

Emissions Inventory Overview

Susan S.G. Wierman
Patrick Davis
MARAMA

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Hartford, CT
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Topics

- Overview
- Stakeholder outreach opportunities
 - Status by sector
 - Where to find data



1. Overview

- 2007 emissions inventory under development for SIP modeling
- Future modeling years to be selected
- Pollutants: NO_x, VOC, PM_{2.5}, PM₁₀, SO₂, CO, Ammonia
- Base and Future year inventory target completion -- October 2010



General Philosophy

- Each State controls its emissions inventory
- MARAMA provides training and technical support to states
- MARAMA coordinates contractor assistance
- MARAMA coordinates stakeholder review with assistance from states



General Schedule

- March 2010
 - Updates completed by this time will be used in initial screening modeling
- August 2010
 - Target for completing remaining 2007 sectors
- October 2010
 - Target for completing future year projections



Sector Schedule for 2007 Data

- 2007 inventory sectors to be updated by March 2010:
 - Point source annual emissions (complete)
 - Point source hourly emissions (underway)
 - Non-road mobile sources calculated by NONROAD model (complete)
 - Area source emissions (underway)
- 2007 inventory sectors to be updated by August 2010
 - Remaining non-road (marine, air, and rail)
 - Any remaining area source categories
- On-road emissions may take additional time



2. Stakeholder Outreach Plan

- **Initial Outreach**

- OTC Committee Meeting Sept. 2-3, 2009
- October 2009 stakeholder review of 2007 annual point source inventory – States reviewed and revised in response to comments

- **Ongoing Outreach**

- OTC Committee Meeting March 16, 2010
- Stakeholder review of hourly 2007 point source inventory begins March 16, 2010
- Area source inventory & NONROAD documentation to be posted soon



3. Status by Sector

- Point – Annual and Hourly
- Area
- Non-road Mobile
- On-road Mobile



Point Source Improvements

- **Initial focus – 2007 annual emissions**
- **State 2007 point source inventory data**
- **Incorporate CAMD data**
 - Improved crosswalk between CAMD ID and State ID
- **Estimate PM_{2.5} Condensable Emissions**
 - MARAMA's 2008 Condensable Study
- **Revised based on Stakeholder Review**

2007 Hourly Point Source Inventory

- **CAMD data for the entire year includes**
 - About 90% of OTR point source SO₂
 - About 65% of OTR point source NO_x
- **Other sources of hourly information**
 - Maryland data for sources reporting 6 months to CAMD
 - Virginia study of Distributed Generation sources
 - General temporal profiles in the model used for other sources

