OZONE TRANSPORT COMMISSION

Reducing Air Pollution and Complying With the New Ozone Standards

How are We Doing?

OTC Fall Meeting

November 5, 2009

Topics Covered

- What does the science say?
  - The OTC Conceptual Model … or
    - Where does our ozone pollution come from and what do we do about it?
- What are we doing?
  - What does the preliminary modeling tell us?
  - How are we doing with new "Inside-the-OTR" control programs?
  - How are we doing with "National" rules to reduce transport?
- Will we make it?
  - Are we on schedule?

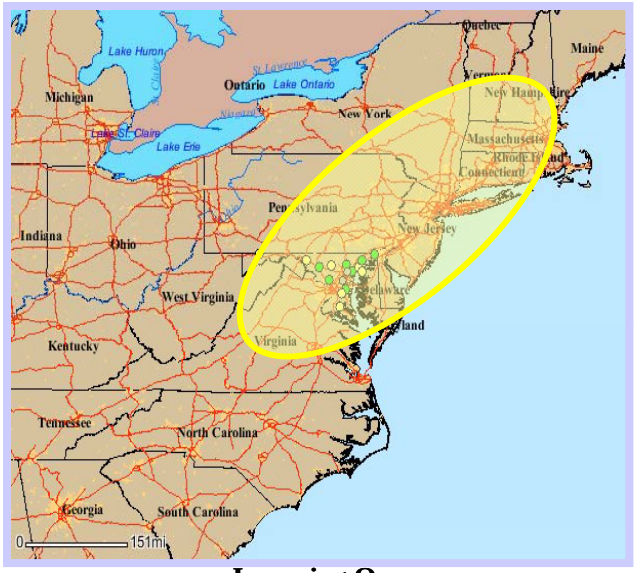
The Science

Two Significant New Findings

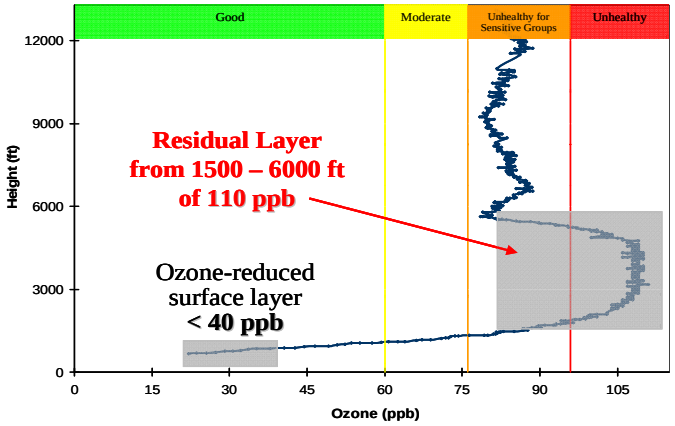
- The existence of an **"Elevated Reservoir"** of high ozone sitting above the Mid-Atlantic and Northeast areas during the morning hours on bad ozone days
  - Transport fills the reservoir
- The **transport** and build-up of ozone and ozone precursors **at night**

* A more detailed summary of the OTC Conceptual Model can be found at http://www.otcair.org/document.asp?fview=meeting#

