



# South Carolina Air Quality Update

**40th Anniversary CAPCA  
2009 Fall Meeting  
October 22, 2009**

**Myra C Reece  
Bureau Chief  
Air Quality**



# Discussion Topics

- **Attainment Challenges**
  - **PM<sub>2.5</sub>**
  - **Ozone**
  - **Proposed NO<sub>2</sub> Rule**
- **Chicora Elementary Air Toxics Monitoring**
- **RMP**
- **“Stirring Things Up at the National Level”**

Wood-Burning Stoves



Power Plants



Heavy Duty Diesel Engines



Natural Sources



# Ozone Design Values 2006 – 2008

Cars and Trucks



Non-Road Vehicles



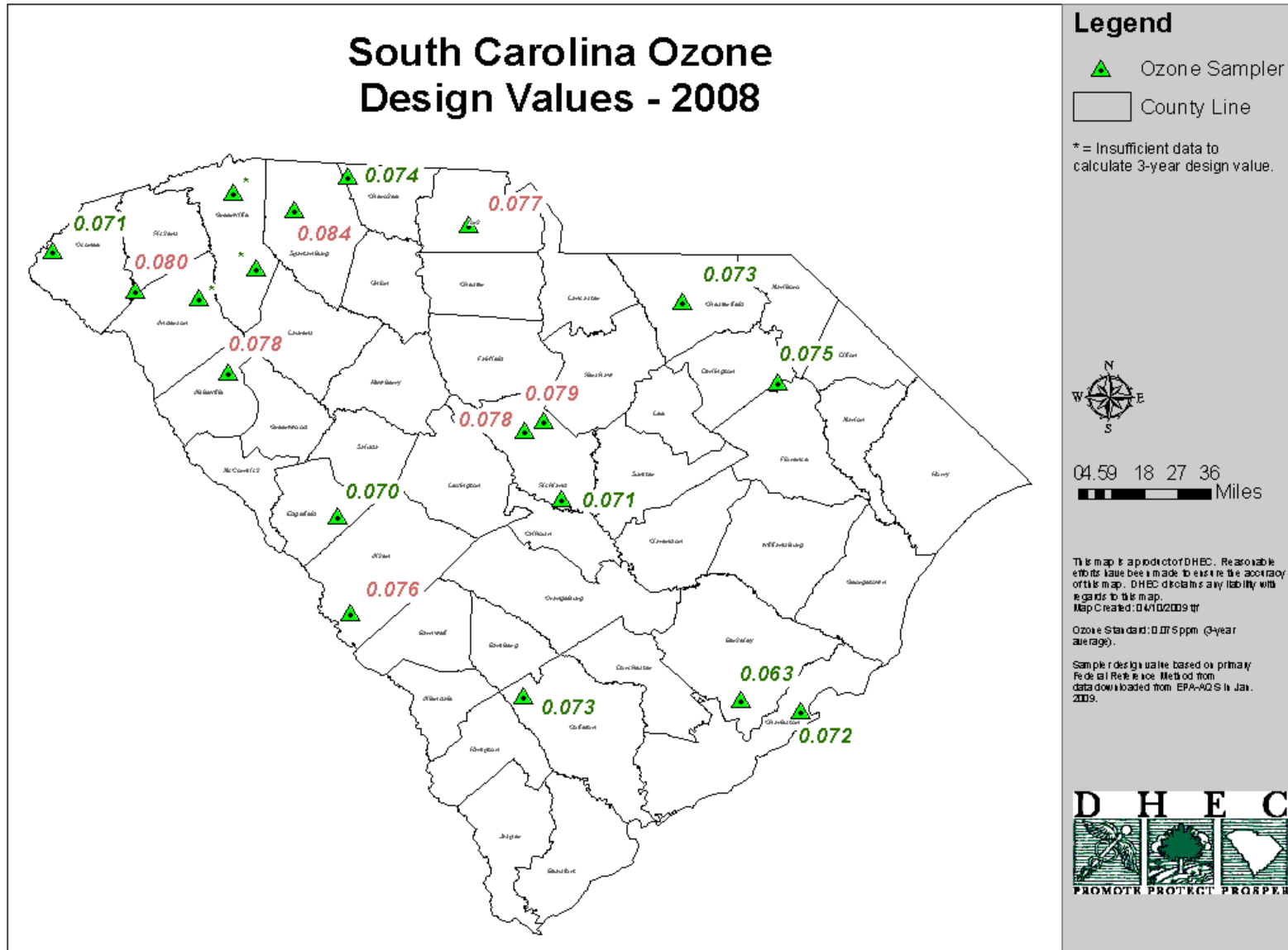
Forest Fires



Industrial Sources



# Where we stood at the end of 2008





| Monitor        | 2007      | 2008      | 2009 | 2009<br>Number of<br>hits* | DV<br>through:* | 9/30/2009 | 2010<br>Critical<br>Value | 2009<br>Critical<br>Value | 2010<br>Critical<br>value if<br>standard is<br>70 ppb |
|----------------|-----------|-----------|------|----------------------------|-----------------|-----------|---------------------------|---------------------------|---|
| Ashton         | 72        | 70        | 60   | 0                          | 67              |           | 98                        | 86                        | 83  |
| Big Creek      |           | 65        | 61   | 0                          |                 |           |                           |                           |   |
| Bushy Park     | 60        | 67        | 56   | 0                          | 61              |           | 105                       | 101                       | 90  |
| Congaree Bluff | 70        | 73        | 58   | 0                          | 67              |           | 97                        | 85                        | 82  |
| Chesterfield   | 73        | 72        | 66   | 0                          | <b>70</b>       |           | 90                        | 83                        | 75  |
| Clemson        | <b>81</b> | <b>80</b> | 66   | 0                          | <b>75</b>       |           | 82                        | 67                        | 67  |
| Cowpens        | 67        | <b>80</b> | 57   | 0                          | 68              |           | 91                        | 81                        | 76  |
