



Department of the Environment

Maryland's Air Quality: Nitrogen Reductions and the Healthy Air Act



Brian Hug, MDE

November 20, 2006

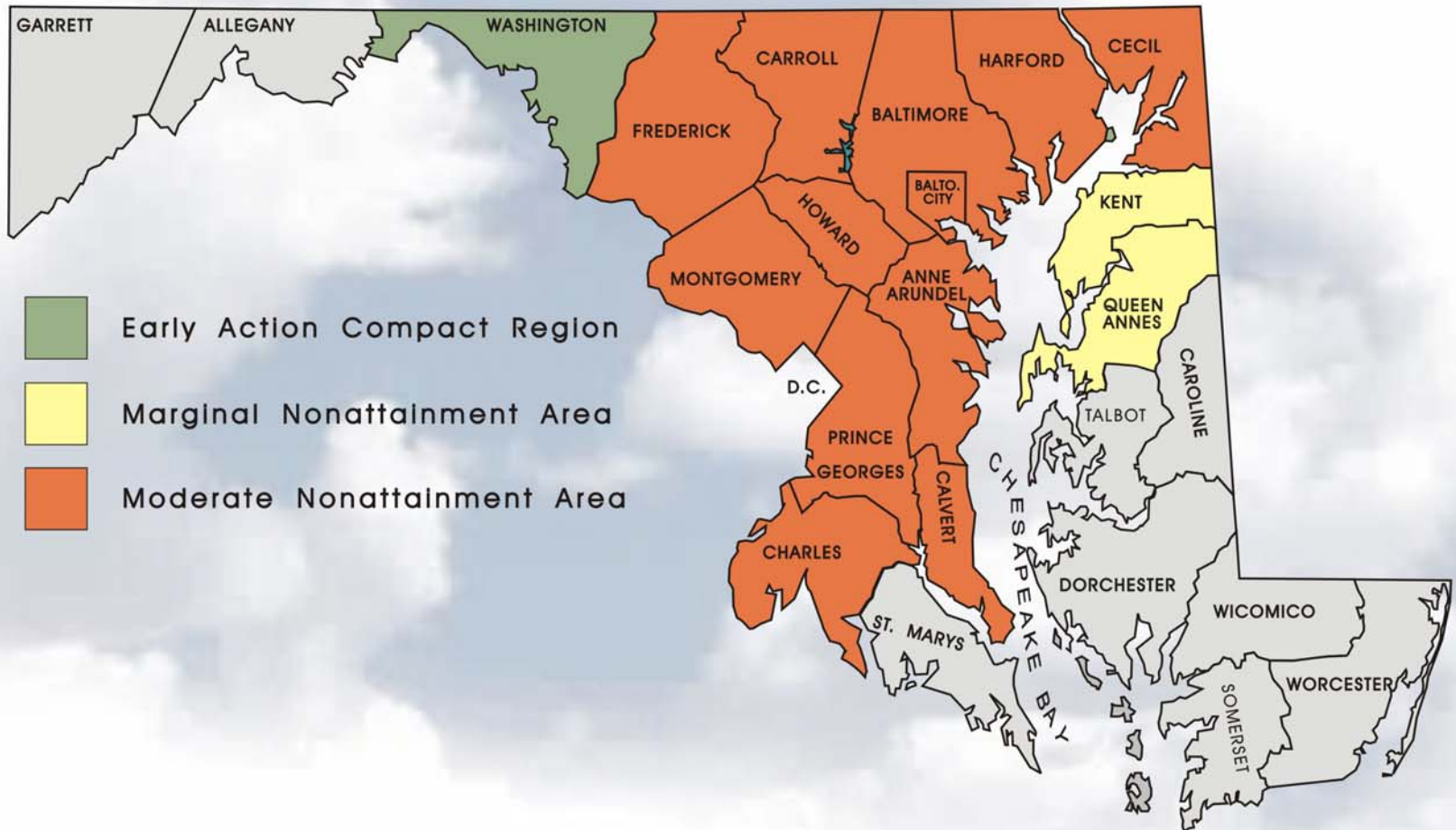


Maryland's Air Quality

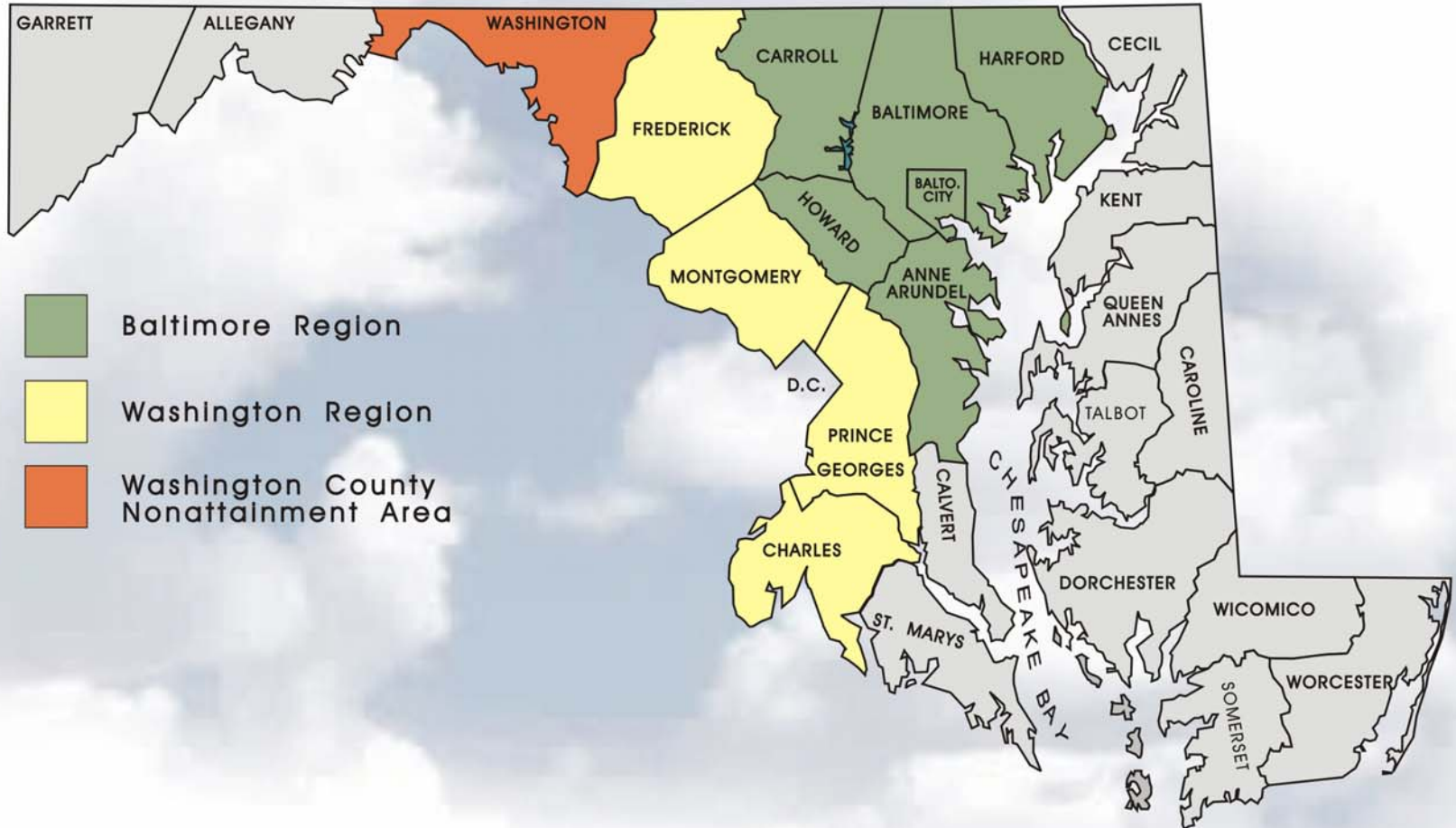
- We have problems with long term ozone exposure
- Fine particulate levels are generally very close to the federal standard
- Regional Haze issues
- Air pollution contributes significantly to Bay pollution



