Department of the Environment

Amendments to Maryland's Conformity Regulation

Establishing Long-Range Planning Targets for Nitrogen Oxides and Greenhouse Gas Emissions

Stakeholder Meeting #1
June 1, 2012

Topics

- What is transportation conformity?
- How well does the current process work?
- How does the new amendment to the conformity rule work?
  - How will the long-range planning targets be incorporated into and used in the conformity process?
  - How did we formulate the long-range planning targets?
- What is the process for moving forward with the draft regulation?

What is Transportation Conformity?

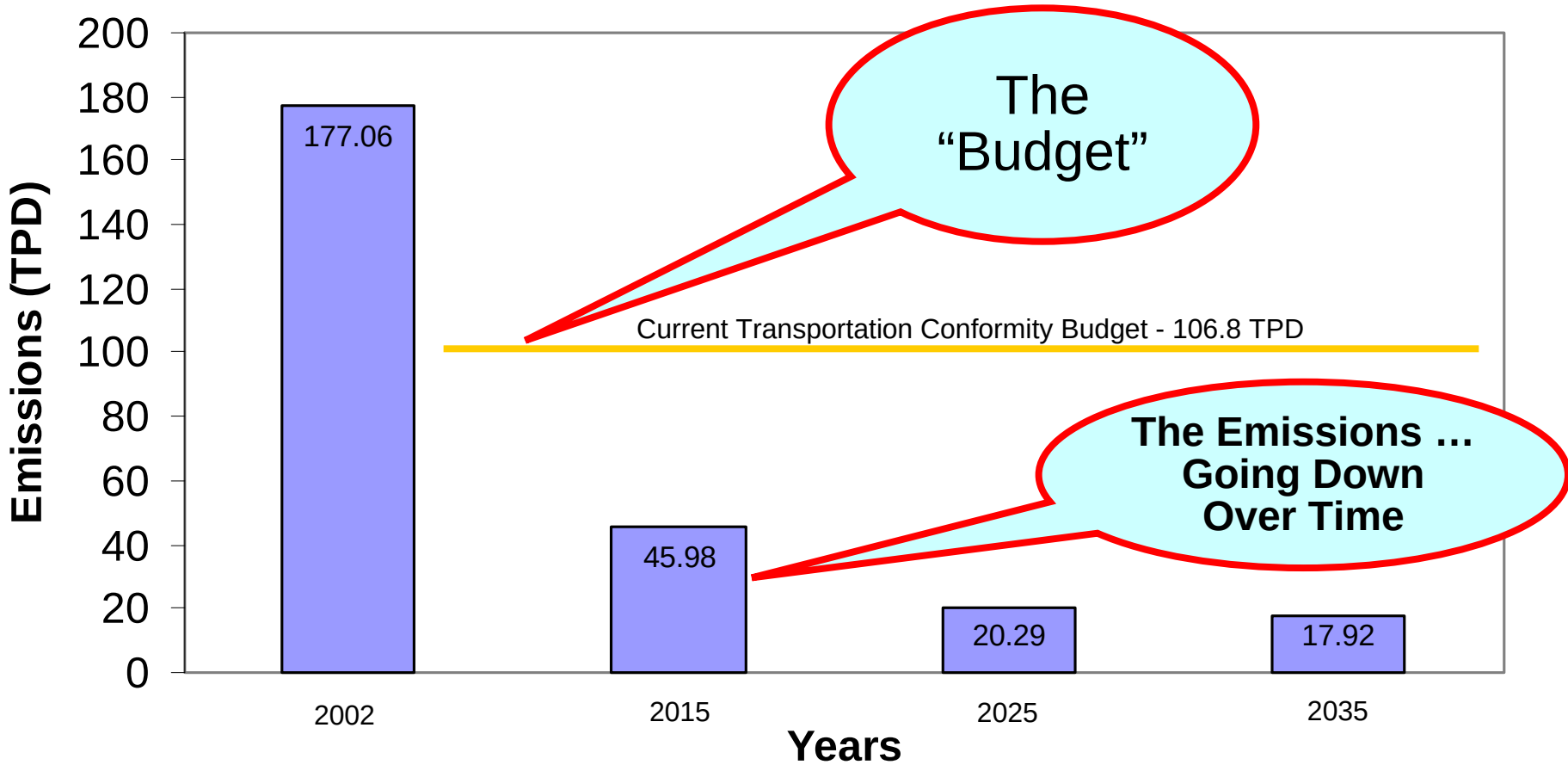
- The Basic Concept
  - When state and local governments add projects to their transportation plans (called Transportation Improvement Programs or “TIPs” or Constrained Long Range Plans or “CLRPs”) …
    - They must demonstrate that emissions stay below emission “budgets” set in the states clean air plan (or SIP/State Implementation Plan)
    - A formal demonstration (the conformity analysis) is submitted to show that the “new” transportation plan will keep emissions under the SIP “budget”
- Conformity failure places federal transportation dollars at risk
  - Federal funds provide a large portion of the money we use to fund transportation plans in Maryland and other states and have a tremendous influence on what and how many projects we can develop

How Does Conformity Currently Work?

