

Regional Report

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Lake Michigan Air Directors Consortium

October 15, 2008

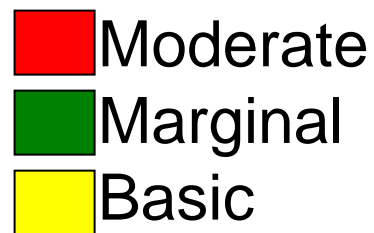
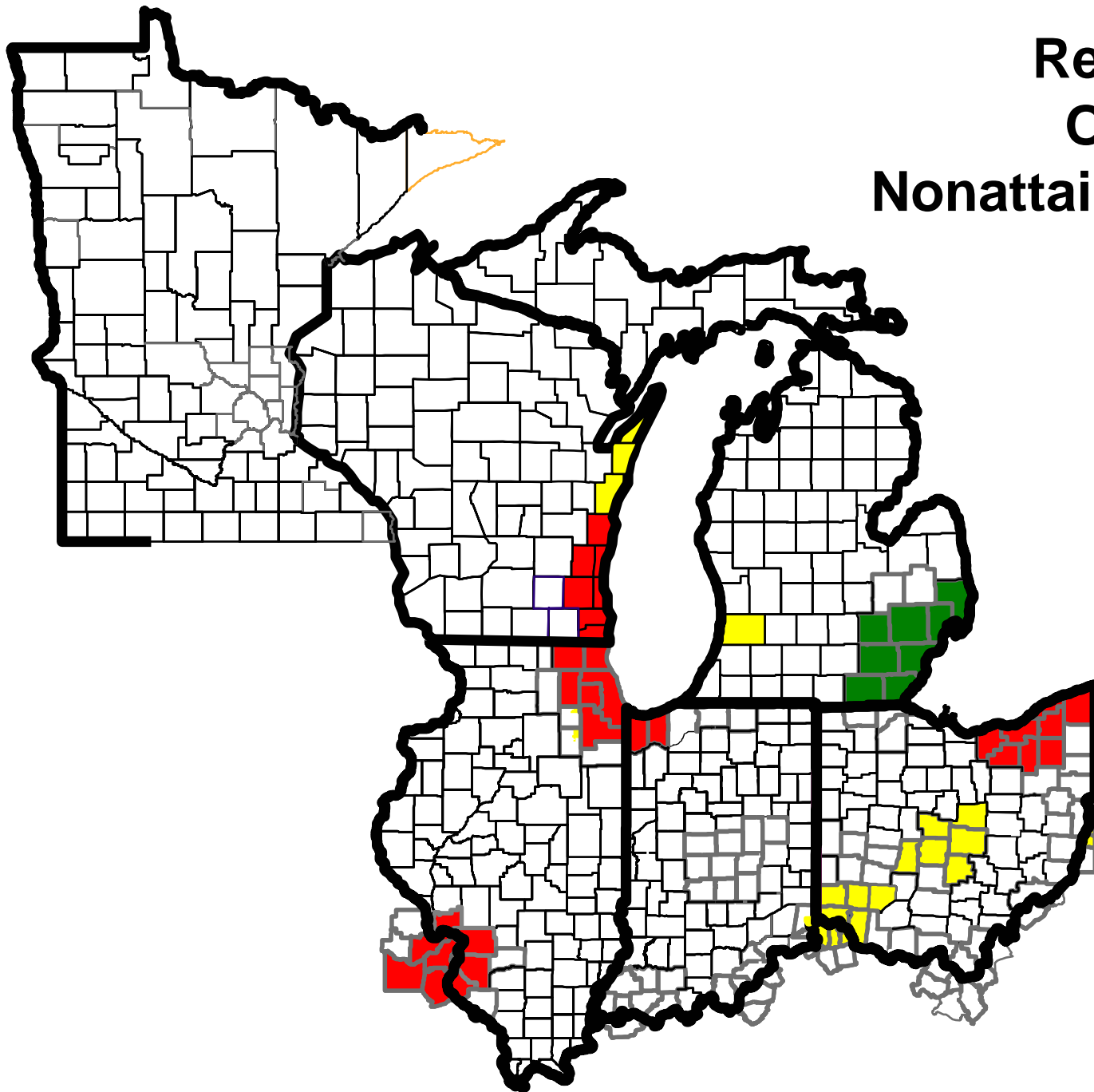
Air Quality Challenges for LADCO States

- 1997 PM_{2.5} and ozone standards
 - Develop State Implementation Plans (SIPs) – *late!!*
 - Attain/maintain standards
- 2006 PM_{2.5} and 2008 ozone standards
 - Designate areas as attainment/nonattainment
 - Develop SIPs
 - Attain/maintain standards
- Regional haze
 - Develop initial strategy to make reasonable progress – *late!!*
 - Provide 5-year progress reports and every 10-year SIPs
- Address mercury deposition, air toxics, greenhouse gases, and

National Ambient Air Quality Standards

	1997 Version	2006/2008 Version
Ozone	0.08 ppm (8-hour)	0.075 ppm (8-hour)
PM _{2.5}	15 ug/m ³ (annual) 65 ug/m ³ (daily)	15 ug/m ³ (annual) 35 ug/m ³ (daily)

