

Fall 2005 CAPCA Update

Myrtle Beach, N.C.

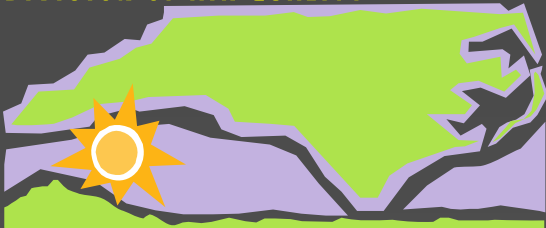
October 20, 2005

Keith Overcash, P.E.

Director,

Division of Air Quality

NORTH CAROLINA
DIVISION OF AIR QUALITY



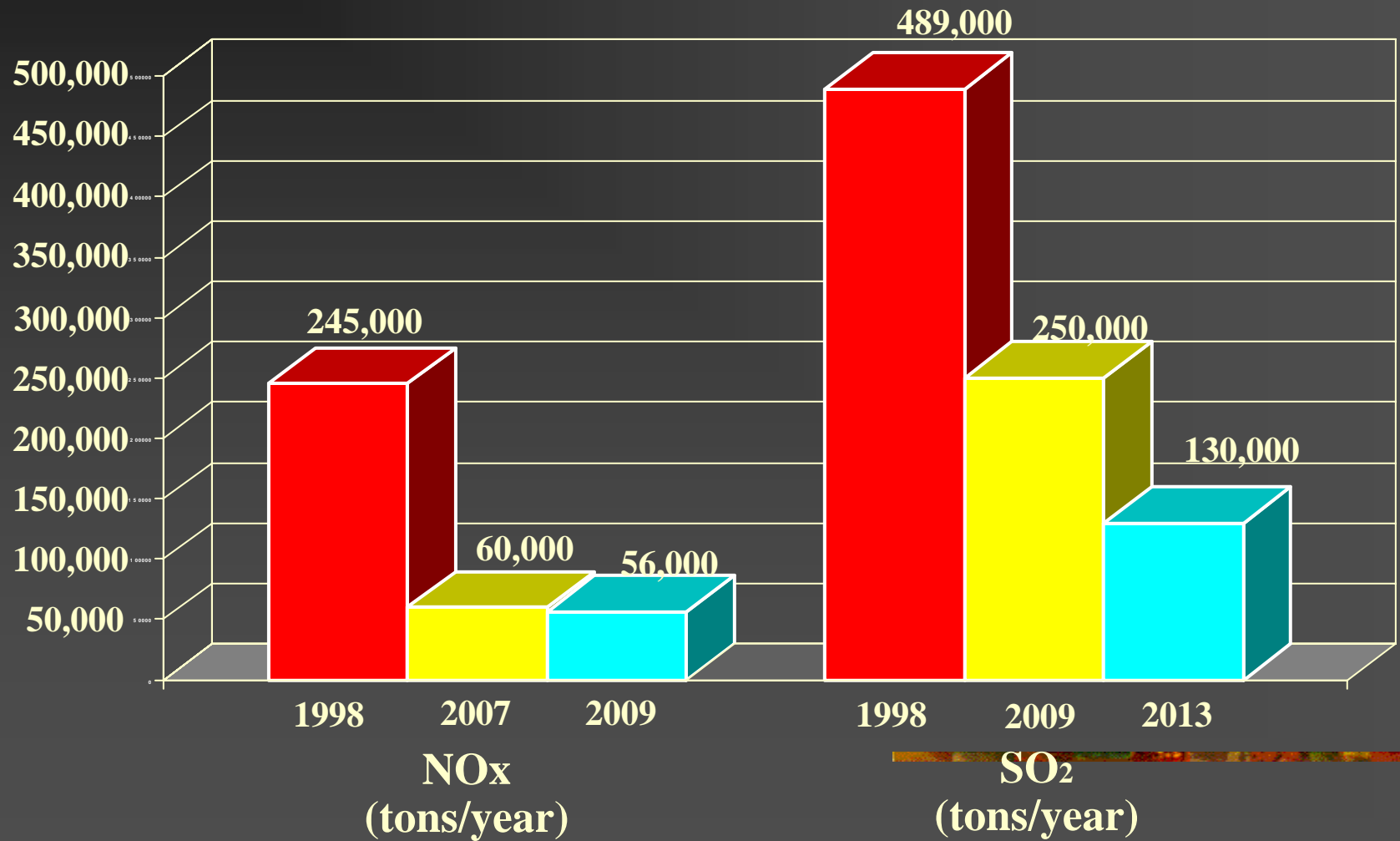
North Carolina Clean Smokestacks Act (CSA)

- NO_x & SO₂ Caps on Emissions
 - Tons/Year
 - Caps per Company – They Decide on Controls
 - Phased Compliance; 1 Jan. '07, '09, '13
 - 22 SO₂ Scrubbers
 - 36 SCR / SNCR Units
 - NO_x Controls in Place Starting in 2001
 - SO₂ Scrubbers Scheduled to Start in November 2005
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CSA (cont.)