| Cape Romain    | 69        | 71        | 63   | 0                          | 67              |           | 94                        | 88                        | 79  |
| Due West       | <b>83</b> | 74        | 61   | 0                          | <b>72</b>       |           | 93                        | 71                        | 78  |
| Famoda Farms   |           | 65        | 65   | 0                          |                 |           |                           |                           |   |
| Hilcrest       |           |           | 67   | 0                          |                 |           |                           |                           |   |
| Jackson        | <b>82</b> | 75        | 68   | 0                          | <b>75</b>       |           | 85                        | 71                        | 70  |
| Longcreek      | <b>76</b> | 72        | 66   | 0                          | <b>71</b>       |           | 90                        | 80                        | 75  |
| N. Spartanburg | <b>83</b> | <b>85</b> | 67   | 0                          | <b>78</b>       |           | 76                        | 60                        | 61  |
| Pee Dee        | 73        | <b>76</b> | 65   | 0                          | <b>71</b>       |           | 87                        | 79                        | 72  |
| Parklane       | <b>77</b> | <b>77</b> | 64   | 0                          | <b>72</b>       |           | 87                        | 74                        | 72  |
| Sandhill       | <b>84</b> | <b>77</b> | 67   | 0                          | <b>76</b>       |           | 84                        | 67                        | 69  |
| Trenton        | 73        | 71        | 63   | 0                          | 69              |           | 94                        | 84                        | 79  |
| York           | <b>80</b> | 75        | 62   | 0                          | <b>72</b>       |           | 91                        | 73                        | 76  |

\*=based on unofficial data

Wood-Burning Stoves



Power Plants



Heavy Duty Diesel Engines



Natural Sources



# PM<sub>2.5</sub> Design Values 2006 - 2008

Cars and Trucks



Non-Road Vehicles



Forest Fires





Industrial Sources



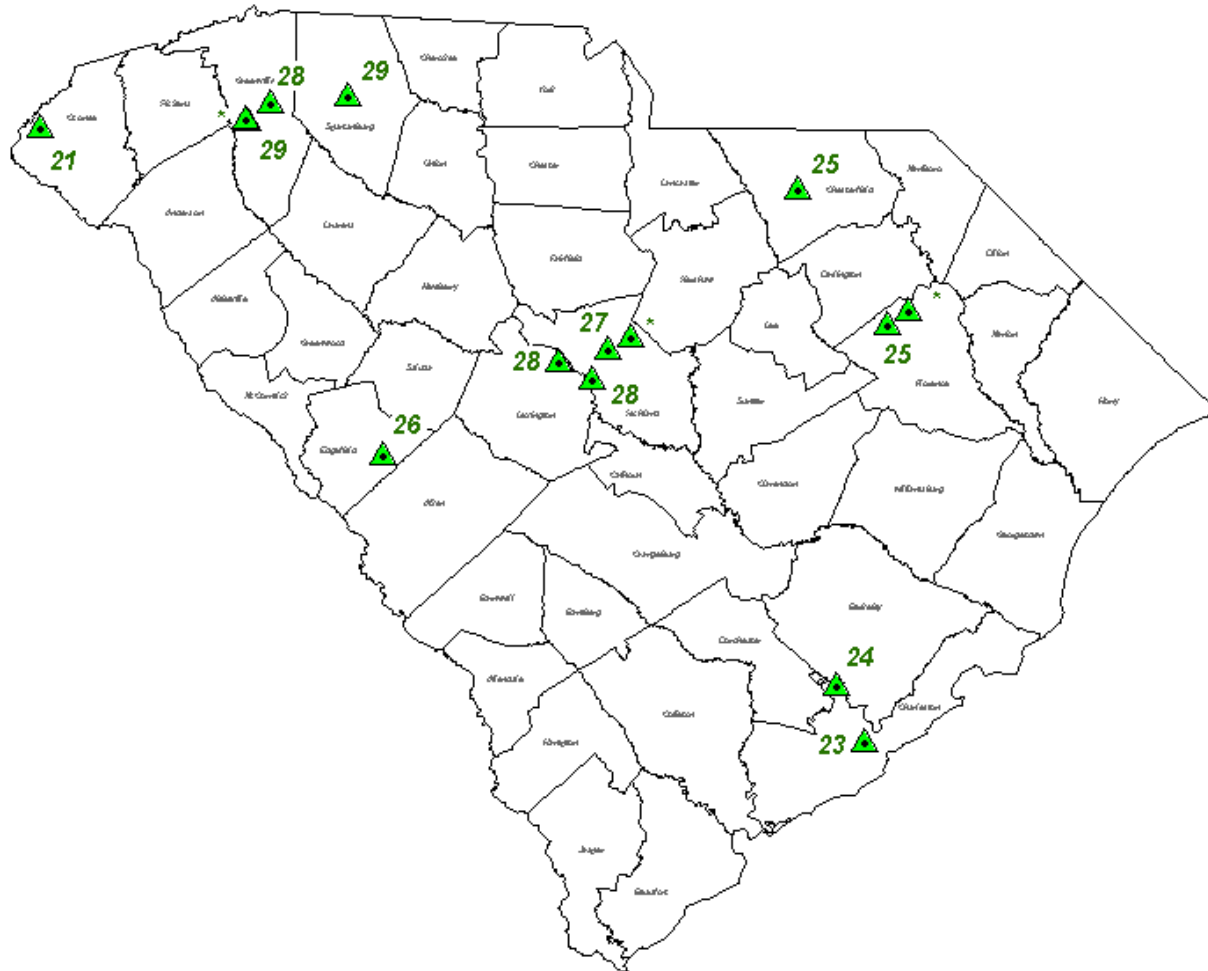
# South Carolina Daily PM<sub>2.5</sub> Design Values - 2008