- The Interagency Consultation Group (ICG) Process
  - Partnership between State air and transportation agencies and local transportation planning decision-makers
    - Baltimore Regional Transportation Board (BRTB) in Baltimore
    - National Capital Transportation Planning Board (TPB) (part of MWCOG) in Washington
- The ICGs run a very sophisticated technical process
  - Transportation models that quantify the NOx, VOC and CO2 increase or decrease associated with the new measures being added to the TIP or CLRP

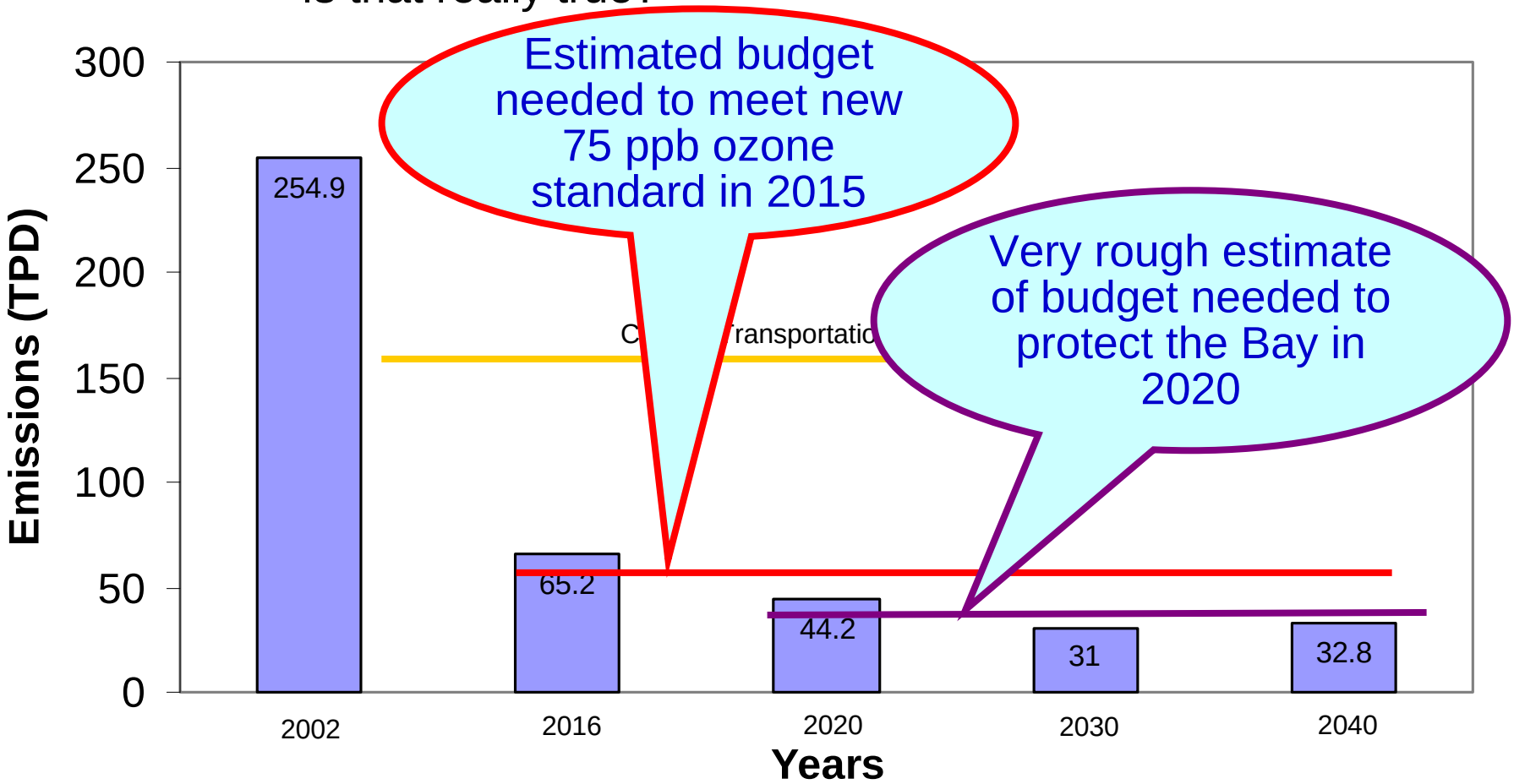
Walking Through a Conformity Analysis

Baltimore Region Mobile NOx Emissions



The Washington DC Area

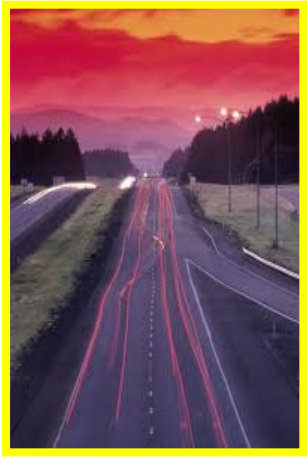
- Appears that mobile emissions are well below levels needed to protect public health
- Is that really true?



