

Regional Air Quality Planning in the Upper Midwest

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Lake Michigan Air Directors Consortium

RPO National Meeting

June 8-10, 2005

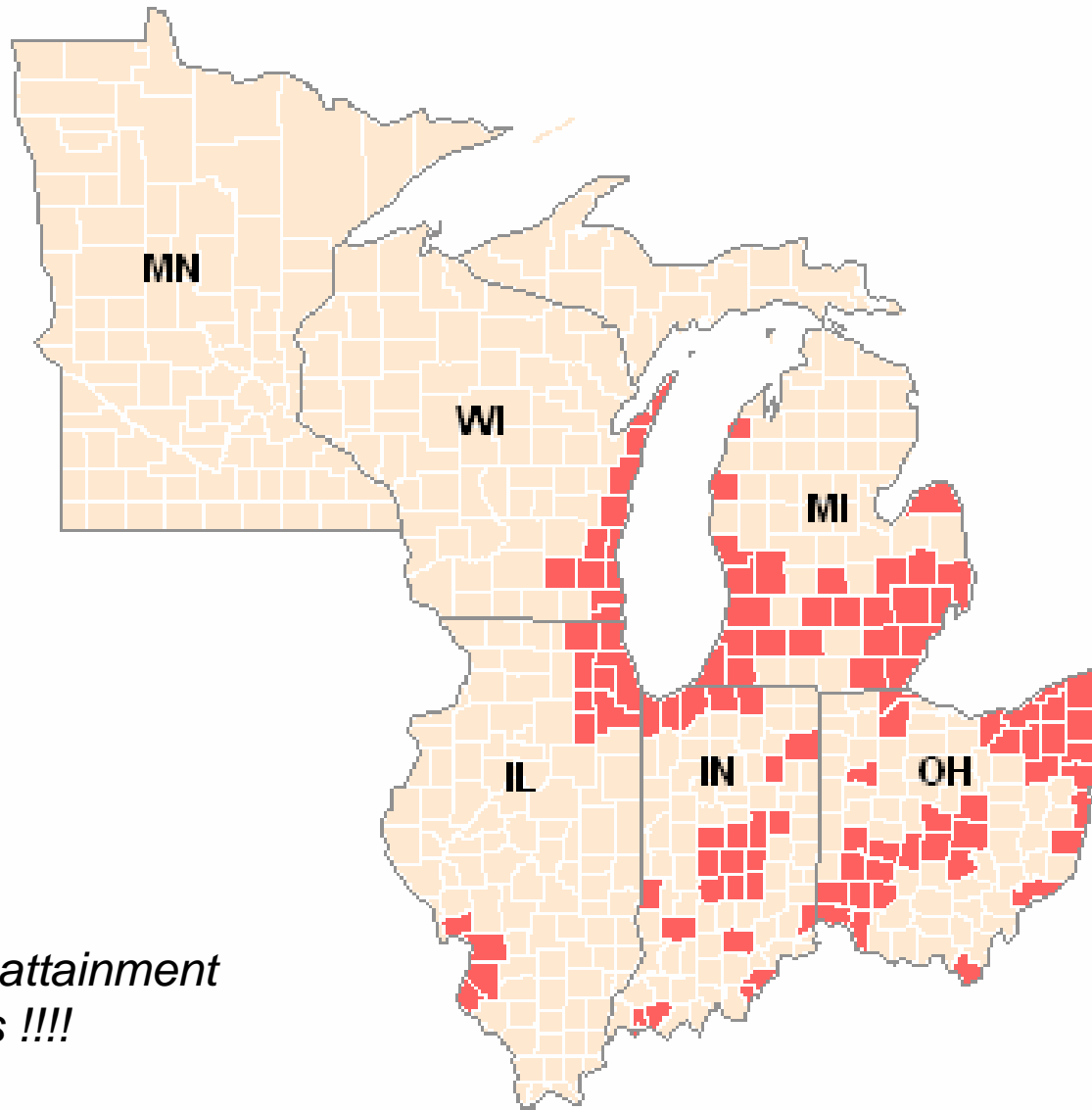
Overview

- Current Air Quality (O_3 , $PM_{2.5}$, and regional haze)
- Regional Planning Efforts
 - Schedule
 - Organization
 - Preliminary control strategy work