## Legend

 PM<sub>2.5</sub> Sampler

 County Line

\* = Insufficient data to calculate 3-year design value.



0 10 20 30 40  
Miles

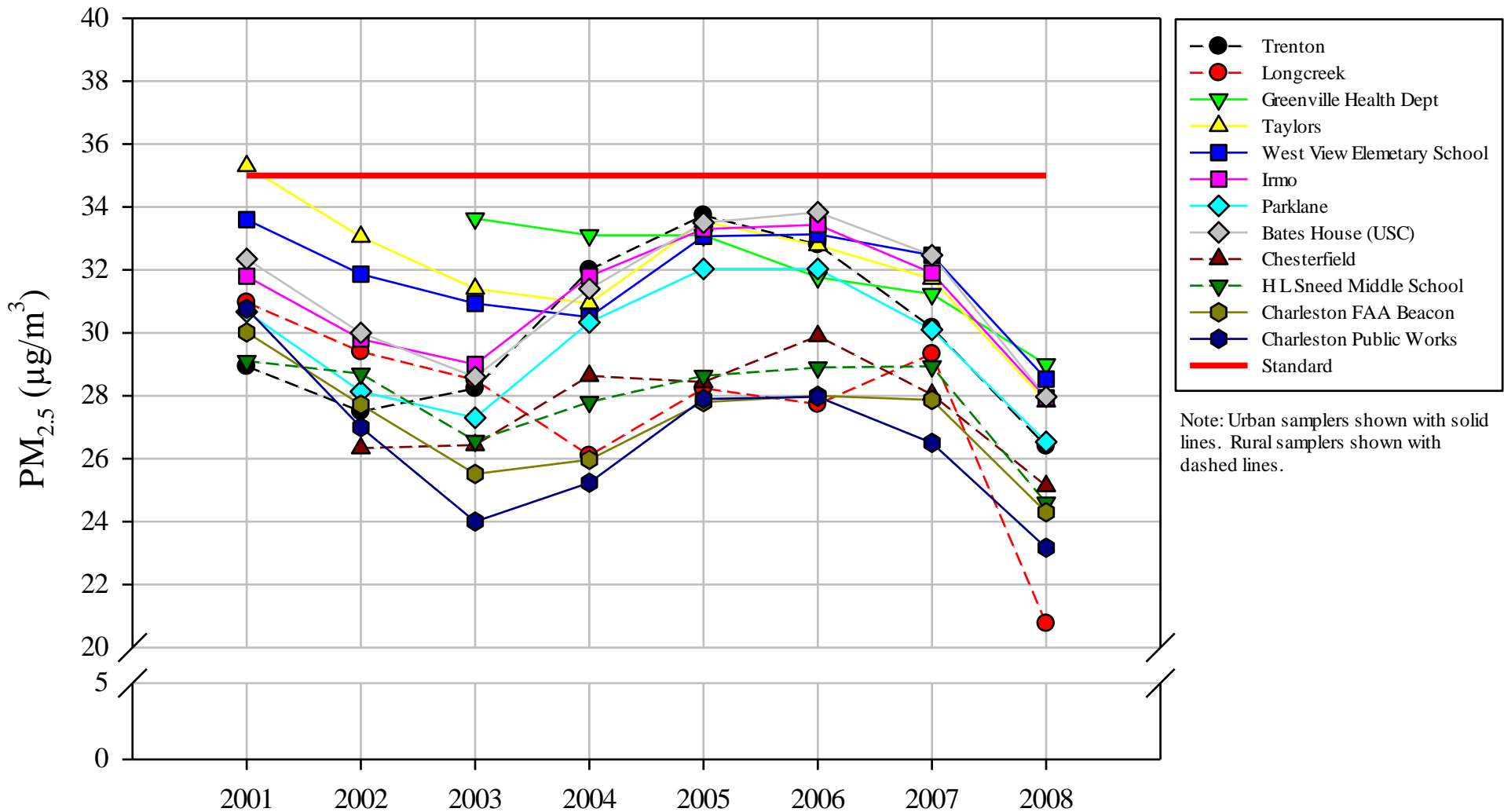
This map is a product of DHEC. Reasonable efforts have been made to ensure the accuracy of this map. DHEC disclaims any liability with regards to this map.  
Map Created: 04/10/2009 tjr