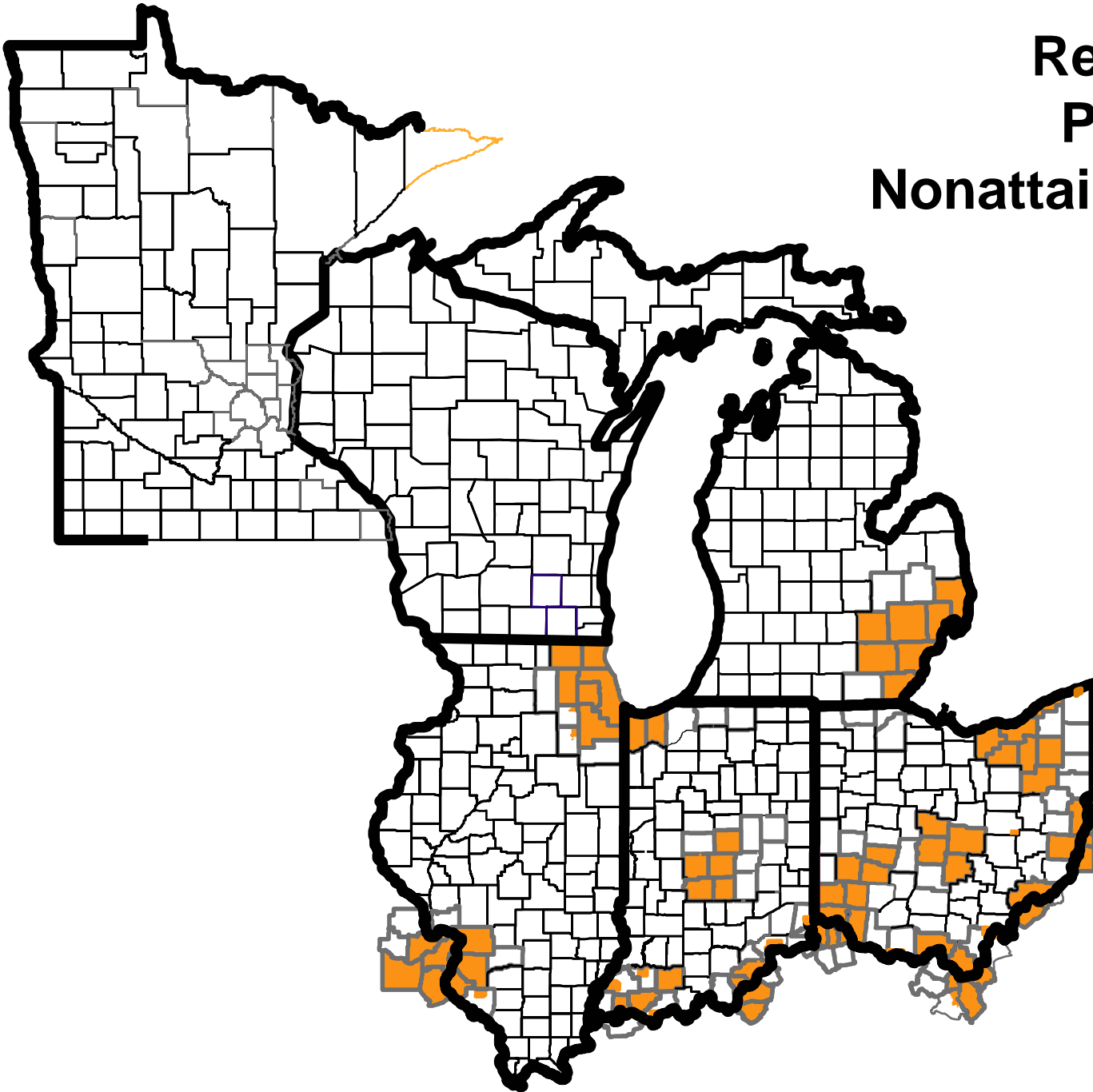
Region 5 Ozone Nonattainment Areas

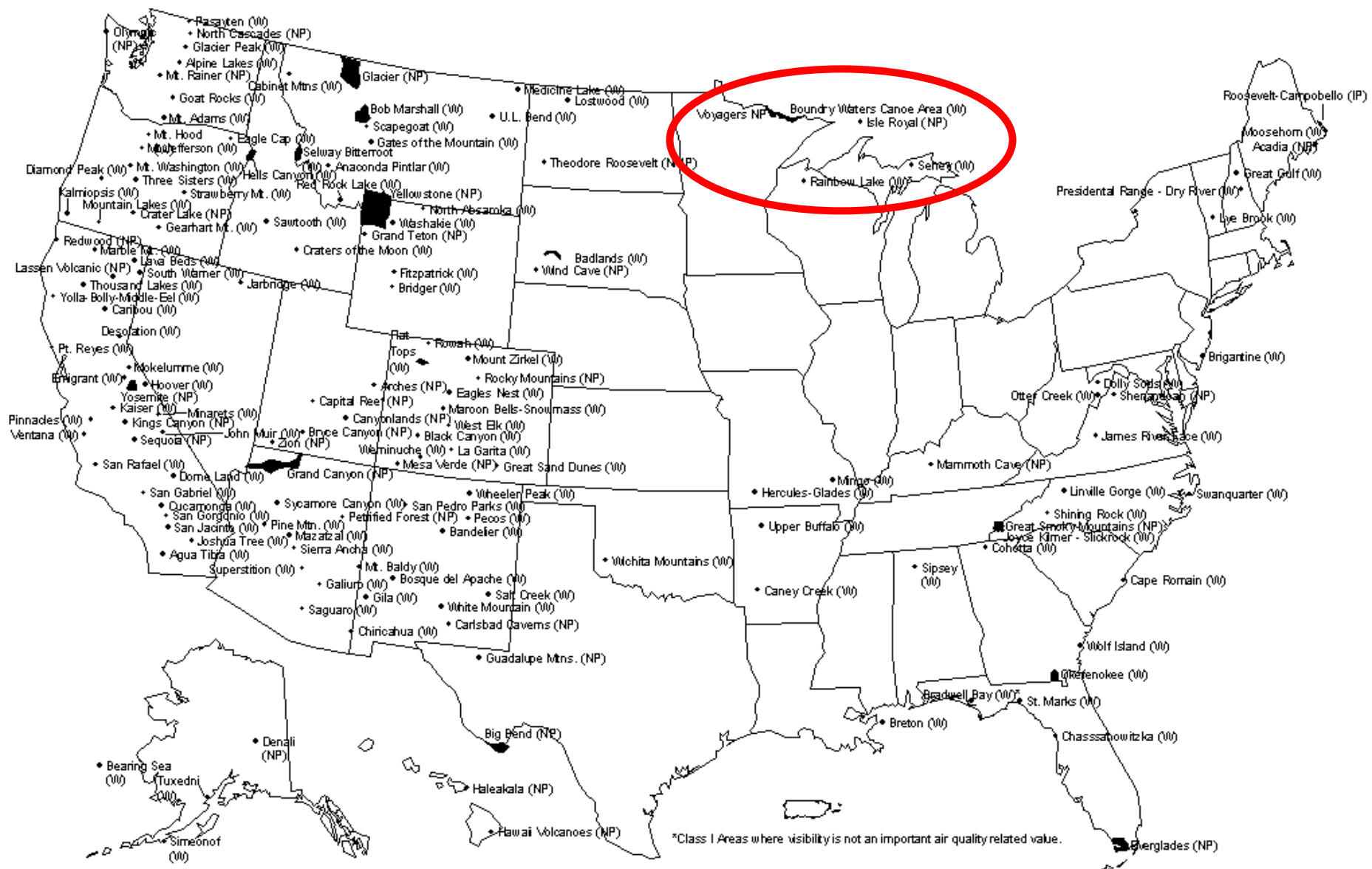


Region 5

PM 2.5

Nonattainment Areas





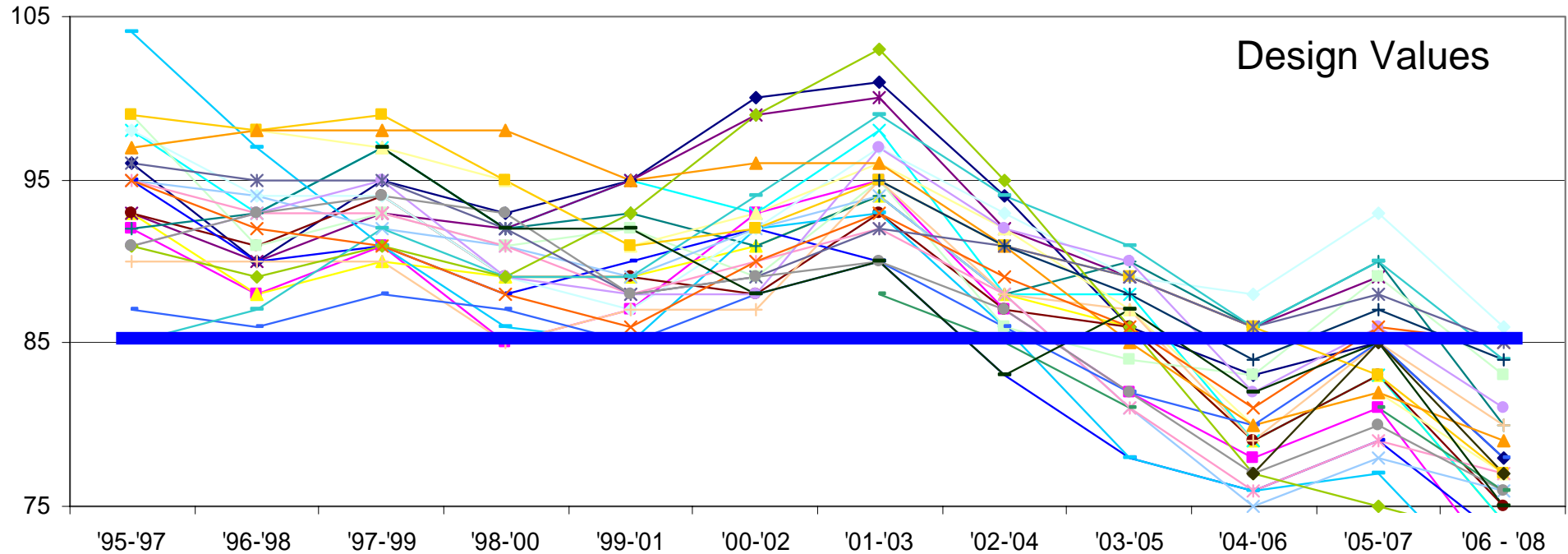
Map of 156 National Park and Wilderness Areas Protected by EPA's Regional Haze Rule

