

- Sensitivity Analyses - Benefits Of Potential National Control Measures

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Ozone Transport Commission Meeting
Baltimore, MD
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Overview

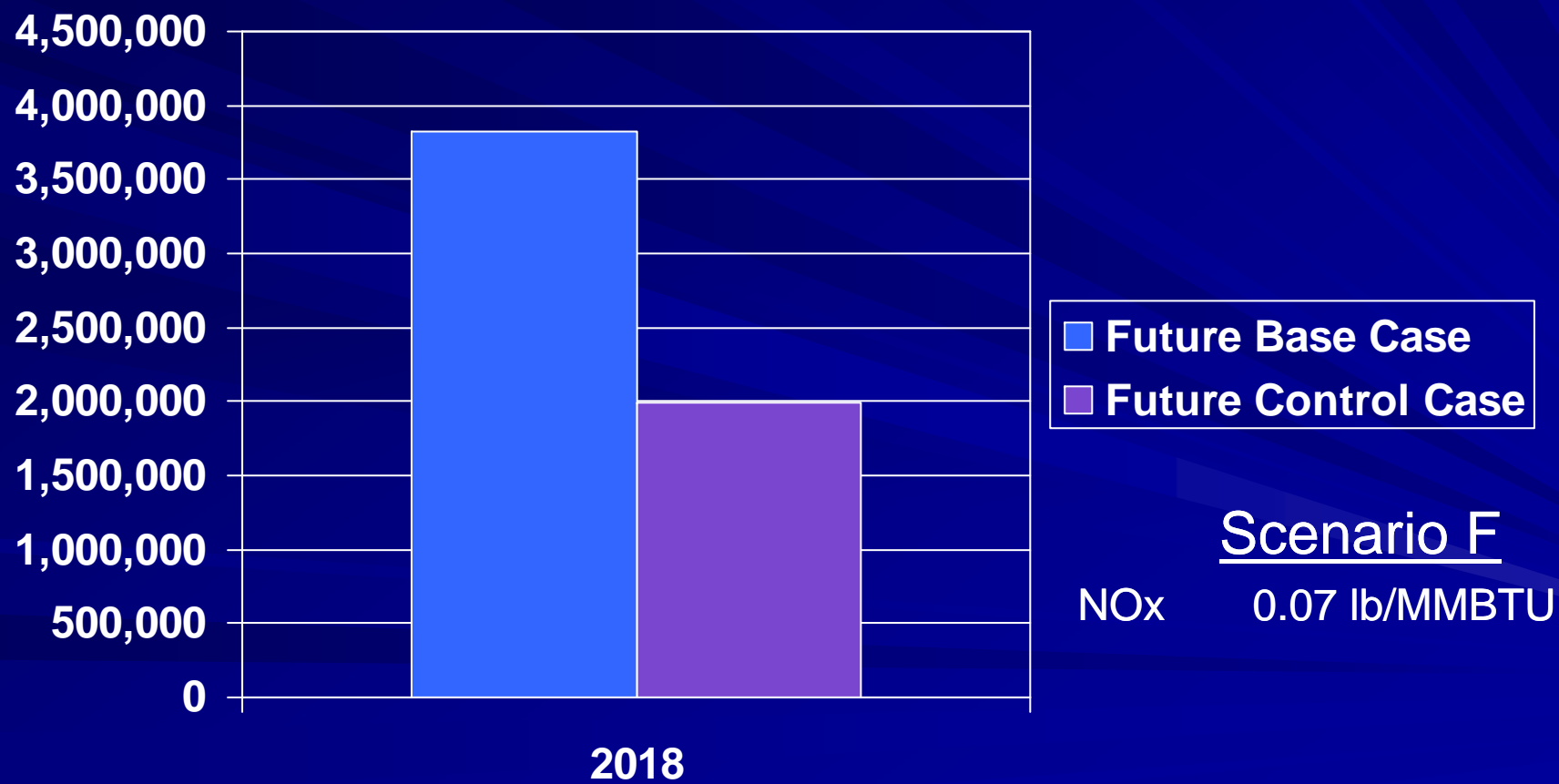
- Significant Ozone Reduction Benefits Result from National Controls at:
 - Electric Generating Units (EGUs),
 - Industrial, Commercial, and Institutional (ICI) Boilers,
 - Large Storage Tanks, and
 - On-Road Mobile Sources
- More Reductions will be needed to attain the 75 ppb or lower health standard in the Eastern United States