- Actual Reductions in N.C.
 - Unique Cost Recovery Feature
 - Recommendations on Hg & CO₂;
September 2005
 - Reduction Credits Held by the State
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Emissions Reductions Under Clean Smokestacks Bill



Background – CSA CO₂ & Hg Reports

- CSA Passed and Signed in June 2002
 - Sections 12 & 13 required reports by DAQ on Sept. 1, 2003, 2004 and 2005 on CO₂ and Mercury
 - 2003 Reports were “State of Science”
 - 2004 Reports were “Range of Options”
 - 2005 Reports are “Recommendations”
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CO₂ – Assumptions & “Extrapolations”

- Acceptance of Global Warming Implied in CSA – Not an Issue to Decide
 - CO₂ Specified in CSA, but Assumed to be Inclusive of all GHG (Basically, Adds Methane, N₂O, and Other but “Less Common” Gases)
 - CSA Basically Directed Toward Coal-fired Power Plants, but Effort was Viewed in Context of all Sources of GHG, Stationary and Mobile
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DAQ Recommendations for CO₂

DAQ to do (Action Plans)	Administrative & Regulatory	Longer Term Studies/Plans
8 Listed Plans of Action that DAQ is committing to do.	7 Recommendations that DAQ is making for the DAQ and other agencies to act upon under existing authorities and level of knowledge.	7 Long Term general Recommendations to be studied and further developed as part of the stakeholder developed Climate Action Plan.

DAQ To Do (Action Plans)

- Develop/facilitate a NC Climate Action Plan (CAP)
 - High level oversight/direction group (Secretary – level)
 - Stakeholder groups (transportation, agriculture, efficiency...)
 - Technical working groups – government, consultants, etc.
 - Coordinate Develop of CAP for SE Region
 - Require Baseline Point Source GHG Reporting within 3 Years
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DAQ To Do (Action Plans) cont.

- Explore Ways to Facilitate Higher Power Plant Efficiency
 - Include Consideration of Measures in SIP
 - Adopt/recommend Use of GHG Term “CO₂e” State-wide Instead of “CO₂”
 - Explore Ways to Use CO₂ Emission Credits to Fund Program
 - Work With and Assist Newly Authorized Legislative Commission on Global Climate Change (to end November 2006)
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Administrative & Regulatory Recommendations

A-1: NC increase state government efforts to reduce its own CO ₂ e	A-2: Encourage use of clean coal technologies
A-3: 5 years – Reassess CO ₂ removal and sequestration technology status	A-4: “Someone” initiate a NC GHG Registry w/verification
A-5: Establish major NC GHG tech centers for education, consulting and manufacturing	A-6: NC General Assembly and Executive Branch Influence National/world
A-7: NC education system incorporate GHG science	

Longer Term CAP Study, Assessment & Actions

LT-1: Endorse, continue to expand and refine State Energy Plan	LT-2: Establish Leadership Center in University for Ag & Forestry Sequestration
LT-3: Maximize use of animal waste for energy	LT-4: Establish RPS and EPS Standards ASAP
LT-5: Establish Public Benefits Fund	LT-6: Transportation use reductions and efficiency increases
LT-7: Plan or Commission for Long Range Global Warming Disaster Recovery	

Next Steps

- Present to EMC – Possibly ERC
 - Establish CAP Membership and Groups
 - Begin Implementation of EI Details
 - Work with Global Climate Change Commission as they Desire
 - Develop Climate Action Plan by December 2006 – Report to Commission, GA, Governor, etc. as Needed and Implement
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Expected CAP Process

