OTC Annual Meeting

Baltimore, MD

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OTC Modeling Committee Update

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Massachusetts DEP

OTC Modeling Committee Update

The OTC Modeling Committee reconvened in Fall 2008 to address the OTR states' modeling needs:

- 2008 8-hour ozone NAAQS
- 2006 24-hour $PM_{2.5}$ NAAQS

Initial discussions focused on obtaining modeling results of regional control measures to allow for **on time** submissions of State Implementation Plan (SIP) attainment demonstration, **including state rule development**

Multi-Pollutant Timing Considerations

2008 8-hour ozone NAAQS

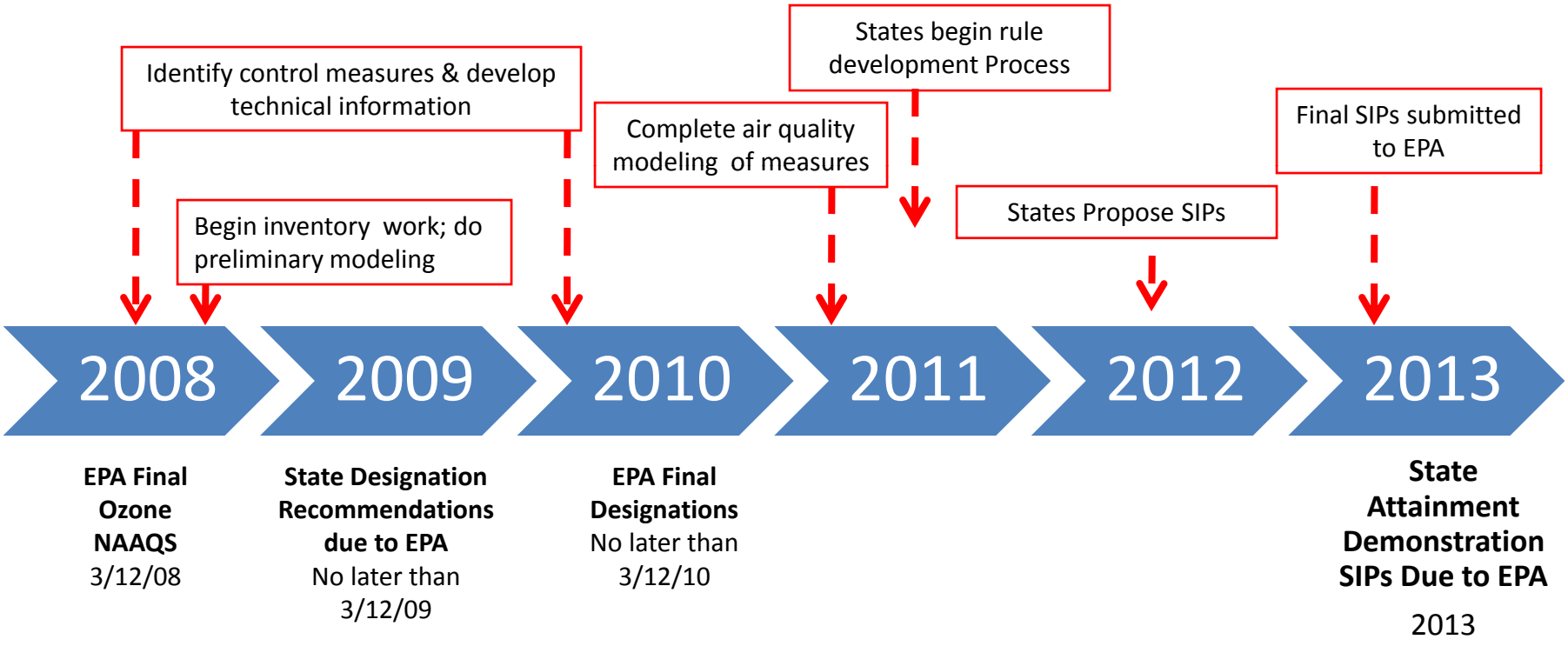
- Attainment date for moderate areas expected to be 2nd quarter 2016
- Attainment demonstration SIP due 3 years after final designations or 2nd quarter 2013
- OTC Modeling complete at least 1 year in advance to allow for state rule development or 2012
- Therefore, SIP-quality modeling including consideration of control measures must be completed by end of 3rd quarter 2011

