

Washington, DC-MD-VA Ozone Non-Attainment Area

# Weight-of-Evidence Analyses (WOE)

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MWAQC Meeting

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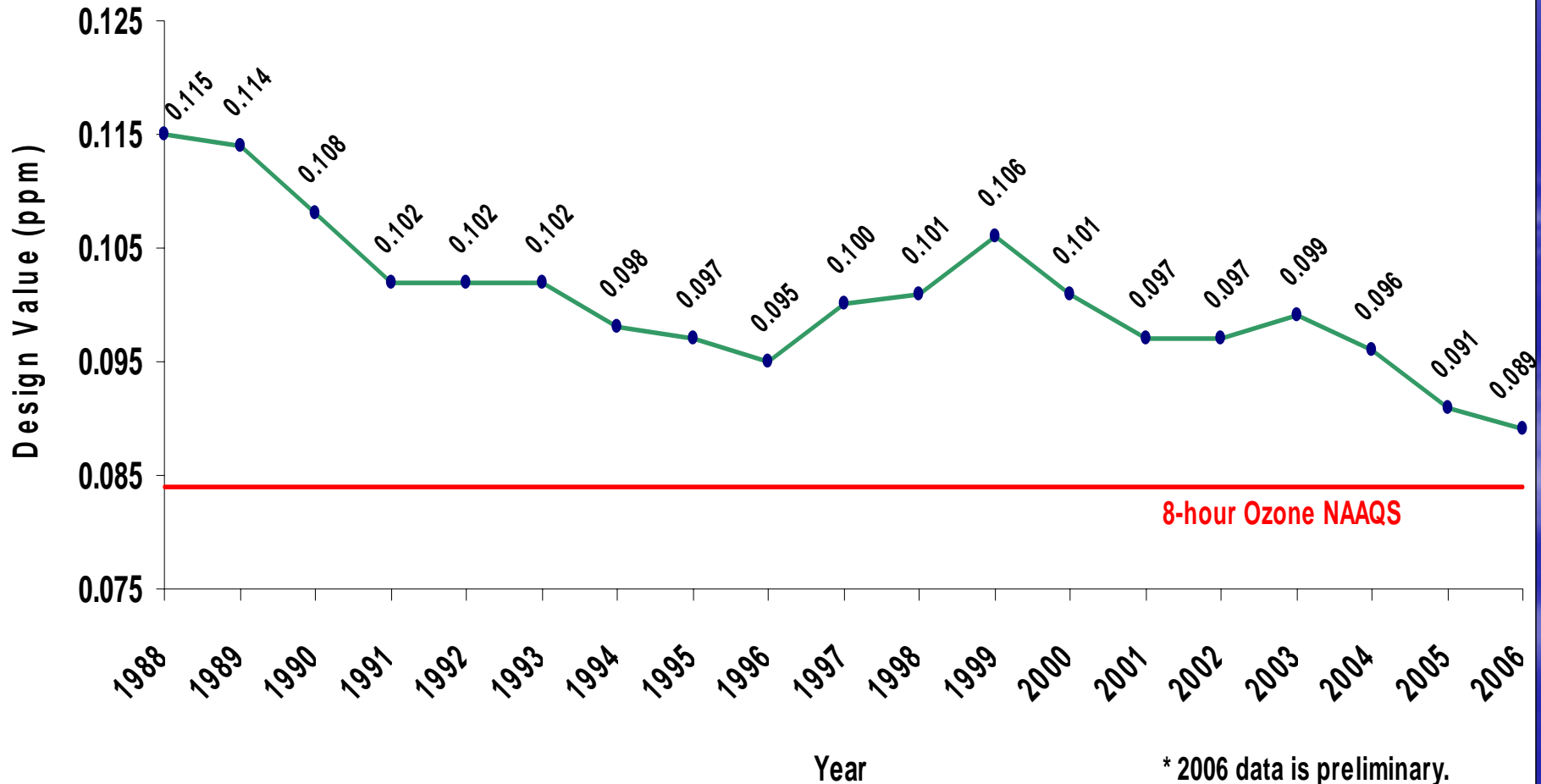
# Why WOE Analyses ?

- WOE analyses needed to support attainment modeling results.
- Model projected attainment Design Value
  - $< 82$  ppb – Basic supplemental analyses needed to confirm modeled attainment test.
  - 82-87 ppb – Aggregate WOE analyses needed to support modeled attainment test.
  - $\geq 88$  ppb – WOE analyses less likely to change modeled attainment test.