How Doe This New Rule Work?

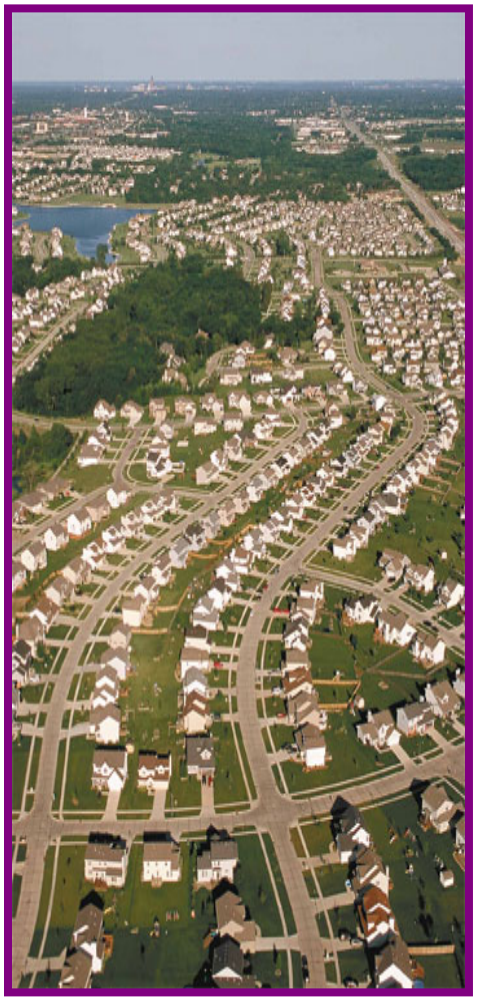
- Only a requirement for Maryland's two largest Metropolitan Planning Organizations (MPOs)
  - BRTB in Baltimore and
  - TPB in Washington DC

- Requires that a mandatory long-range planning report be submitted whenever a conformity analysis is required
  - Report must
    - Show how transportation emissions compare to long-range planning (LRP) Targets established in the regulation, and
    - Discuss plans to reduce any gap between LRP Targets and projected emissions



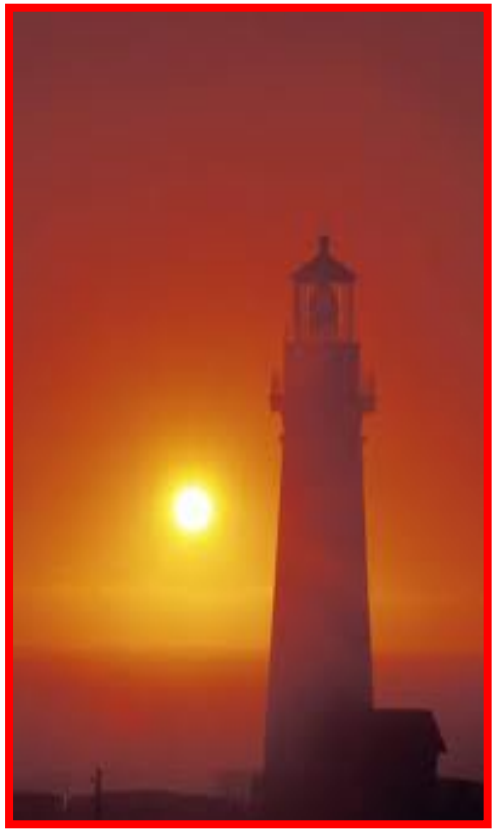
What Are the LRP Targets?

- Washington
  - 2030
    - NOx = 28.71 Tons per day (TPD)
    - CO2 = 12.3 Million metric tons per year (MMTY)
  - 2040
    - NOx = 29.19 TPD
    - CO2 = 7.3 MMTY
- Baltimore
  - 2025
    - NOx = 18.3 TPD
    - CO2 = 8.1 MMTY
  - 2035
    - NOx = 16.1 TPD
    - CO2 = 5.4 MMTY



How Were the LRP Targets Set?

