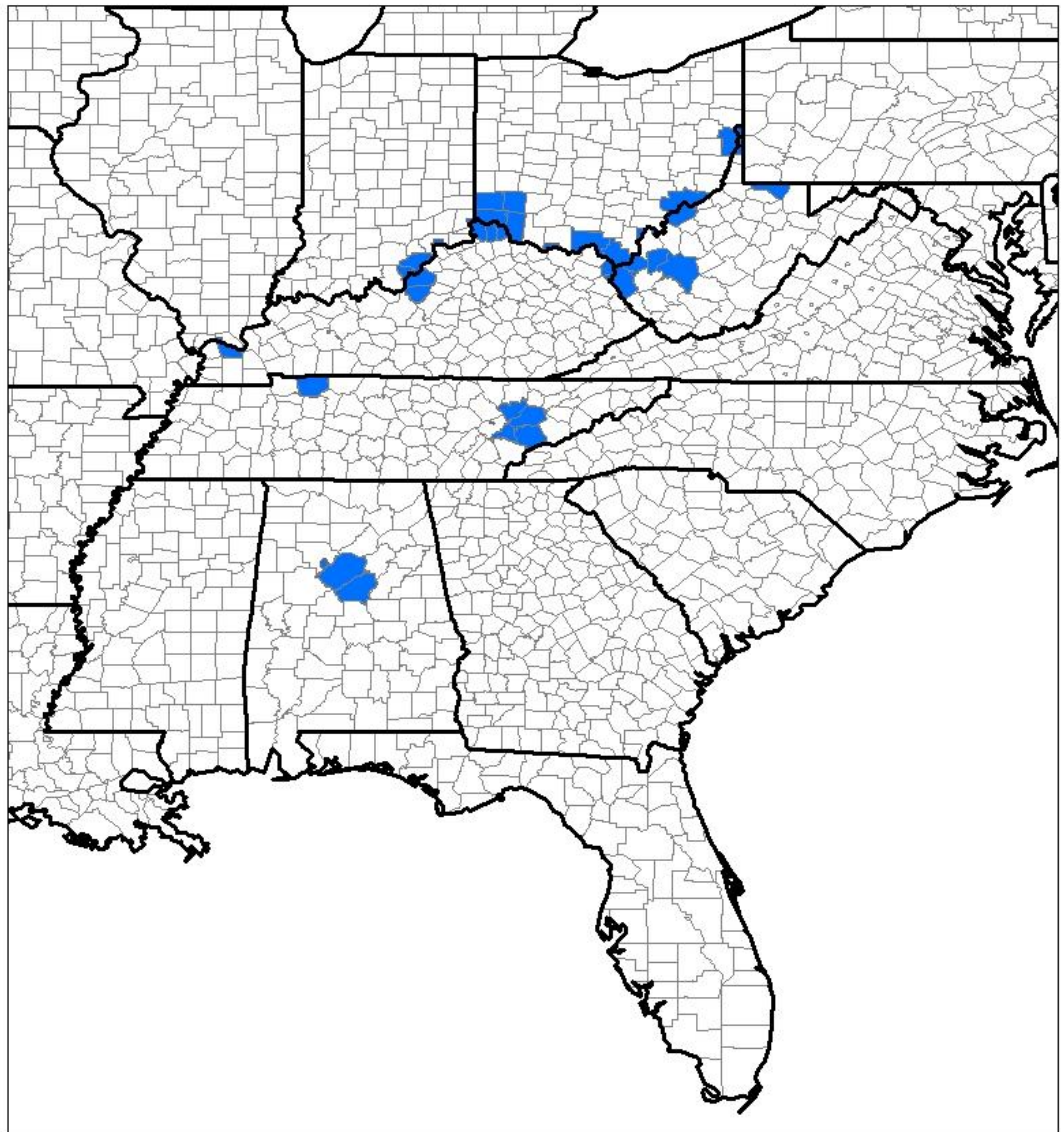
Legend

 Annual PM2.5 Nonattainment and Maintenance Areas (1997 Standard)