# WOE Analysis List

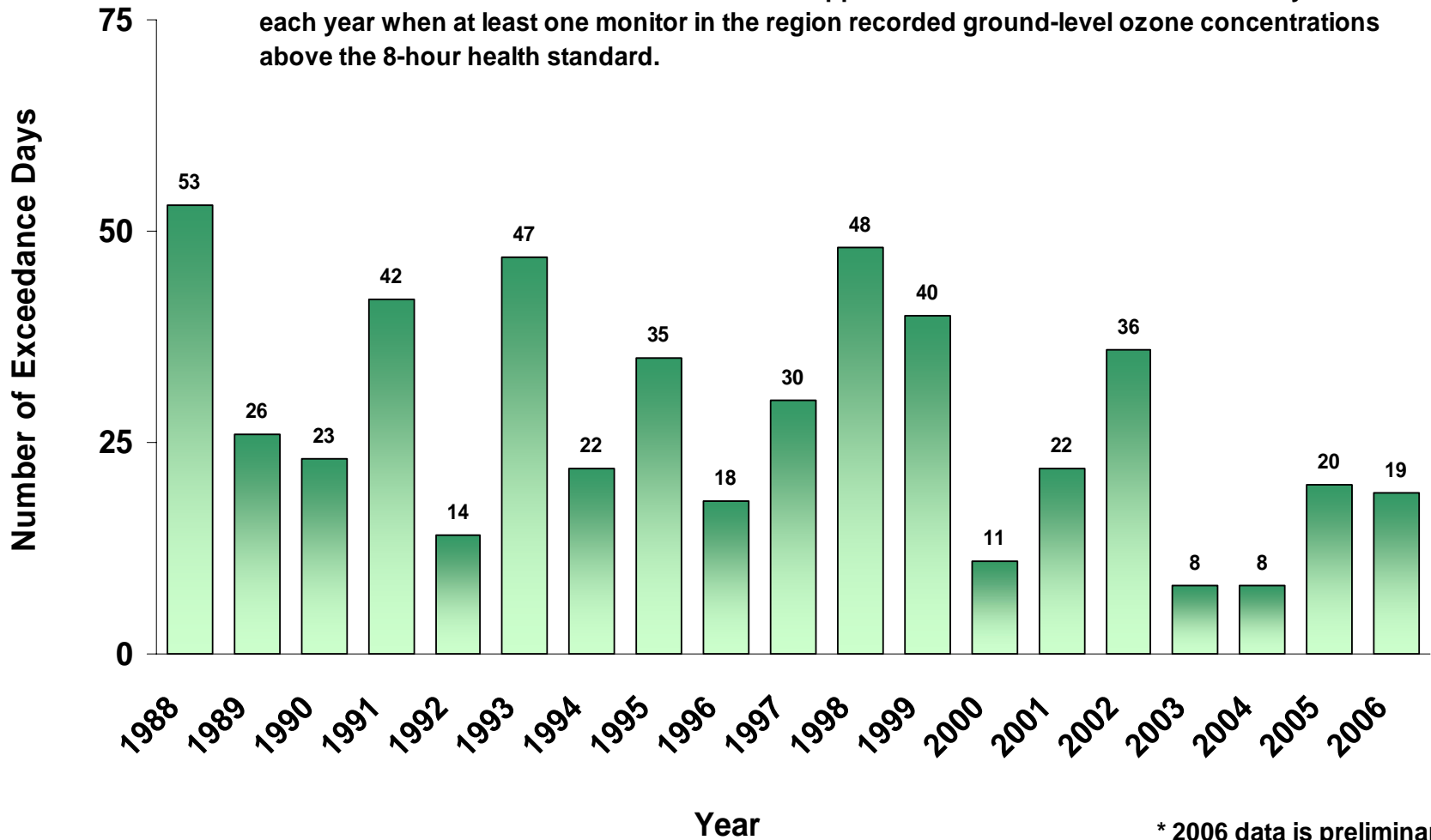
- Trend in 8-Hour Ozone Levels (Design Value)
- Trend in 8-Hour Ozone Exceedances
- Trend in NO<sub>x</sub> Levels (Annual Average Concentrations)
- Trend in CO Levels (2<sup>nd</sup> High 1-Hour Concentrations)
- Trend in VOC & NO<sub>x</sub> Emissions Levels
- Area of Monitors Exceeding 8-Hour Ozone Standard
- 8-Hour Ozone Exceedance Days Vs. High Temperature days
- Local Innovative Measures