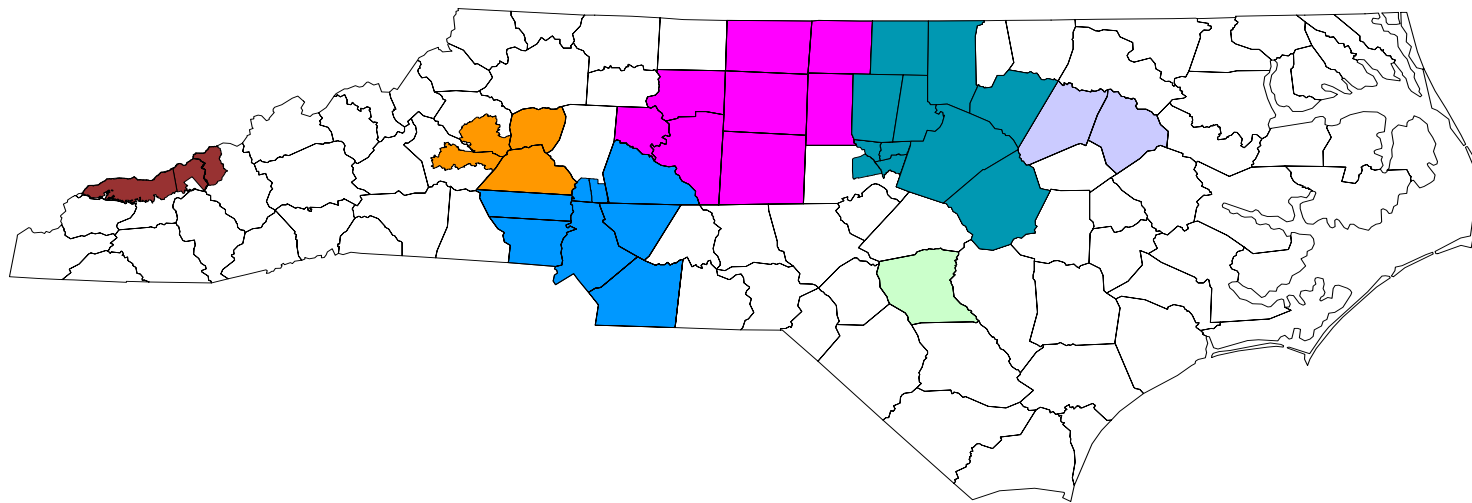
- DAQ in Charge of Administrative and Day-to-Day Oversight
 - Executive Oversight/Steering Committee at Secretary Level
 - Stakeholders (30-40) Representing Specific Sectors
 - Technical Work Groups (Consultant and Other Volunteer Experts – University, State Government, etc.)
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Mercury

Report/Recommendations

- Federal Clean Air Mercury Rule Promulgated by EPA
 - Significant Co-Benefits Expected from CSA Controls (55-65%)
 - Will Co-Benefits be Enough?
 - DAQ Recommendation:
 - Mercury Rule at least as Stringent as the Federal Mercury Rule
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EPA's Boundary Designations for 8-Hour Ozone Standards for North Carolina (4/15/04)



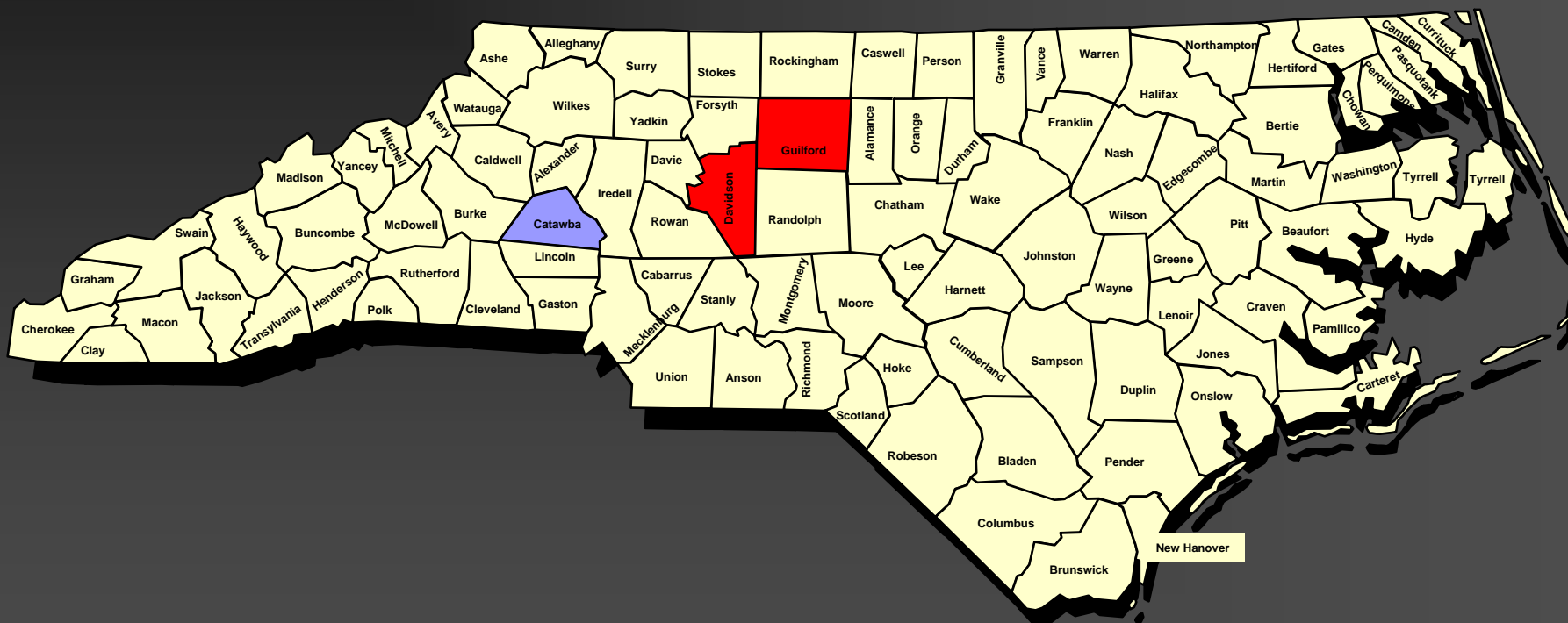
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- ncco_meter.stp
- charlotte_cty_415.shp
- Charlotte_twn_1.shp
- Triad_cty_415.shp
- Triangle_twn.shp
- unifour_cty_415.shp
- Mpo_hick_m
- Great Smōky Mtn.
- Fayetteville Area.shp
- Rockymount_cty_415.shp