2006 Daily PM2.5 Standard

11 Areas

- 22 Whole Counties
- 8 Partial Counties



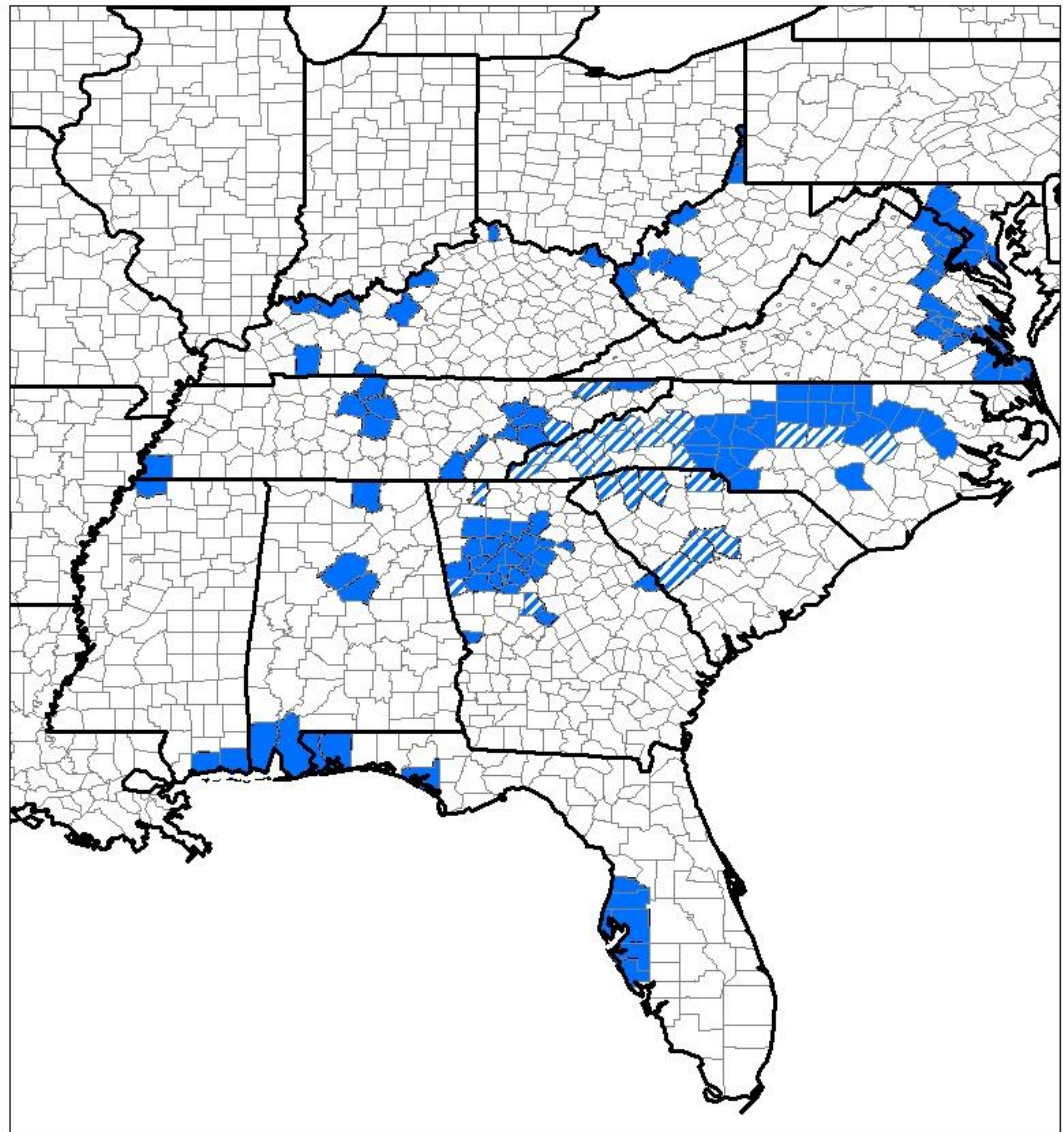
Legend

 Daily PM2.5 Nonattainment and Maintenance Areas (2006 Standard)

2008 8-hour Ozone Standard (State Proposed Boundaries)

~34 Areas

- 80 Whole Counties
- 13 Partial



Legend

State Proposed Boundaries for 8-hour Nonattainment Areas (2008 Standard)