Current Air Quality

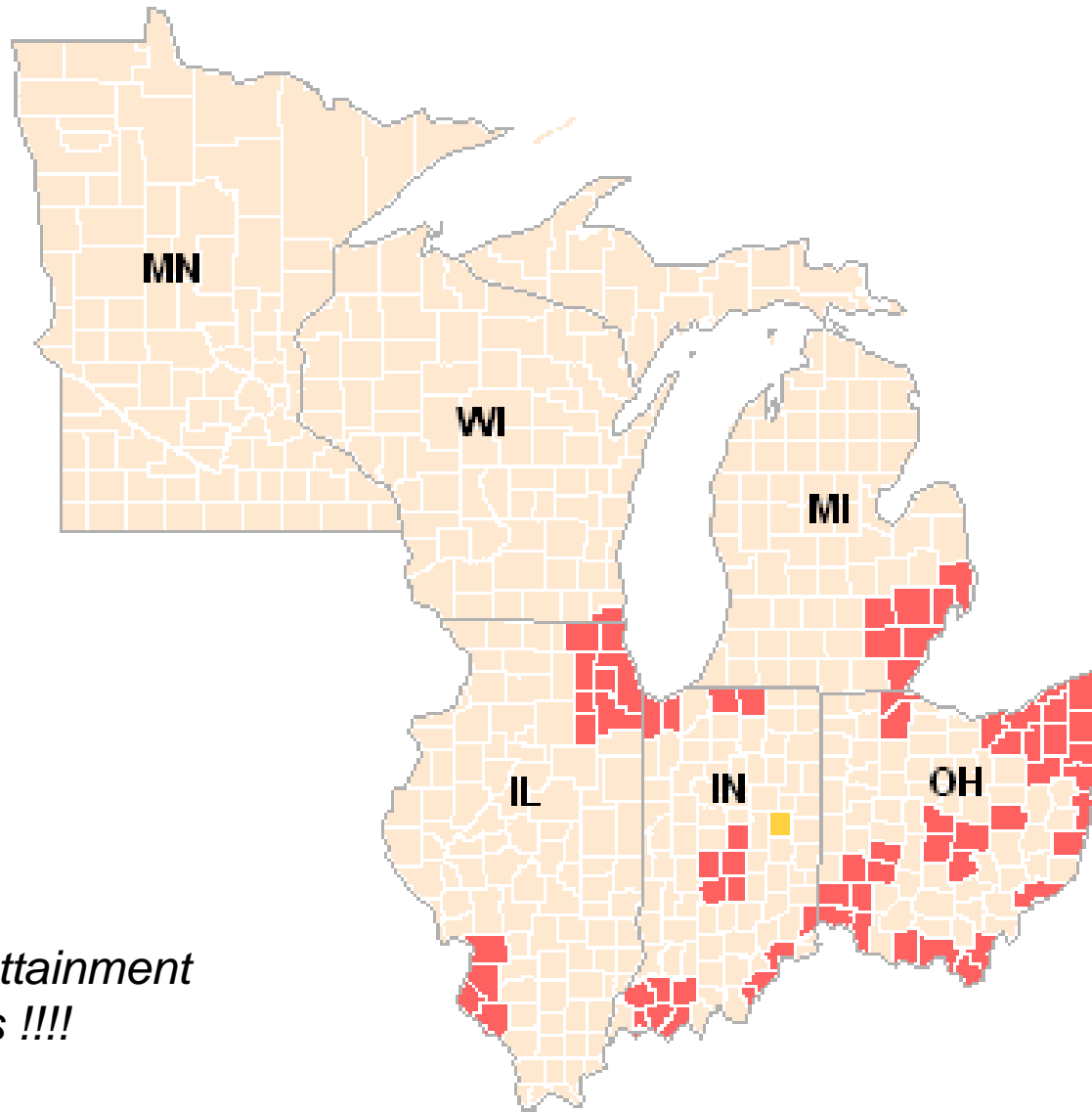
- O_3
- $PM_{2.5}$
- Regional Haze

8-Hour Ozone Nonattainment Areas (Region V)



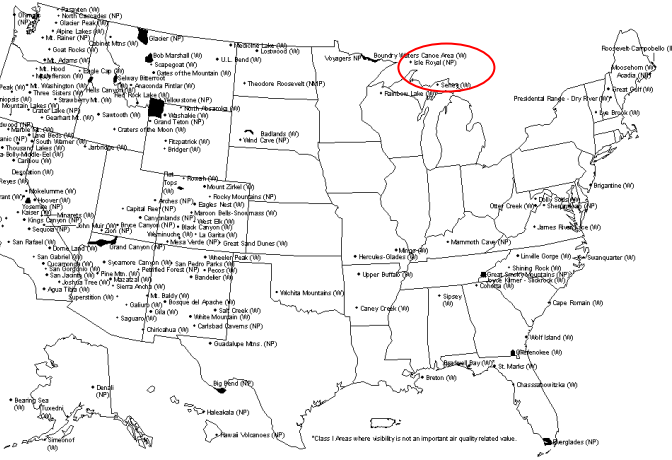
*104 Nonattainment
Counties !!!!*

PM_{2.5} Nonattainment Areas (Region V)