Sensitivity Analyses

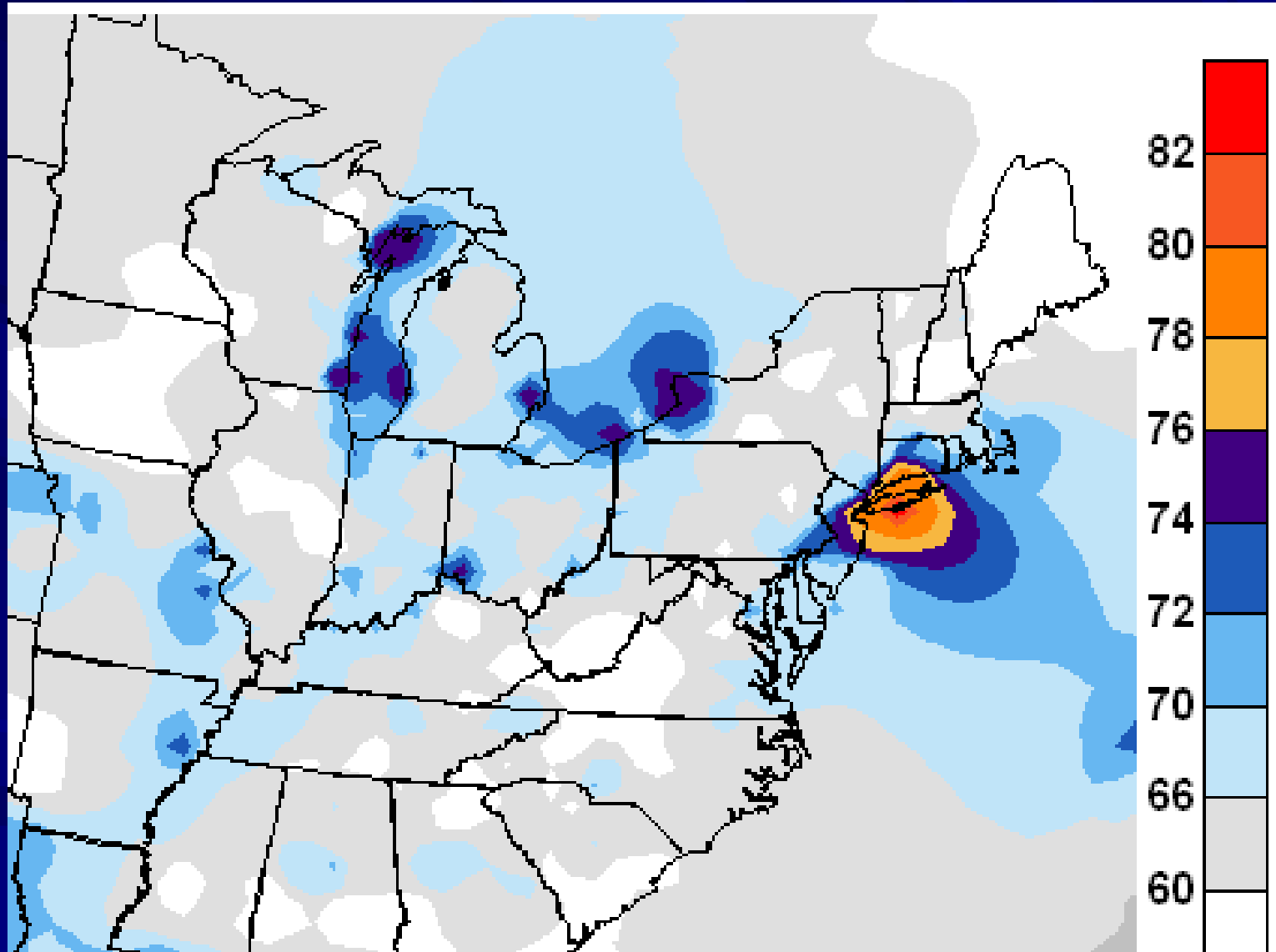
- Collaborative Effort - Midwest, Northeast, Mid-Atlantic States
 - Focused on Electric Generating Units (EGUs)
 - Growth through 2018
- New Jersey
 - Focused on
 - Electric Generating Units (EGUs)
 - Industrial, Commercial, and Institutional (ICI) Boilers
 - Large Storage Tanks
 - Growth through 2012
- Both – 2018 Mobile Emissions
 - On-Road estimated using MOBILE6