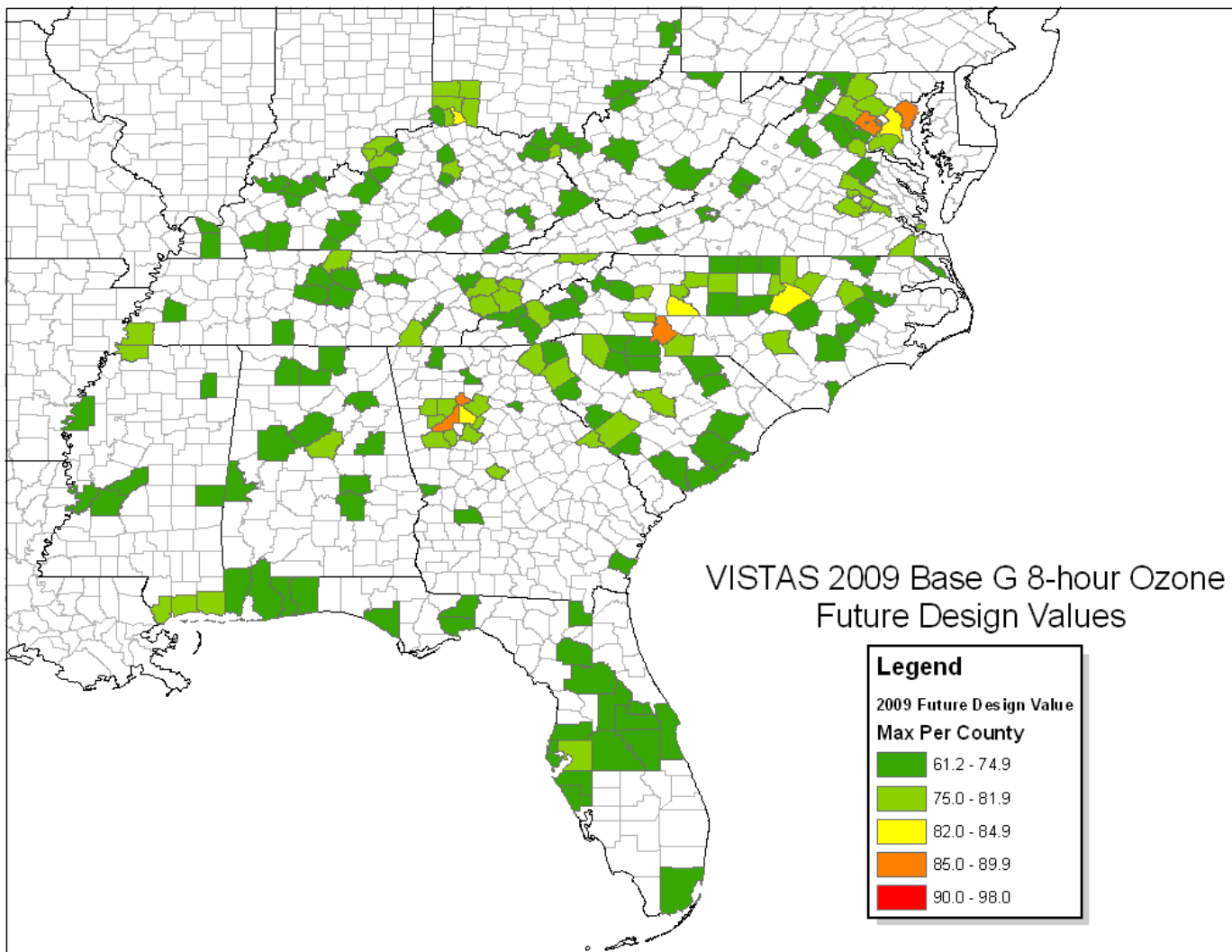
-  Partial County
-  Whole County

Regional Haze SIP Development