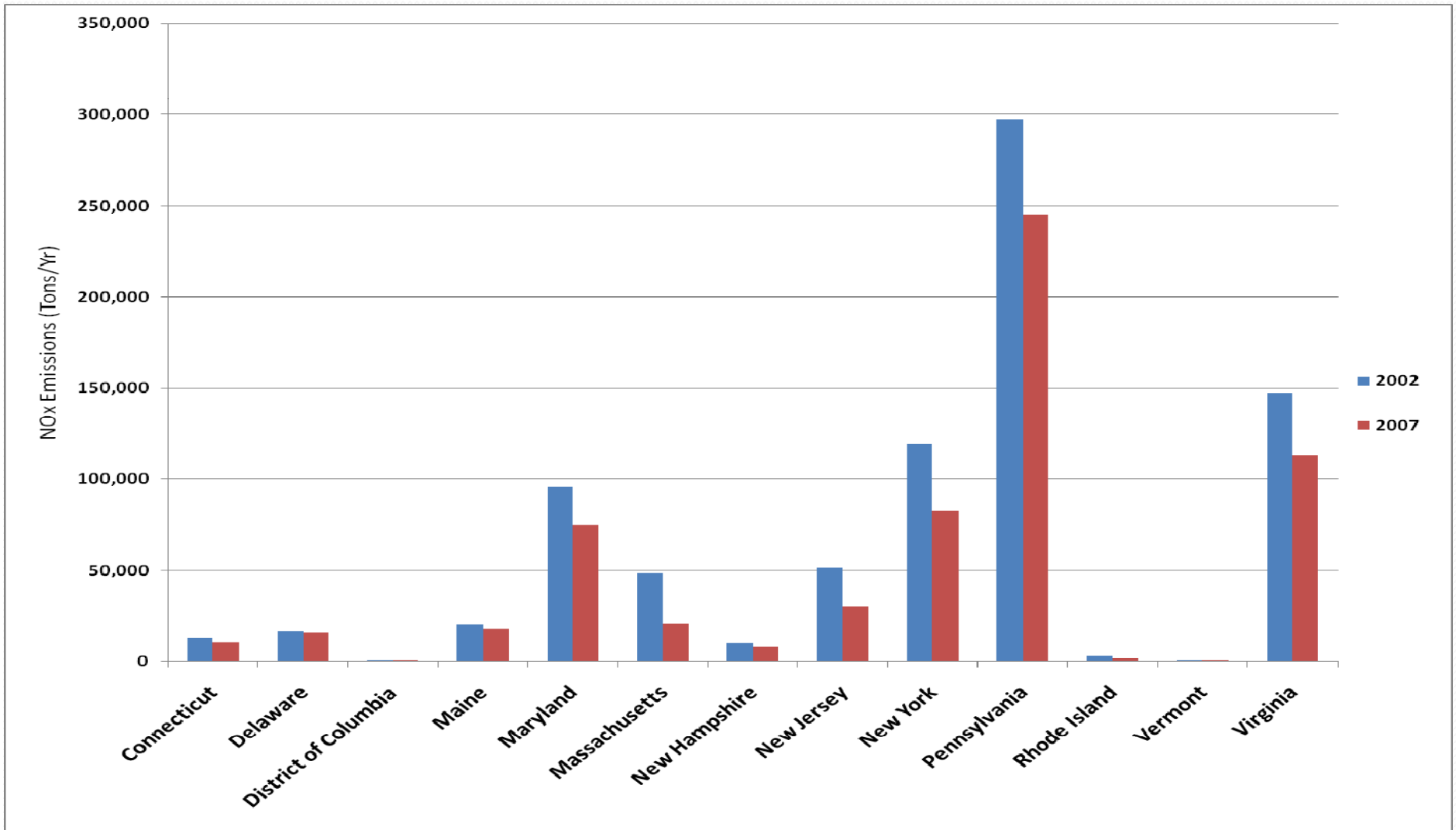


Classification of Sources Reporting to CAMD

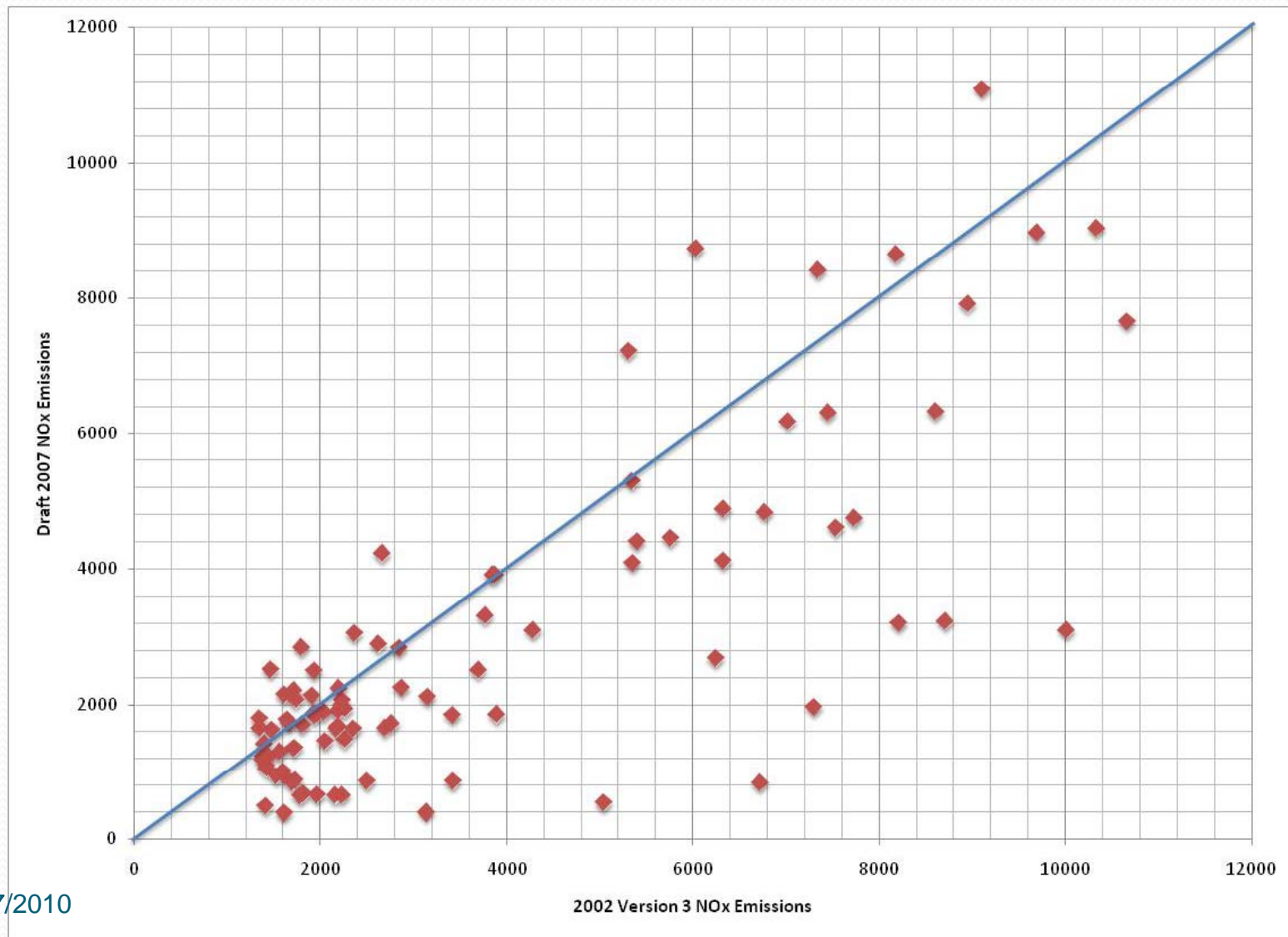
- Operating over 50% of the time in 2007
- Operating 15 to 50 % of the time in 2007
- Operating less than 15% of the time in 2007
 - (If only reporting for 6 months, then percent was of that time)
- Hourly point source inventory annual totals for CAMD sources are the same as annual totals previously reviewed by states and stakeholders
 - Documentation explains data sources & methods used