Multi-Pollutant Timing Considerations

2006 24-hour $PM_{2.5}$ NAAQS

- Attainment date is 2nd quarter 2014
- Attainment demonstration SIP due 2nd quarter 2012
- OTC Modeling schedule completed about one year in advance to allow for state rule development or 2011
- Therefore, SIP-quality modeling including consideration of control measures must be completed by end of 2010

SIP Timeline for 2008 8-hour O_3 NAAQS

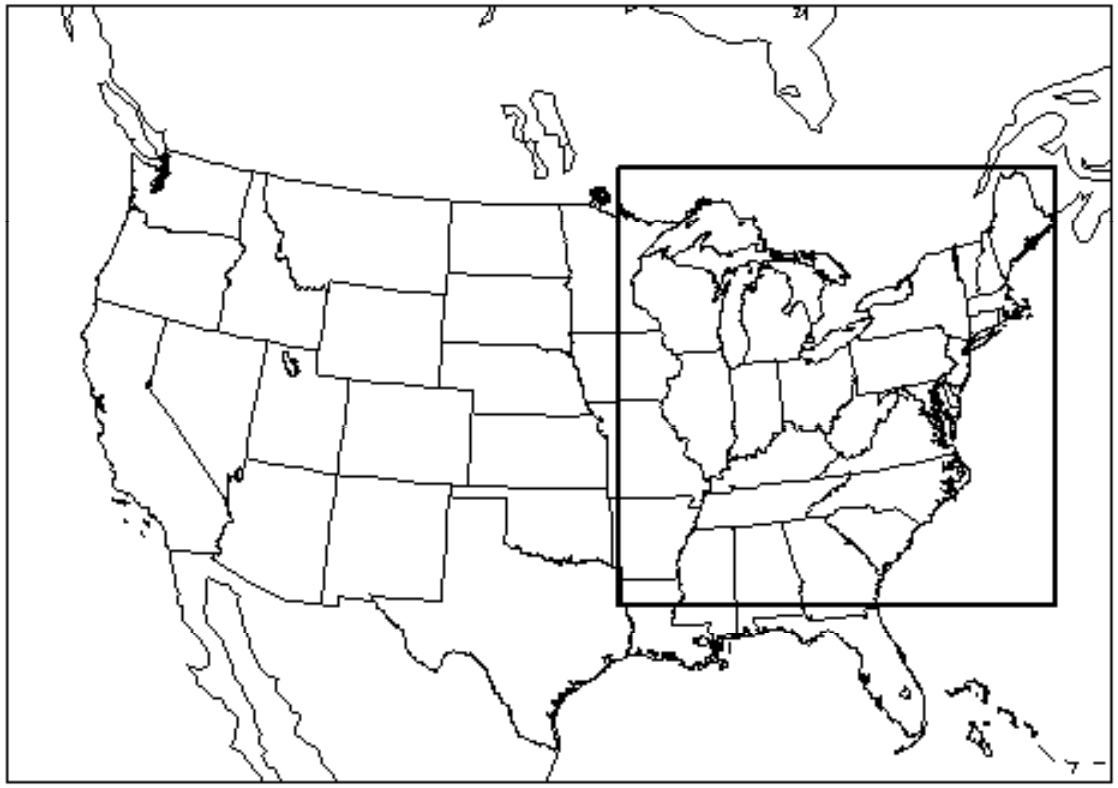


2008 Ozone NAAQS Attainment Dates 2013 - 2030

SIP Development Approach

- Collaborative approach with OTC States working together, with other regions, and with USEPA on modeling and inventory development
  - Base and future emissions
  - Model inputs and model runs
  - Sharing resources, coordinating modeling centers
- States working regionally to identify and develop control options for inclusion in SIPs
  - Regional consistency on measures
  - Consistent information for technical analysis