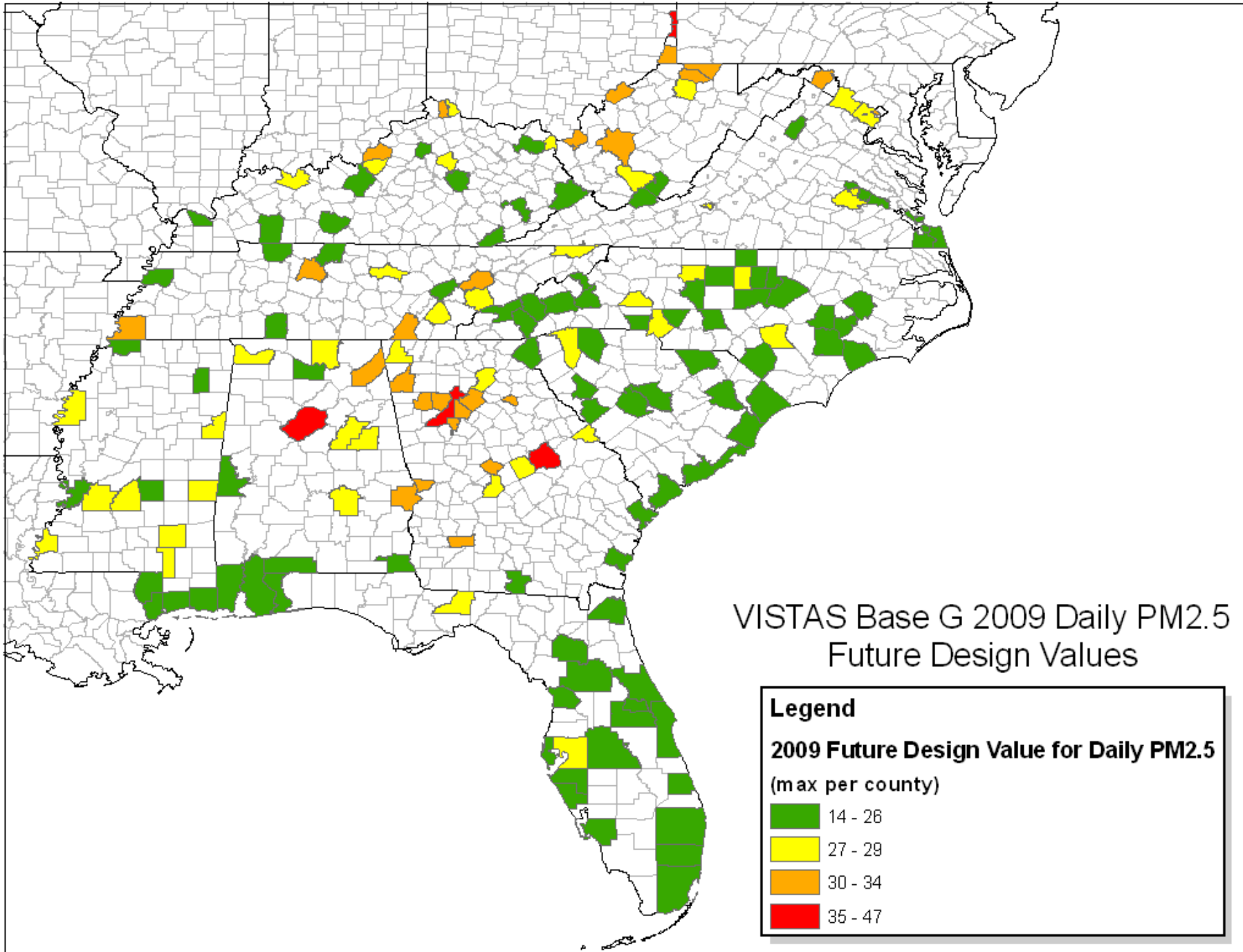


Ozone SIPs

Modeling Results (2009)