Collaborative Effort EGU NOx Control Strategies

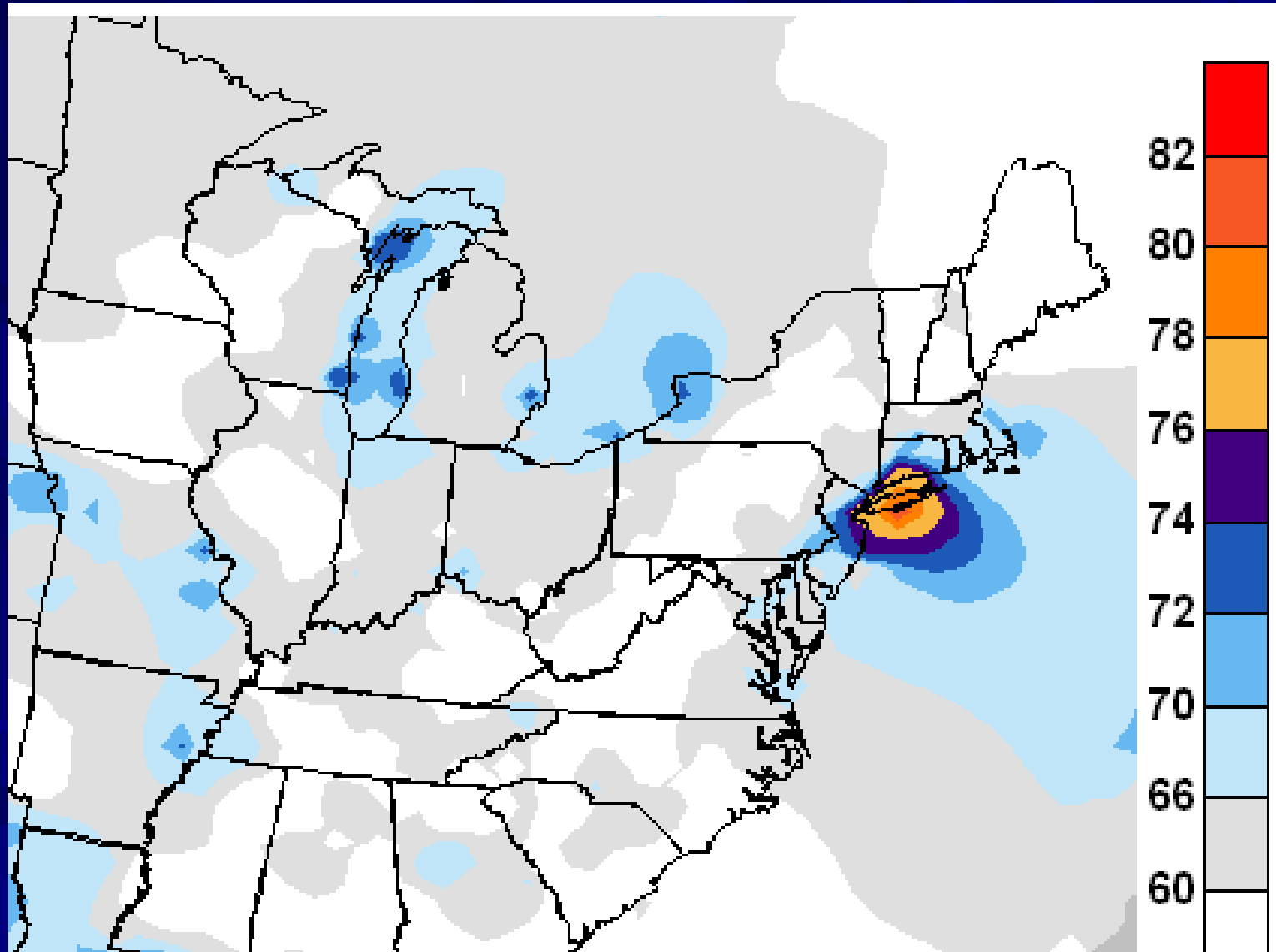
Eastern U.S. Annual EGU Emissions (TPY)



8-Hours Ozone Future Base Case



8-Hour Ozone Future Control Case



NJ Sensitivity Analysis Modeling Description

- **Model** — CMAQ v4.5.1 on 12km OTC SIP modeling domain
- **Meteorology** — August 2002
- **Base Year** — 2002B1
- **Future Year Base Case** — 2012BOTW_B4 with no CAIR strategy (from IPM) but with NO_x budget program
- **Future Year Control Scenario** — potential NO_x, VOC emission controls
- **Details** — used monitor sites with 5 or more RRFs \geq 60 ppb in the analysis

Control Strategies

EGU Performance Standard

- NO_x = 0.10 lbs/MMBtu (domain wide)

ICI Boiler

- 50% NO_x reduction on ICI Boiler (domain wide)