- NOx
  - 10% below where the current technologies take NOx emissions between now and 2040
- CO2
  - Based on a linear path between 2006 CO2 emissions in each area and a 2050 target that equals a 90% reduction from the 2006 CO2 baseline
    - 90% by 2050 from Maryland's 2008 Climate Action Plan
    - Best CO2 data from each area used to calculate targets



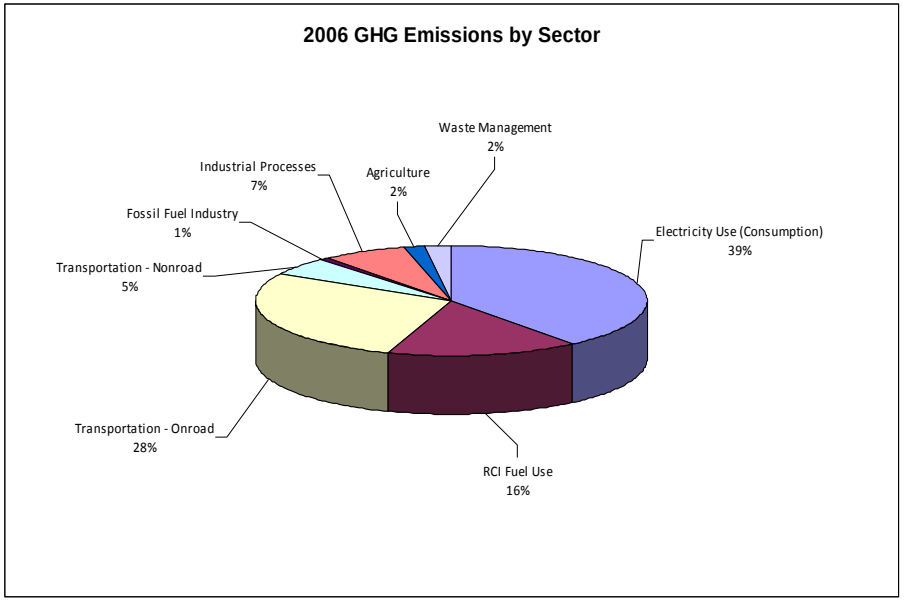
Environmental Drivers for LRP Targets

- Clear Need for Much Deeper NOx Reductions
  - Current and future ozone standards
    - Current standard needs to be more protective
    - Mobile still about a third of the inventory in 2020
  - Current and future fine particle standards
  - 33% of nitrogen in the Bay comes from air pollution
  - Deeper NOx reductions help all of these issues

- Climate Change
  - Maryland is the 4th most vulnerable state to sea-level rise
  - Driving CO2 emissions down from mobile sources is critical
    - Generally, mobile sources about 1/3 of statewide greenhouse gas emission inventory

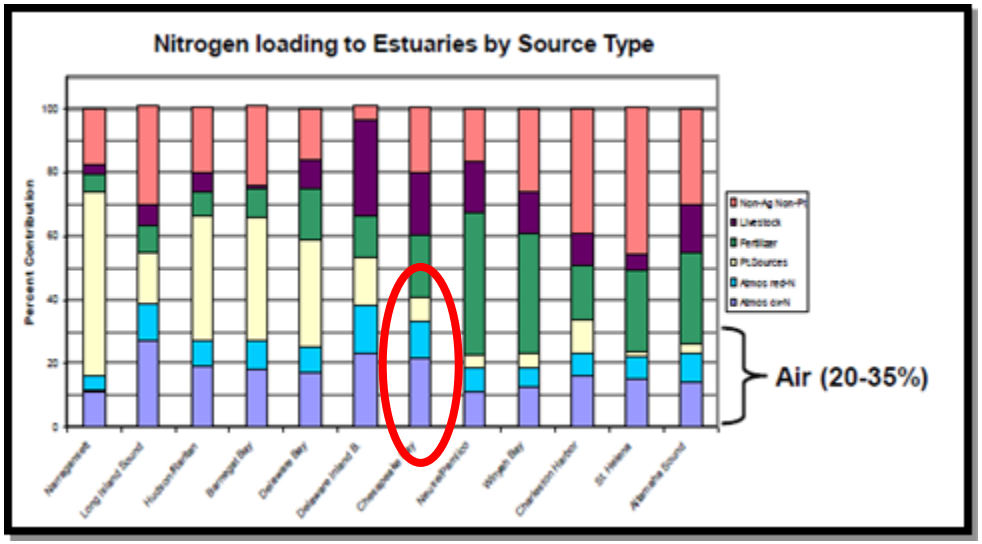
Transportation and GHG Emissions

- Maryland is the 4th most vulnerable state to sea-level rise – one of the consequences of global warming
- Transportation is responsible for about 1/3 of the GHG emissions in MD
- Other major sectors (like power plants) have addressed growth through a hard cap



Mobile Source Emissions and the Bay

- About one third of the Bay's nitrogen problem comes from air pollution sources
  - About ½ of that comes from mobile sources
- 2007 NOx emissions in Maryland – Top two categories
  - Onroad Vehicles (gasoline and diesel)
    - 1148 tons per year
  - Power Plants
    - 516 tons per year