# 8-hour Ozone Design Value Washington, D.C. Region, 1988-2006\*



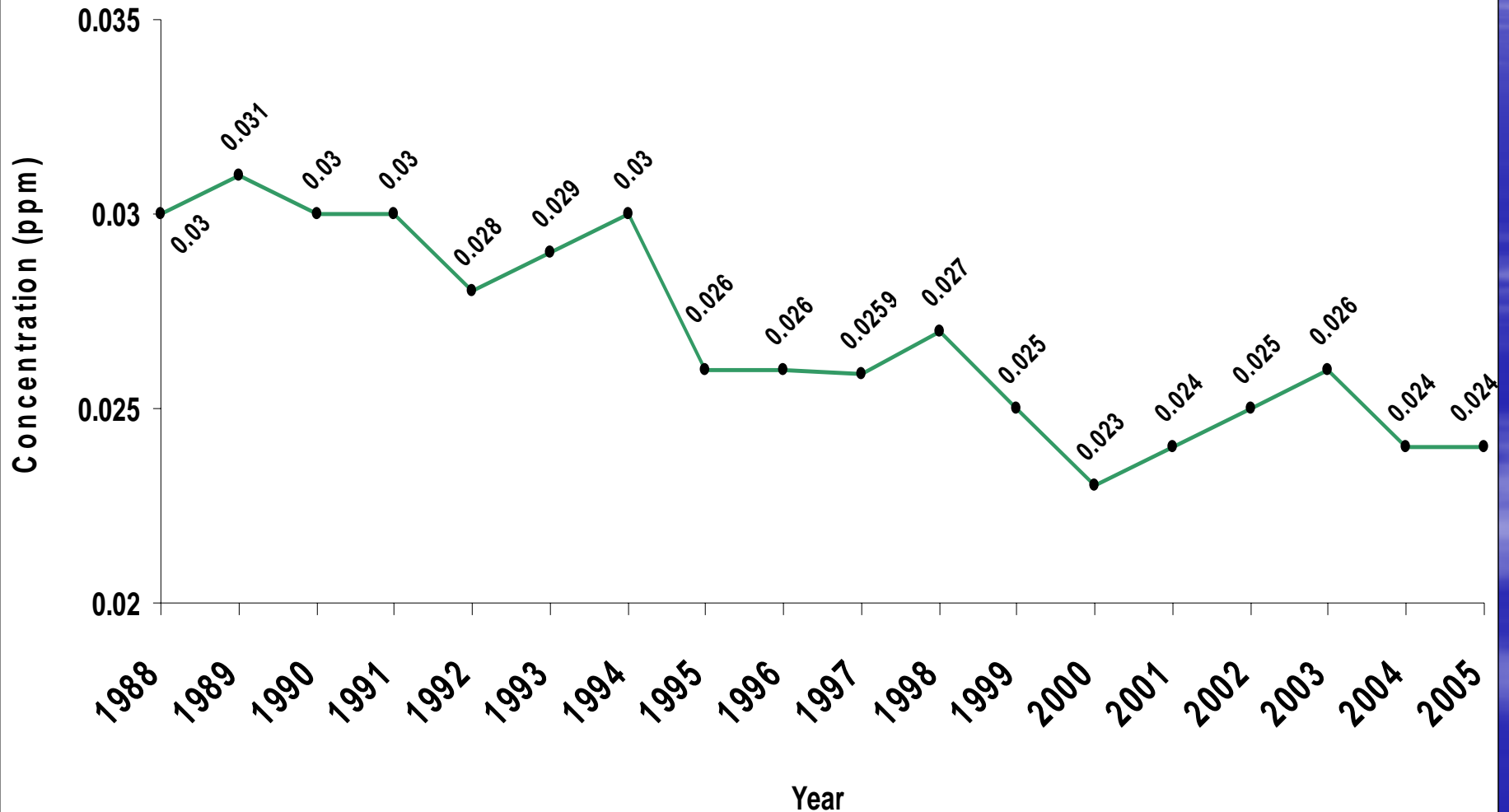
# Exceedances of 8-hour Ozone Standard Washington, D.C. Region, 1988-2006\*

Note: Health Standard for 8-hour Ozone is 0.08 ppm. Data shown are the number of days in each year when at least one monitor in the region recorded ground-level ozone concentrations above the 8-hour health standard.