Notes:

Charlotte area: Moderate, Max. attainment date: June 2010
Triad area (EAC): Moderate, Max. attainment date: Dec. 2007
Triangle area: Basic, Max. attainment date: June 2009
Unifour area(EAC): Basic, Max. attainment date: Dec 2007
Haywood & Swain cos: Basic, Max. attainment date: June 2009
Fayetteville area(EAC): Basic, Max. attainment date: Dec 2007
Rocky Mount area: Basic, Max. attainment date: June 2009

North Carolina Areas Designated Nonattainment for PM2.5 (EPA 12/17/04)



- NC_Attainment_Area.shp
- Hickory_PM2.5_Area.shp
- Triad_PM2.5_Area.shp

Not To Scale
02-17-05

State Implementation Plan (SIP)

- Must be Submitted to EPA Within Three Years
 - Details the State's Plan to Bring the Area into Attainment of the Federal Standard
 - Most Significant Features are Already Underway
 - Clean Smokestacks Act
 - Vehicle Emissions Testing
 - Low Sulfur Fuels
 - Cleaner Fuels
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SIP Development Completed

- Early Action Compact Areas
 - Fayetteville
 - Hickory/Morganton/Lenoir
 - Triad
 - Mountain
 - Ozone SIP Submitted December 2004
 - Demonstrates Attainment of Standard by December 2007, Maintenance Through 2017
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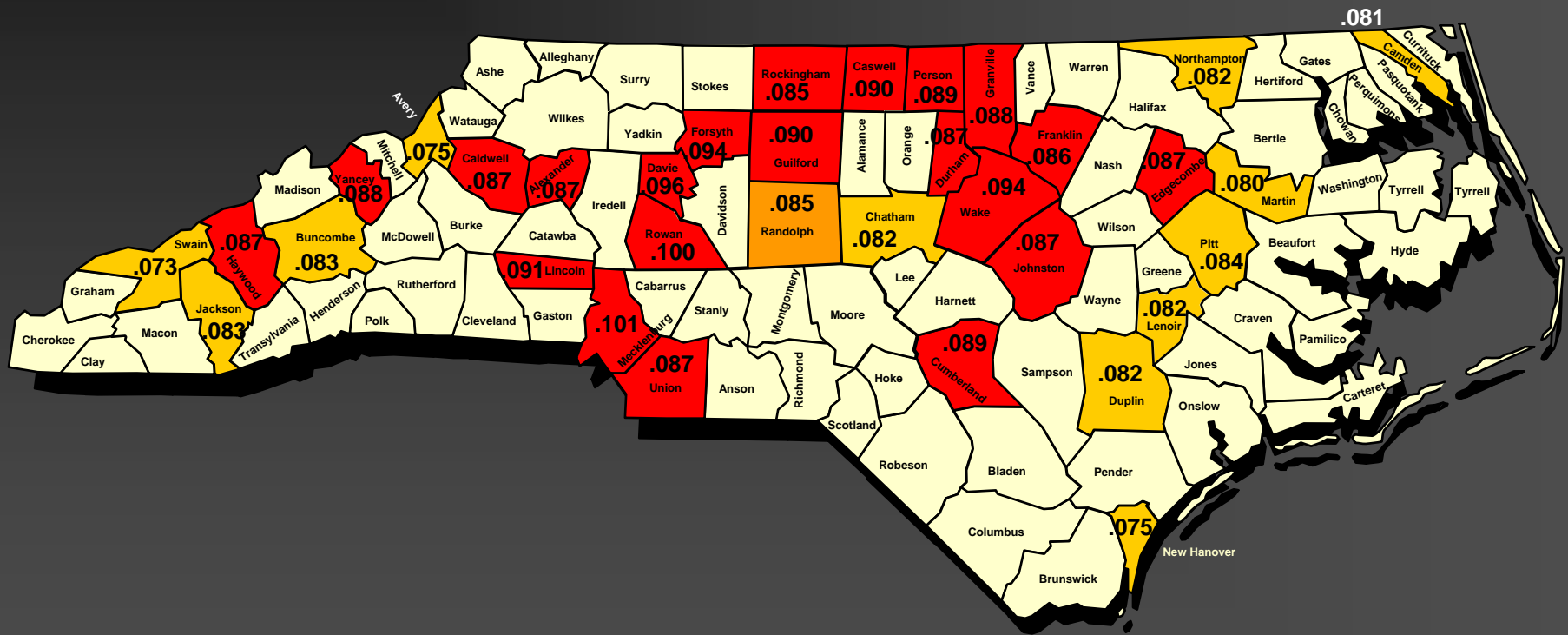
SIP Development Ongoing