The Elevated Ozone Reservoir



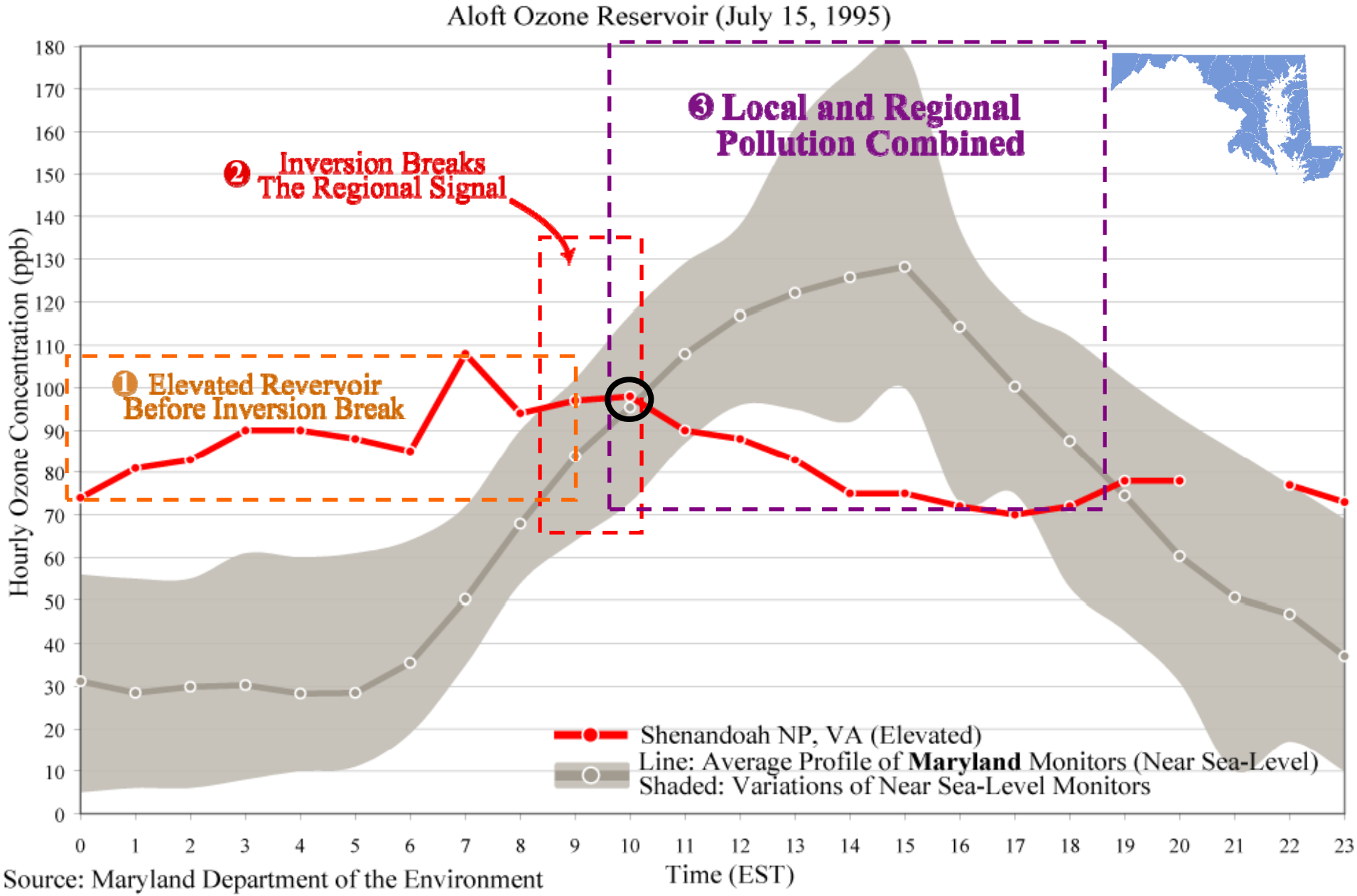
Incoming Ozone
August 2, 2005 (7:00 AM EDT)
Beltsville, MD