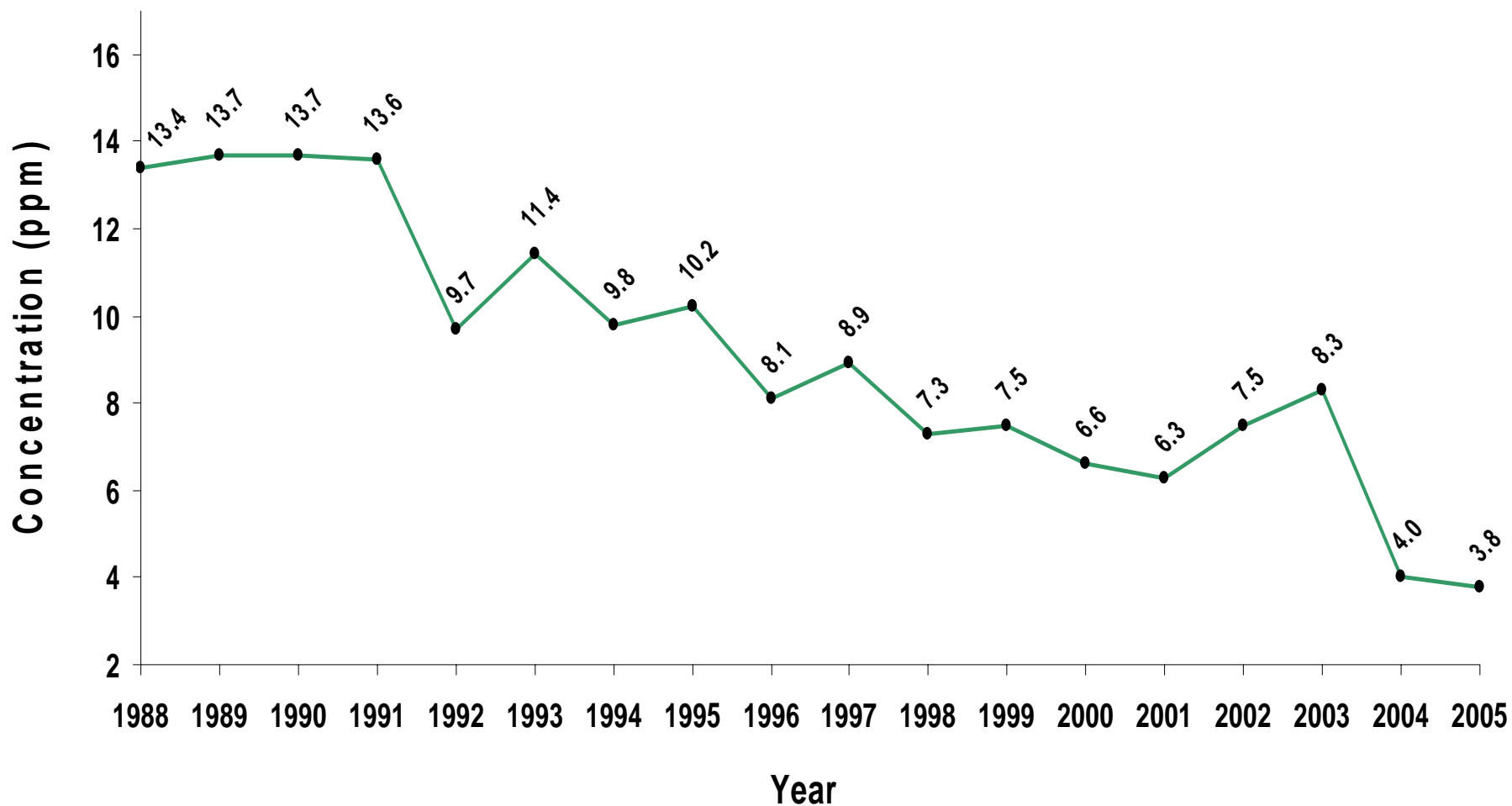


\* 2006 data is preliminary.