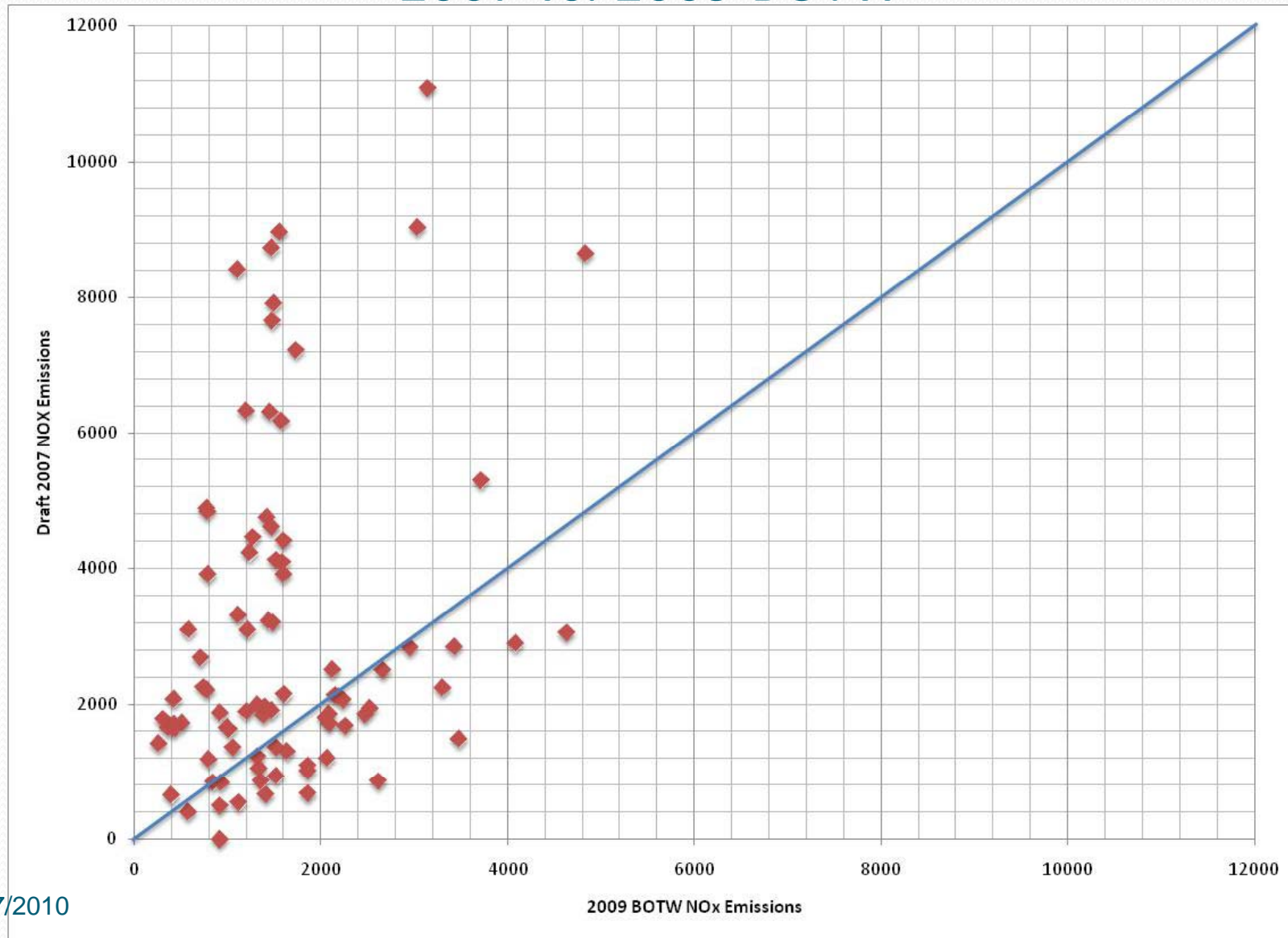
2002 and 2007 Annual NOx Emissions from Point Sources



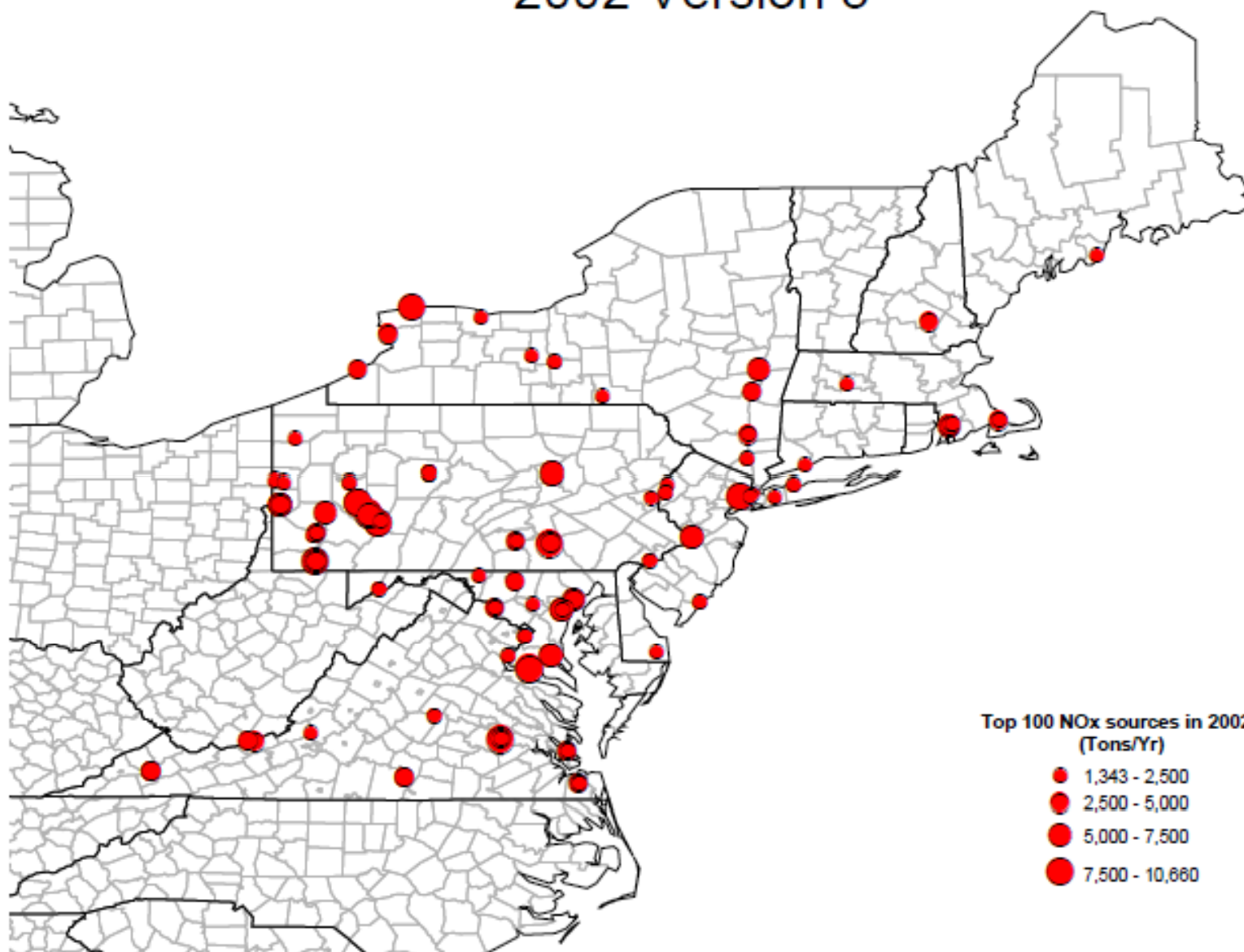
Emission Changes in Top NOx Sources 2007 vs. 2002