Source: Maryland Department of the Environment & Howard University

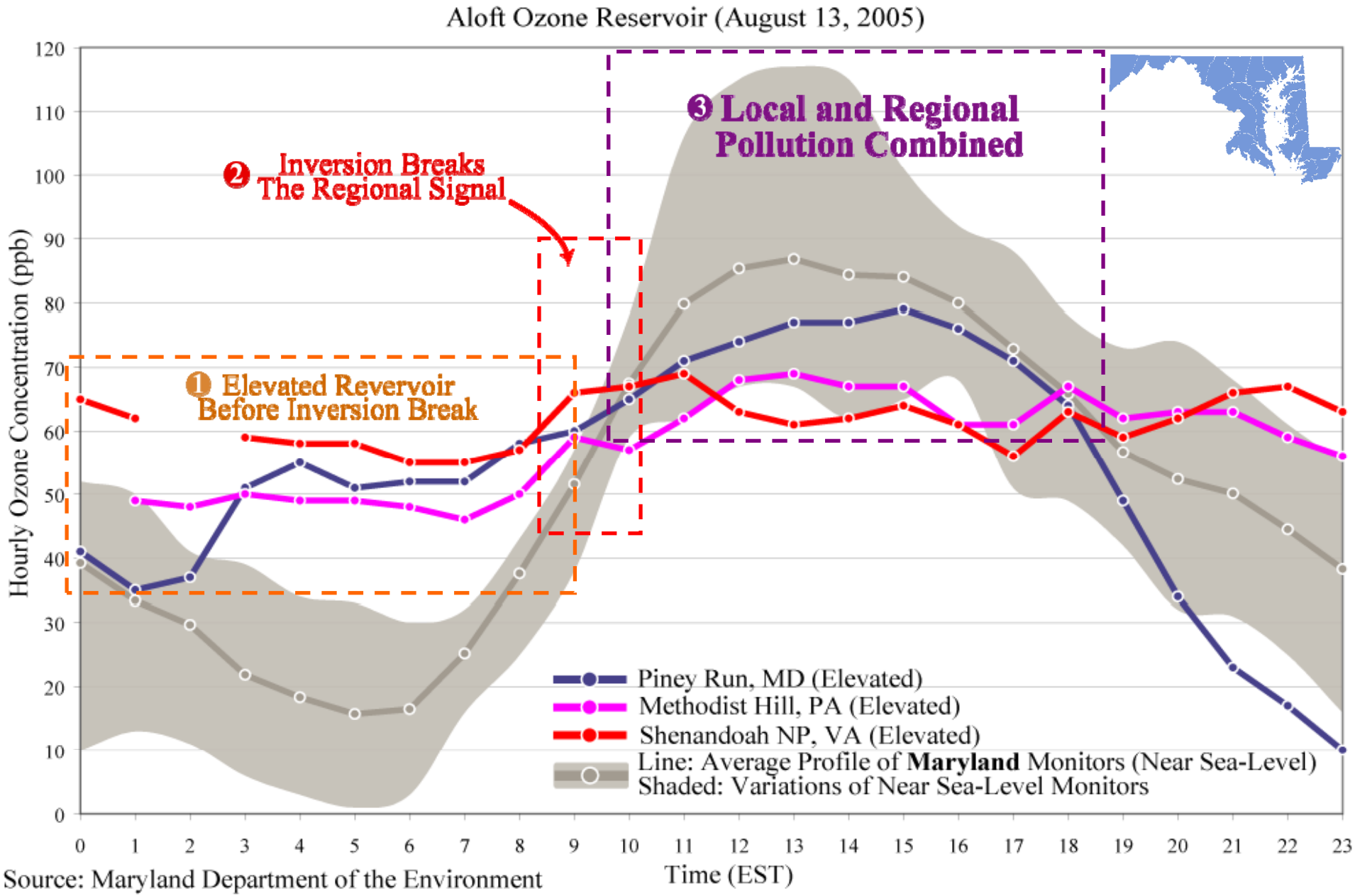
- Every bad ozone day, in the morning hours, a large reservoir of ozone sits above the Ozone Transport Region (OTR) waiting to mix down.
  - Ozone levels in the reservoir are routinely measured at 60 to 100 ppb.
  - In the morning, ozone levels at the surface are very low.
- Around 10:00 or 11:00, the ozone in the reservoir mixes down to the surface and ground-level monitors surge from about 20 to 30 ppb to about 60 to 90 ppb.
  - The morning surge