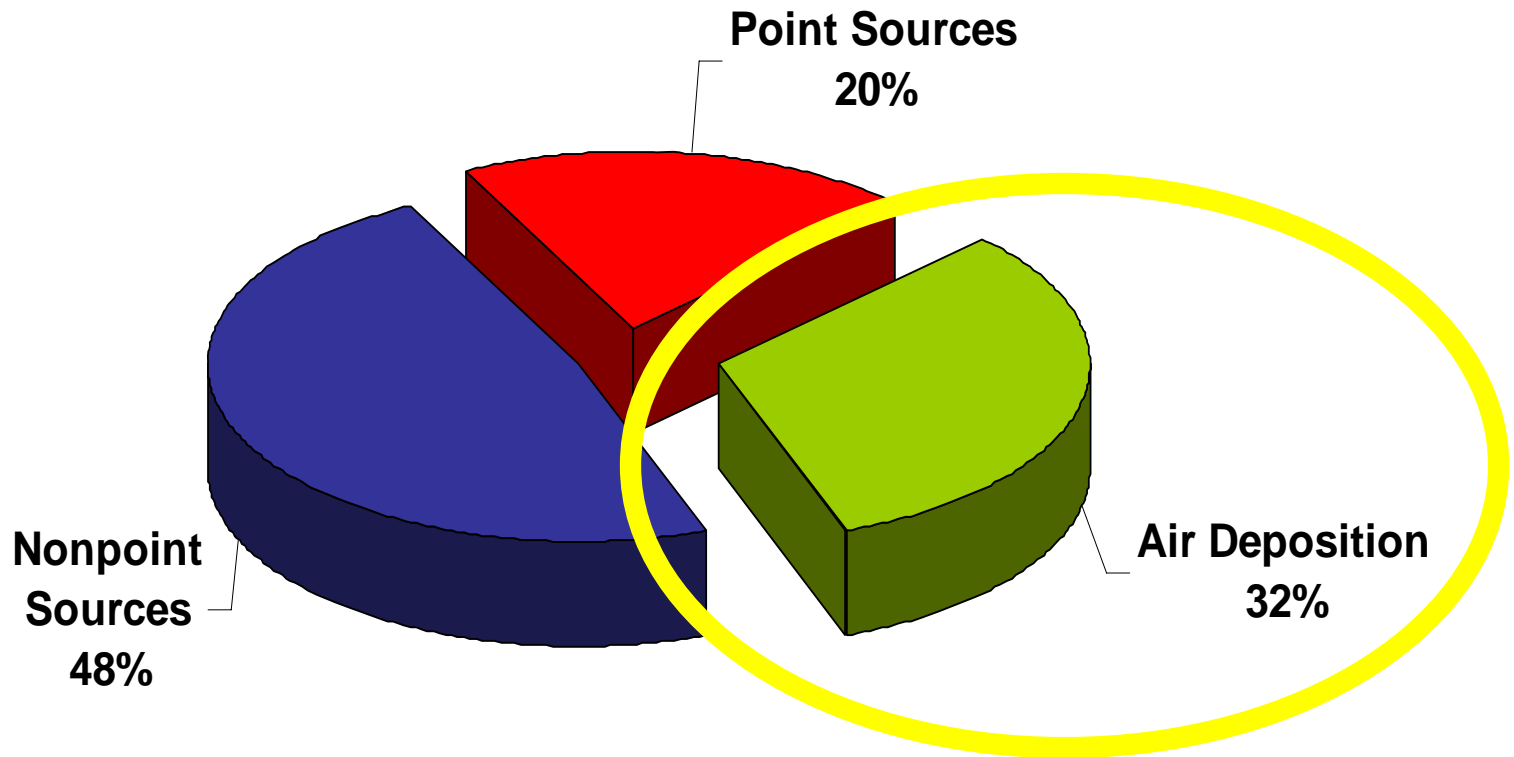
8-hour Ozone Nonattainment Areas



Fine Particle Nonattainment Areas

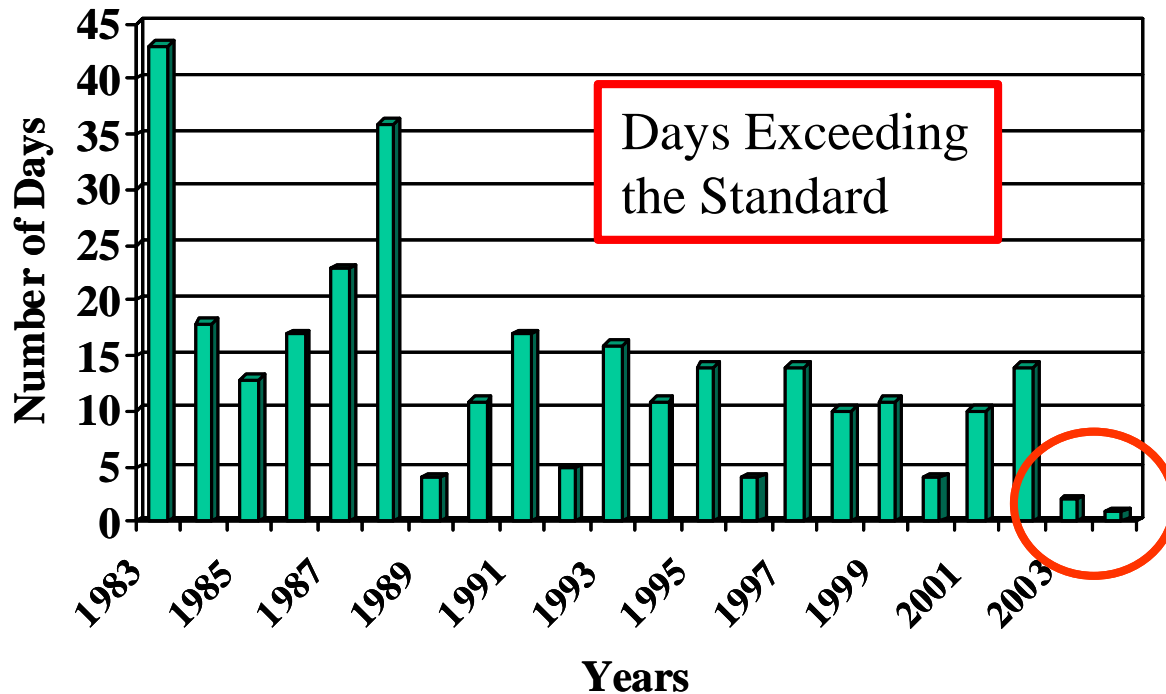


Nitrogen Deposition to the Chesapeake Bay



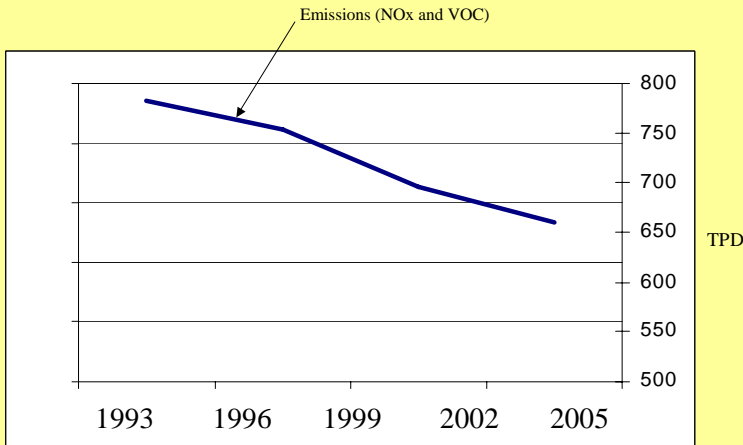
Good News – Ozone Levels

- Ground Level Ozone
 - Monitored levels are lower than they have ever been
 - We came very very close to meeting the old ozone standard
 - Some regions of Maryland actually have achieved both the old and the new ozone standard
 - Maryland areas designated “Moderate” under new standard
 - Not “Severe” as they were under 1-hour standard



Good News – Local Reductions

Emissions in the Baltimore Region



- Maryland has implemented one of the country's most aggressive set of air pollution control regulations
 - Power plants to hair spray and perfume
 - Over 100 different regulations since 1990
- Emissions in Maryland have been cut by about 40% since 1990
 - National average is about 20%