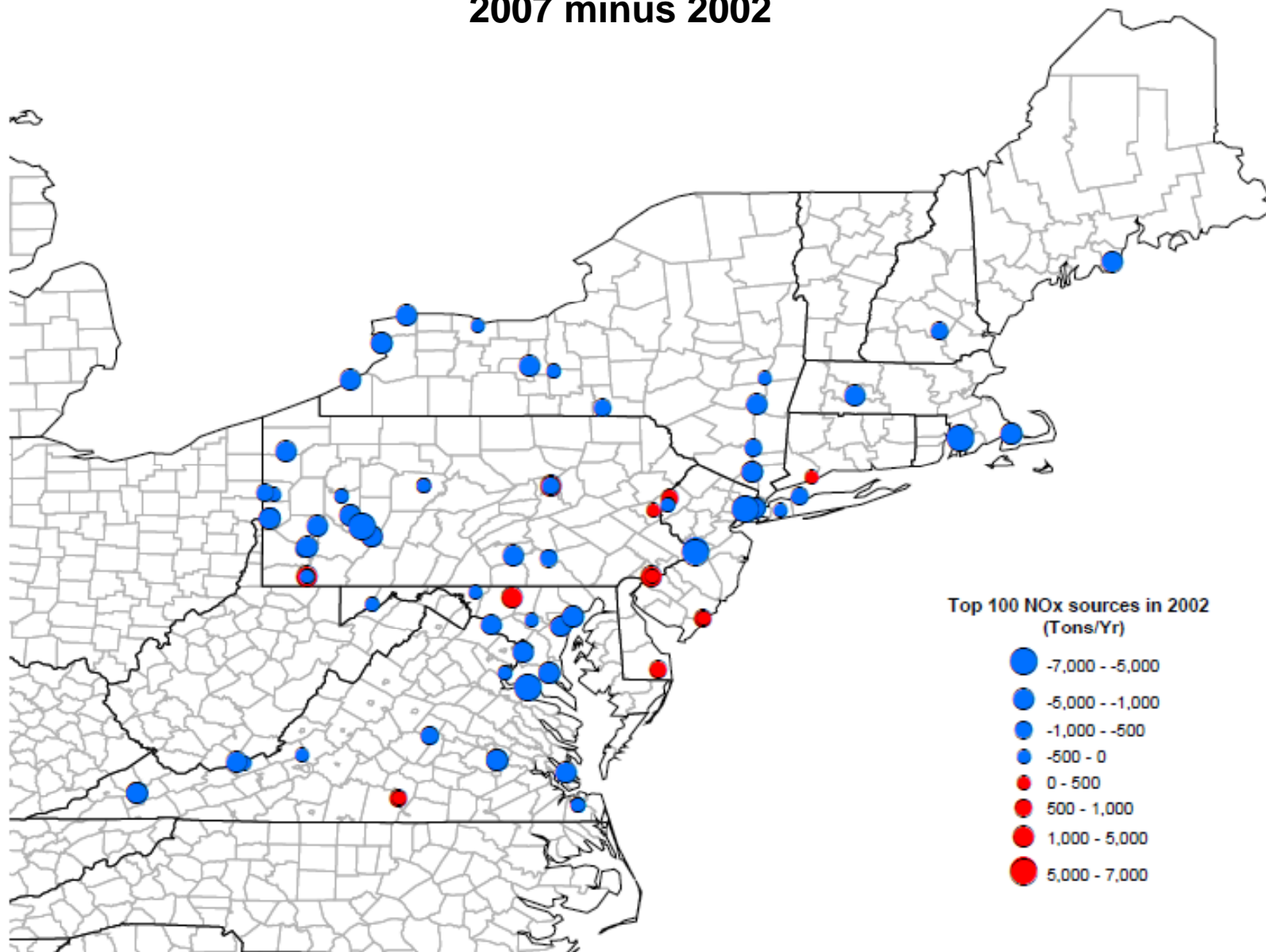
Emission Changes in Top NOx Sources 2007 vs. 2009 BOTW