# Nitrogen Dioxide Annual Average Concentrations Washington, DC Nonattainment Area, 1988-2005

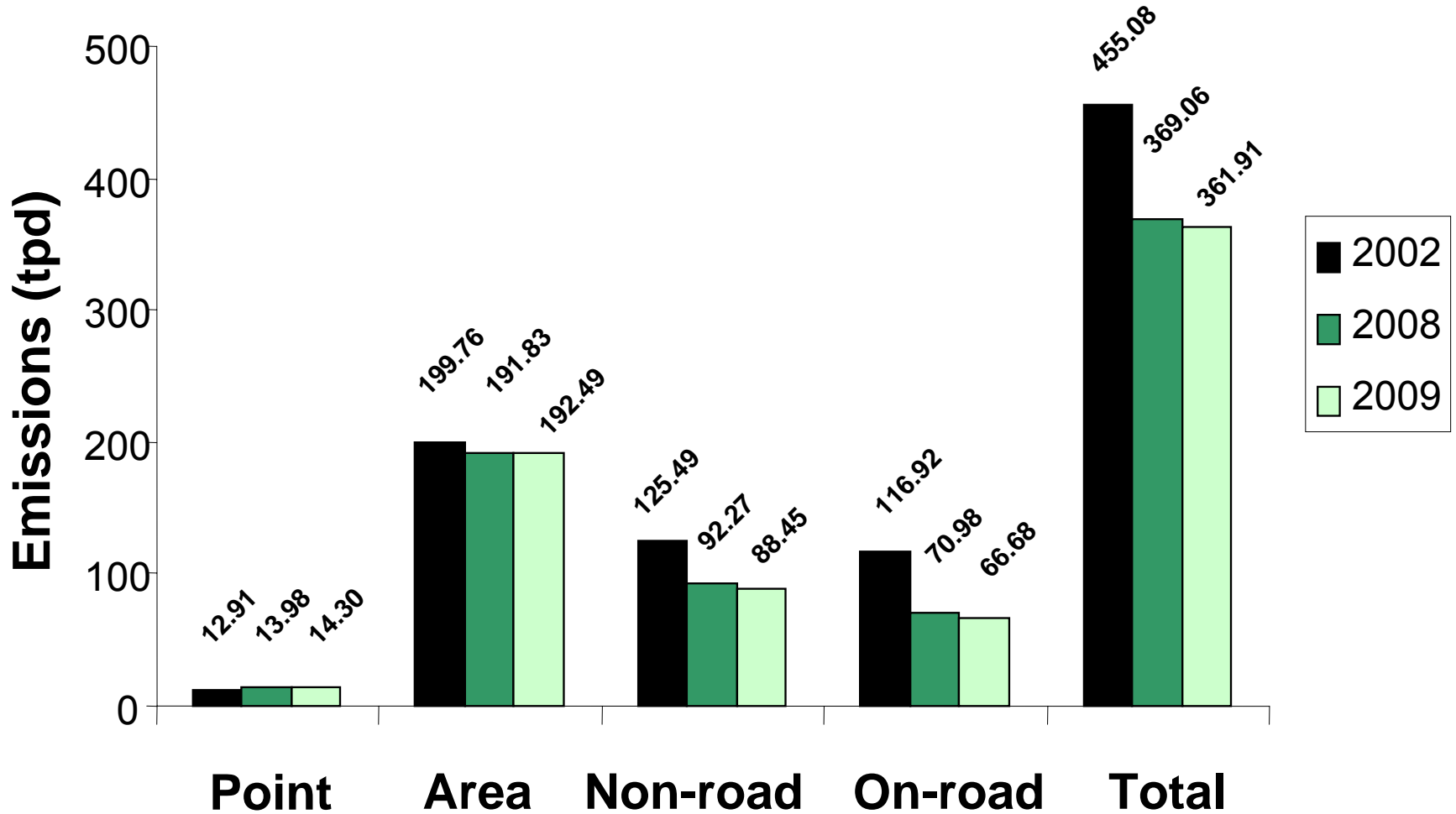


# Carbon Monoxide 2<sup>nd</sup> High 1-hour Concentrations Washington, DC Nonattainment Area, 1988-2005



# VOC Emissions by Source

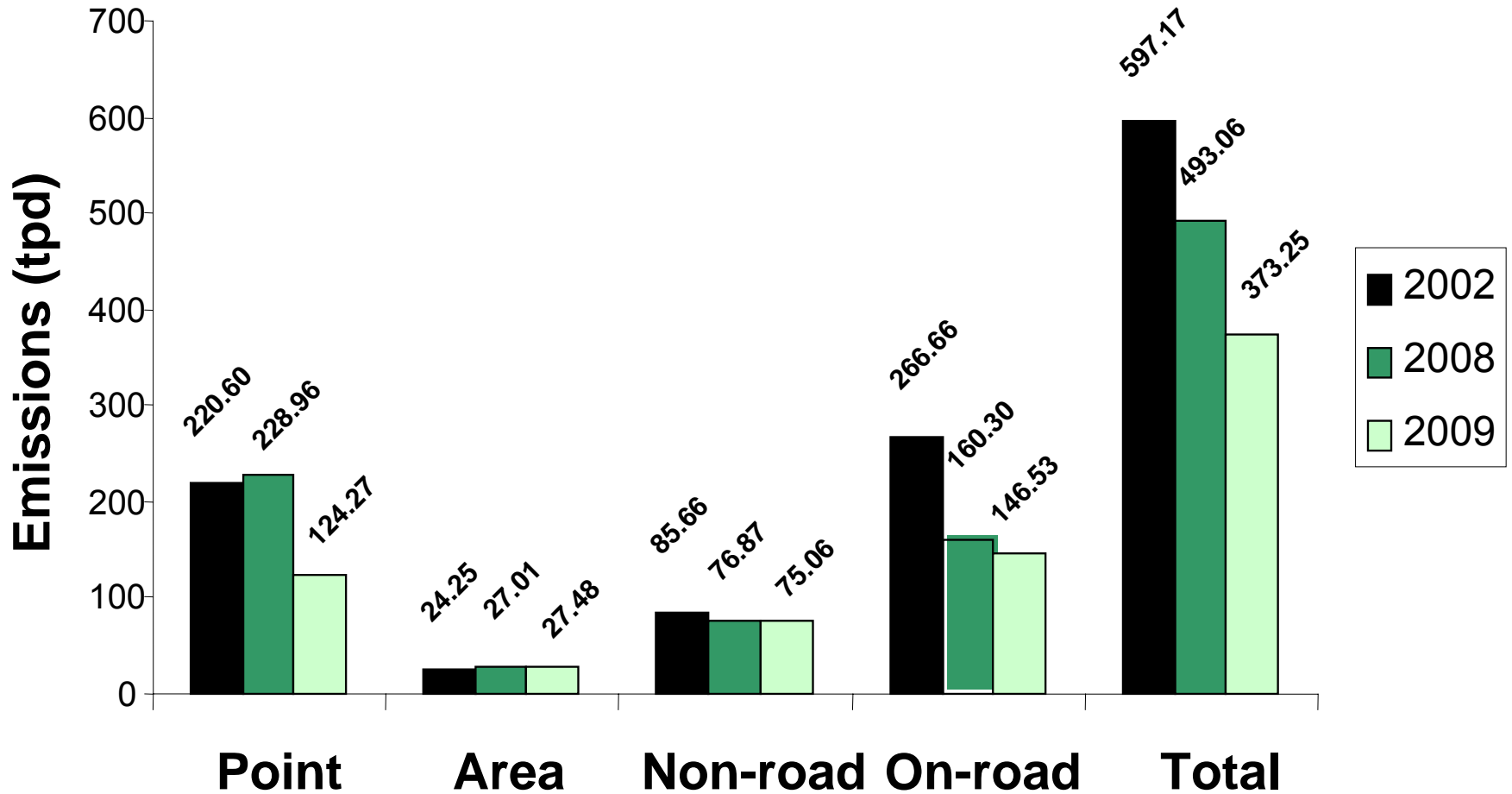