Back in 1990's



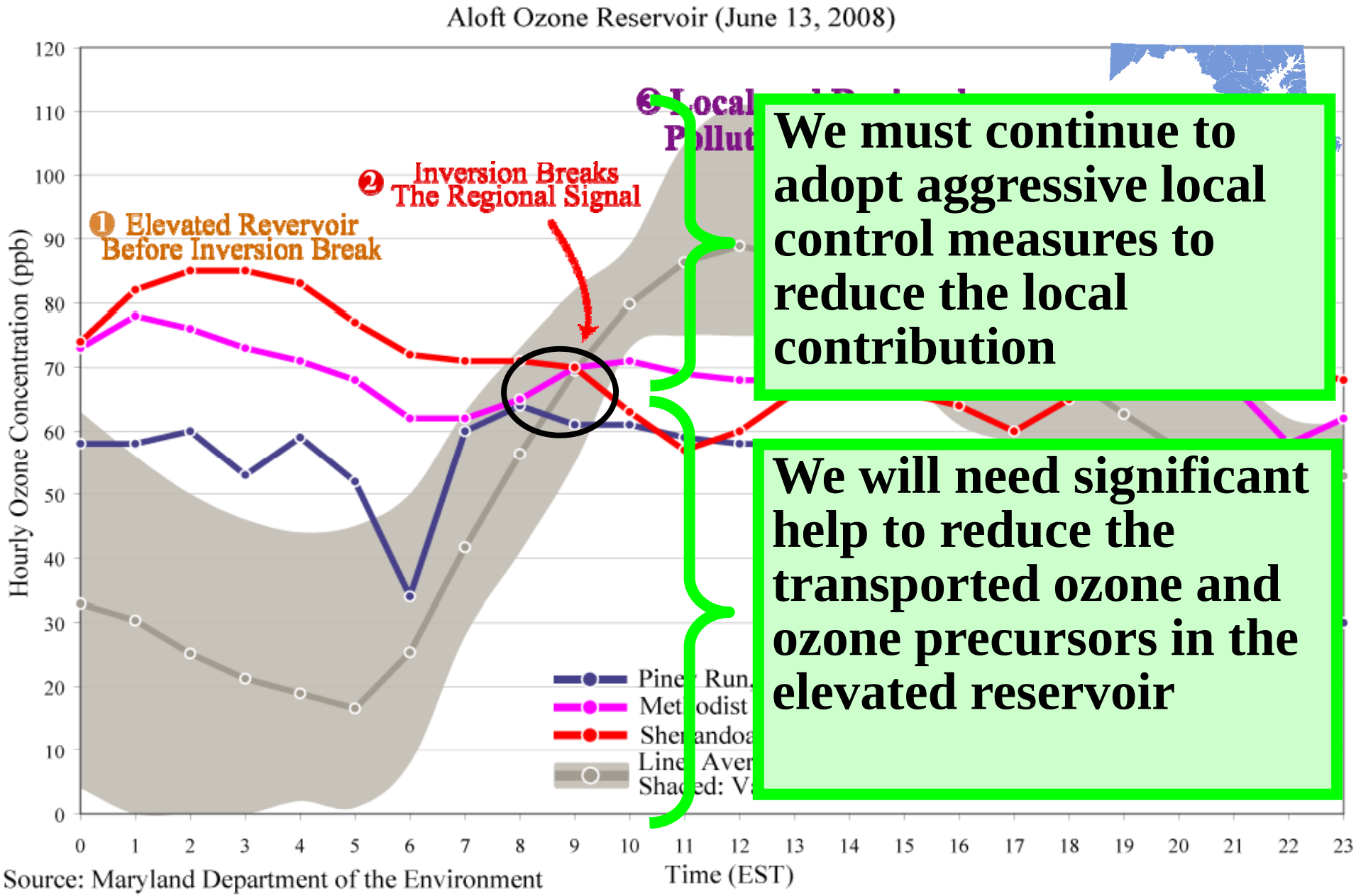
Source: Maryland Department of the Environment

Still Happening in 2000's



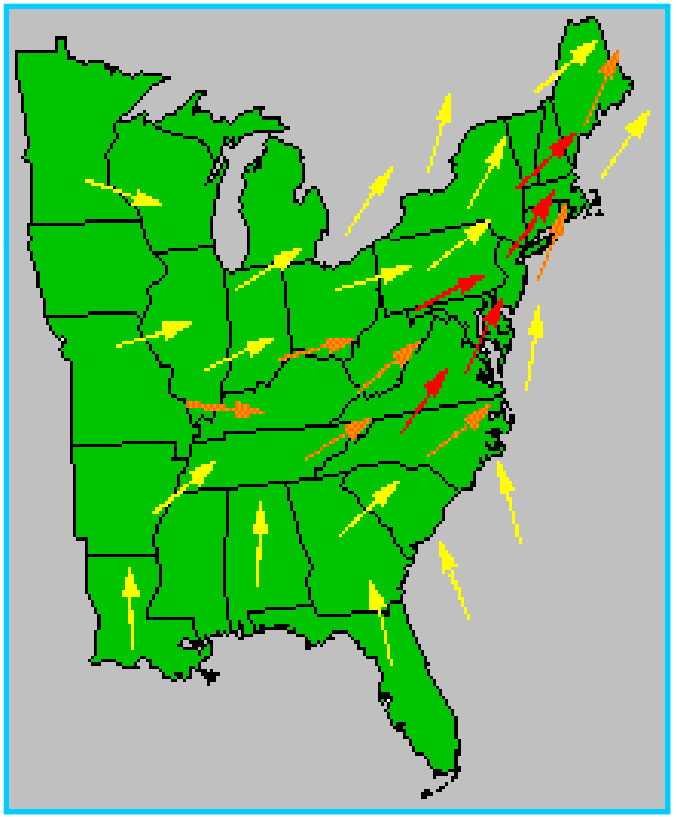
Source: Maryland Department of the Environment