Daily PM<sub>2.5</sub> Standard: 35 µg/m<sup>3</sup> (3-year average).

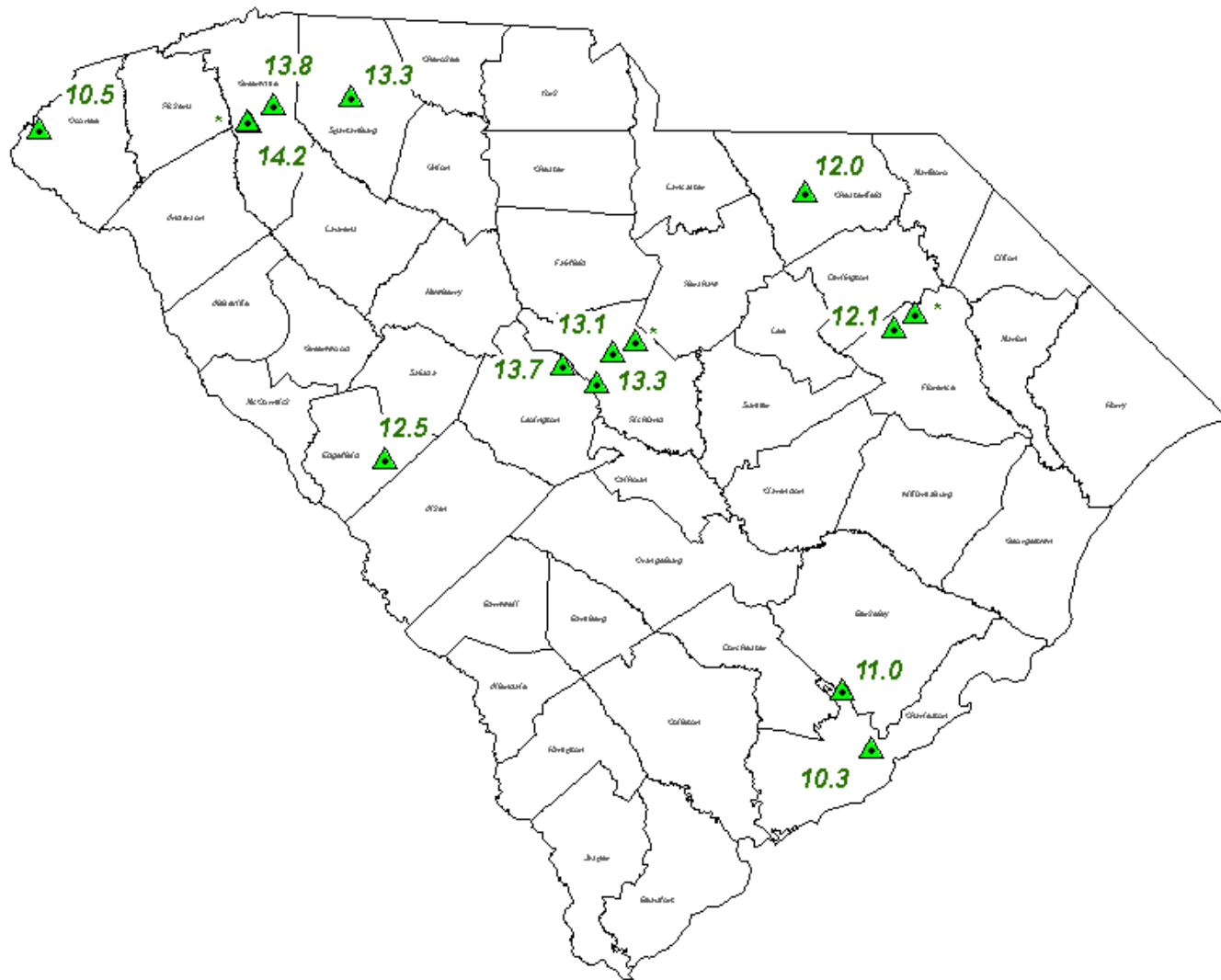
Sample design value based on primary Federal Reference Method from data downloaded from EPA-AQS in Jan. 2009.