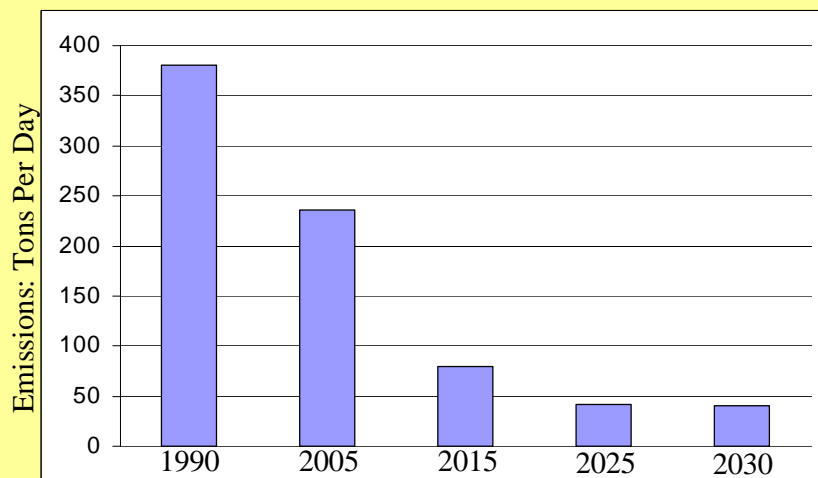
Good News – Mobile Source Reductions



- Maryland programs like the our vehicle inspection program combined with federal motor vehicle emission requirements have reduced mobile source emissions in Maryland by about 50% since 1990.
- Significant additional reductions are phased in in 2004 and 2007
- By 2030 mobile source emissions are projected to be 11% of what they were in 1990.
- These reductions include significant projected growth in Vehicle Miles Traveled (about 40%)

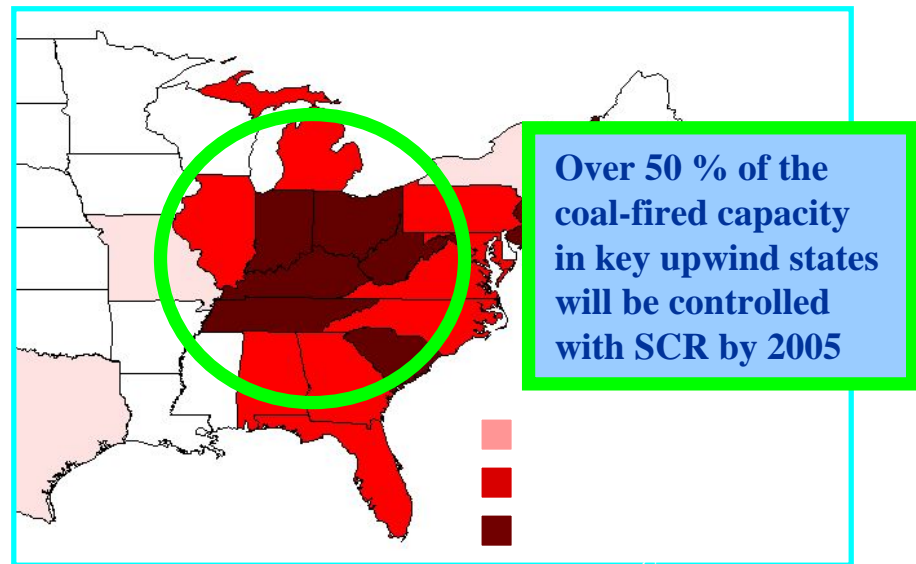
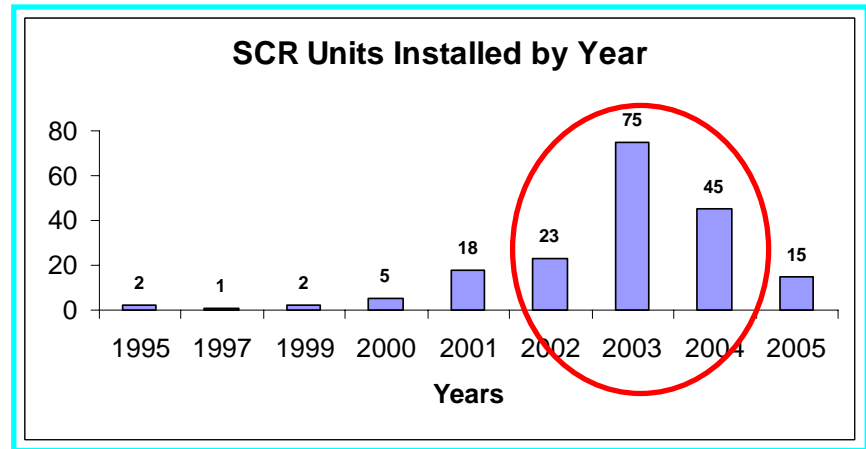
Reductions in Mobile Source NOx Emissions in the Metropolitan Washington Statistical Area

Source: WASHCOG



Good News – Power Plant Reductions

- Significant reductions from regional power plants between 2002 and 2005
- Billions of dollars being invested in “Selective Catalytic Reduction” (SCR) technology to reduce power plant NO_x emissions



What have we done lately?