1997 Standards Key Regulatory Dates

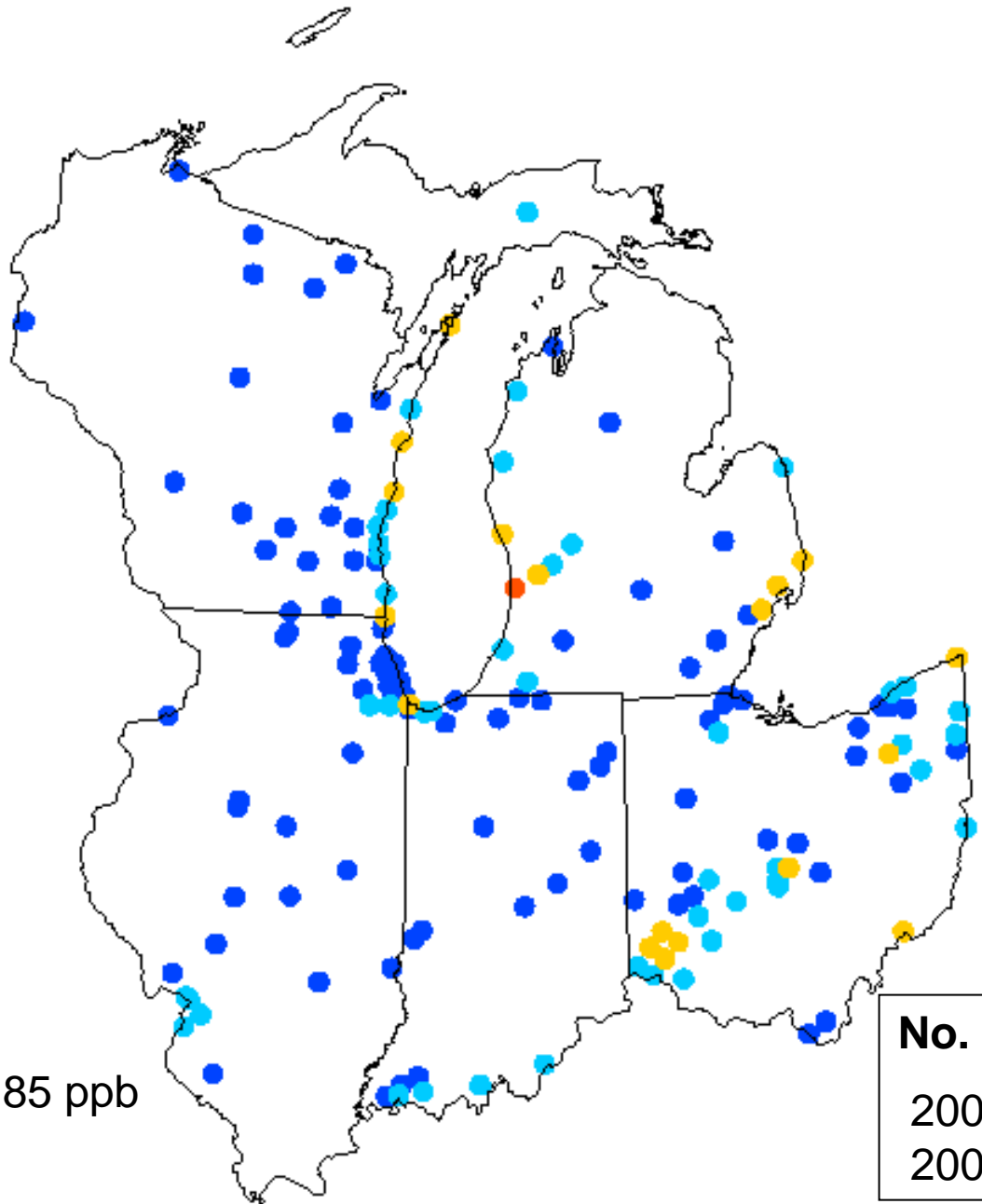
	Ozone	PM_{2.5}	Haze
Nonattainment Designations	April 15, 2004 <i>(June 15, 2004)</i>	Dec 17, 2004 <i>(April 5, 2005)</i>	-----
SIPs due	June 2007	April 2008	Dec 2007
Attainment dates	2007/2009/2010	2010	2018 (2064)