# South Carolina Daily PM<sub>2.5</sub> Design Value Trends



# South Carolina Annual PM<sub>2.5</sub> Design Values - 2008

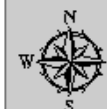


## Legend

PM<sub>2.5</sub> Sampler

County Line

\* = Insufficient data to calculate 3-year design value.



0 5 10 20 30 40  
Miles

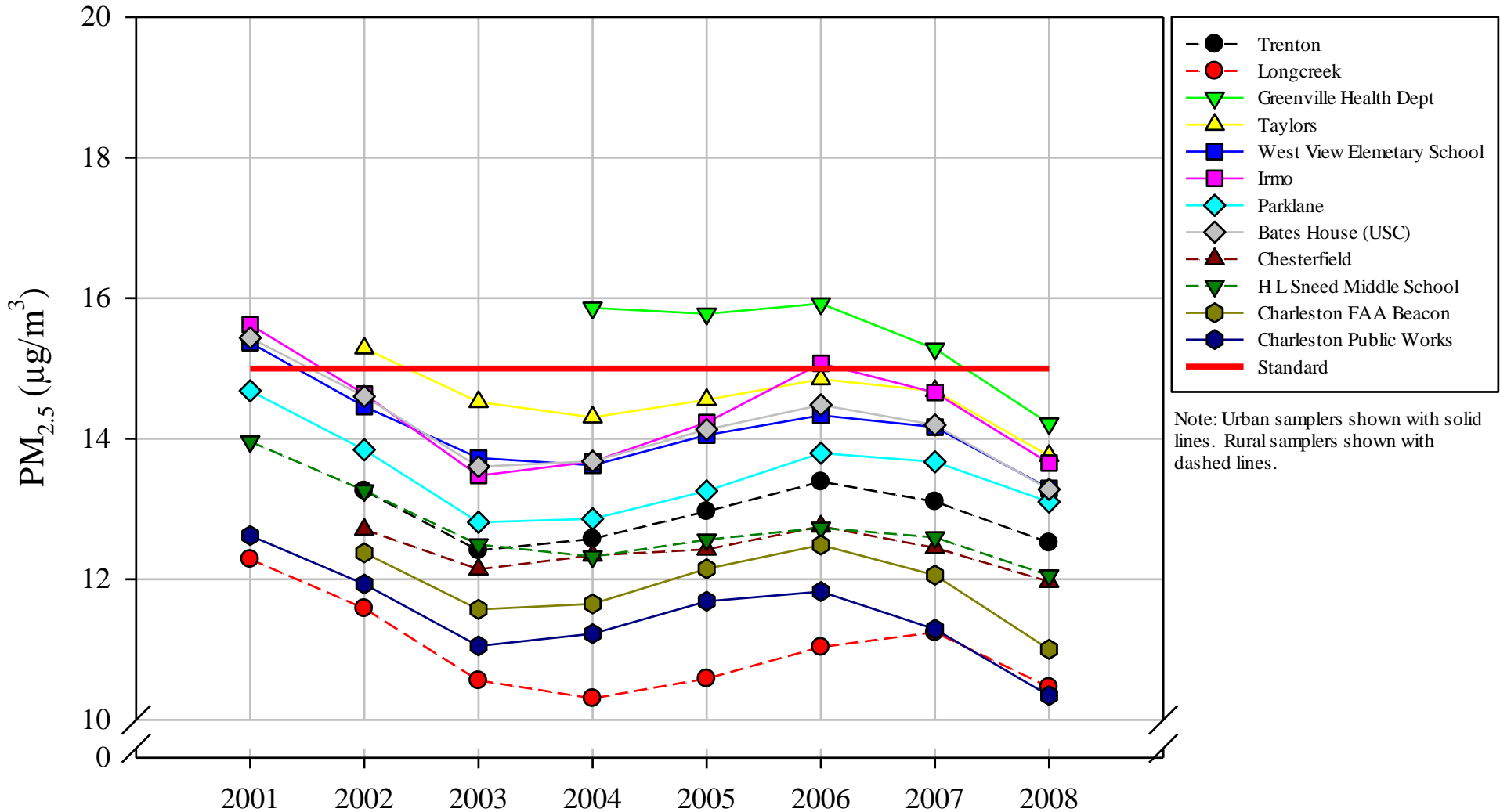
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Map Created: 04/10/2009 tjr

Annual PM<sub>2.5</sub> Standard: 15  $\mu\text{g}/\text{m}^3$  (3-year average).