Summary of Air Pollution Control Programs in Maryland

Cars/ Trucks and other Mobile Source Controls

- Enhanced Inspection/Maintenance Program – Maryland’s VEIP Program
- Tier I – new car standards
- Reformulated Gasoline for Cars
- NLEV - TIER 2 - updated new car standards
- Heavy Duty Diesel Engine Controls
- Gas Station Pump Controls (reduces evaporative loss while filling you tank)

“Area Source” Controls

- Maryland’s Landfill Regulations aimed at controlling landfill emissions
- Maryland’s Open Burning Ban – keeps emissions down from leaf burning
- Consumer Products Controls – controls emissions from everyday items like perfume and hair spray
- Maryland’s controls on household paints

“Nonroad” Source Controls

- Controls aimed at small gasoline engines like weed wackers and lawnmowers and chainsaws
- Diesel Construction Equipment and larger engine controls
- Marine Engine Standard for pleasure craft

Power Plants/ Manufacturers and other “Stationary Sources”

- Reasonable Available Control Technology Regulations for large emissions sources
- Two additional phases of power plant controls (called the OTC Budget Program and the SIP Call)
- Manufacturing Controls on yeast producers, polystyrene producers, bakeries, screen printers, graphic arts and numerous other emissions sources

MD’s Latest Additions:

- OTC AIM
- OTC Consumer Products
- OTC Gas Cans
- Solvent Cleaning Regulation
- Mobile Equipment Refinishing Regulation

Regional Controls still require local implementation and enforcement

These control programs to the right are still producing additional benefits along the way

The Maryland Healthy Air Act

- Imposes upon Maryland's largest coal-fired electric generating units emission caps on pollutants that contribute to ozone, particles, regional haze, acid rain, and bay pollution
- Reduces mercury emissions from all MD coal-fired electric generating units
- Prohibits Maryland power plants from acquiring out-of-state emissions allowances (trading) to meet emission caps