Modeling Domain



Current Work to Meet SIP Schedules

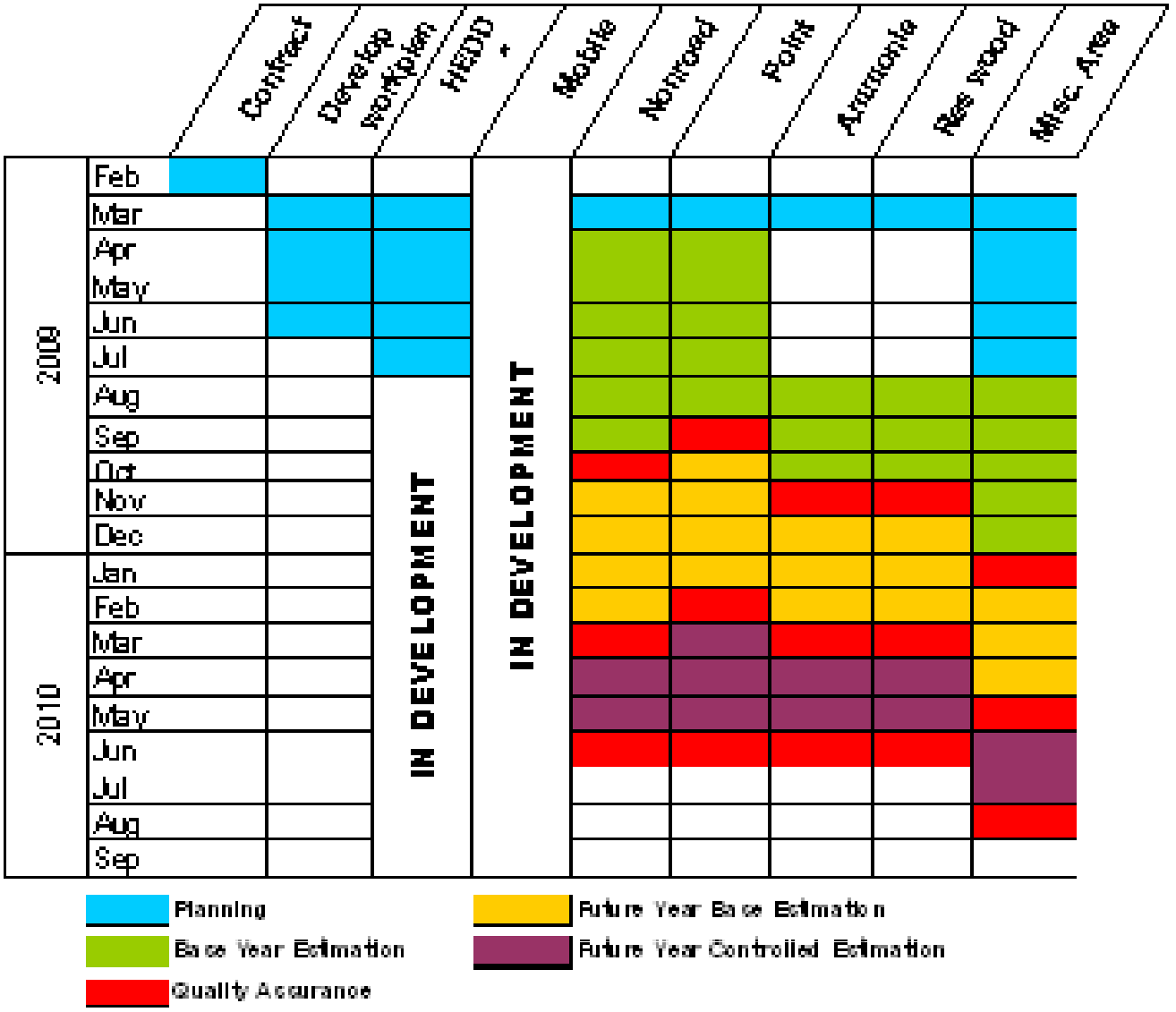
- Development of 2007 meteorological fields
- Emissions Inventory
  - coordination with other RPOs
  - possible sectoral improvements
  - stakeholder outreach in Fall 2009
- Control measure identification and development
  - national, regional, and state/local
- Modeling runs
  - Sensitivity and screening
  - HEDD analyses
  - SIP quality