Sample design value based on primary Federal Reference Method from data downloaded from EPA-AQS in Feb. 2009.



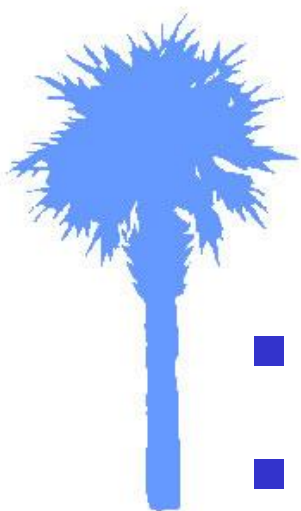
# South Carolina Annual PM<sub>2.5</sub> Design Value Trends



# Proposed NO<sub>2</sub> Rule Concerns....

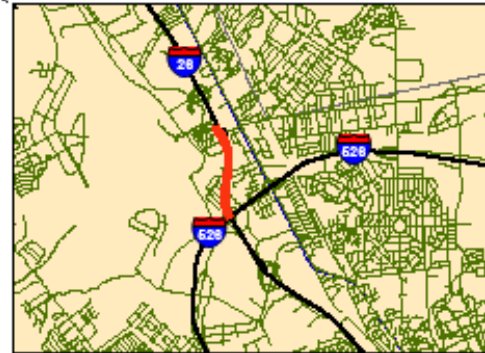
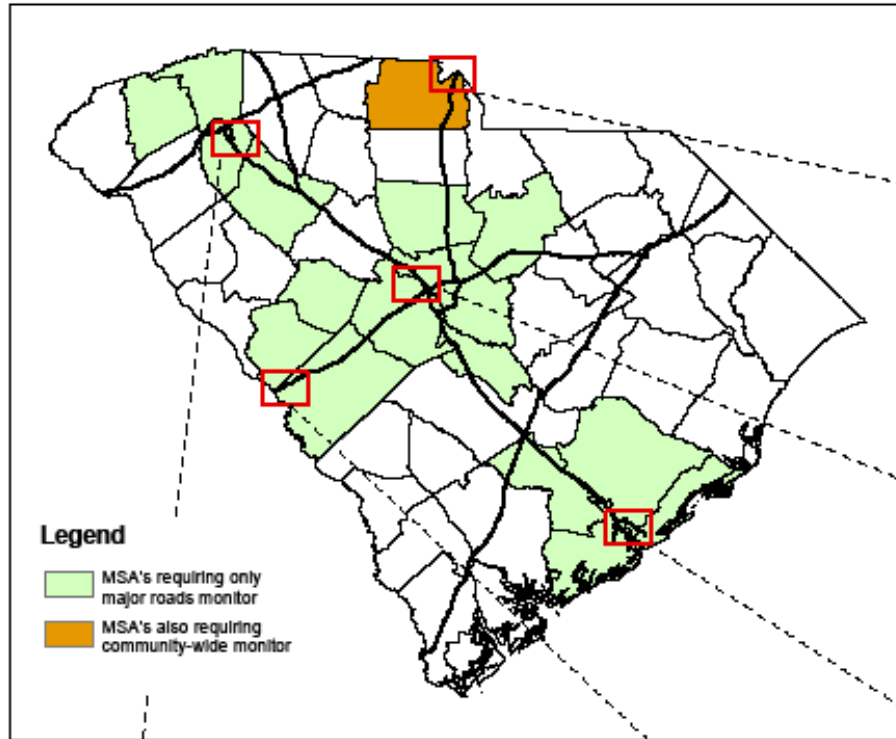
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- \$\$....3 required & 3?
- Safety/Liability
- Attainment Designations?
- EPA goals/Better Approach
  - Data Needs
  - EJ Concerns



# Potential NO<sub>2</sub> monitoring locations

Major Roads in Urban Areas





SPECIAL REPORT



The Smokestack Effect

# Toxic Air and America's Schools

USA TODAY used an EPA model to track the path of industrial pollution and mapped the locations of almost 128,000 schools to determine the levels of toxic chemicals outside. The potential problems that emerged were widespread, insidious and largely unaddressed.