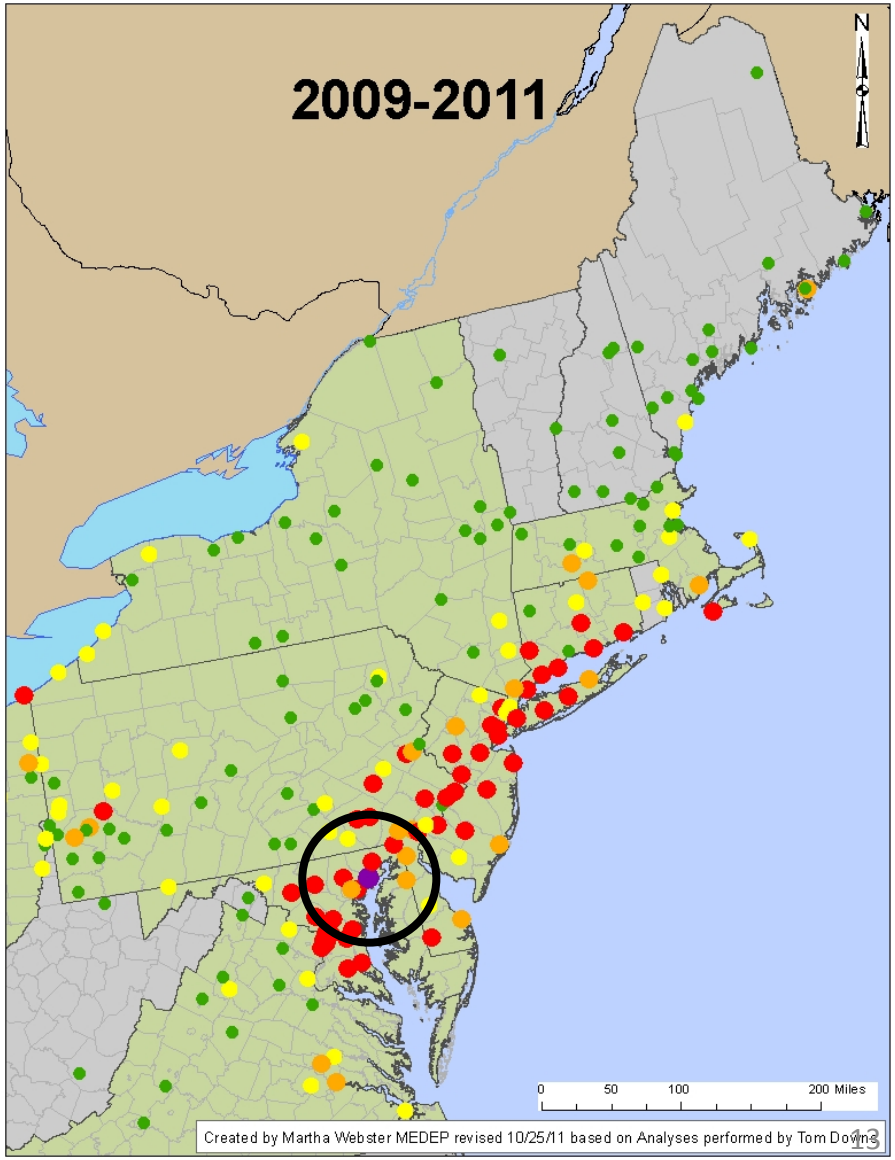
Ozone – The Last Purple Dot

Preliminary 2011 Ozone Design Values in the Ozone Transport Region

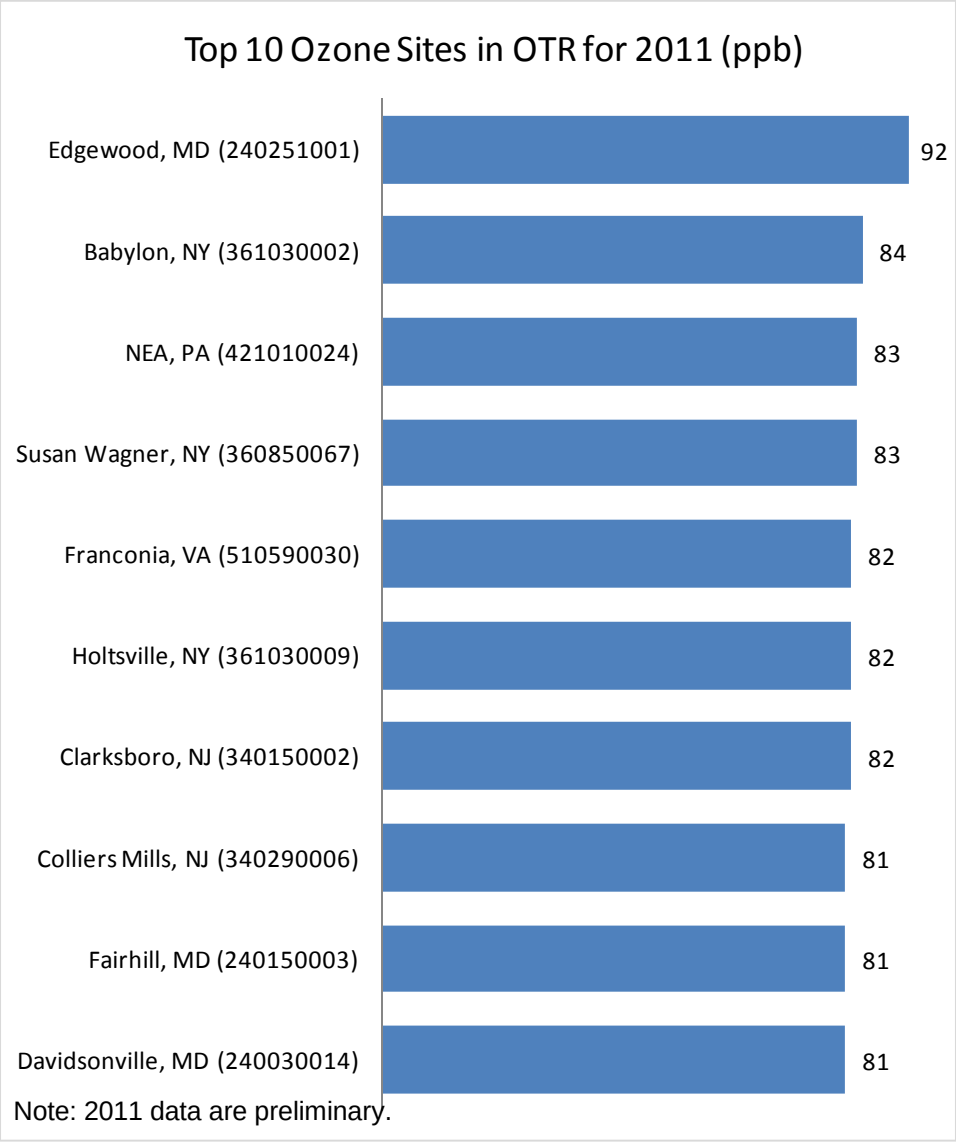
- <71
- 71-73
- 74-75
