

# Update on Ozone Transport to Metro Washington Air Quality Committee

December 17, 2014

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**Ozone Transport Commission**



# Ozone Transport Commission

- Established by 1990 Amendment to the Clean Air Act
- Members include 12 mid-Atlantic and NE states, the District of Columbia, and US EPA as a non-voting member
- Has cleared a path for improved air quality by addressing all sources of emissions of VOCs and NO<sub>x</sub>
- Ozone standards are health and welfare based



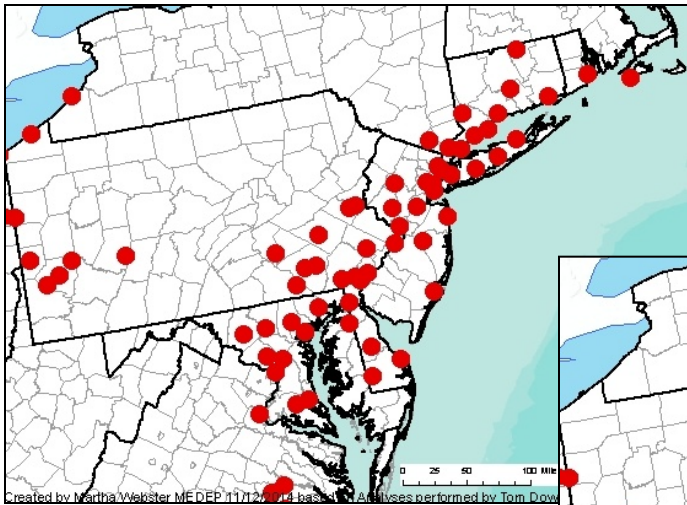
# Science of Ozone Transport

## Science

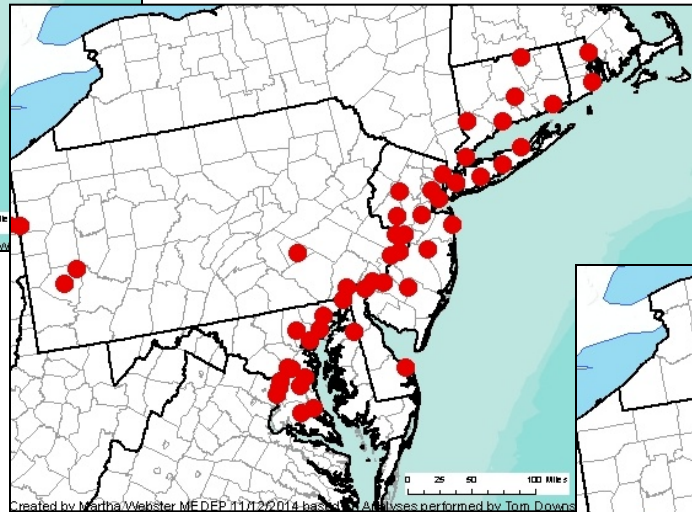
- Emission Inventories + Meteorological Modeling + Photochemical Modeling
- Pollutant transport patterns better understood
  - Influence of elevated ozone reservoir
  - Local NO<sub>x</sub> and VOC impact
  - Meteorological conditions and patterns
- We have experience as to what works in the real world
- Transport continues to be a problem
- Transport can be as much as 50-90 percent of DC Metro area ozone problem