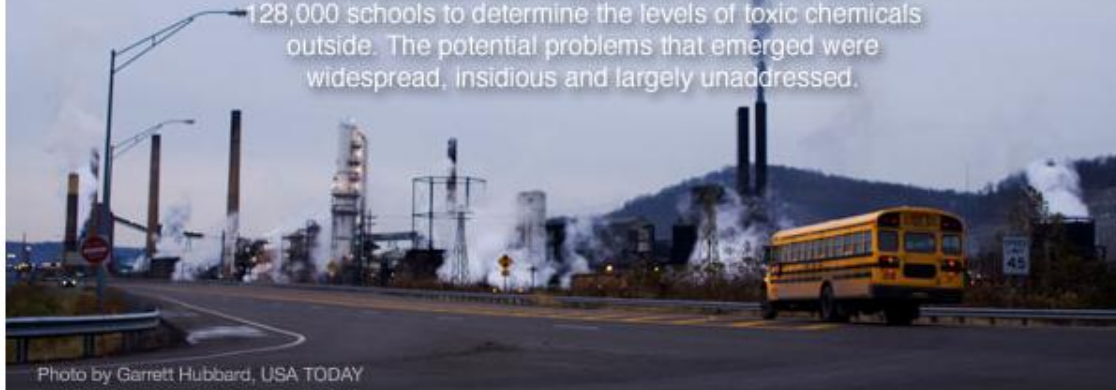


Photo by Garrett Hubbard, USA TODAY

Find your school

\* required




Search

Methodology

Q and A

Most polluted schools by state

Latest Stories

Latest Multimedia

Schools near industry face chemical dangers

The exposure to toxic chemicals in the air outside



Video: Toxic chemicals outside our schools

USA TODAY examines the impact of industrial pollution



QUESTIONS YOU MIGHT HAVE

What if my school ranks high? Should I be alarmed? What do I do next? Can I test the air myself? [Get answers.](#)

Contact Us: [Tipline](#) | [Corrections](#)



# Chicora Elementary School Monitoring Project

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- SC / Unique
  - Early & regular communication w/partners
- Results so far...
  - Concentrations similar to other sites
  - No concerns but some surprises



**Air Home**

- [Events Calendar](#)
- [Industry/Small Business](#)
- [Community/Local Government](#)
- [School Resources](#)
- [News/Media Resources](#)
- [Pollutants](#)
- [Regional Offices](#)
- [About Us](#)
- [Contacts](#)
- [Organizational Chart](#)



**Air Quality**

**Air Quality in Your Community - North Charleston**



**Air Quality & Schools**



Schools are at the heart of every community. Children spend most of their time in or near a school and schools are typically located in residential neighborhoods and high-traffic areas. DHEC is working to make sure the air around schools is safe and healthy.

In North Charleston, many large industrial sites are located near communities with schools. DHEC formed a partnership with the schools, community leaders and industries to share information and to look for ways to go beyond the regulations to improve air quality in the North Charleston area.

**School Monitoring Initiative**

In partnership with the U.S. Environmental Protection Agency (EPA), DHEC is monitoring for air toxics around Chicora Elementary School. Air toxics are hazardous air pollutants that can cause harmful health or environmental effects. Air toxics near schools are typically from automobile exhaust, gasoline vapors, and emissions from some dry cleaners, printing shops, and large industrial plants. Chicora Elementary was chosen for the study because it is located near a variety of pollution sources – cars, trucks, and buses on the highway





# Risk Management Program 112 R

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**"A New Focus....and  
A New Day"**



Ammonia Release



1 death and all the “what ifs”



# **Stirring Things Up at the National Level**



**Video**



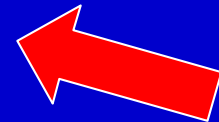
# Southern States SIP Summit

September 10 – 11, 2009  
Columbia, SC

Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina,  
Tennessee, Virginia, West Virginia

# State Implementation Plans

**State  
Environmental  
Department**



**SIP  
Requirements**

# Why Now?

## Why a Sense of Urgency?

- **Economy....dwindling resources**
- **More priorities & challenges**
- **Current SIP process – impeding our ability to get the job done.....resource intensive; process driven - not results driven. Single pollutant?**
- **EPA request to ECOS.....recommendations for “leaning” the process.....process needs to be transformed first.**
- **Window of opportunity?.....Timing is right?**

FIPS

↑ Process ↓ results



Checklist  
AQM

↓\$\$ ↑work

Unrealistic goals ↓morale

Programs → EPA



ROAD BLOCKS

↑ Results ↓ process

flexibility

innovation

Collaborative  
partnerships

Collaborative  
Problem solving

EPA ↔ States

Public health  
protection

**The time is now for us to work smarter, transform the SIP process, and remove the barriers that are preventing us from shifting to a better approach for managing today's AQ challenges!**