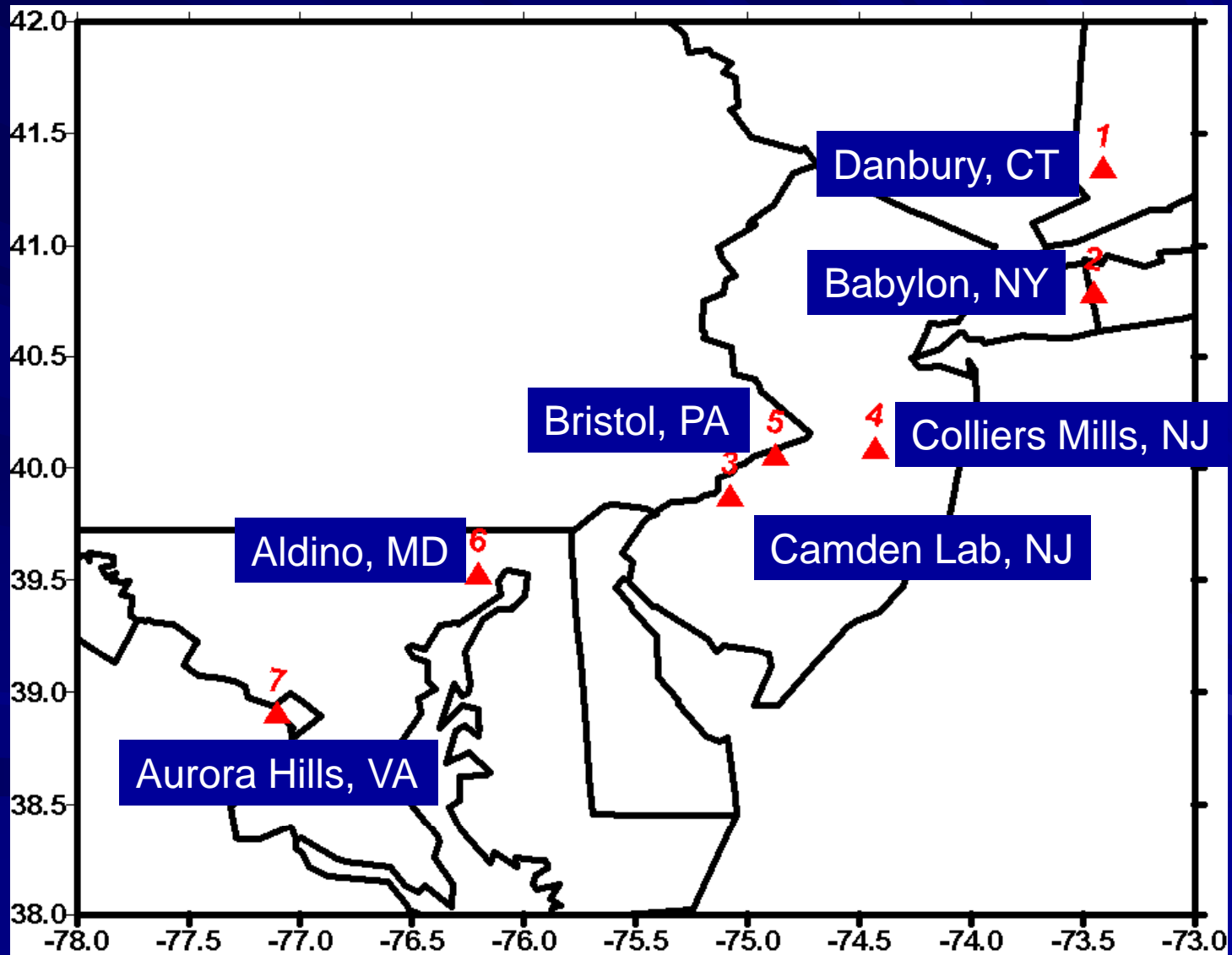
Storage Tank

- 80% VOC reduction on Storage Tank (domain wide)