- 8-hour Ozone Areas
 - Metrolina
 - Triangle
 - Rocky Mount
 - Great Smoky Mountains National Park
 - PM2.5 Areas
 - Triad
 - Hickory
 - Regional Haze
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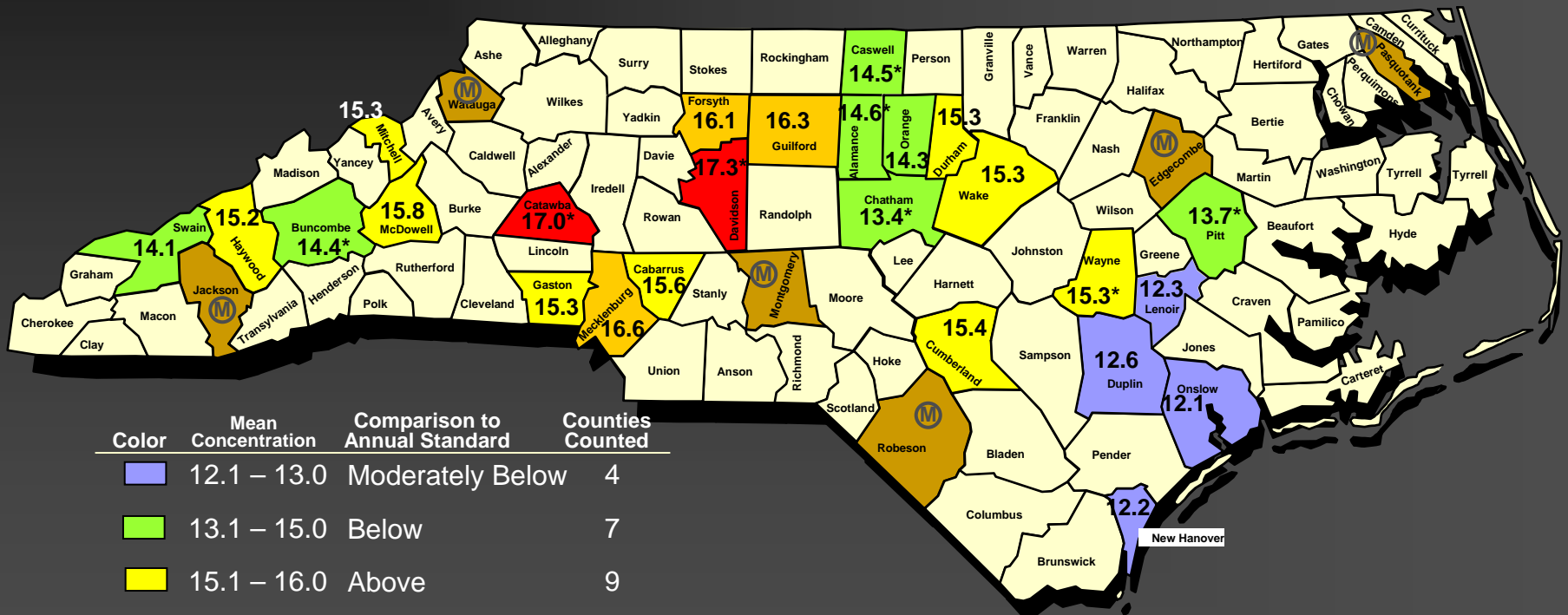
SIPs Submittal Schedule