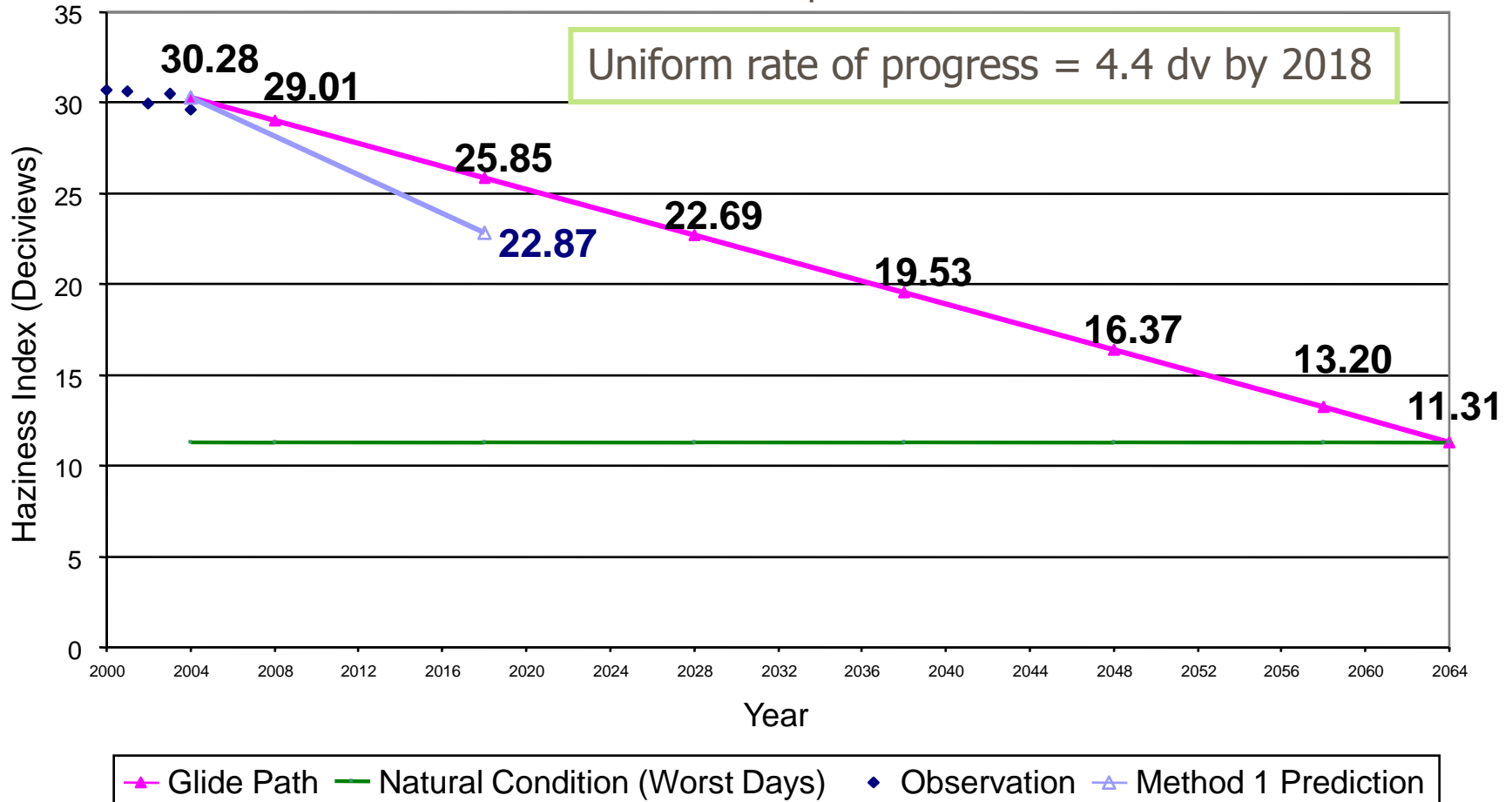


Orange =
85-89 ppb



Uniform Rate of Progress Glide Path Great Smoky Mountains - 20% Worst Days

New IMPROVE equation



Similar results for Shining Rock, Linville Gorge, Cohutta, VA, WV sites



National Research Council AQM Report

■ Five Recommendations

- 1. Strengthen Scientific and Technical Capacity
- 2. Expand National and Multi-state Control Strategies
- 3. Transform the SIP Process; Streamline the SIP Process
 - Integrated Multipollutant Plan
- 4. Develop Integrated Program for Criteria and Hazardous Air Pollutants
 - Address Multiple Pollutants in the NAAQS Review and Standard-Setting Process
- 5. Enhance Protection of Ecosystems and Public Welfare