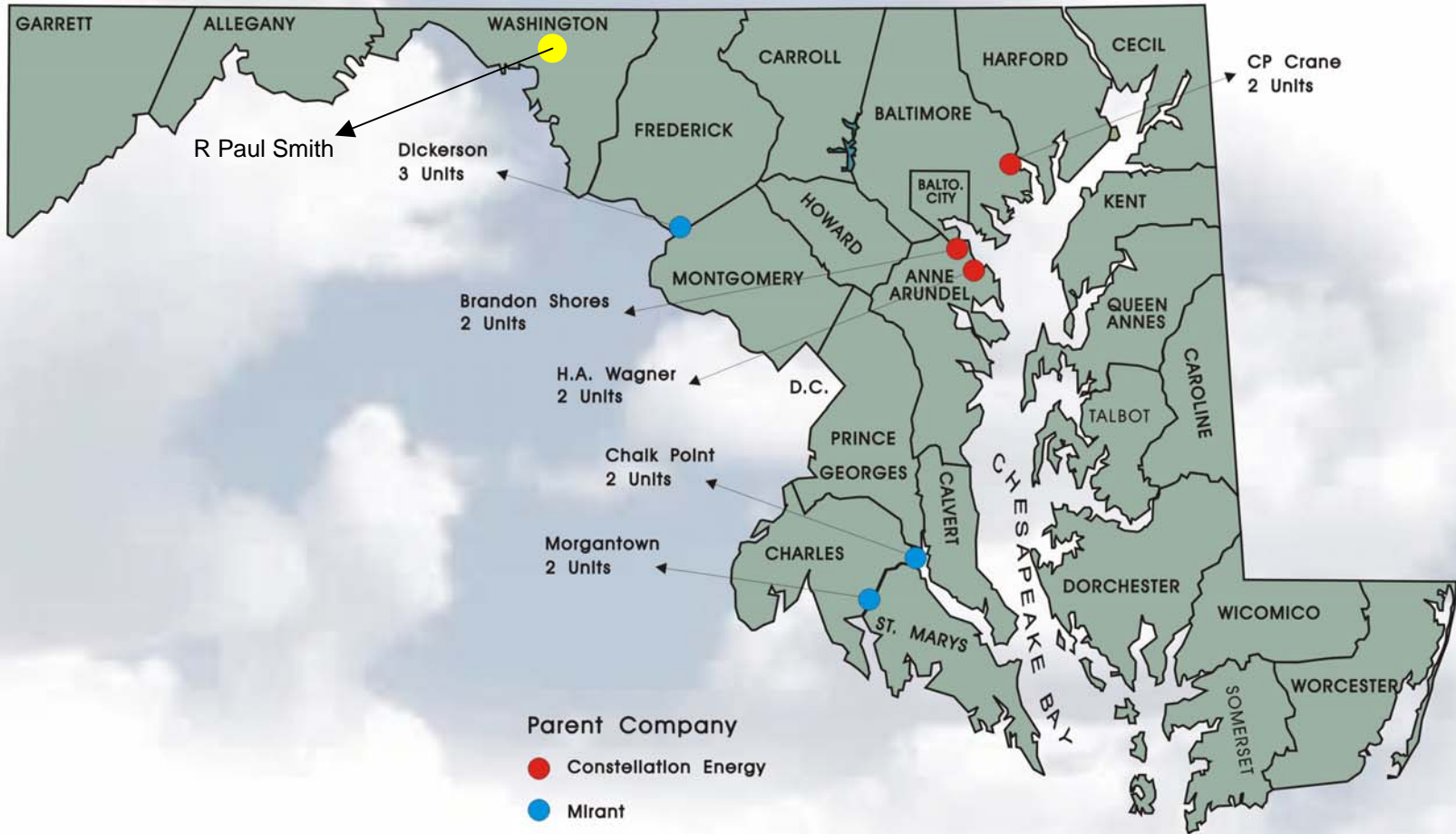


History of the HAA

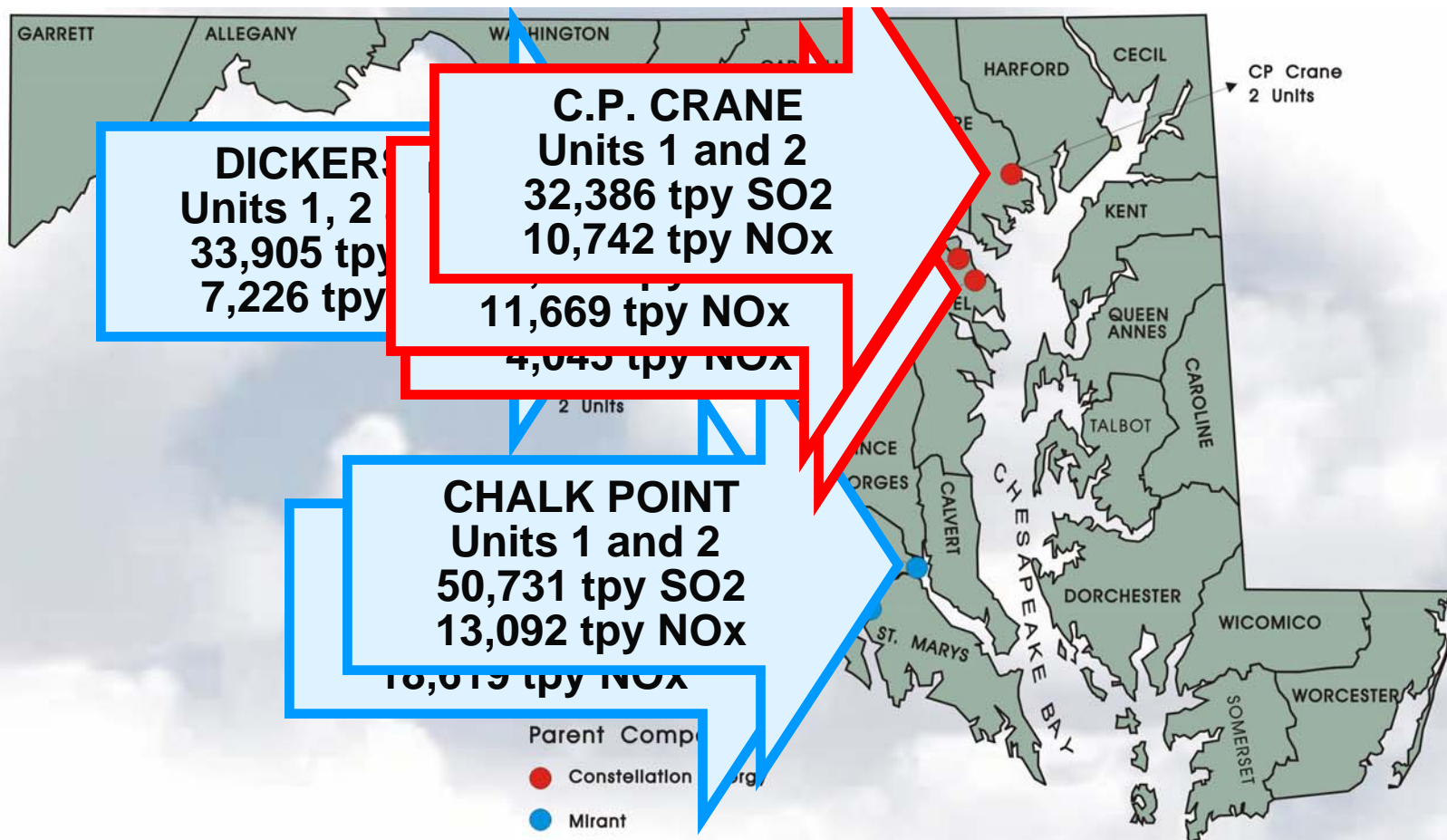
- For the past several years there has been a growing consensus in the MD general assembly that a power plant pollution law was needed
- Several MD legislators continued to push the need for a law
- This past year the Healthy Air Act was developed in conjunction with the developing Maryland Clean Power Regulations as a means of controlling power plant emissions
- This much debated law was signed by the Governor on April 7th, 2006