- Ozone June 6, 2007
 - PM2.5 April 8, 2008
 - Haze December 17, 2007
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North Carolina Counties with 8-Hour Ozone Violations 1999-2001



Estimated Annual Mean PM 2.5 24-Hour Concentrations for January 1999 thru December 2001

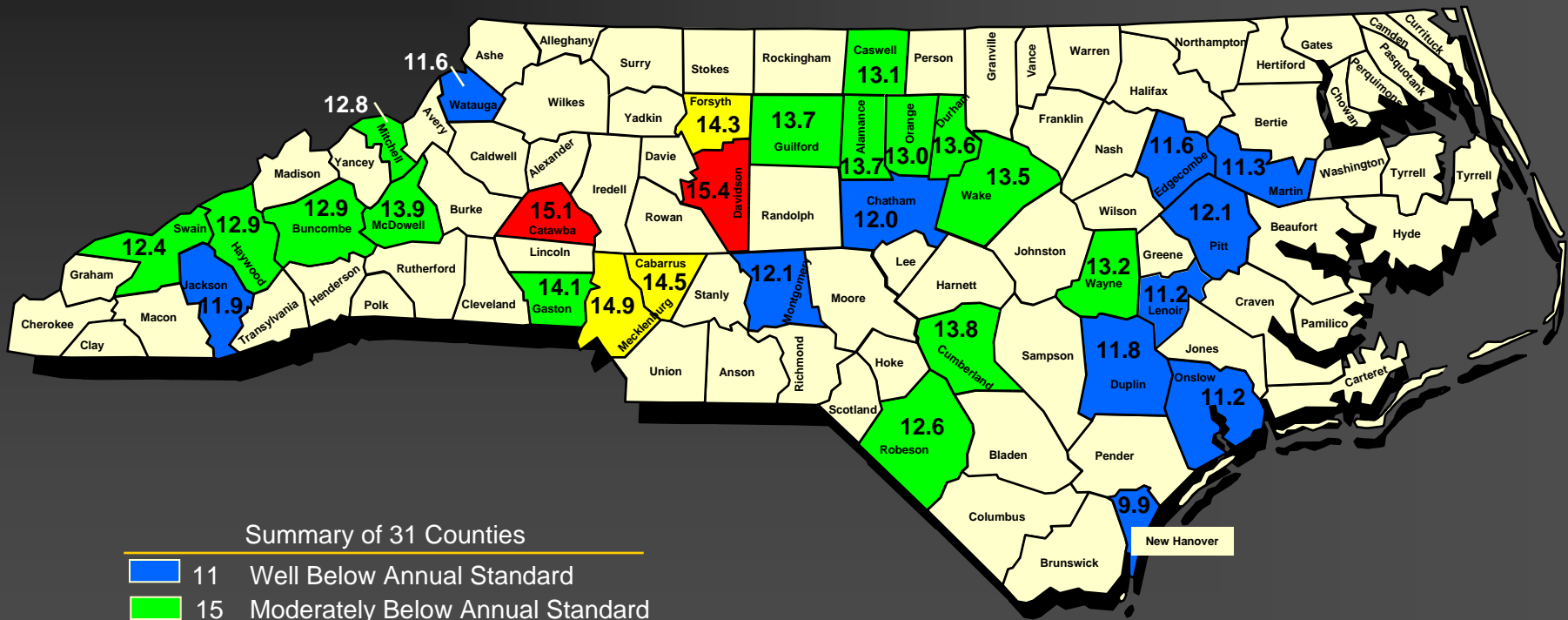


Color	Mean Concentration	Comparison to Annual Standard	Counties Counted
Blue	12.1 – 13.0	Moderately Below	4
Green	13.1 – 15.0	Below	7
Yellow	15.1 – 16.0	Above	9
Orange	16.1 – 16.8	Moderately Above	3
Red	16.9 – 17.3	Well Above	2
Brown	(NA)	Not Available	6

From each county's one-day or three-day monitoring site with the highest mean. Documented forest fire samples are expected.