CAAAC – AQM Subcommittee

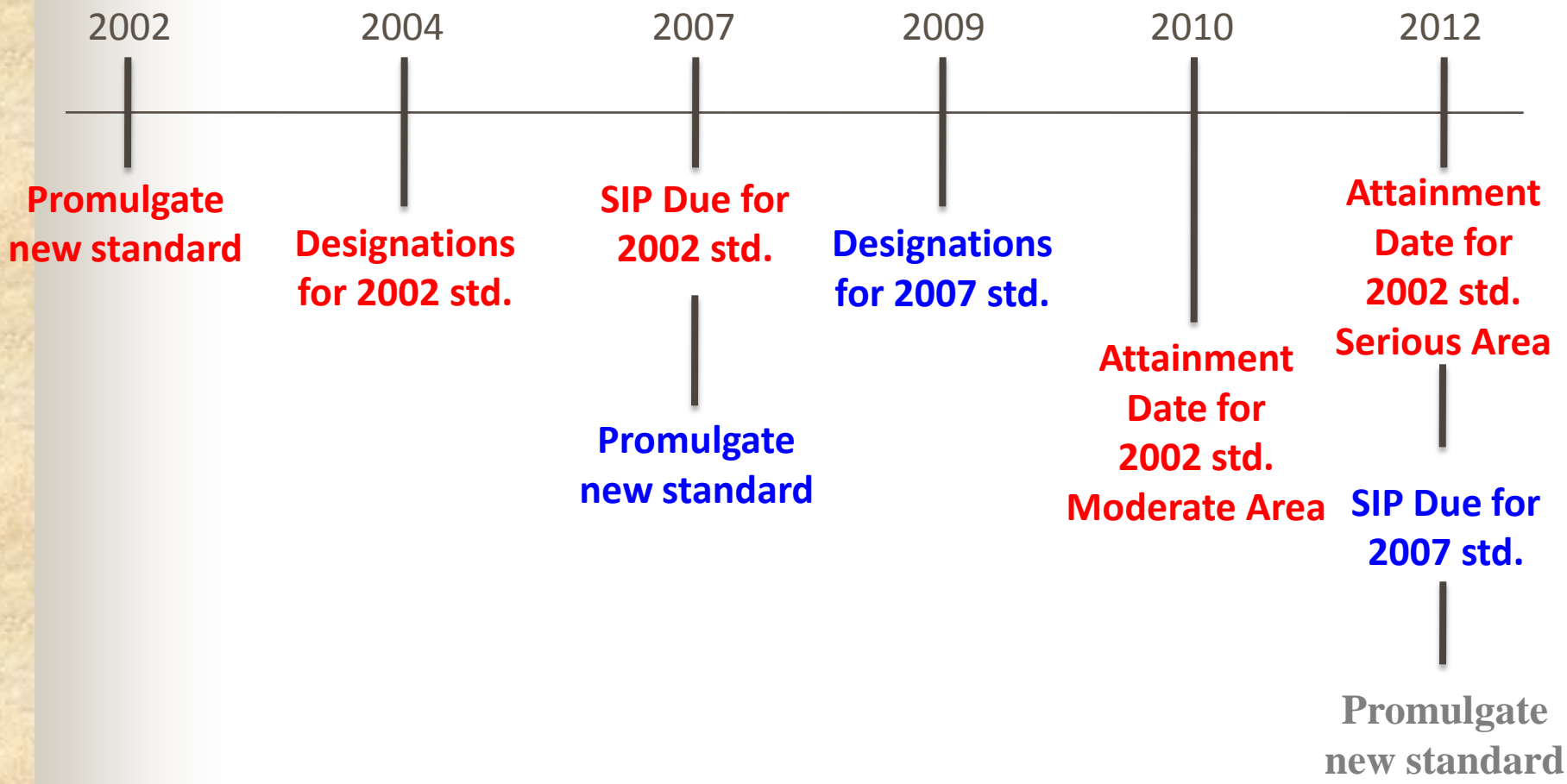
- Excerpt from Phase II Report:

“The recommendations contained in this report represent the AQM Subcommittee’s vision of a comprehensive AQM system that can assist in meeting future air quality challenges in this country. As such, the AQM Subcommittee is making an overarching recommendation for taking a holistic approach to AQM through utilization of a more comprehensive planning process.”