# Change in OTR Violations 2012-14

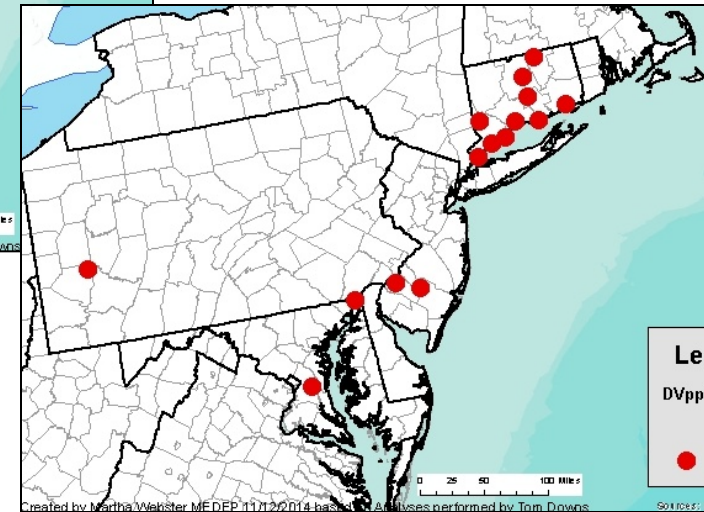
**2010-2012**



**2011-2013**



**2012-2014**

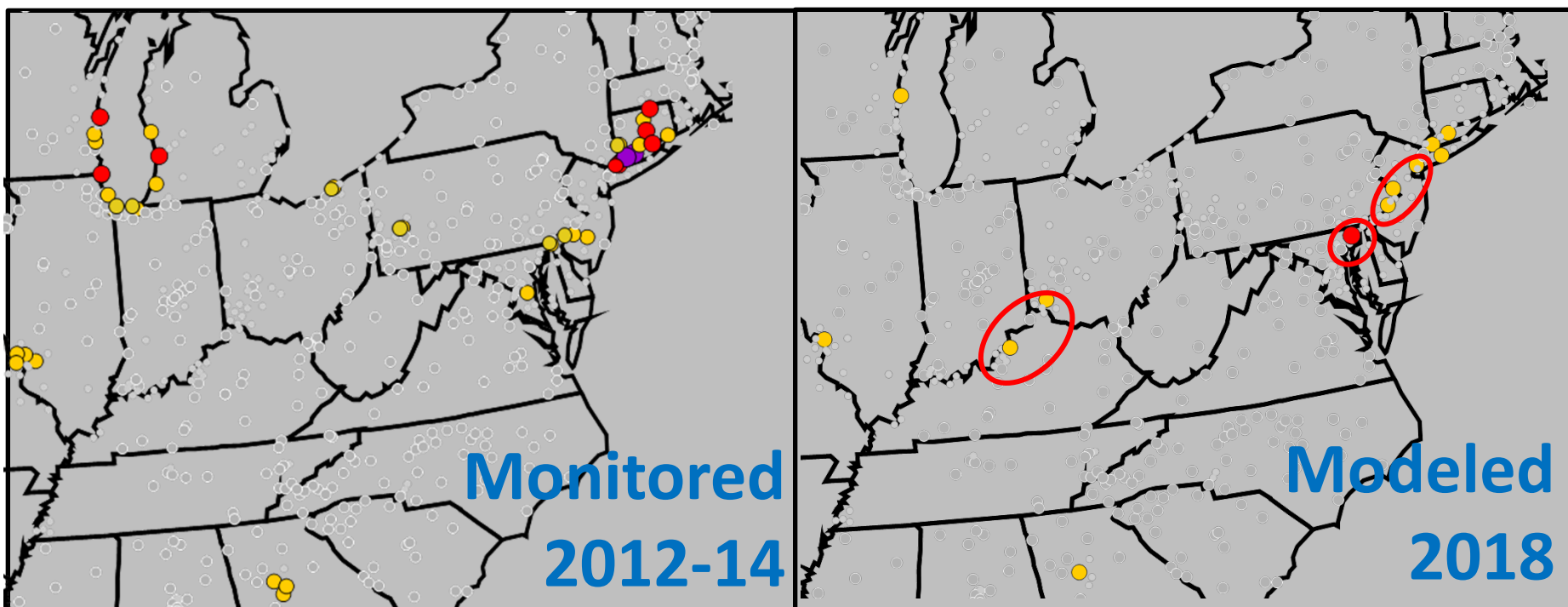


*2013 and 2014 were cool summers and did not observe typical transport patterns; 2011 and 2012 had more typical transport*

# Why Models Differ from Monitors

Are the models wrong?

- Models do pretty well – but don't predict variations in future weather
- Models typically simulate high-ozone weather & emissions