A Two Part Control Strategy



Reducing Transport - National Rules

- Significant progress under way
- Cooperation with Midwest States, EPA and stakeholders continues
- September 2, 2009 State Collaborative letter signed by 17 states
  - Strong recommendation on new national rules



Today's Action on National Rules

- OTC statement on the need for more national rules scheduled for action later today
- Recommended national rules
  - EGUs (CAIR replacement rule)
  - ICI Boilers
  - Cement Kilns
  - Other large stationary sources of NOx
  - AIM Coatings
  - Consumer products
  - Cleaner, environmentally sensitive fuel
  - New federal tailpipe standards
  - Several others

Preliminary Screening Modeling

- NY DEC did a screening modeling run, assuming an additional 40% NO_X reduction from all sectors domain-wide
- Results showed almost all sites below 75 ppb
  - New “reconsidered” standard likely to be lower
- Requires an approximate 500,000 ton per year of NOx reduction within the OTR
  - Using this as a rough target of what the OTC needs to do

Stationary and Area Source Committee

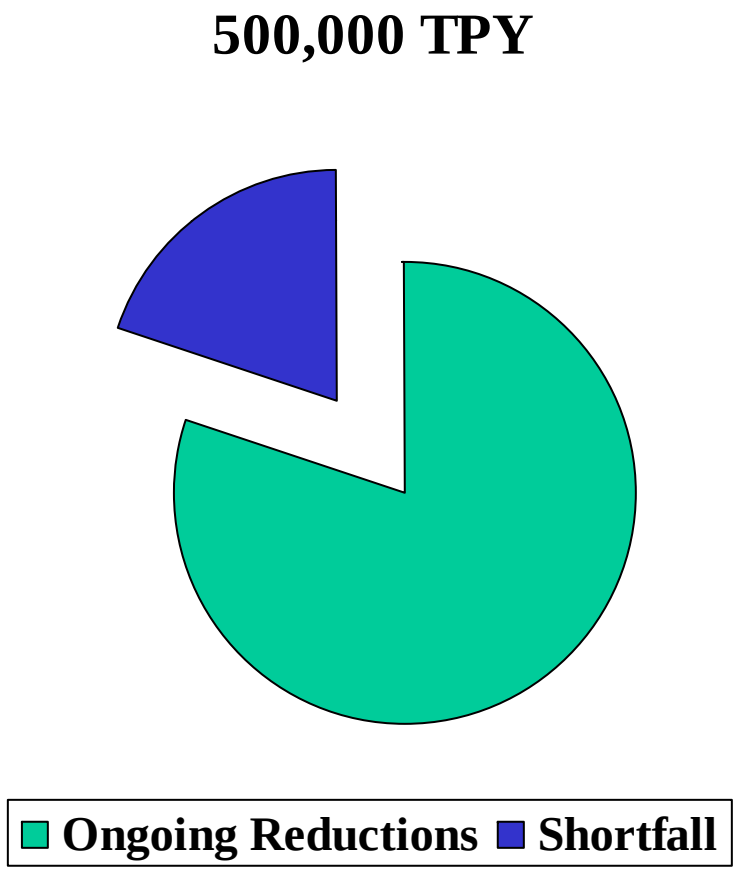
- Looking at 13 new control measures
  - Many just within the OTR
  - Some that should be national rules
  - Working with stakeholders
- Measures include:
  - Electricity Generating Units (EGUs)
  - Other stationary sources
  - Area sources like consumer products and paints
  - Non-traditional programs like HEDD (High Electricity Demand Days)
  - More
- More details from Committee later