Ozone

Ozone Trends: LADCO Region



Ozone Design Values, 2005_2007



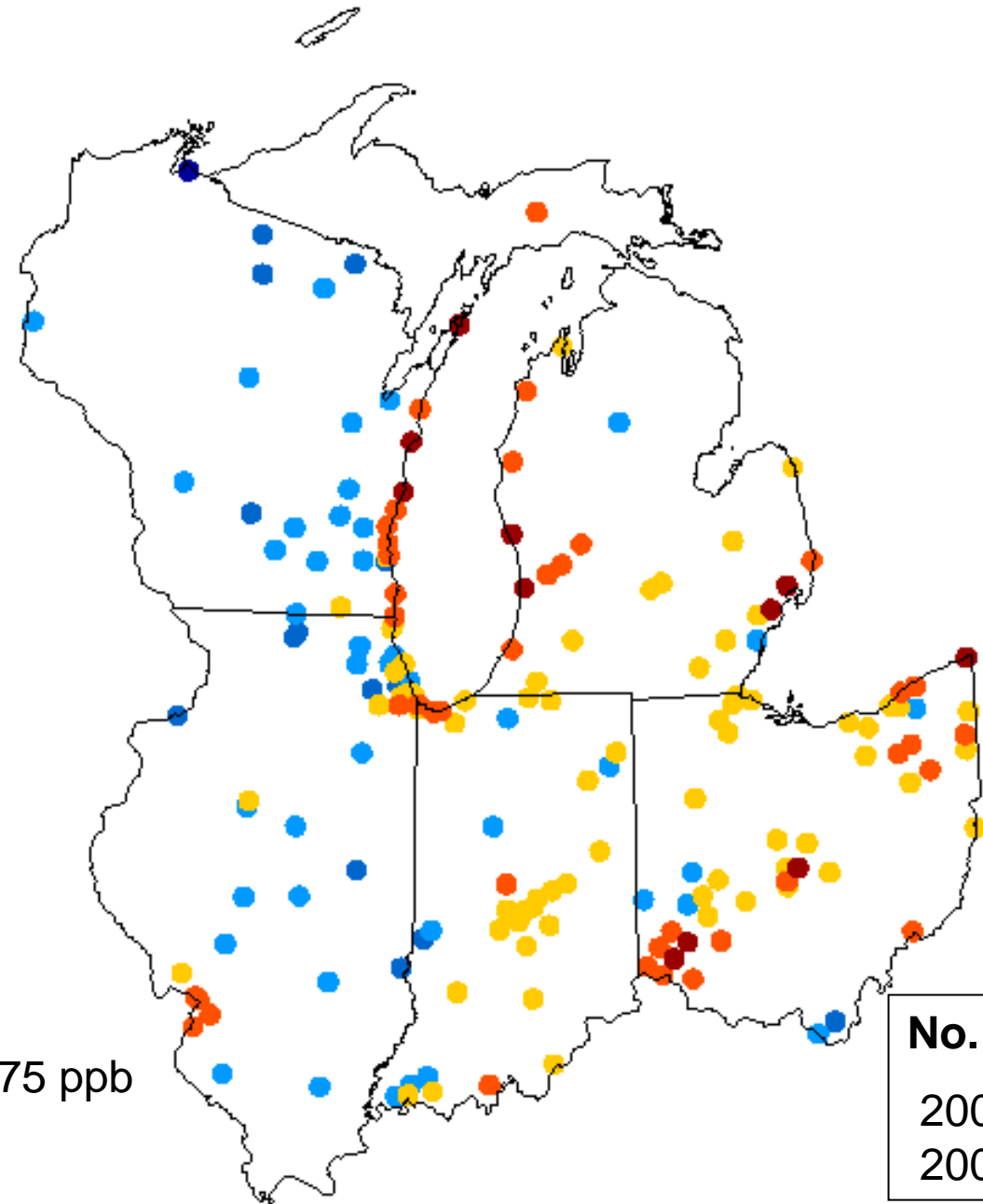
DV, in ppb

- 90+
- 85-89
- 80-84
- <80

← 85 ppb

No. Sites > NAAQS	
2005 - 2007	19
2006 - 2008	3

Ozone Design Values, 2005_2007



DV, in ppb

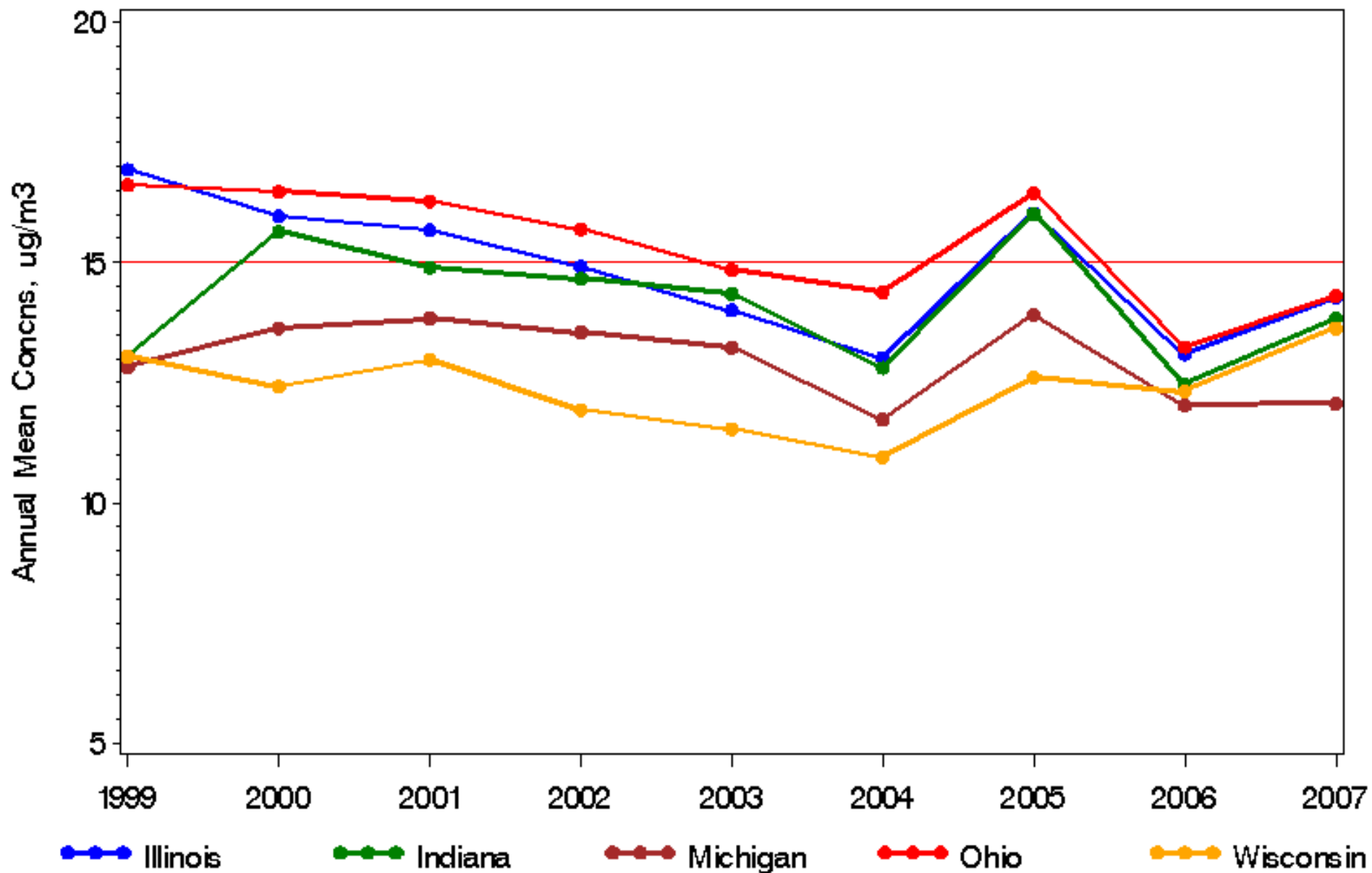
- 85+
- 81-85
- 76-80
- 71-75
- 66-70
- <66