Current NAAQS Review Schedule

- Does not work with a ten year attainment date in Subpart I of the CAA, or in Subpart II classification scheme.

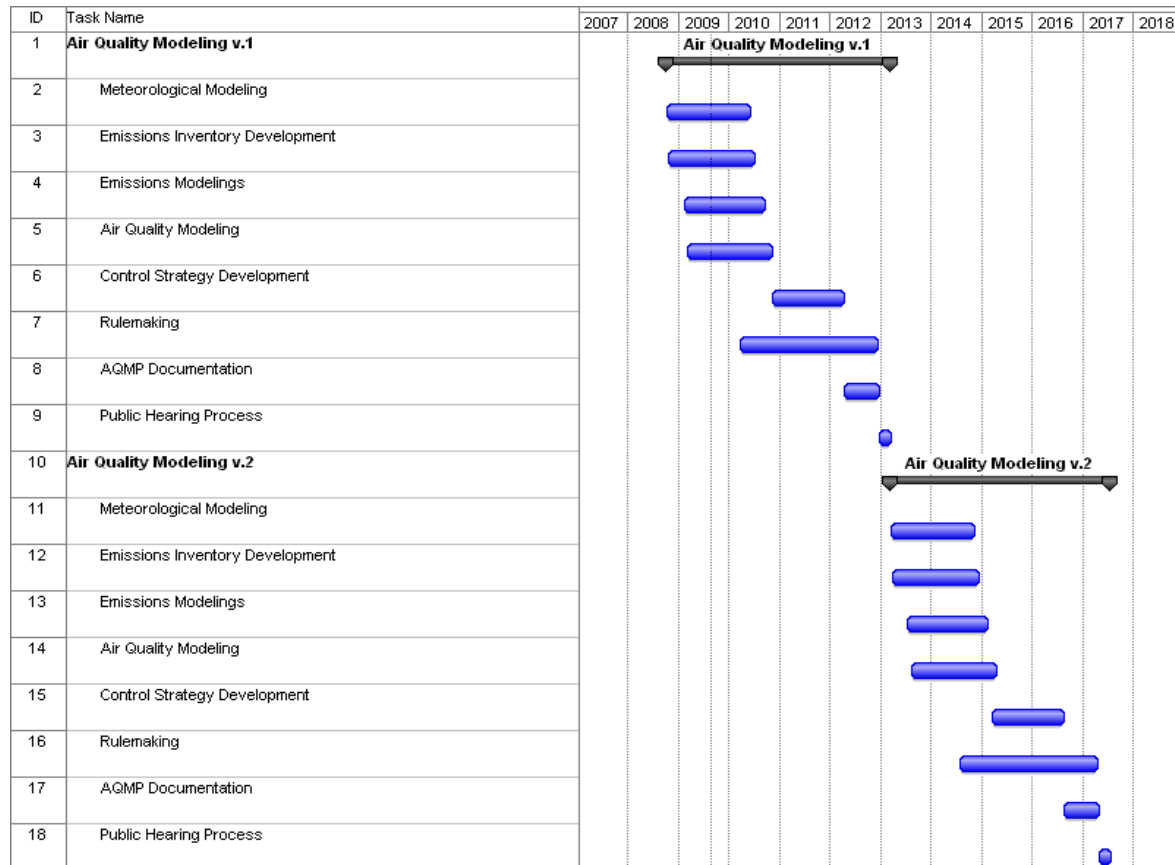




Technical AQM Planning

- Should be done on a regularly planned schedule
- Routine updates to account for latest scientific developments

AQMP Technical Schedule





Revisions are needed to CAA

- Three recommendations:
 - 1. Revise prescriptive controls to account for different chemistry in different areas of the country (e.g., no required VOC control programs in Southeastern United States).
 - 2. Revise timeline for NAAQS Review to allow EPA ability to consider multiple pollutants at once which supports multiple pollutant planning and full implementation of a plan before a revision to a NAAQS occurs
 - 3. Revise SIP language to incorporate AQM concept, and allow enough time for technical evaluation development between AQM submittals. Allow States flexibility to address other concerns besides criteria pollutants in the AQM plan.



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- **Visit our web site:**

- **<http://www.ncair.org/>**