Top NOx Sources in MANE-VU 2002 Version 3



Change in NOx Emissions from the Top NOx Sources 2007 minus 2002



Status of Area Source Inventory

- States submitted Area source inventory in January 2010.
- Contractor adjusted to 2007, performed QA and states are responding to QA issues
 - Working on filling gaps, resolving issues



Area Source Improvements

- **Ag Ammonia**

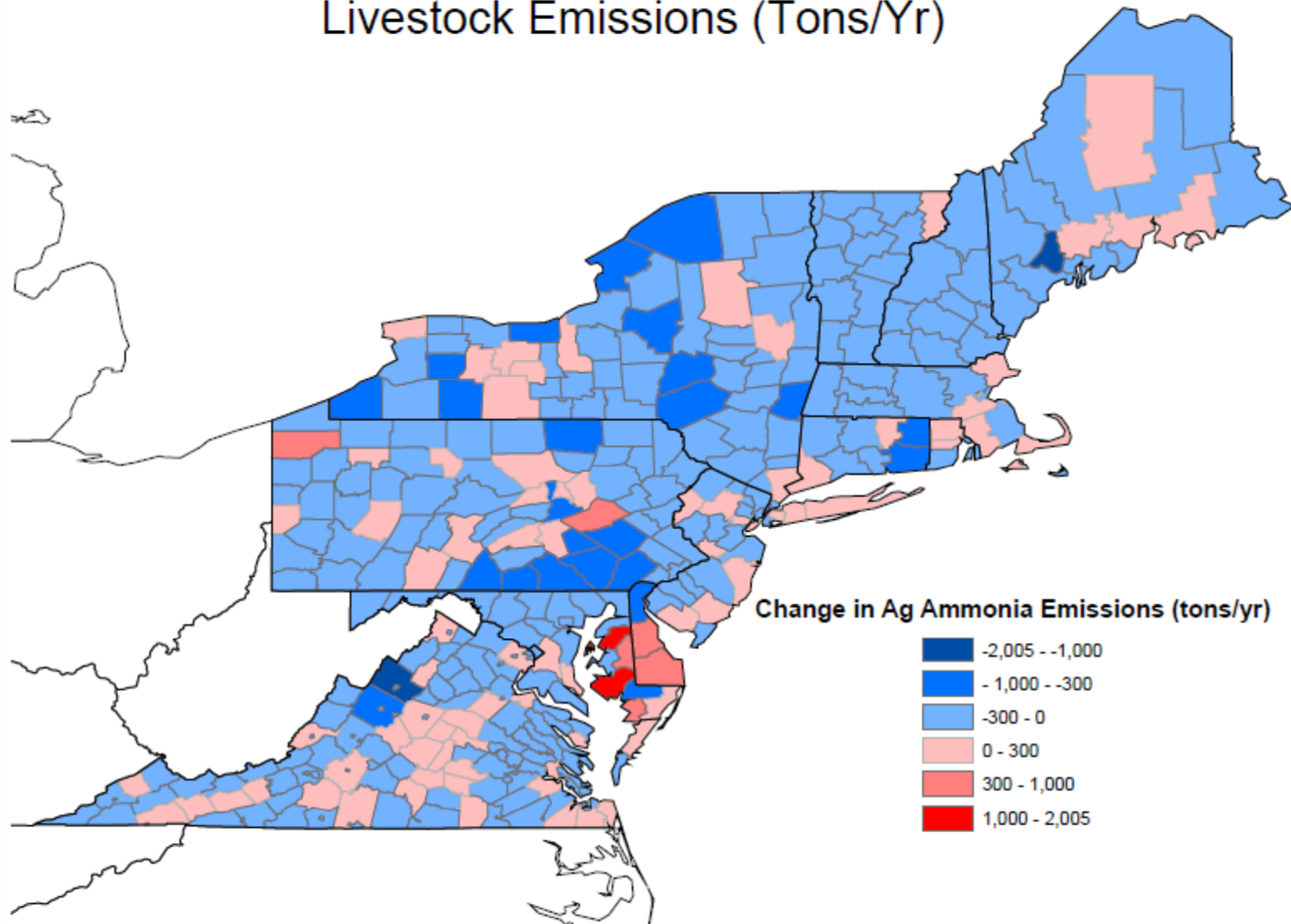
- EPA updated the inventory with the 2007 Census of Agriculture
 - OTR states reviewed the emissions and activity data and provided updates to EPA
 - Final state review underway