75 ppb

No. Sites > NAAQS	
2005 - 2007	127
2006 - 2008	68

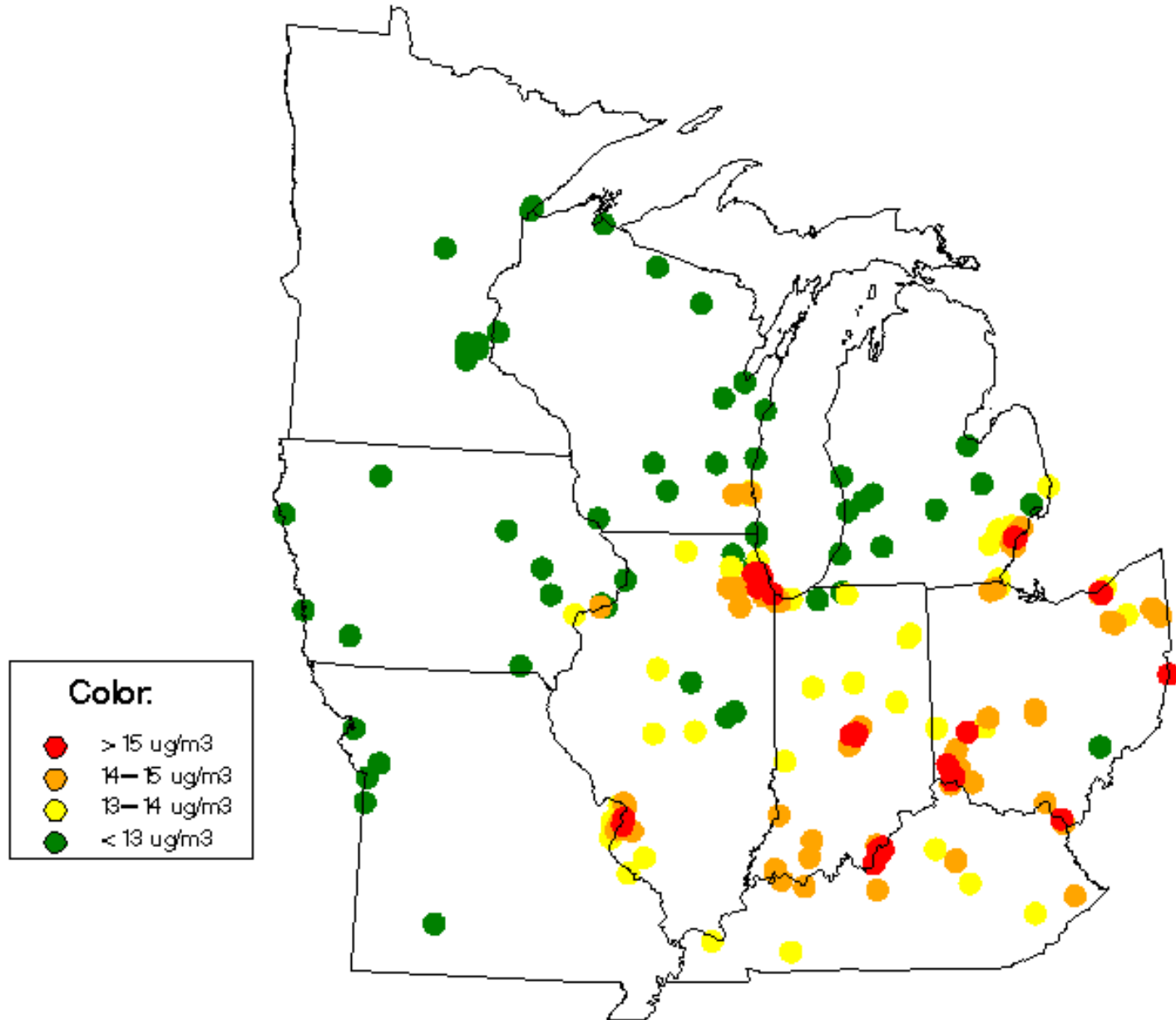
PM_{2.5}

PM2.5 Annual Mean Trends, LADCO States, 1999–2007

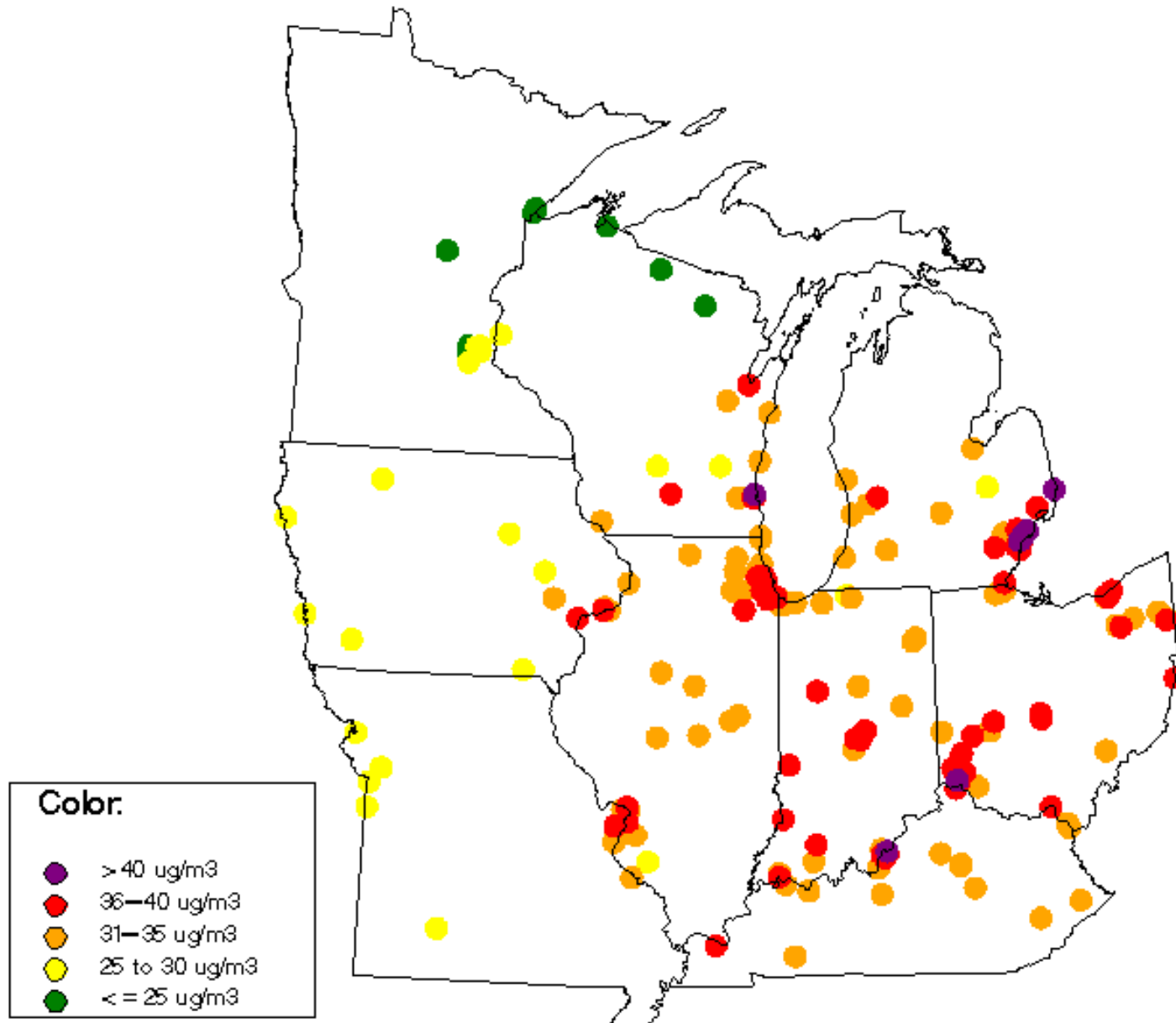


trends for monitors with at least 8 years of data

PM_{2.5} Design Value: Annual Standard



PM_{2.5} Design Value: Daily Standard



Regional Haze

Isle Royale National Park, Michigan

Current Conditions

Natural Conditions