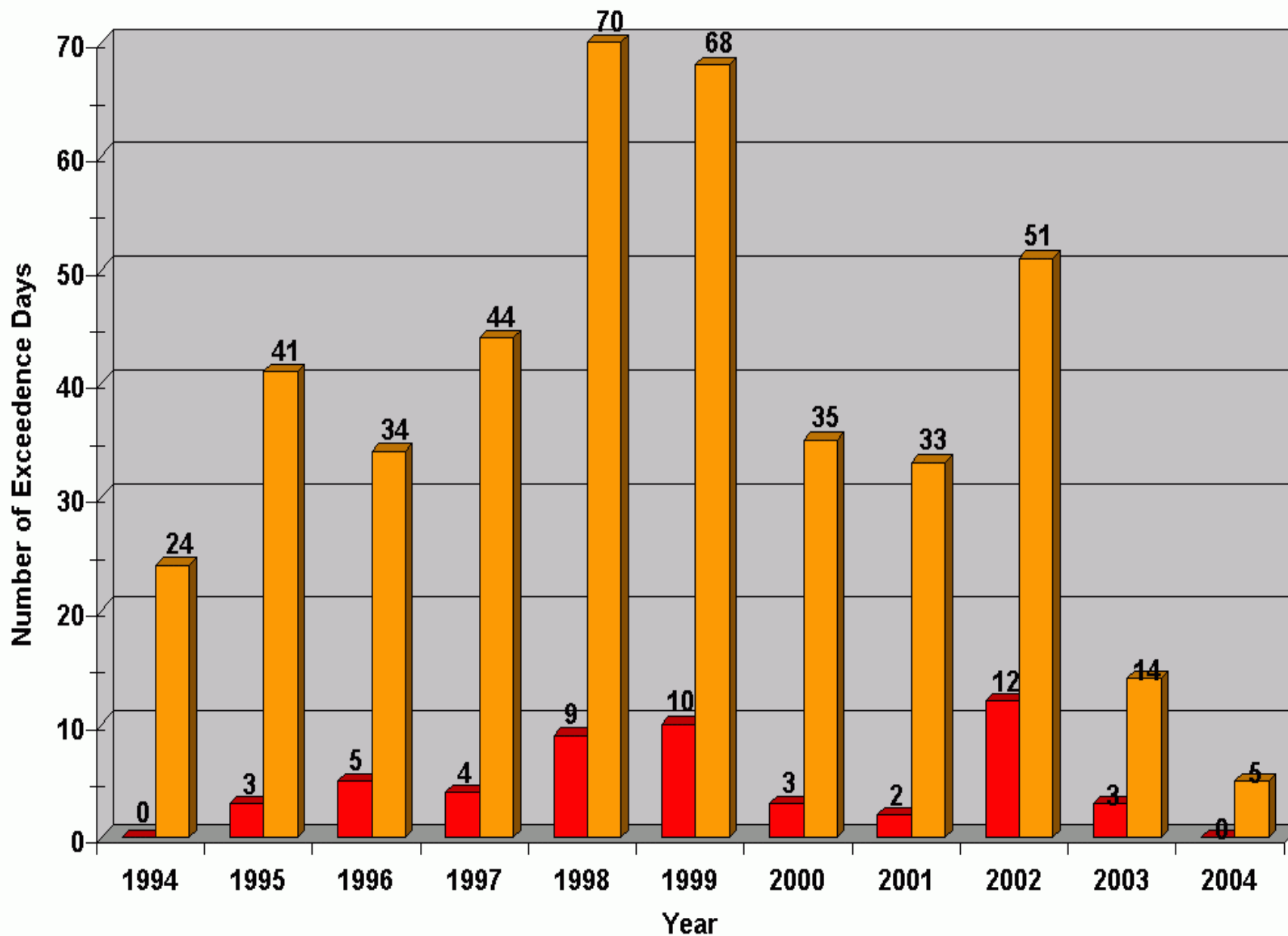
* In one or more of 12 calendar quarters, less than 75% of expected valid sampling occurred.
 (M) In one or more of 12 calendar quarters, 0% valid sampling occurred.