Emission Inventory Development

Sectors

- Non-EGU Point
- EGU Point
- Mobile On-Road
- Mobile Non-Road & Off-Road
- Area
  - Agricultural Fires & Wildfires
  - Ammonia
  - Residential Wood Combustion
  - Residential Heating
  - Area VOC sources
  - Other area sources

PREPARATION OF THE EMISSION INVENTORY FOR STATE IMPLEMENTATION PLAN MODELING

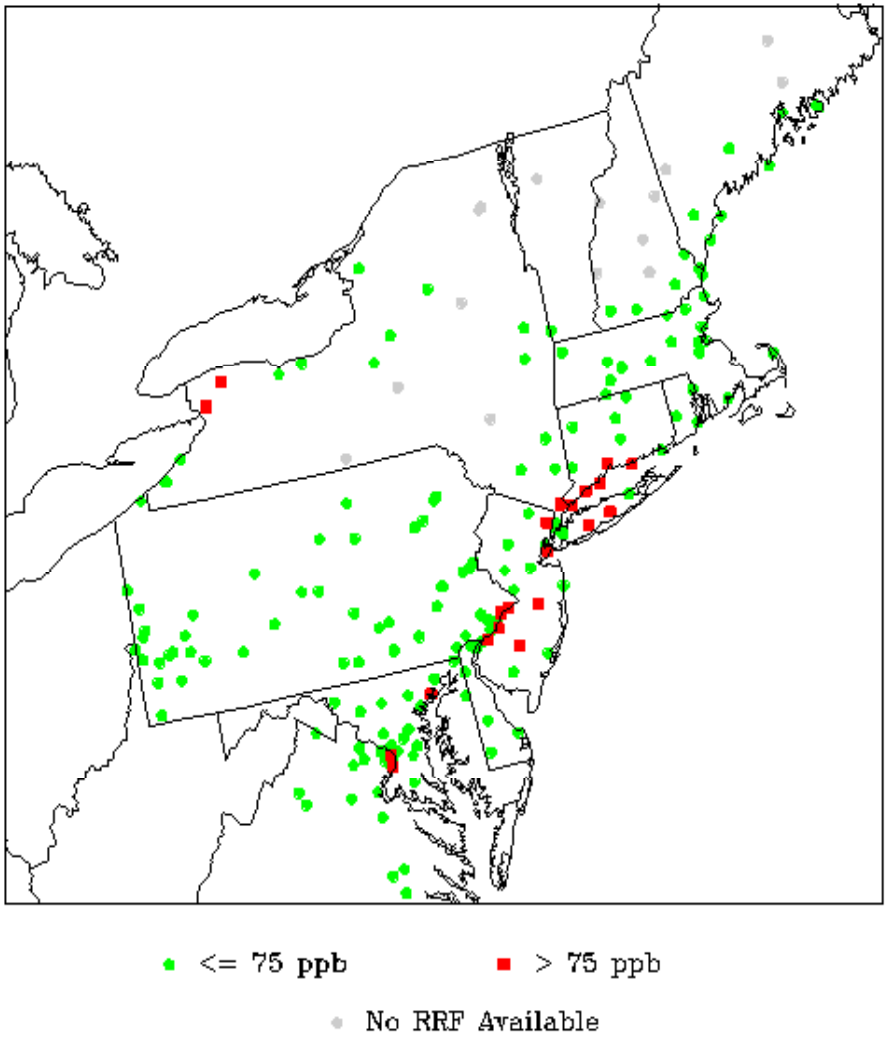


Previous Modeling of 2018

- The 2018 modeling results help us start answering the questions “How much do we have to do, and where are our problem areas?”