- 76-85 (mar)
- >85 (mod)

Parts per Billion (ppb)

States with Nonattainment Monitors

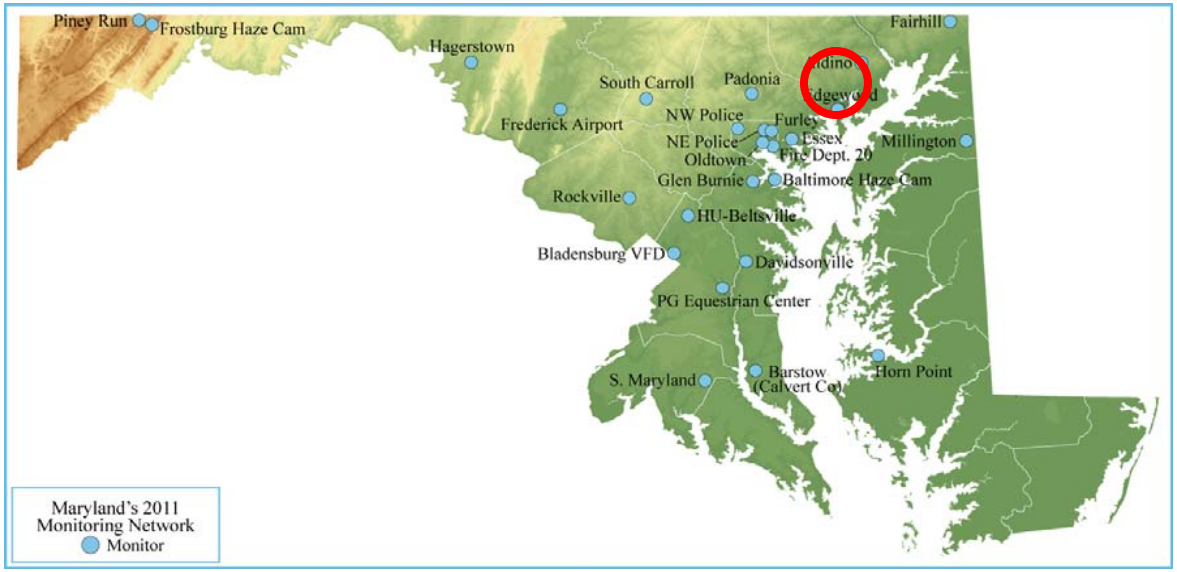


The Top 10 – or Maybe the Bottom 10 - List



So What's With the Edgewood Monitor?