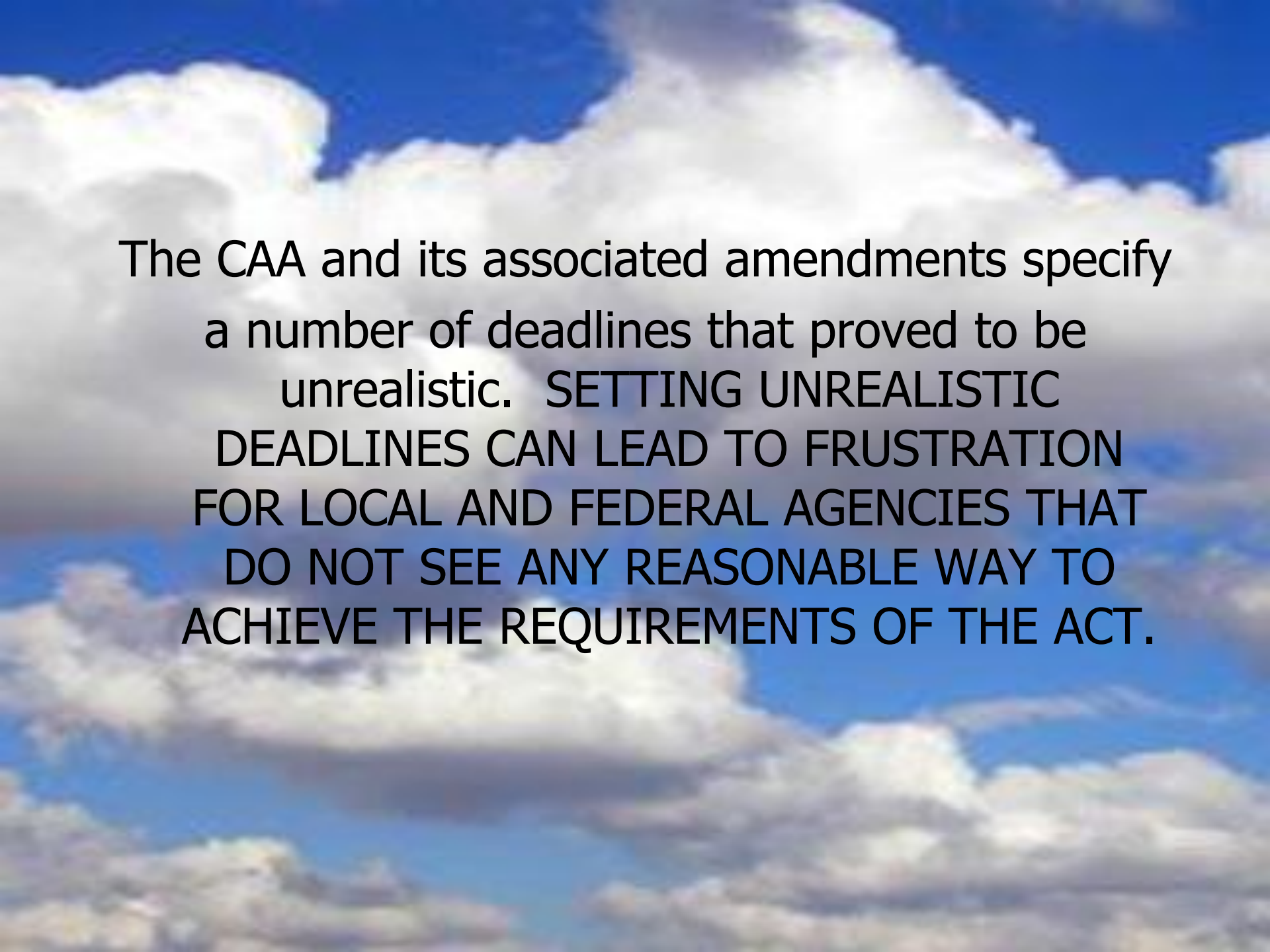
*Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia.....our goal.....*



# Our Efforts To Bring About Change




- “Grass Roots” Effort/State Air Directors
  - SIP.....AQM Approach (State Sanctions, Mobile Sources)
  - Framing the Message is Key
  
- NACAA
  - R4 Cohesive Voice (air agenda)
  - Representation
  - “Not trying to get out of anything”
  
- Broader Support (Beyond the R4 “Renegades”)
  - States, Locals, Industry, Enviros, Chambers
  - Response so far.....
  
- November Strategy Meeting
  - Priorities: Quick Fixes....Longer Term



The CAA and its associated amendments specify a number of deadlines that proved to be unrealistic. SETTING UNREALISTIC DEADLINES CAN LEAD TO FRUSTRATION FOR LOCAL AND FEDERAL AGENCIES THAT DO NOT SEE ANY REASONABLE WAY TO ACHIEVE THE REQUIREMENTS OF THE ACT.

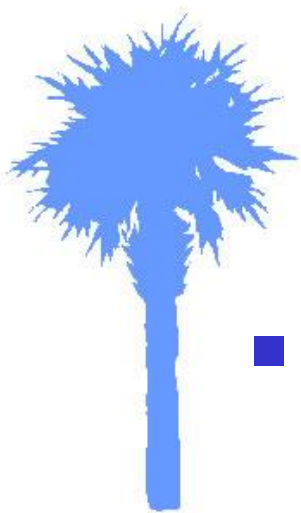


Unrealistic Goals?.....  
“Unhealthy and take your  
spirit away”



“Coming together is a beginning.  
Keeping together is progress.  
Working together is success.”

-Henry Ford



# H1N1.....Swine Flu

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- Take it seriously but don't panic....
- Vaccinations
- Business plans.....sick days....