- **Residential Wood Combustion**

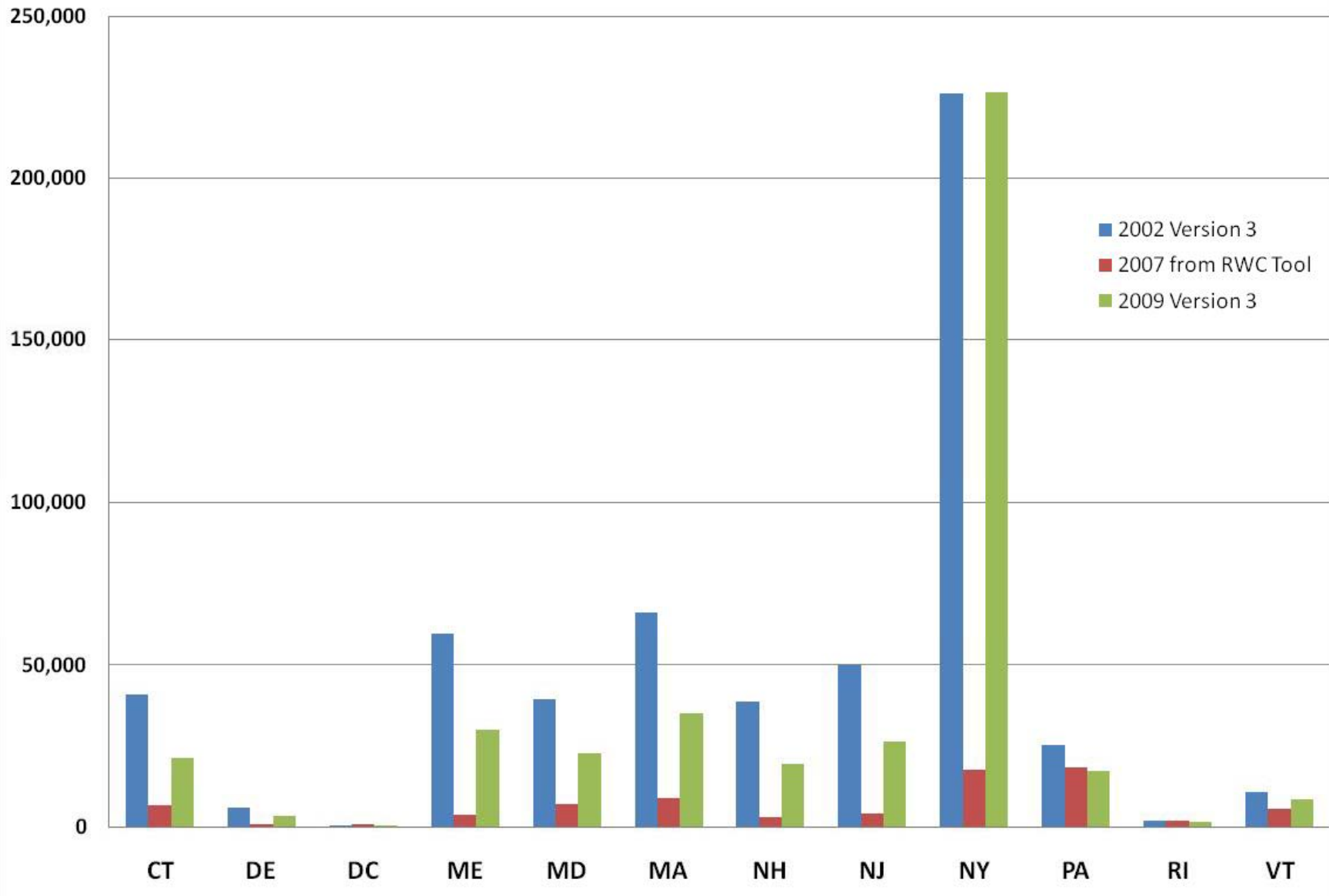
- EPA developed calculation tool with 2007 population updates
 - OTR states reviewed the activity data and provided comments to EPA
 - Final state review underway



Change in Ag Ammonia Emissions from 2002 to 2007 Livestock Emissions (Tons/Yr)