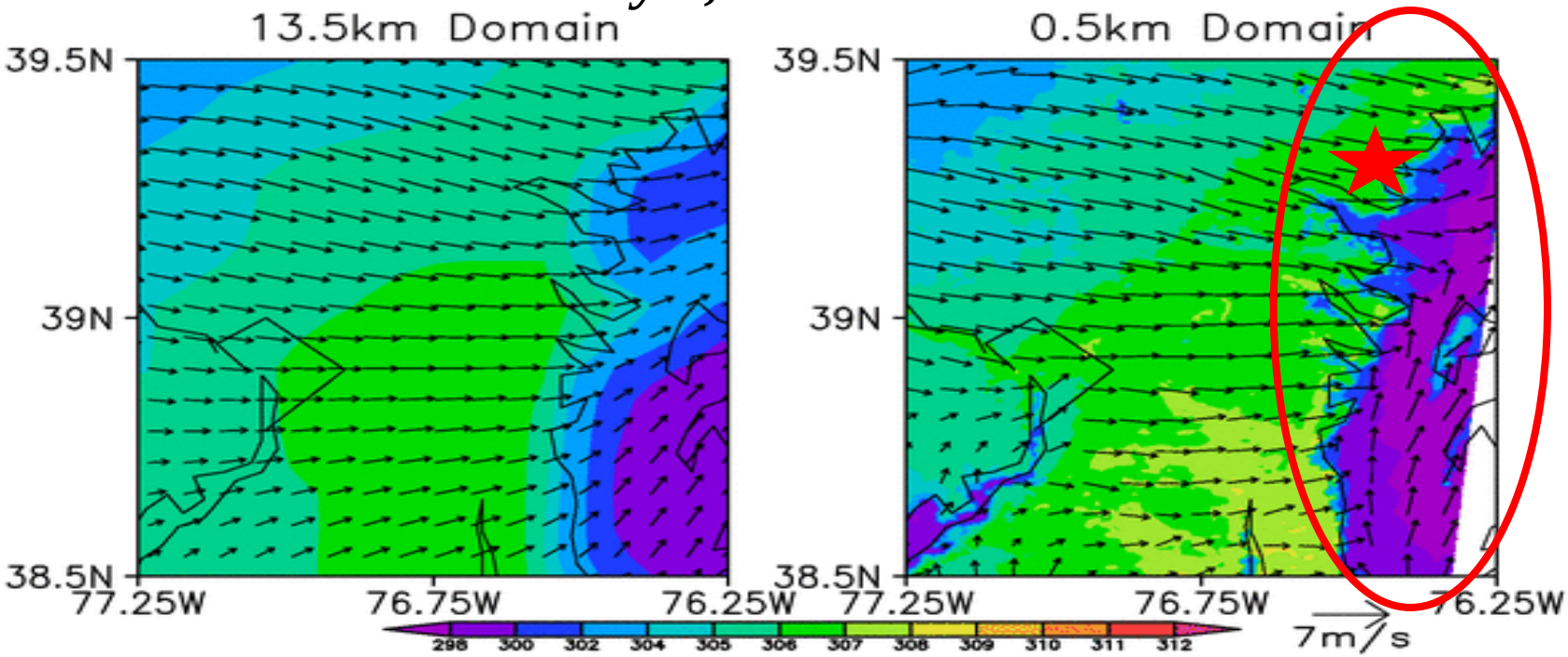
- Baltimore has a very difficult monitor in Edgewood, Maryland
  - Very close to the Chesapeake Bay
  - Last remaining problem monitor in the East for the 85 ppb ozone standard
- Recent research shows that – for ground level ozone – Baltimore NOx emissions and local NOx transport from the Washington, DC area may significantly impact this monitor
- Research conducted by U of M and MDE to better understand how the Chesapeake Bay breezes affect local air quality



Addressing the Ozone Problem at Edgewood

- **MDE has started discussions on a rule designed to ratchet down on mobile source NOx from the Washington DC and Baltimore areas**
- **For Ozone and NOx, It's all about Edgewood**
- **Driven by recent research on the Bay breeze and it's impact local air quality**
- **Started with U of M WRF (meteorological) modeling around the Bay region**
- **Used a courser and a finer grid - Finer grid showed very interesting results**