Regional Air Quality Analyses for Ozone, PM_{2.5}, and Regional Haze:

Final Technical Support Document



April 25, 2008

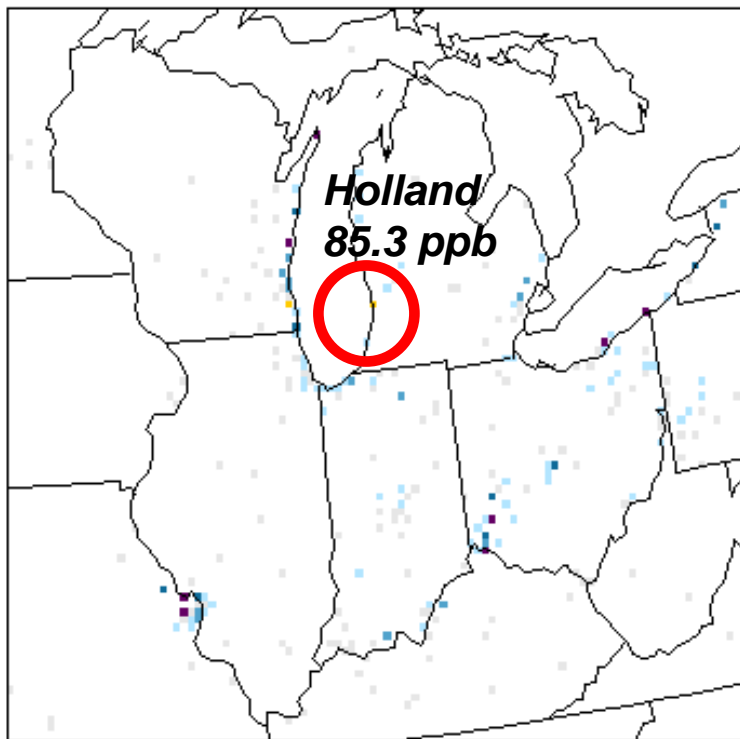
States of Illinois, Indiana, Michigan, Ohio, and Wisconsin

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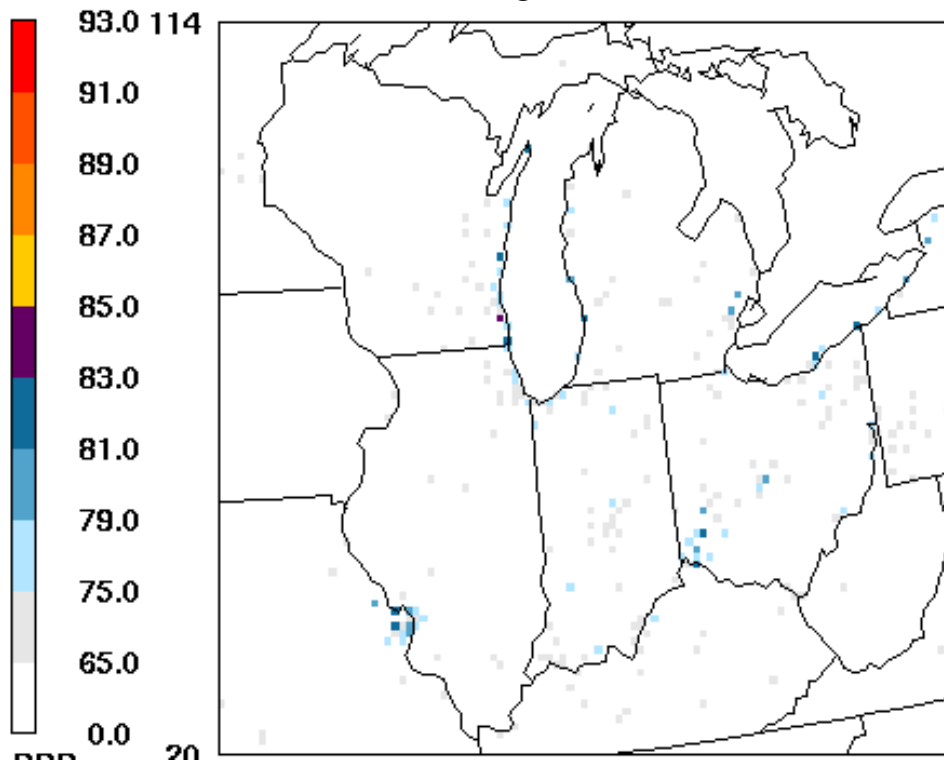
- Introduction
- Ambient Data Analyses
- Air Quality Modeling
- Attainment Demonstration for Ozone & PM_{2.5}
- Reasonable Progress Assessment for Regional Haze
- Summary