Coal Fired Power Plants Covered by the Healthy Air Act



Emissions by Plant

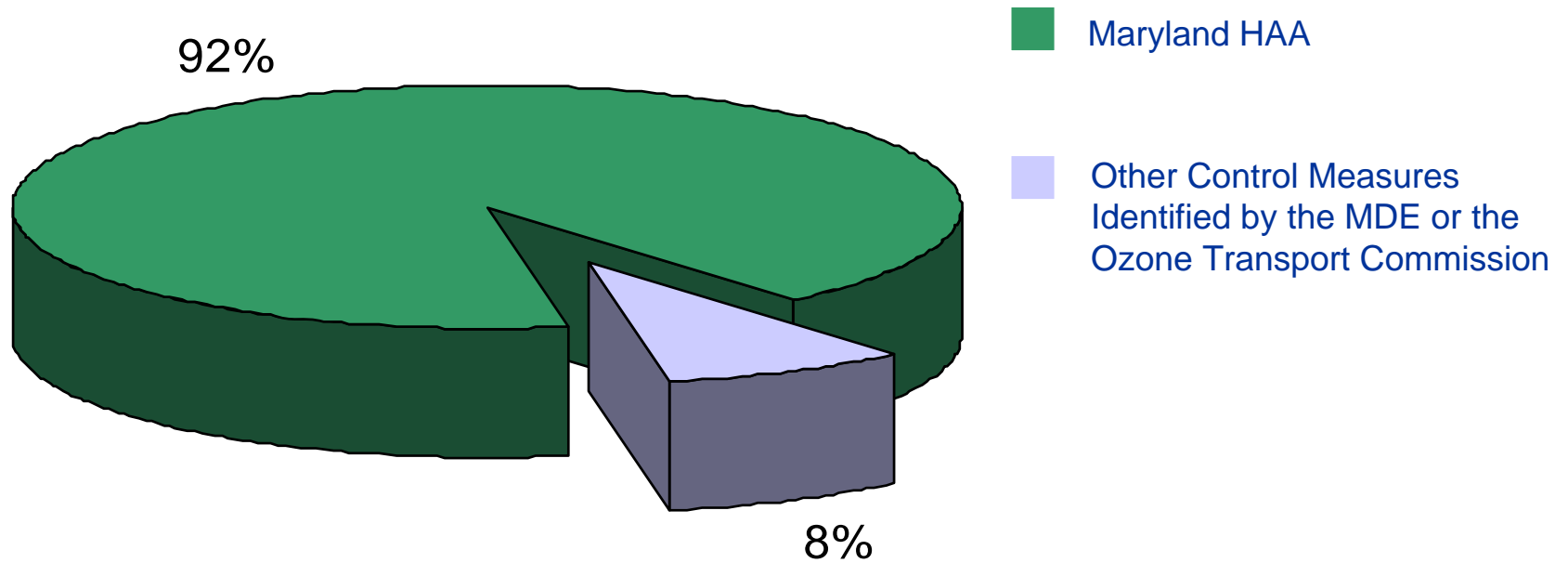


Healthy Air Act Benefits

Larger, Earlier Emission Reductions

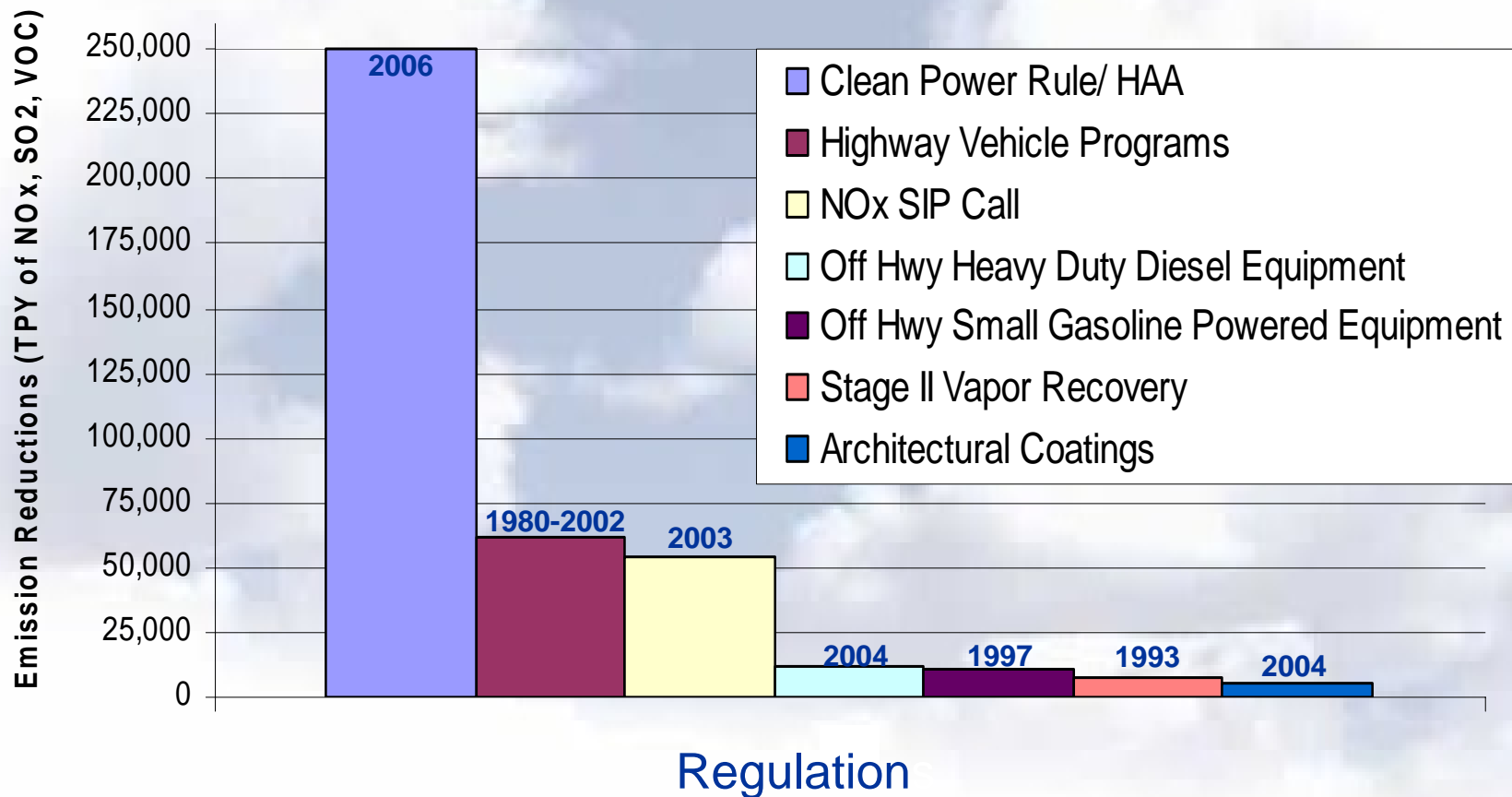
Pollution Reduction	EPA Clean Air Interstate Rule / Clean Air Mercury Rule	Maryland Healthy Air Act
Nitrogen Oxide (NOx)	↓ 42% ↓ 27,000 tons per year	↓ 70% in 2009 ↓ ~45,000 tons per year
Sulfur Dioxide (SO₂)	↓ 50% ↓ 120,000 tons per year	↓ 80% in 2010 ↓ ~200,000 tons per year
Mercury (Hg)	↓ 46% Reduction	↓ 80% in 2010
Timing	Full Implementation = 2015 (2018 for Mercury)	Full Implementation = 2009/2012/1013
Regulatory Approach	Continued Trading	In-State Reductions