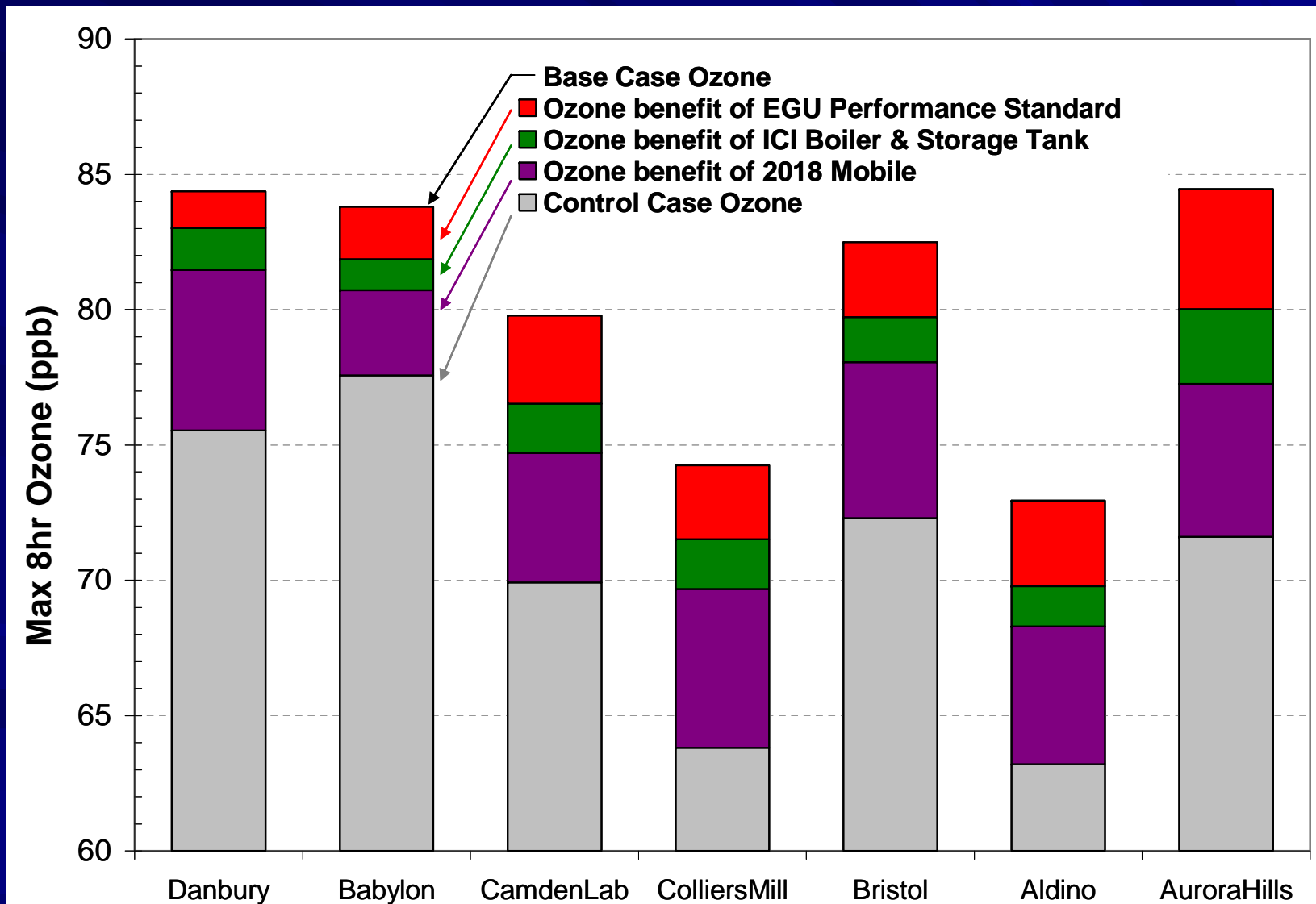
On-road Mobile

- Utilize 2018 mobile source emissions (domain wide)