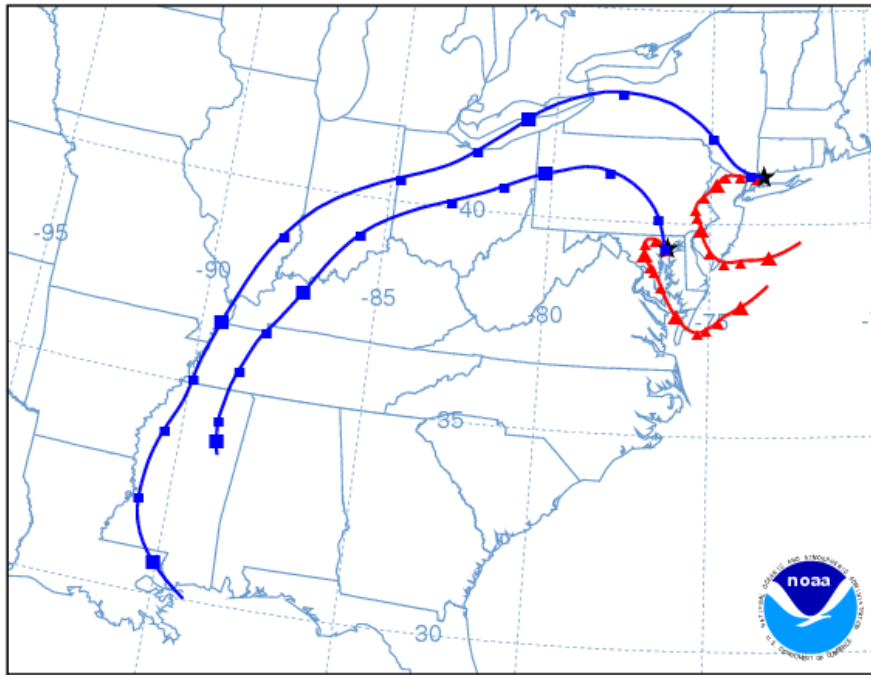


# Common Trajectories



## Corridor & Transport

NOAA HYSPLIT MODEL  
Backward trajectories ending at 2000 UTC 20 Jun 12  
EDAS Meteorological Data



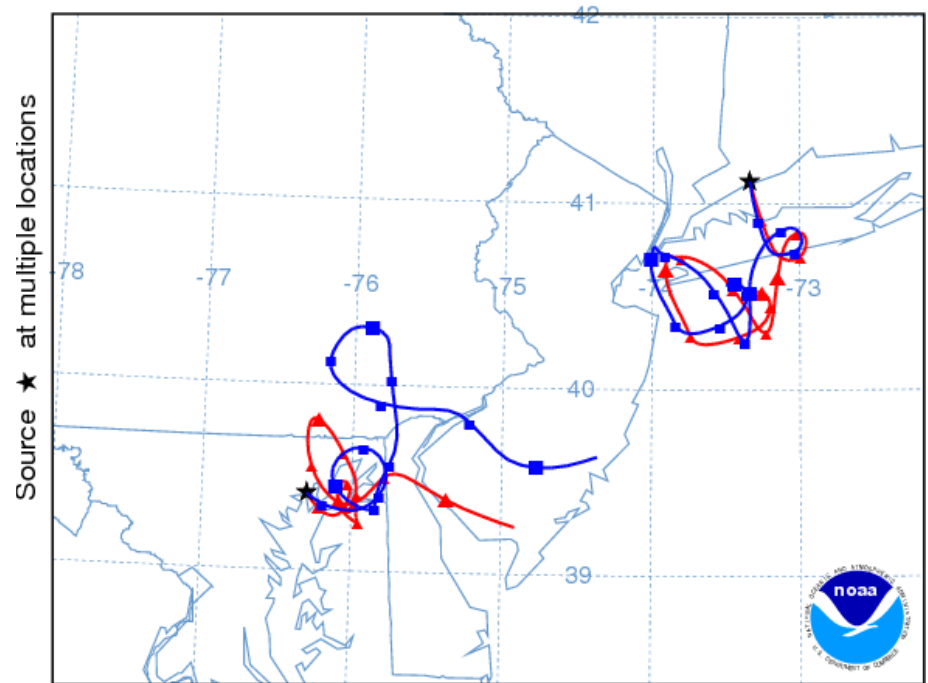
June 20, 2012

Westport CT 89ppb

Edgewood MD 89ppb

## Local Only

NOAA HYSPLIT MODEL  
Backward trajectories ending at 2000 UTC 22 Aug 12  
EDAS Meteorological Data