- Beyond-on-the-way regional measures from a 2002 base

- Includes benefits from the CAIR



Screening Modeling

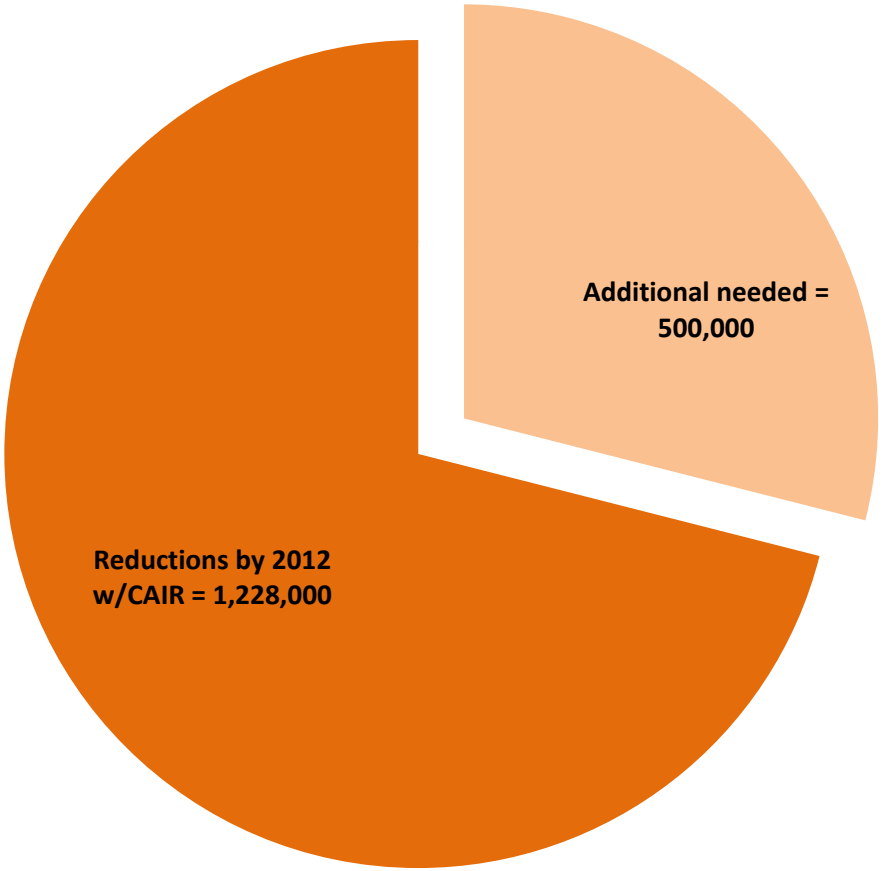
- Provides a “ballpark” estimate of the reductions that will be needed for attainment
- Allows for the longer term development of the SIP-quality modeling platform
- 2005 emissions and 2002 meteorology will be used
- New chemistry and biogenics modules will be tested
- Per cent emission reductions by source categories reflecting “bundles” of controls (Ozone and PM)

Screening Modeling (cont.)

- NY DEC did a screening modeling run, reflecting a 40% NO_X reduction from all sectors domain-wide
- Results showed all sites below 75ppb, but some just barely
- Other states east of the Mississippi River were assumed to make commensurate NO_x reductions
- Additional screening modeling with packets of control measures early in 2010

The OTR's share of the 40% reduction is on the order of 500,000 tons of NOx

Total NOx reductions needed in the OTR from a 2002 base = 1,728,000 tons



*Additional reductions also needed in Midwest & Southeast regions

SIP-Quality Modeling

- 2007 as both the base modeling and meteorology year
- Decision on appropriate future years for projecting growth and for control measure implementation
- Timely release of EPA guidance on using the new mobile emissions model -MOVES- to maintain our SIP modeling timeline

Additional Activities and Contacts

- High Electric Demand Day (HEDD) Work Group to develop a technically sound approach to model HEDD emissions in the OTR -- Chaired by Jeff Underhill (NH)
- Coordination with the other eastern Regional Planning Organizations on harmonizing our collective SIP modeling efforts for efficiency and resource needs -- Anna Garcia

Additional Activities and Contacts (cont.)

- Coordination and development of emissions inventories for base and future years – Susan Wierman, MARAMA
- Coordination of the development of a consistent set of multi-year met database for use in the modeling effort -- Mike Kiss, Virginia
- Public input into the Modeling Committee's activities -- Fall 2009