Comparison of Annual Residential Wood Combustion VOC Emissions



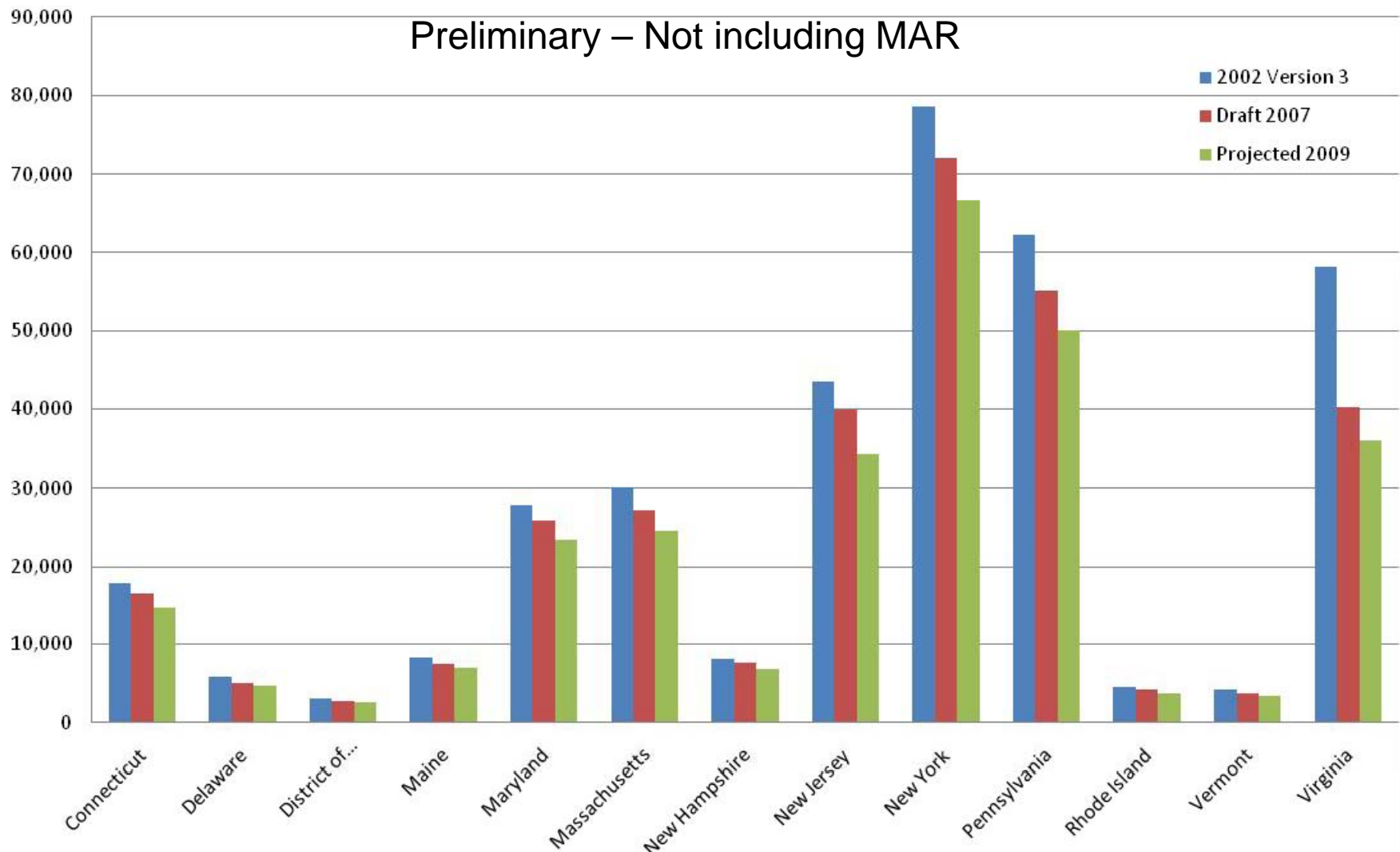
Non-road Mobile Sector Status

- **MACTEC ran the NONROAD model in NMIM**
 - 2007 household and population data, state input
 - Documentation will be posted for review soon
- **Marine, air, and rail categories**
 - Working with EPA on Marine and Airport Inventory
 - Plan to include offshore shipping emissions from EPA
 - Inter-regional effort to update rail data
 - Expecting to receive information soon



NOx Emissions from Nonroad Sources

Preliminary – Not including MAR



Schedule for Non-road Sector

- **October 2009** – MACTEC ran NMIM with revised inputs and prepares NIF files.
- **November 2009**– States reviewed results
- **December 2009**– MACTEC addressed state comments on '07 NMIM inventory.
- **March 2010** – States to submit draft M/A/R data.
- **April 2010** – Expect stakeholder review of documentation of NMIM/NONROAD run.

On-road Mobile Sector Status

MOVES Model

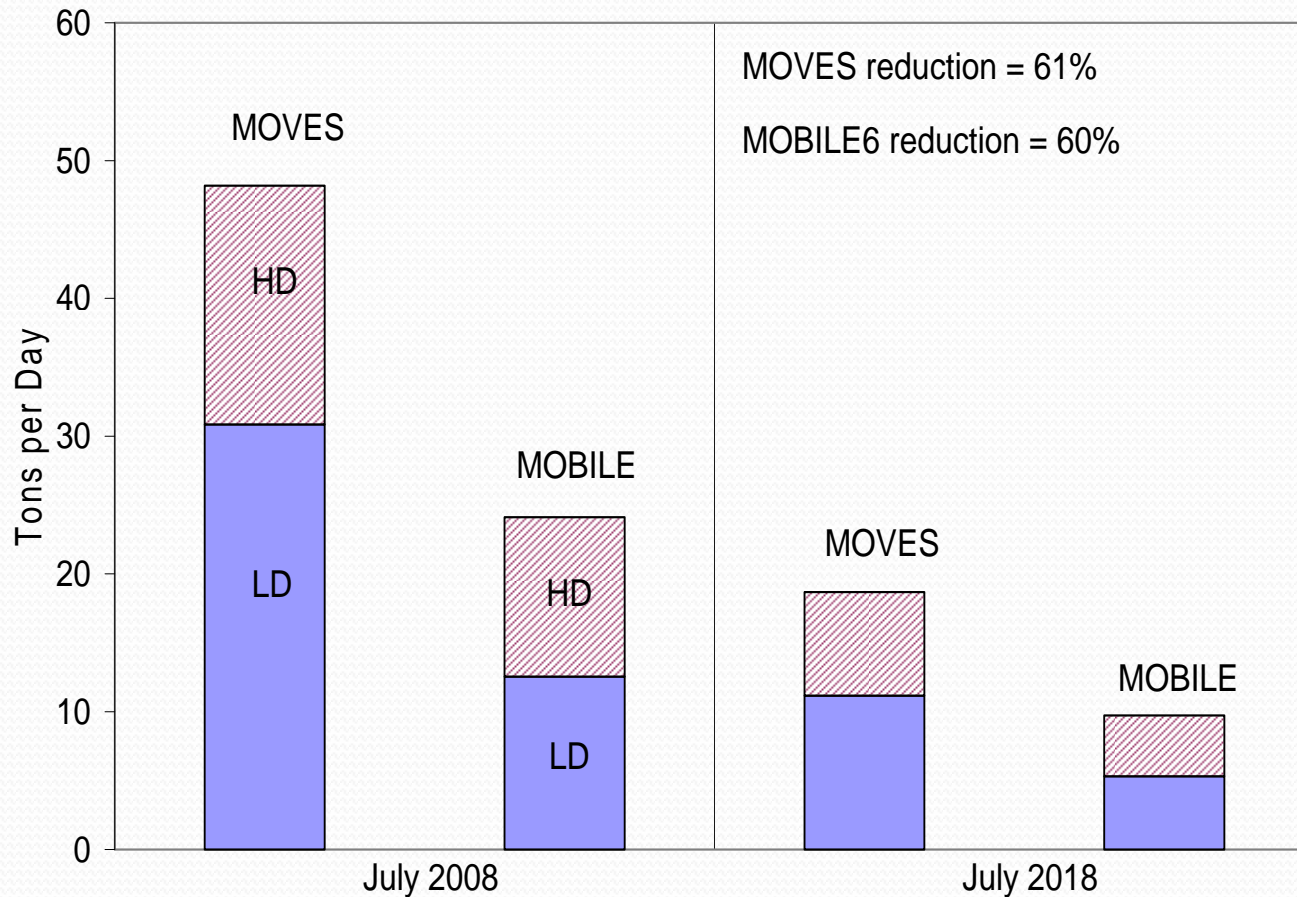
- Released in December, 2009
- States preparing input data
- EPA developing interface with SMOKE
 - Will not run MOVES until this is released
- Considering how to structure the runs to achieve in reasonable time