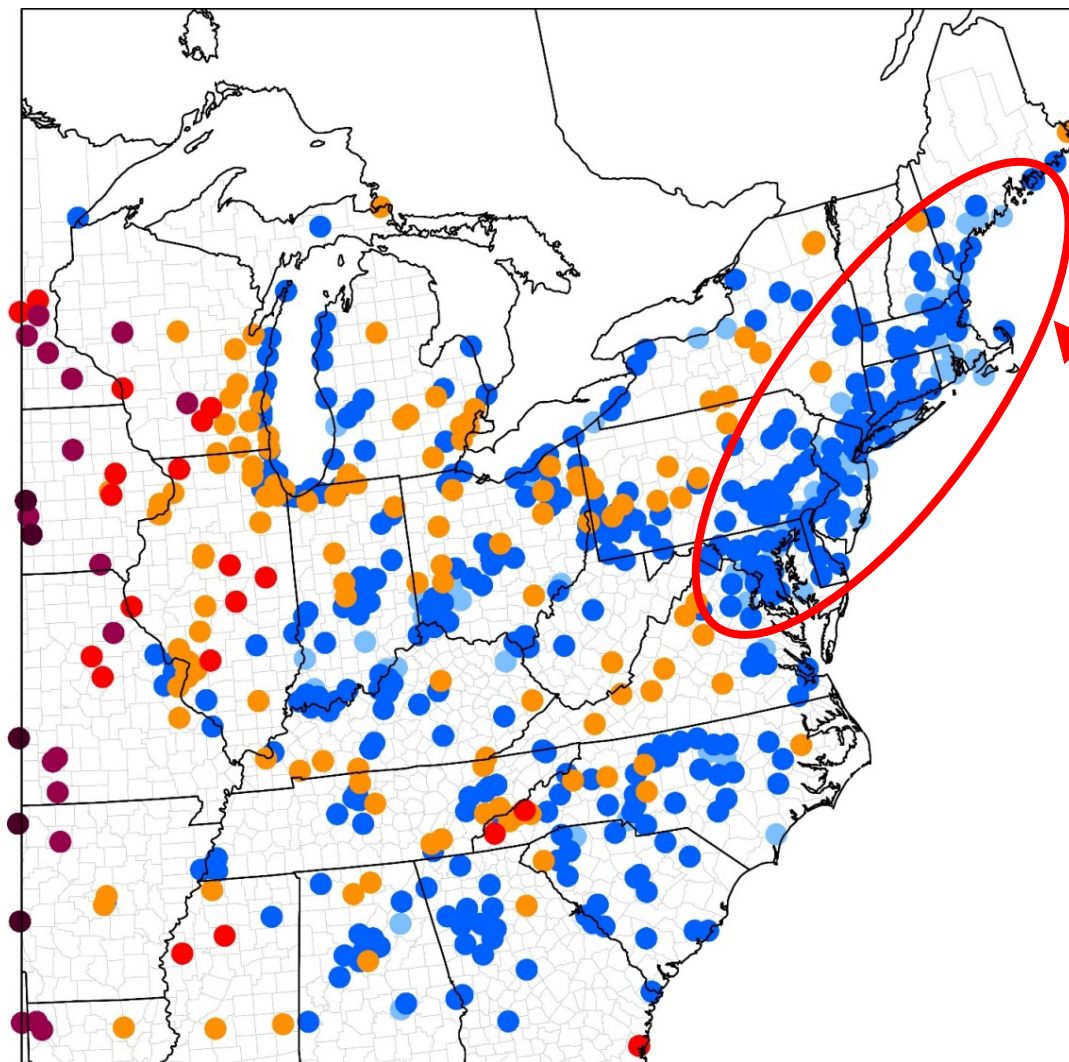


August 22, 2012

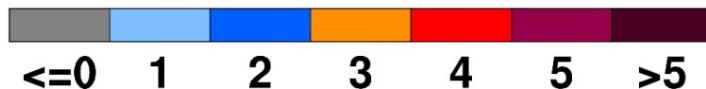
Westport CT 72ppb - Exceeded in CT

Edgewood MD 65ppb

# Boundary Condition Effect on OTR



Reducing boundary conditions by 10% translates into 1-2ppb ozone lower along Northeast corridor



# Tools that Shape Ozone Transport Policy

- Section 184/176 established OTR and OTC
  - NO<sub>x</sub> MOU/SIP Call, NLEV/Tier 2, Model Rules, etc.
- Federal Process not working well ...consistently behind in goal of protecting public health
  - Cross-State Air Pollution Rule (son of CAIR)
  - CAA §110a2D - “Good Neighbor” SIPs
  - State Collaborative
  - CAA § 176A petitions
  - CAA § 126 petitions