Mobile Source Committee

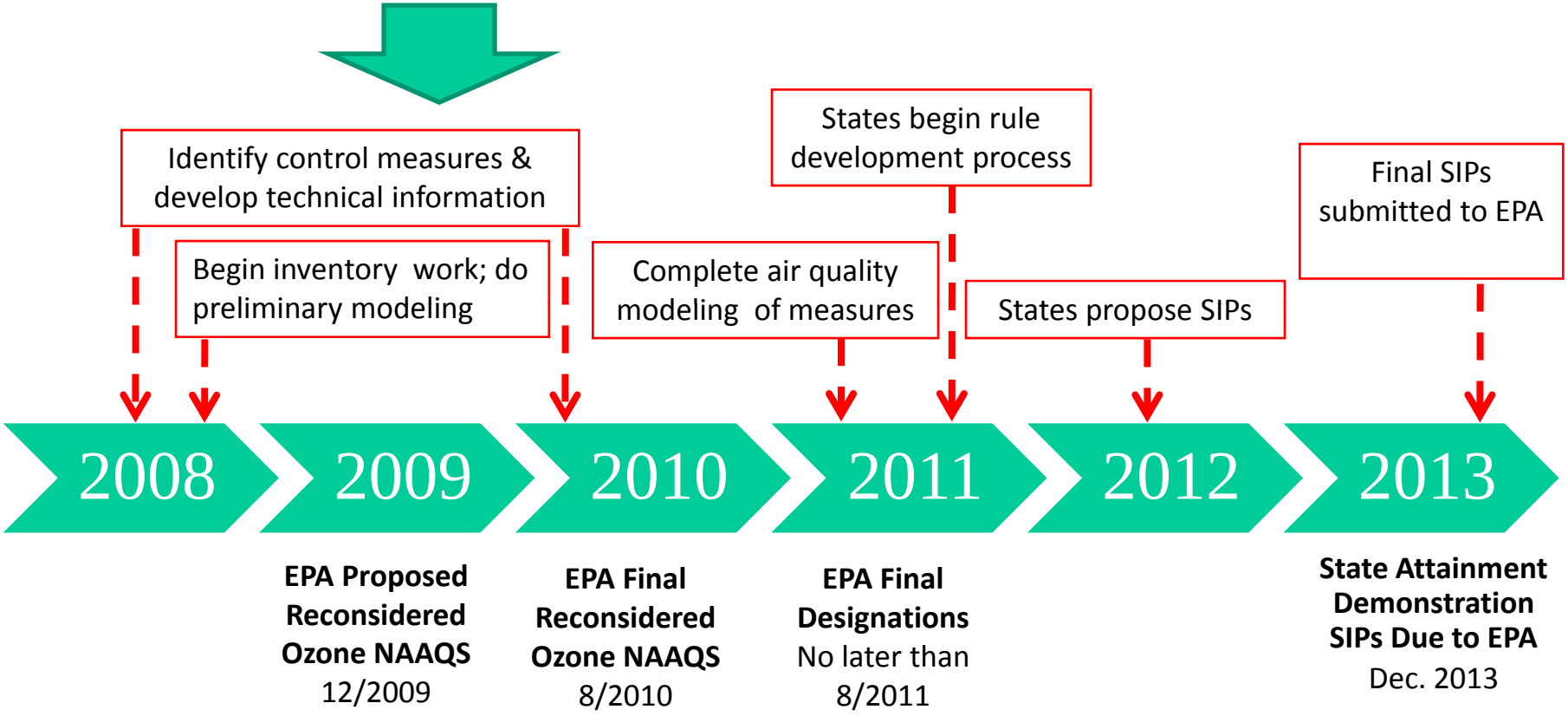
- Looking at 5 to 10 new control measures
  - Many just within the OTR - Some that should be national rules
- Includes
  - Tailpipe standards, fuels, idling and non-road sources like ports, ships, diesel equipment and more
- More details from Committee later

How Are We Doing?

- NOx reductions needed within the OTR
  - Preliminary, rough estimate to meet 75 ppb standard
    - 500,000 TPY
  - Lower standard will require more reductions
- "New" reductions that are under development are currently estimated to result in greater than 500,000 TPY of NOx reductions inside the OTR
  - New measures being worked on by the OTC Committees
  - Inside-the-OTR reductions from new national rules (eg. the CAIR replacement rule)
  - Continuing benefits from existing programs (eg. new mobile reductions resulting from fleet turnover)



Updated Timeline for OTC Planning



Likely Attainment Dates for Reconsidered Ozone Standard

Moderate – 2017 (Requires 3 years of clean data in 2014, 2015 and 2016)

Serious – 2020 (Requires 3 years of clean data in 2017, 2018 and 2019)

Wrap-Up

- Ozone and fine particle levels continue to drop
  - This is great news
- Tougher ozone and fine particle standards are on the horizon
  - Still lot's of work to do
- The OTC planning process is on schedule
  - Committees continue to refine the technical analysis needed to support the OTC policy development process:
    - Emissions, photochemical modeling, mobile modeling, costs and benefits
  - Will need significant help from EPA