North Carolina PM 2.5 Design Values 2002-2004

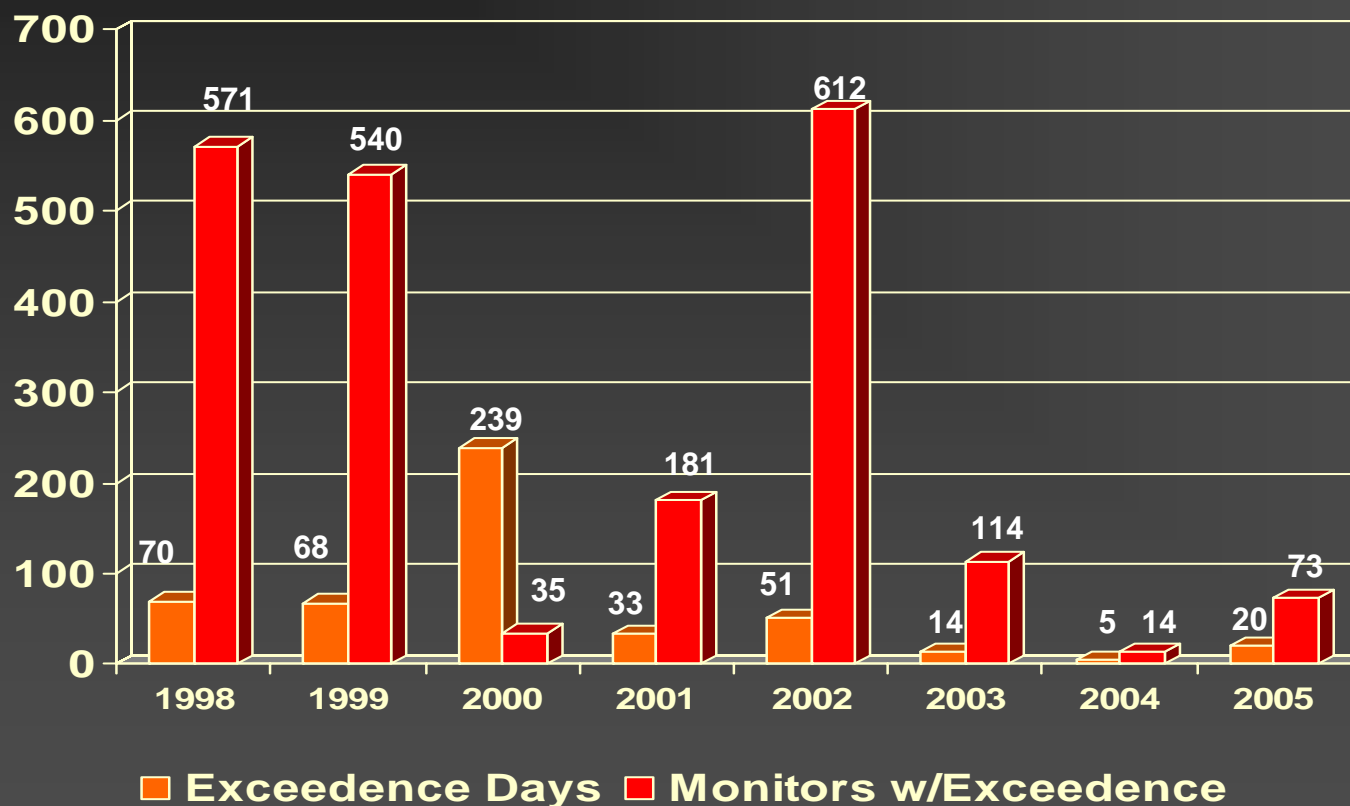




NC Statewide 1-Hour and 8-Hour Exceedence Days



NC Statewide 8-Hour Exceedence Days & Total Measured Exceedences



Toxics Protection Branch at the U.S. Open

- Requested by SBI
 - 24-Hour, 7 Day Coverage (June 13-19, 2005)
 - Monitored for Chemical Air Releases
-

Toxics Protection Branch U.S. Open (cont.)

- Airborne Releases – Major Avenue of Possible Attack
 - Large Crowds (45,000 per day) Potentially Exposed
 - Air Monitoring Would Detect releases in time to Alert Authorities and Avoid Widespread Harm to Public
-

Toxics Protection Branch U.S. Open (cont.)

- Sampling & Analysis for Gases, Vapor, Particulate
 - Based Sites on Historical Meteorology
 - Used Portable Equipment
 - Adapted Numbers & Locations, But Used 6 Basic Sites
-

Toxics Protection Branch U.S. Open (cont.)

Results

- A Lot of Ammonia – It's a Golf Course!
 - No Worrisome Chlorine Levels
 - No Hydrogen Cyanide
 - Some Evidence of Pesticide Applications
 - A Lot of Mobile Source Emissions
-



Alignment of FTIR with Retroreflector at Clubhouse





Practice Range Fairway Site A

Maintenance
Area &
Practice
Range
Site B



MOBILE AIR MONITORING LABORATORY



DAQ Rules Update

- Banking Emission Reduction Credits
 - CAIR (Clean Air Interstate Rule)
 - CAMR (Clean Air Mercury Rule)
 - BART (Best Available Retrofit Technology)
 - RACT (Reasonable Available Control Technology) for Charlotte MSA (Triangle/Triad ?)
-

The Carolina Cup (April 2004)

- Alan Klimek's Idea
 - Began Competition in Fall 2000
 - Galardi/Joy (SC) vs Overcash/Klimek (NC)
 - NC's record so far → 0-4-1
 - SC Team is Gracious in victory
-

The Carolina Cup Update

- NC's record now → 1 - 5 - 1
 - NC is not as gracious in victory as SC has been
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