Potential Emission Changes in Draft MOVES

Queens County, NY – NOx

Queens County NOx



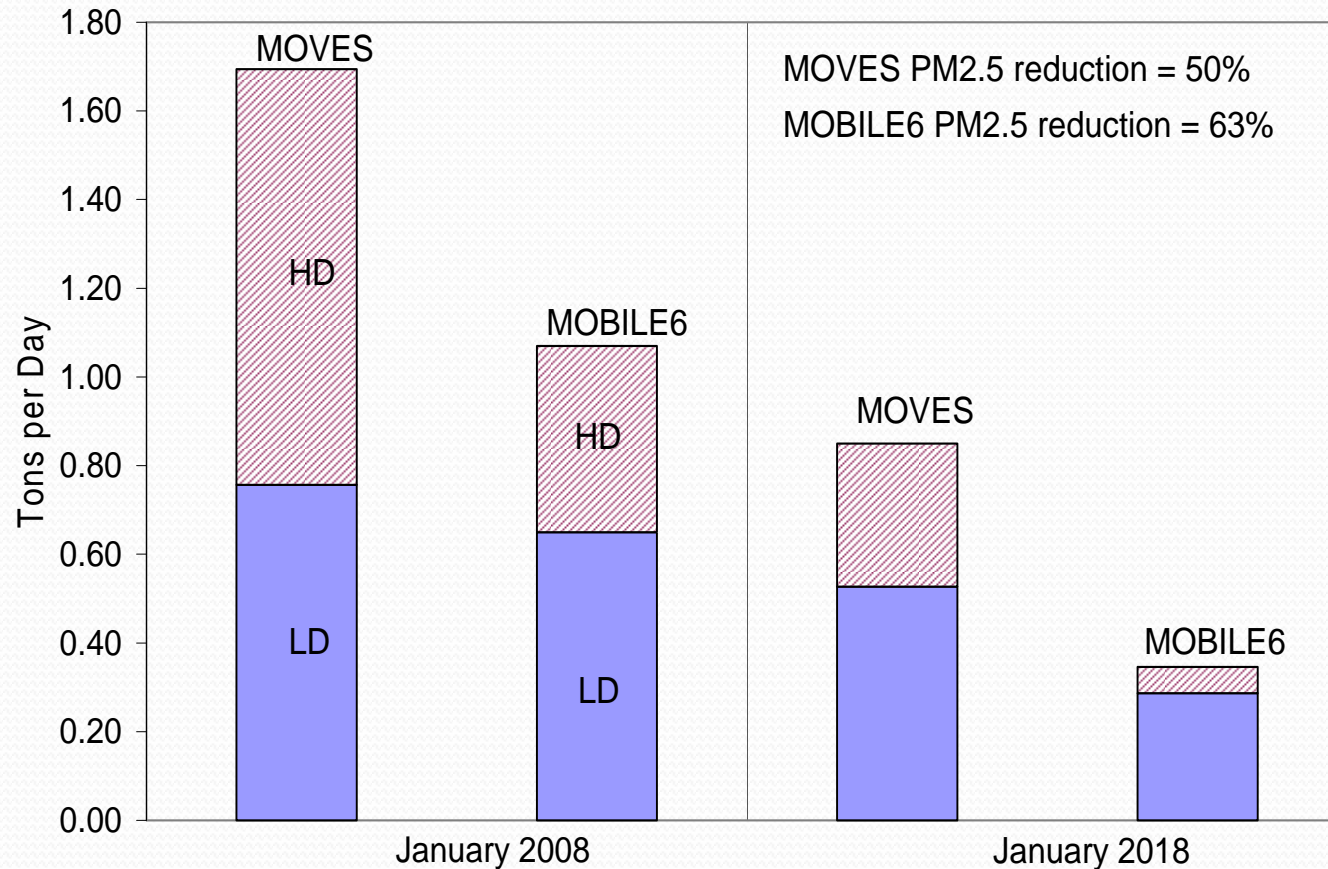
- NOx emissions and control effectiveness may increase

Source: OTAQ

Potential Emission Changes in DraftMOVES

Queens County, NY – PM2.5

Queens County PM2.5



- PM2.5 emissions may increase, especially for heavy duty vehicles,

Source: OTAQ

and control effectiveness may decline

4. Finding the data and documents

- The MARAMA Website –
 - Projects
 - 2007 Base Case Inventory
 - www.marama.org/projects
 - Look for hourly point starting today, area soon, NONROAD documentation soon



Thank You!

Susan Wierman & Patrick Davis

MARAMA

443-901-1882

swierman (at) marama.org

pdavis (at) marama.org