## Washington, DC Nonattainment Area



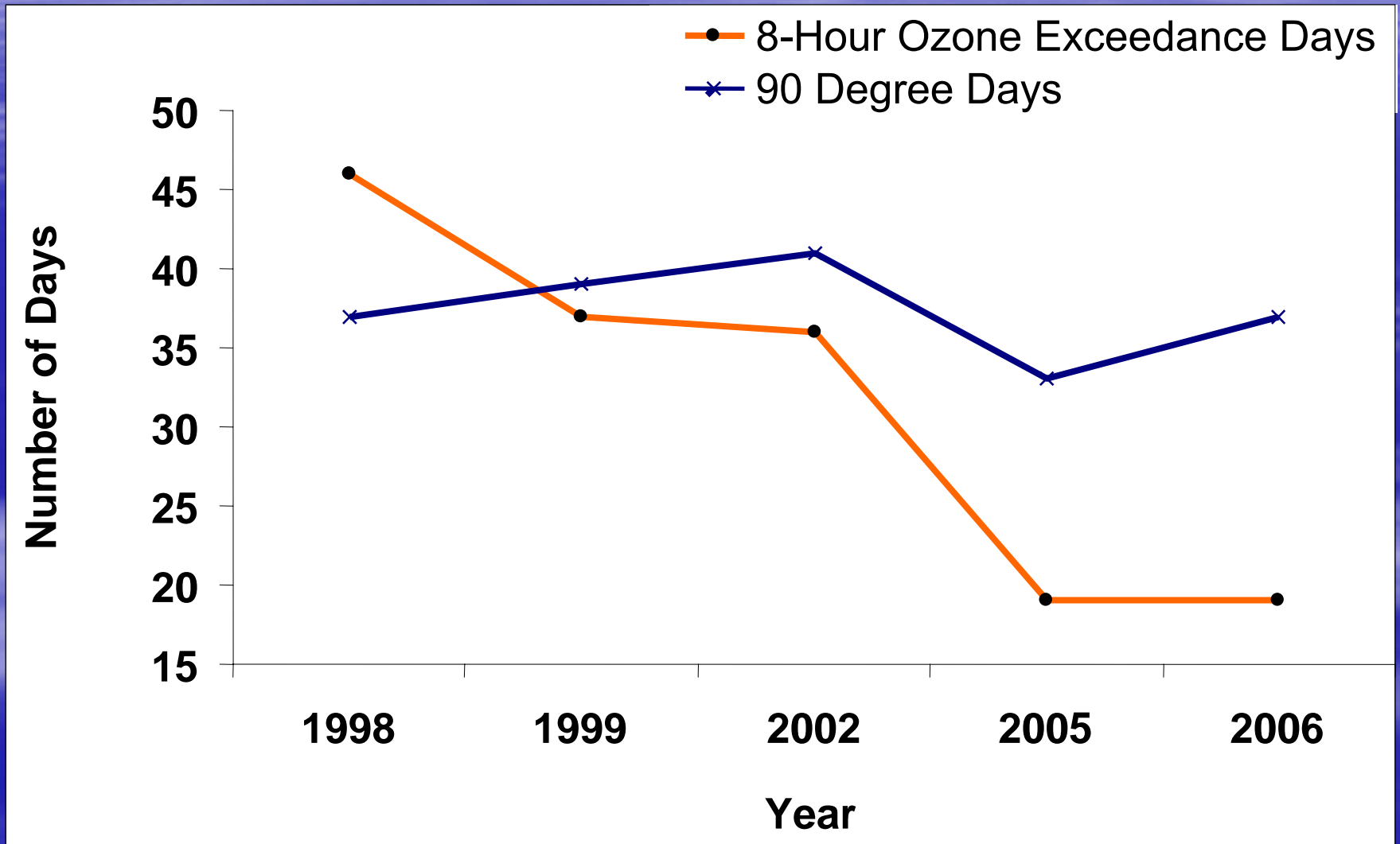


# NOx Emissions by Source

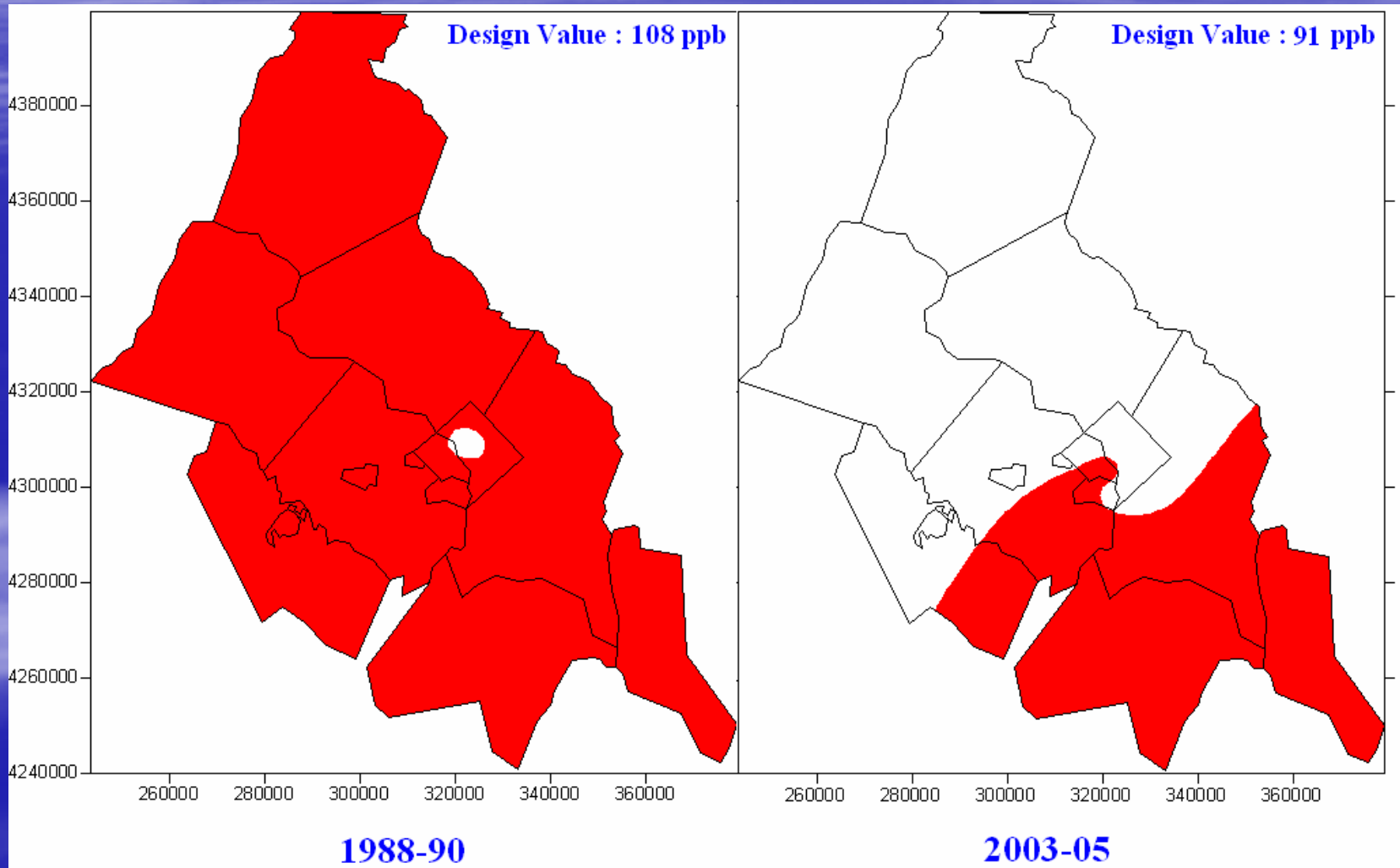
## Washington, DC Nonattainment Area



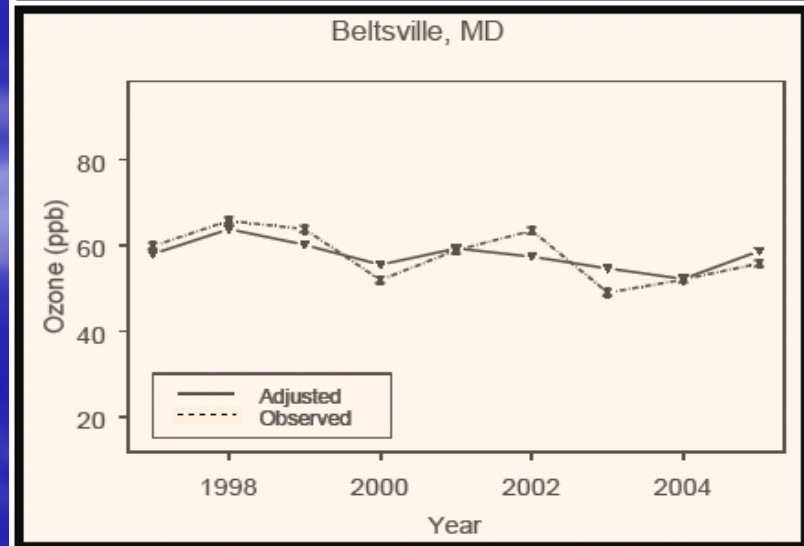
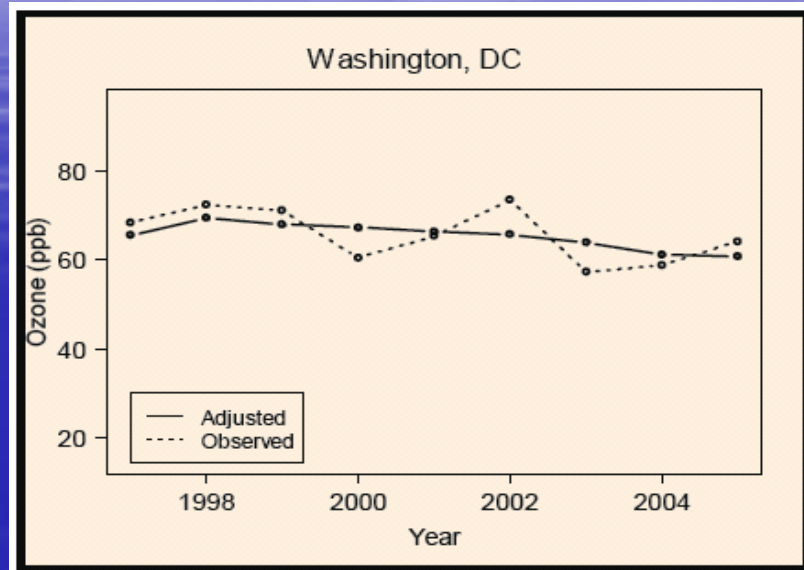
# Air is Cleaner Even in Hot Years



# Area of Monitors Exceeding Standard Washington, DC-MD-VA (1990 – 2005)



# Meteorology Adjusted Ozone Trend Washington, DC-MD-VA (1997 – 2005)



# Local Innovative Measures

- Directionally Correct Measures as Weight of Evidence
  - Episodic Programs (Code Orange and Code Red Actions)
  - Urban Heat Island Mitigation/Tree Planting
  - Green Building Initiatives
  - Low-Emission Vehicles/Diesel Retrofits

# Conclusion

- All WOE tests point to the same conclusion –  
Washington region will be able to attain the 8-hour ozone standard by the deadline (June 15, 2010).