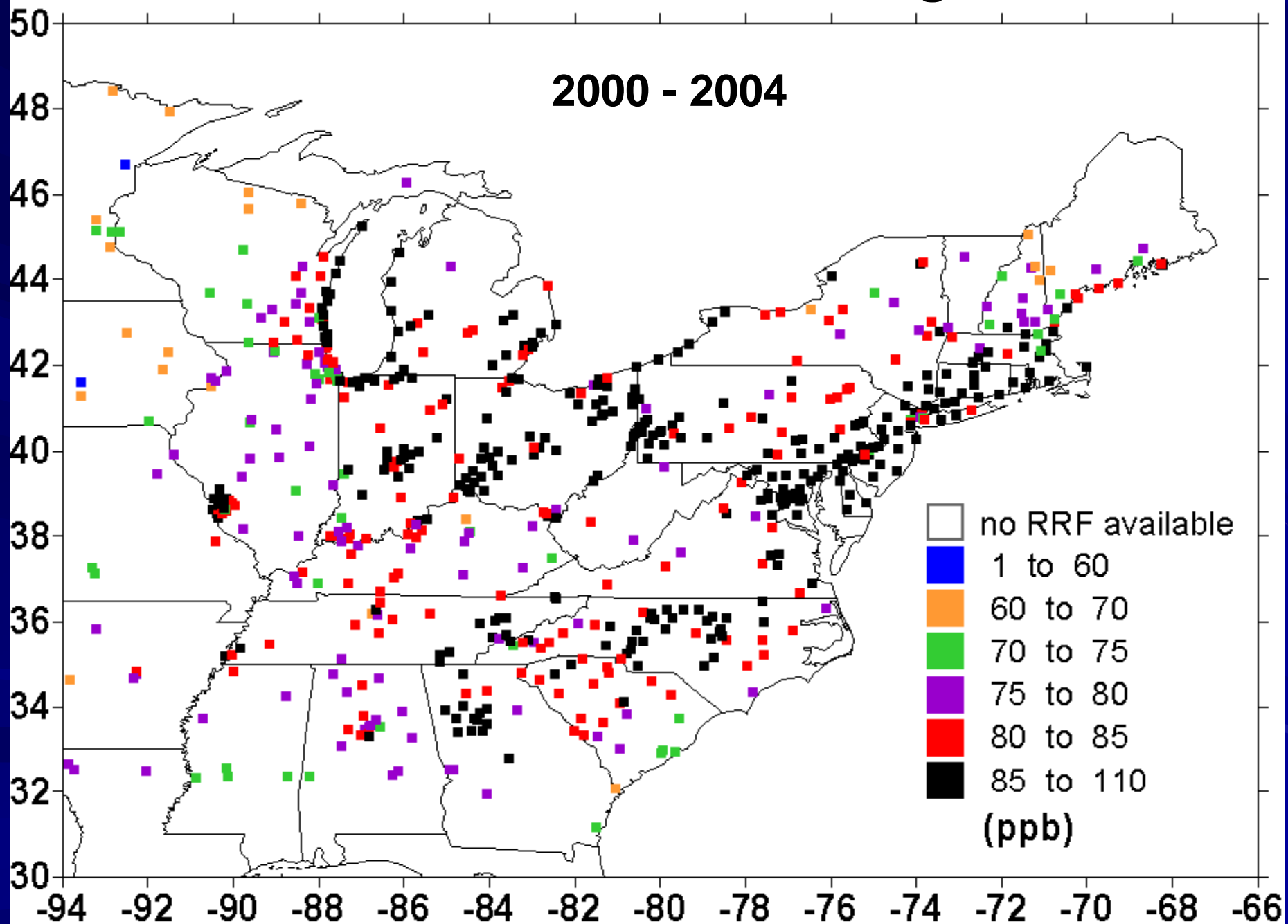
Ozone Sites of Interest



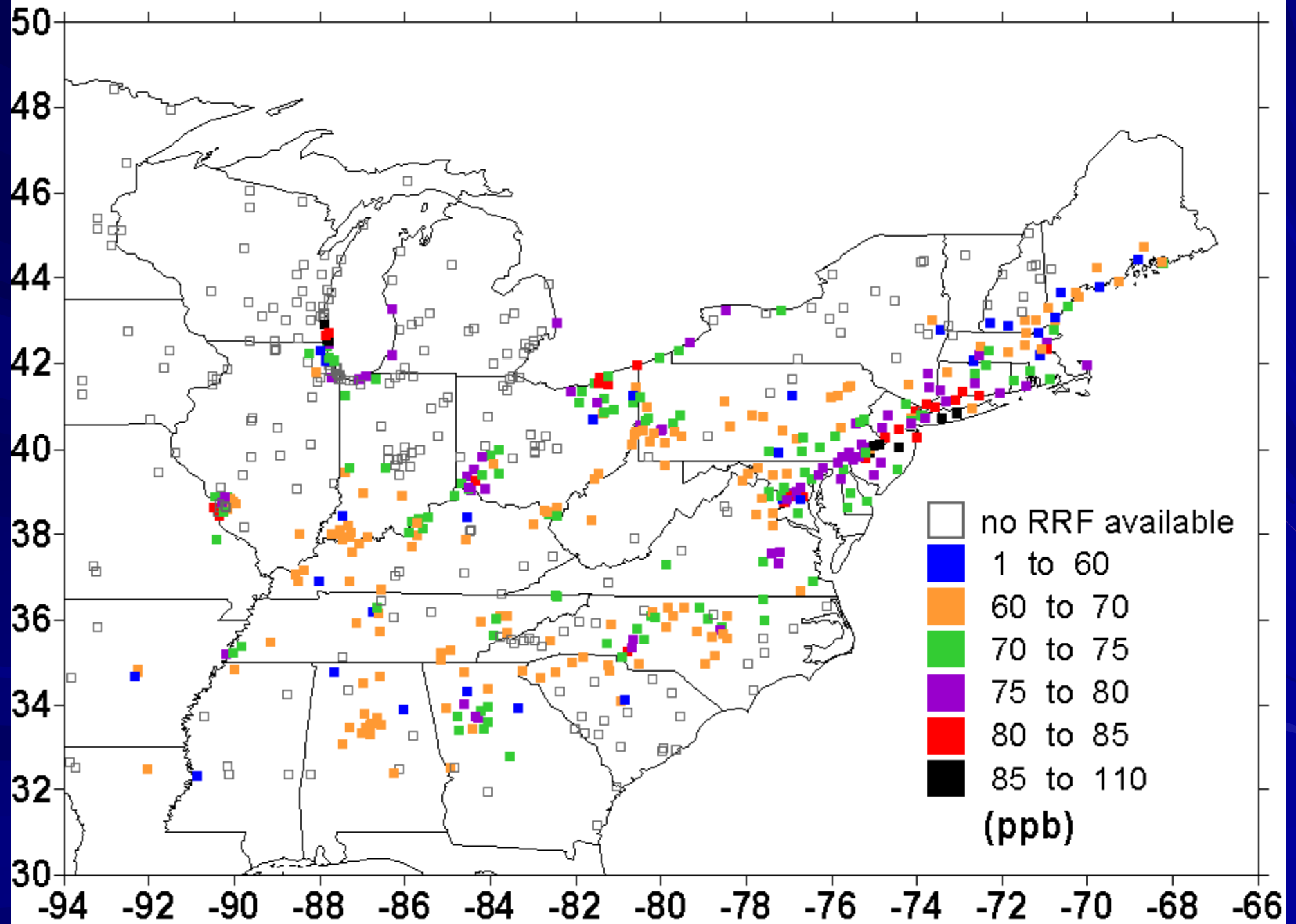
Stepwise Modeling Results



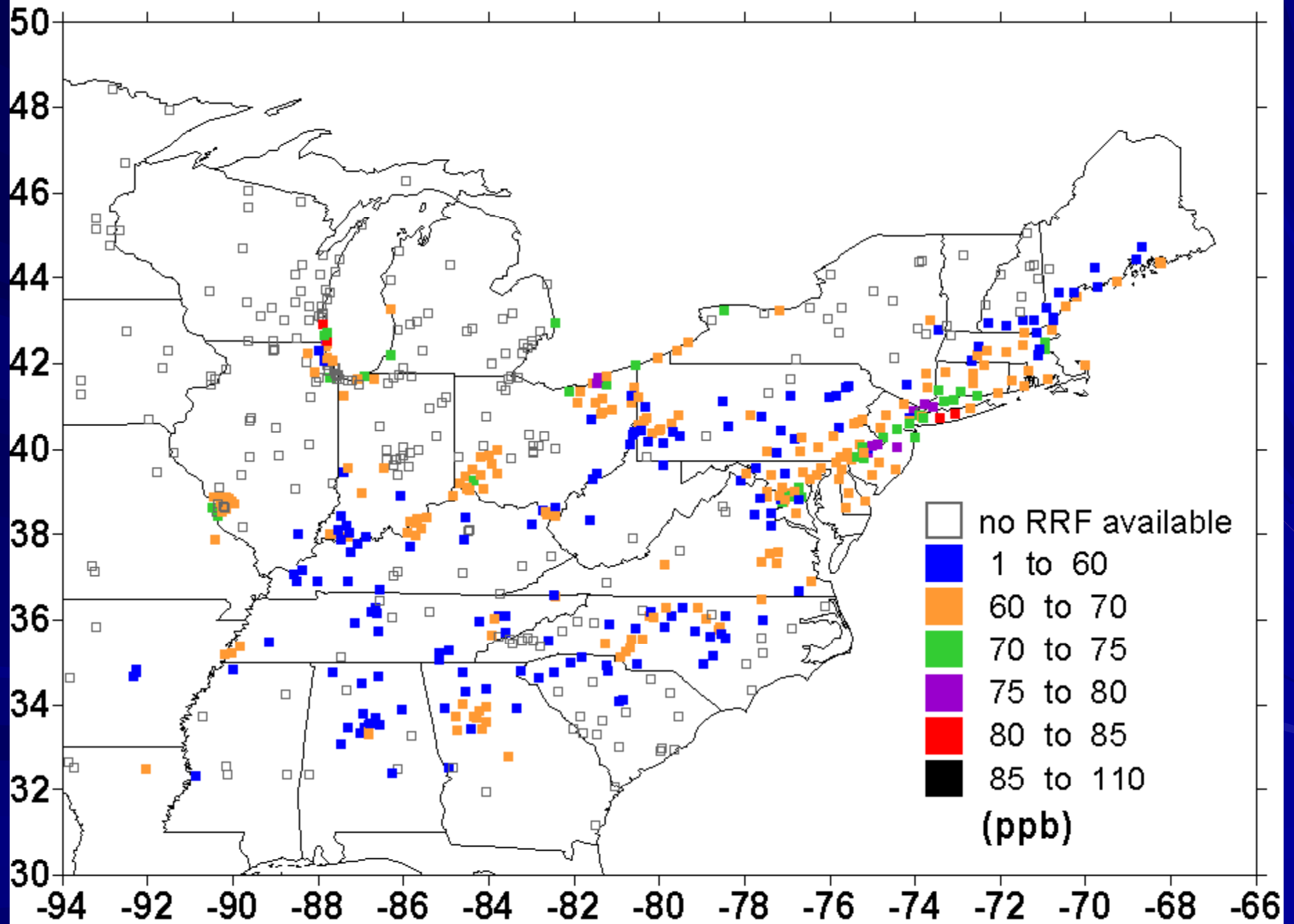
2002 8hr Ozone Baseline Design Values



8hr Ozone Future Base Case

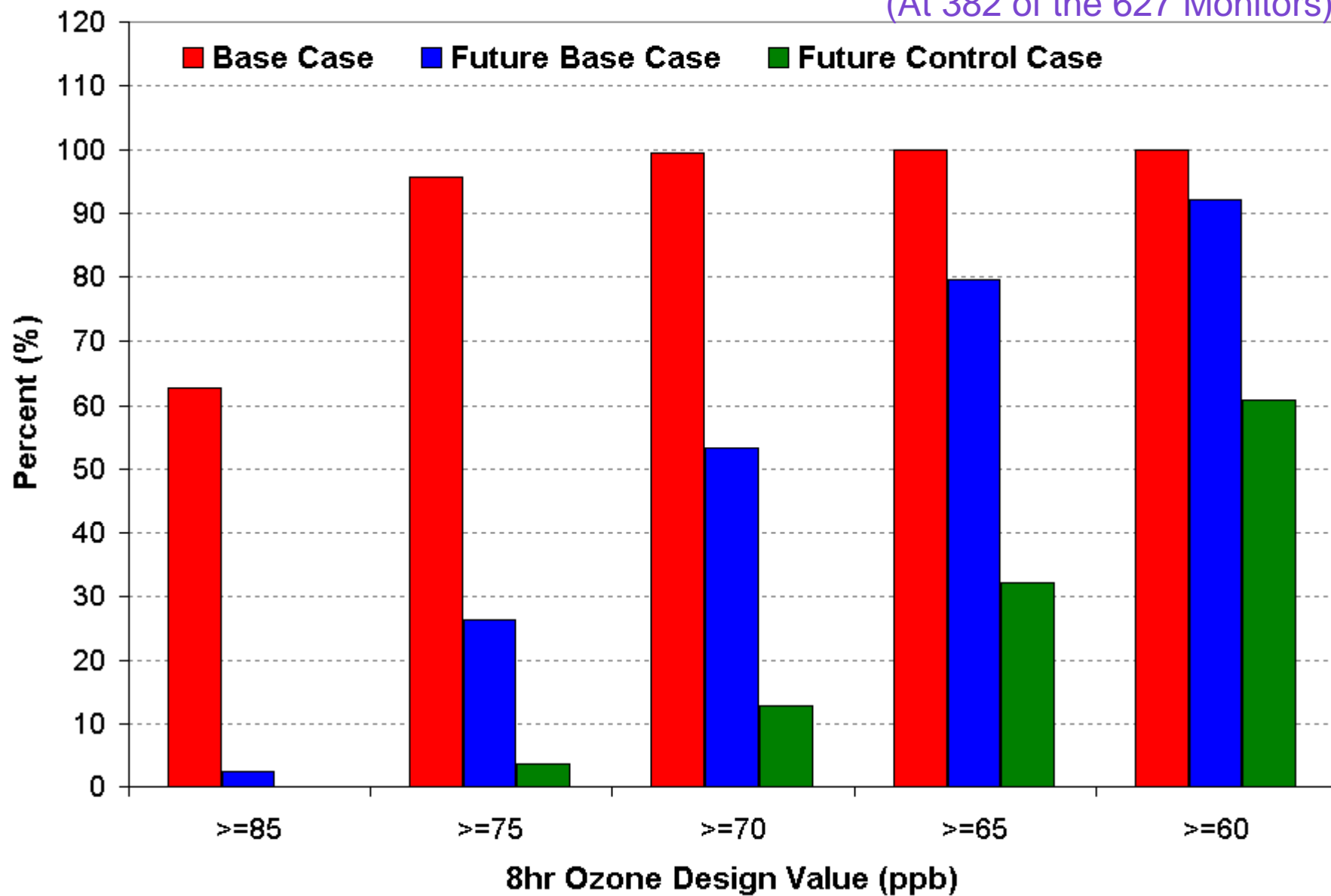


8hr Ozone Future Control Case



Strategy Effectiveness Monitors Above Threshold

(At 382 of the 627 Monitors)



Caveats

- Analyses Build on Existing Modeling Platforms
- NJ Analysis - One (1) month of data
- High Electric Demand Day Emissions not accurately represented
- Uses MOBILE6 Emission Estimates

Conclusions

- Significant improvements will require:
 - Time for fleet turnover
 - Federal electric generating unit (EGU) and industrial, commercial, and institutional (ICI) boiler and storage tank controls will provide significant benefits
 - Additional measures will be needed to attain the 75 ppb or lower health standard