Modeling Results: Ozone

2009

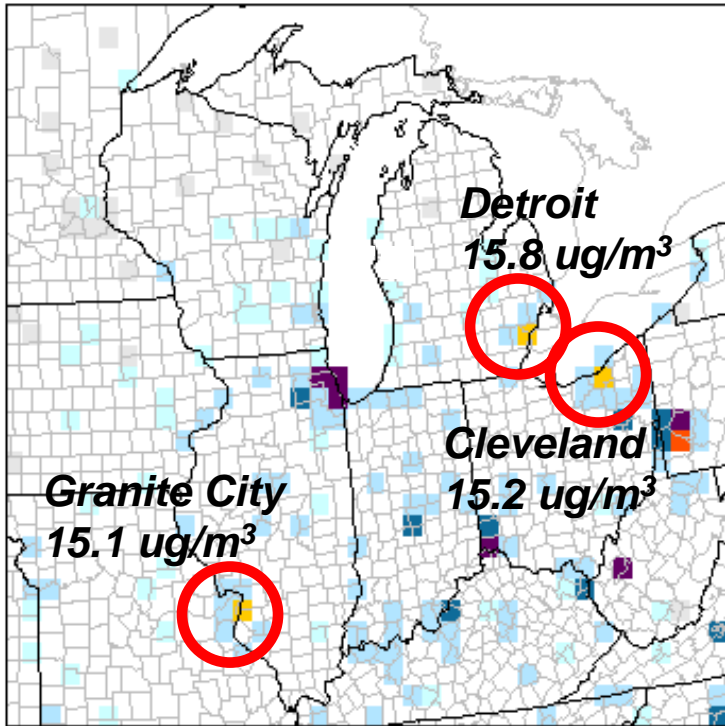


2012

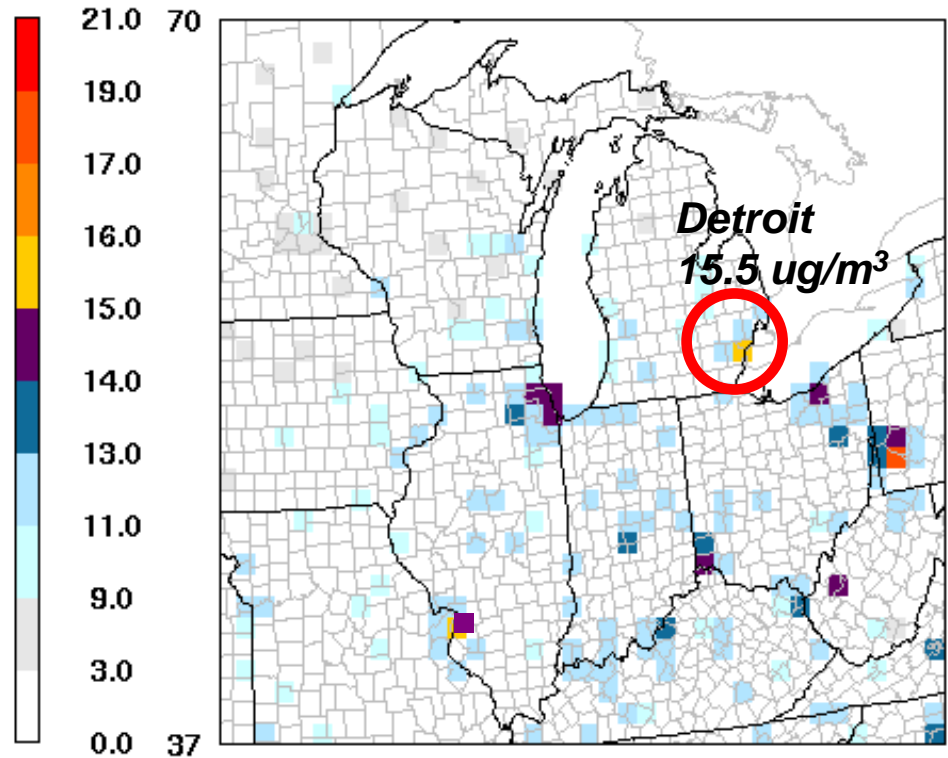


Modeling Results: PM_{2.5}

2009



2012



Existing Control Programs

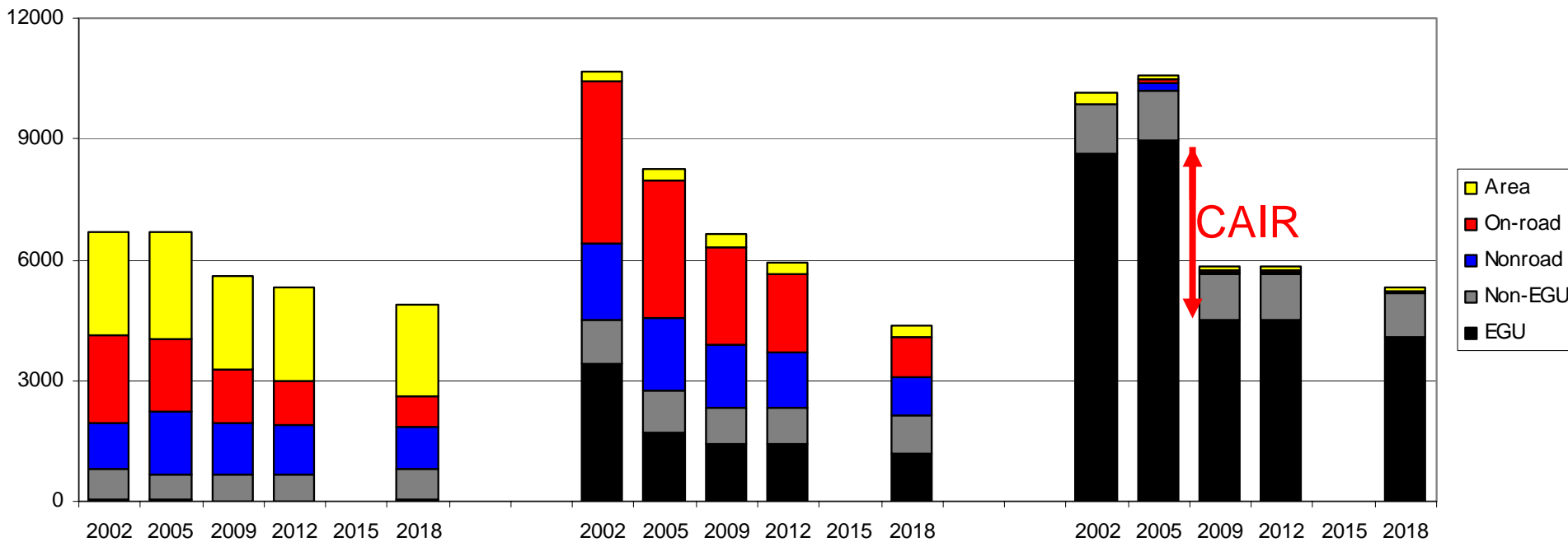
- **On-Highway Mobile Sources**
 - Tier II/Low sulfur fuel
 - Inspection/Maintenance programs (nonattainment areas)
 - Reformulated gasoline (nonattainment areas)
- **Off-Highway Mobile Sources**
 - Federal control programs incorporated into NONROAD model (e.g., nonroad diesel rule), plus the evaporative Large Spark Ignition and Recreational Vehicle standards
 - Heavy-duty diesel (2007) engine standard/Low sulfur fuel
 - Federal railroad/locomotive standards
 - Federal commercial marine vessel engine standards
- **Power Plants**
 - Title IV (Phases I and II)
 - NO_x SIP Call
 - Clean Air Interstate Rule – *vacated!!!*
- **Other Point Sources**
 - VOC 2-, 4-, 7-, and 10-year MACT standards
 - Combustion turbine MACT
 - Industrial boiler/process heater/RICE MACT
 - Miscellaneous consent decrees and settlement agreements
- **Area Sources**
 - Aerosol coatings (new rule)
 - Architectural and industrial maintenance (AIM) coatings (amendments)
 - Household and institutional consumer products (amendments)
 - Portable fuel containers (Mobile Source Air Toxics rule)

Regional Emissions (TPD)