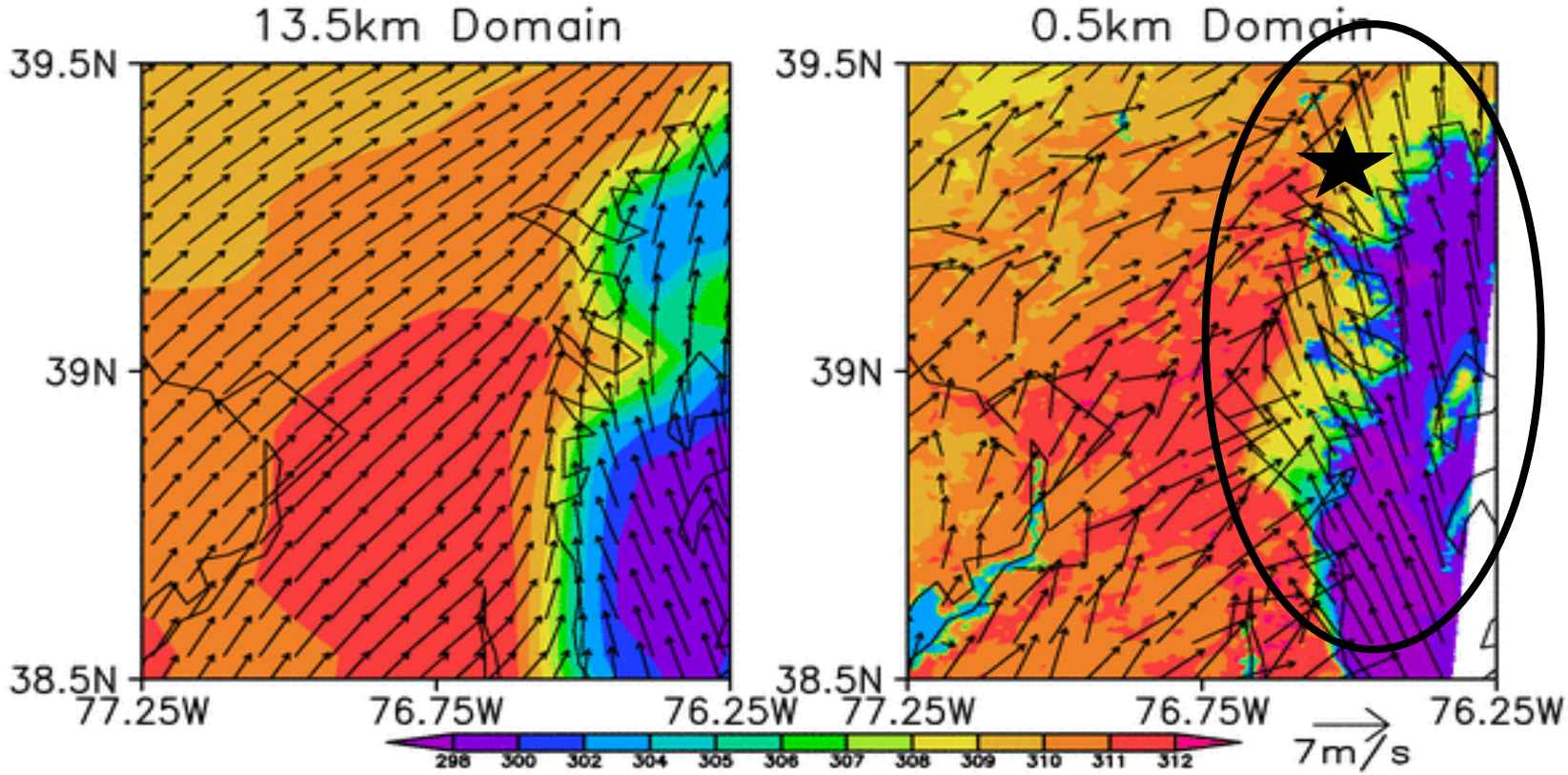
July 9, 2007 – 9 am



Why is Washington Included

- Dominant DC/Baltimore local source of NOx is vehicles
- Washington area mobile NOx emissions more than double Baltimore's
- The Washington (and Baltimore) mobile source NOx emissions seem to be the reason that Edgewood is always several ppb higher

July 9, 2007 – 2 pm



What Happens if Report Falls Short?

… future emissions are projected to be above the LRP Targets

- LRP Targets are set at levels that are designed to push for additional reductions
  - They are “stretch” targets
- No penalty for failure to achieve
- Mandated plans must include a discussion of planned activities designed to close any gap between LRP Targets and projected emissions

What Are the Next Steps?

- AQCAC briefing – March 26, 2012
- Stakeholder discussions with DOTs, BRTB, TPB and MWAQC, environmental and business groups and others
  - June and July
- Action by AQCAC this summer/fall
- Propose regulations in Maryland Register
- Adoption of Final Regulation around the end of year
  - Any conformity analyses after 2012 will be required to include the LRP Report
  - Would encourage MPOs to begin this process now

Key Issues to Discuss

- How this “State Rule” is connected to, but separate from the Clean Air Act mandated conformity process
- Setting the LRP Targets
  - Other ideas?
- What needs to be included in the long-range planning report?
- What kind of programs can be included in transportation plans to further reduce NOx and CO2?

Questions?