Local Emission Reductions Needed in Maryland to Comply with 2010 Ozone and Fine Particulate Standards



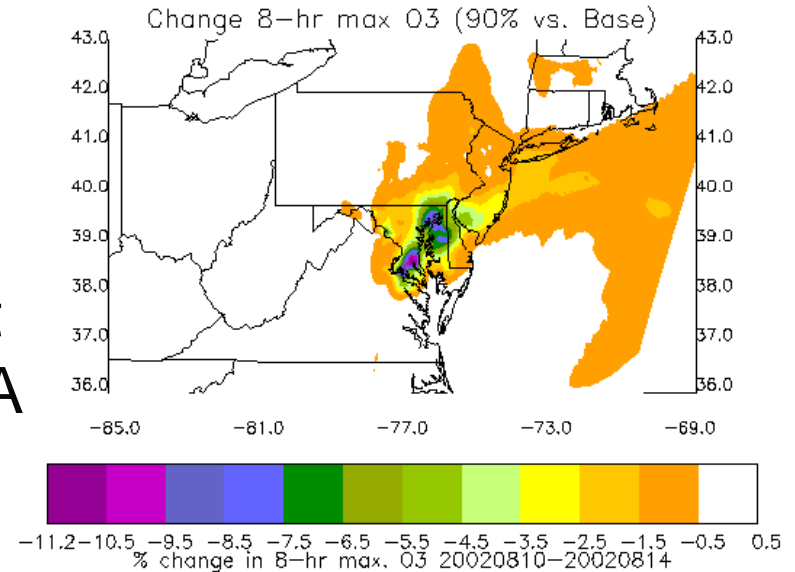
Maryland Healthy Air Act

Largest Maryland Emission Reductions Ever



Meeting the New Standards

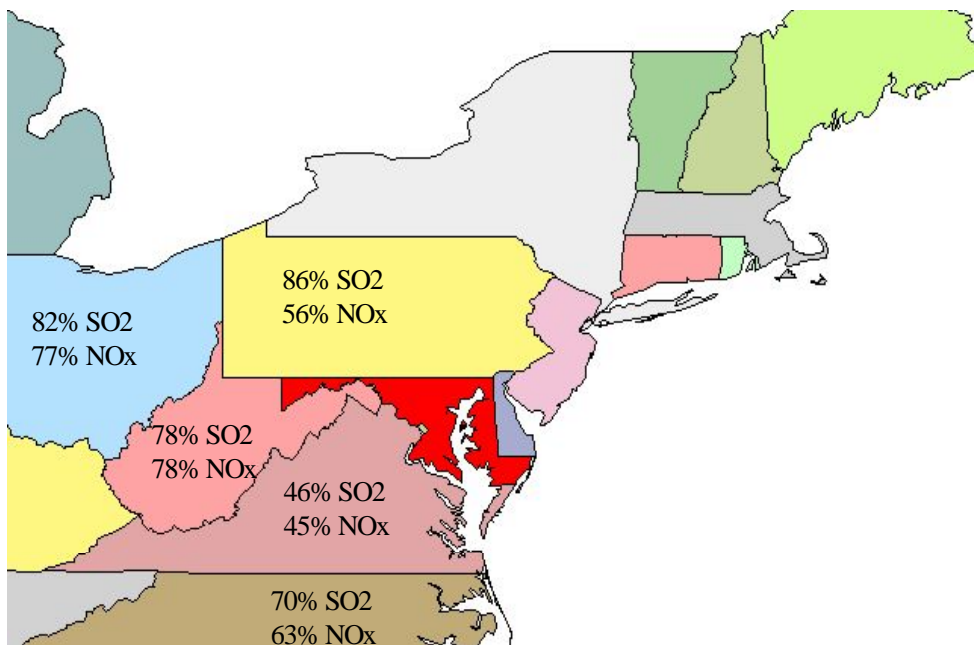
- Preliminary photochemical modeling analysis indicates that Maryland will attain the fine particulate standard and come very close* to the new ozone standard with stringent power plant rules like the HAA
- Reductions from upwind power plants are also critical
- Without the reductions from the Healthy Air Act ...
 - Maryland will not be able to comply
 - Public health will remain at risk



Reductions at Upwind Power Plants

- EPA has adopted a good federal rule (the Clean Air Interstate Rule) that will significantly reduce NO_x and SO₂ emissions across the East
- Maryland, working with northeast and midwest states, is looking for ways to strengthen CAIR if needed.
- Modeling and other technical work to support this effort is underway

Power Plant Reduction in Selected Upwind States Projected Under the CAIR



Other Benefits

- Reduces regional haze
 - increases visibility
- Reduces crop and agricultural damage
- Reduces damage to buildings and structures
- Clean hands
 - MD still pushing for deep reductions from upwind power plants
 - Helps Maryland with transport arguments



Questions?



Thanks.....

Brian Hug
Acting Deputy Program Manager
Air Quality Planning Program
410-537-4125
bhug@mde.state.md.us