# Cross-State Air Pollution Rule Update

- Court stay lifted on EPA's transport rule Oct. 23, 2014
- 2 issues still before DC Circuit Court: 1) approved SIPs v. FIP; and 2) geographic areas of contribution
- On January 1, 2015 we move from CAIR to the 1<sup>st</sup> Phase of CSAPR, and to the 2<sup>nd</sup> Phase on 1/1/2017
- Allocations already set for SO<sub>2</sub>, and annual and seasonal NO<sub>x</sub>
- Transport only addresses 1997 ozone standard of 85 ppb



# Cross-State Air Pollution Rule

- Good news is Supreme Court weighed in confirming EPA and State have clear authorities and responsibilities to address transport
- EPA now has a model rule and should plug in other NAAQS
- CSAPR is EGU-centric and almost 2 standards behind

# Good Neighbor Provision of CAA

- If upwind state contributing to another state ozone nonattainment, then owe “Good Neighbor” SIP (§ 110a2D)
- “Good Neighbor” SIPs were due 2011 (based on current/2008 75 ppb ozone standard)
- MD challenged EPA over VA’s GN SIP never being submitted
  - MD, CT and VA making progress working through mediated settlement; courts only as backstop
- Other challenges to EPA on numerous completeness findings (28+ states)
- States waiting on EPA guidance

# State Collaborative

- Desire for coordination developing emission inventories and modeling in Eastern US
- In 2013, approx. 30 State Air Directors started technical state collaborative
- Looked at:
  - EPA's Tier 3 and Low Sulfur Fuel Program
  - Changes in energy generation markets due to abundance of low cost NG, and to lesser extent, environmental programs (CSAPR & MATS)
  - Impact of low cost NG on ICI Boiler sector
- Recently elevated technical work on issues to gauge interest in policy level discussions

# CAA § 176 A

- Same part of statute that in part formed the OTR/OTC, also provided to petition for additional transport areas or increasing state participation in OTR due to significant contribution
- Dec. 2013 eight states petitioned EPA to broaden OTR by nine states
- 18-month 'clock' runs out July 2015
  - 8 states filed 176A Petitions: CT, DE, MD, MA, NH, NY, RI, VT
  - 9 states subject of Petitions: IL, IN, KY, MI, NC, OH, TN, VA, WV





# CAA § 126

- Allows any states & municipalities to petition EPA for finding a stationary source or group of sources contributes to violation of §110(a)(2)(D)...any NAAQS
- Emission limitations, compliance schedules or cease operations within 3 months
- Influence of § 126 has increased since 1999 (unused from 1977 – 1998!)
  - NJ petitioned for finding SO<sub>2</sub> emissions from Portland Generating Station in PA - successful
  - Eliot Maine (assisted by Sierra Club) petitioned for finding SO<sub>2</sub> 1-hour from Schiller Station in NH
  - 8 states petitioned for finding on NO<sub>x</sub> emissions - backstopped EPA issuing NO<sub>x</sub> SIP Call
  - NC petitioned for finding - supported EPA issuing CAIR FIPs

# Challenges

- Get power generators to run the controls they have already installed!
- Proposed ozone range to tighter standard of 60 to 70 ppb ...
  - Second time EPA's science advisory committee has recommended this range
  - lower the standard, the more regional NOx reductions needed
  - Future reductions will need to come from mobile sources and stationary sources
  - Secondary welfare standard tracking primary health based standard
  - Even greater reductions needed to address both local and transport ozone problems

# Challenges

## **OTC and states reaching into policies and rules for many sources**

- *After Market Vehicle Catalyst Replacement Model Rule*
- Benchmark best practices at *Ports*
- Expand participation and effectiveness of *SmartWay*
- Investigating potential from regionally significant *VMT reduction strategies*
- Benchmark states' *Reasonable Available Control Technologies (RACT)*
- Second cut at *Coatings and Consumer Products* model rules
- Address emissions from *Distributed and Emergency Generators*
- *ICI Boiler* whitepaper as part of *Largest Contributor Analysis*
- Work on programs to reduce emissions from *HDV legacy and new vehicles*
- *Assess Combined Heat and Power (CHP)* role in reducing emissions and energy efficiency
- And more .....

# Questions?

*Ozone Transport Commission*

[www.otcair.org](http://www.otcair.org)

*202/508-3840*



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