VOC

NOx

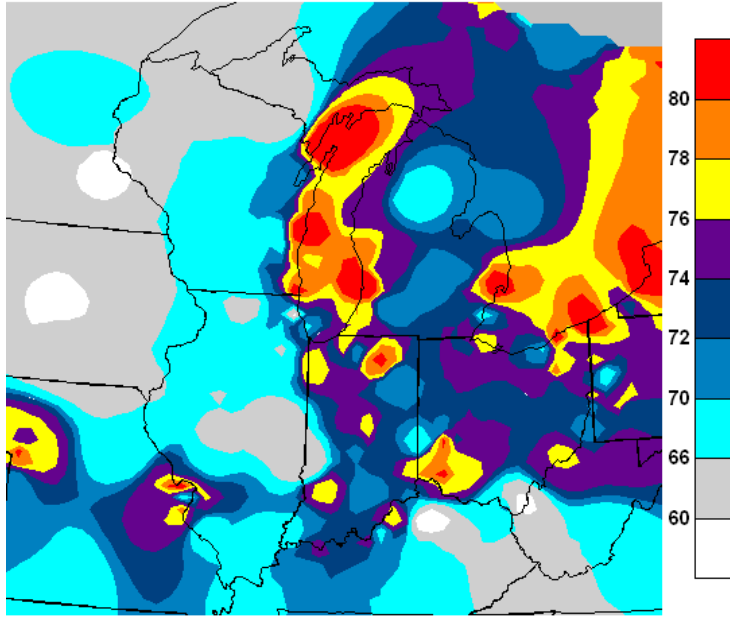
SO2



Ozone Concentrations: 2009

“Legally Enforceable”

8-HR O3: 2009M3R6s1b_05summer

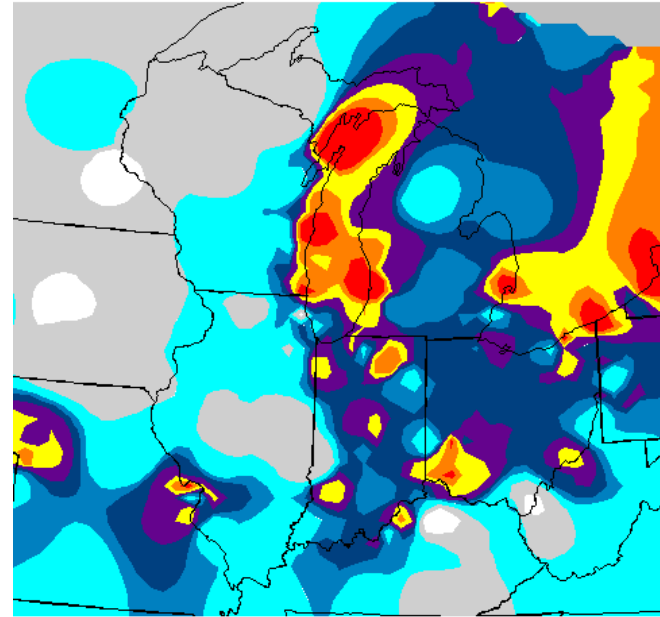


12:00 am EST September 24, 2005

PPB

CAIR

8-HR O3: 2009M3R5.1s1a_05summer



12:00 am EST September 24, 2005

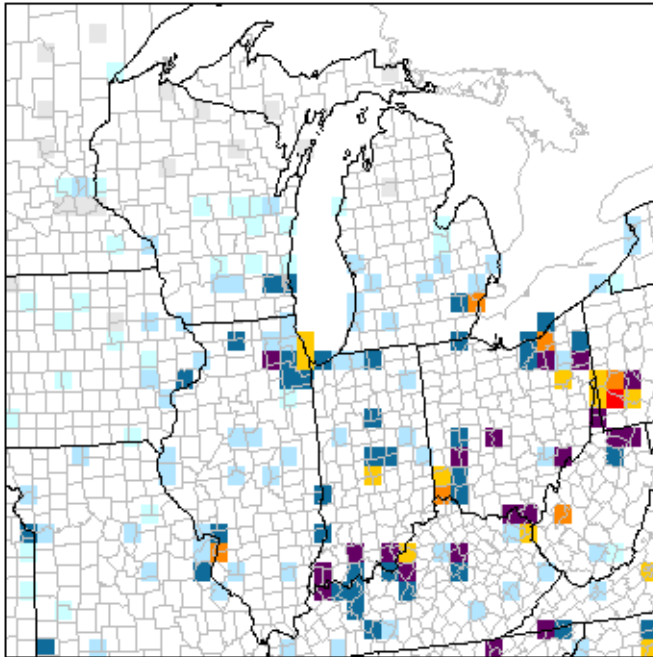
Number of Sites > NAAQS

0.08 ppm/0.075 ppm

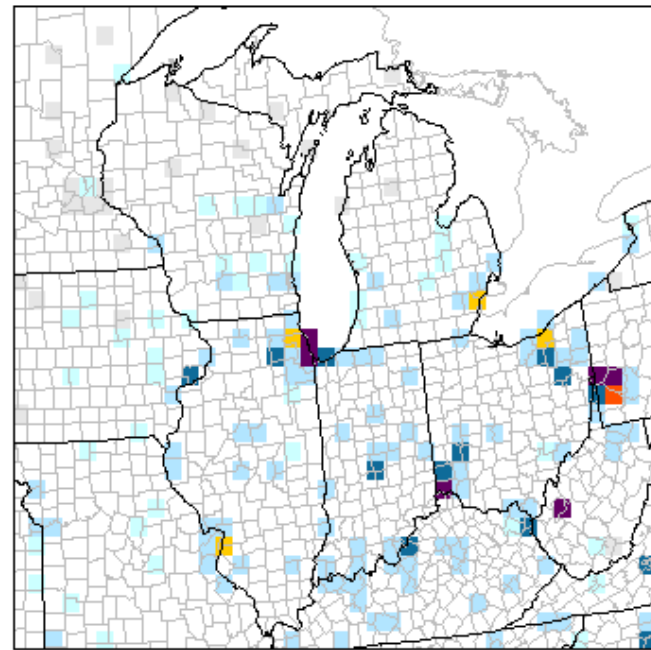
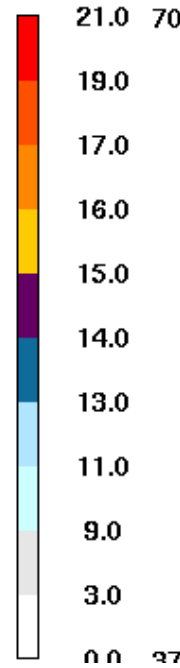
	“Legally Enforceable”	CAIR
IL	0/6	0/4
IN	0/9	0/5
MI	1/12	1/12
OH	0/25	0/21
WI	0/10	0/10
Total	1/62	1/52

PM_{2.5} Annual Concentrations: 2009

“Legally Enforceable”



CAIR



	Number of Sites > NAAQS	
	“Legally Enforceable”	CAIR
IL	4	1
IN	2	0
MI	2	1
OH	12	1
WI	0	0
Total	20	3

Upcoming Challenges

2006/2008 Standards Key Regulatory Dates

	Ozone	PM_{2.5}	Haze
Nonattainment Designations	March 2010 <i>(effective date?)</i>	December 2008 <i>(effective date?)</i>	-----
SIPs due	2013	2011 (2012?)	Dec 2012
Attainment dates	2013 – 2030	2013 (2014?)	2018 (2064)