*63 Nonattainment
Counties !!!!*

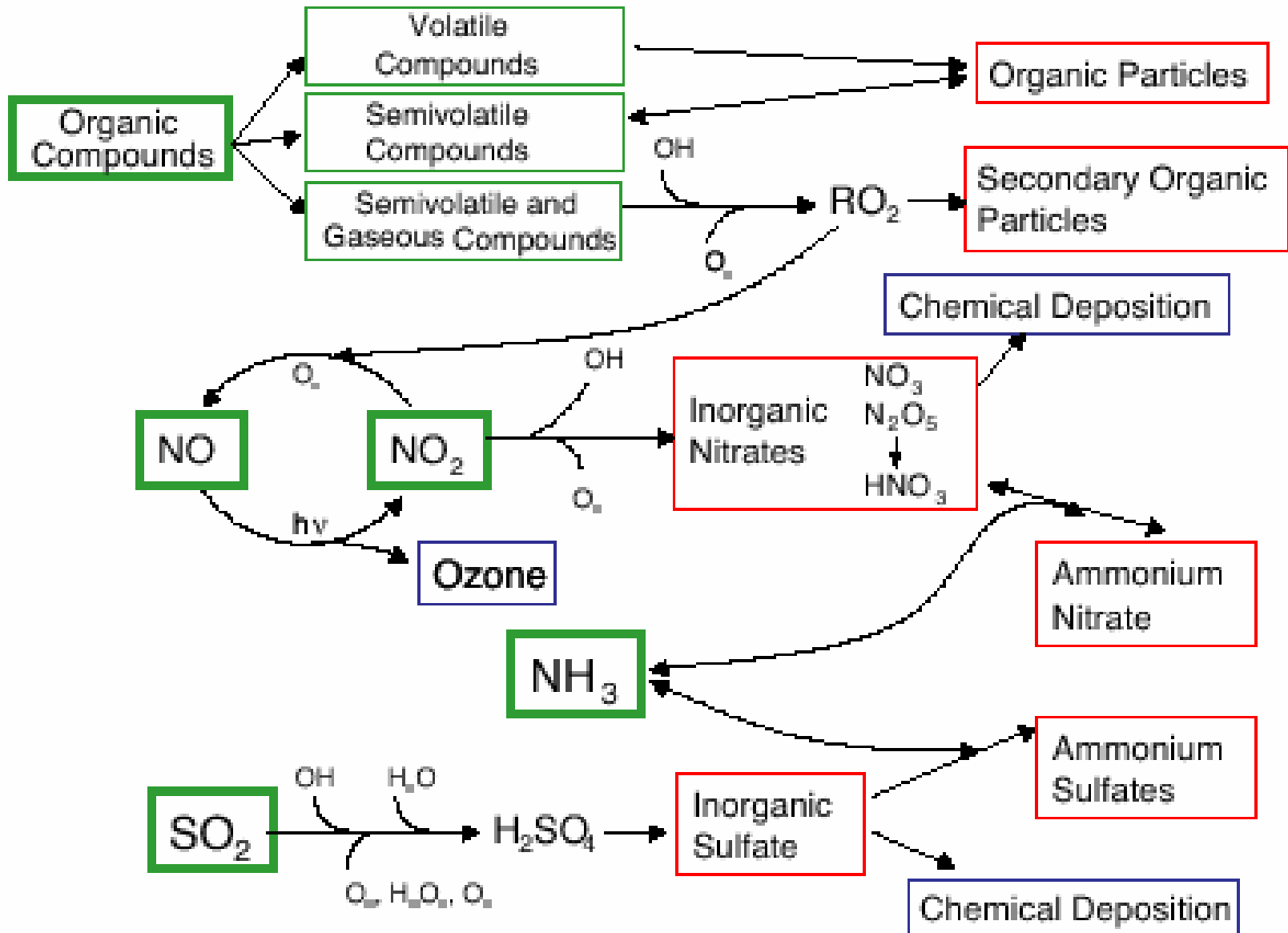
Isle Royale National Park, MI



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

Legend:
NP = National Park
NPA = National Park Wilderness Area
IP = International Park

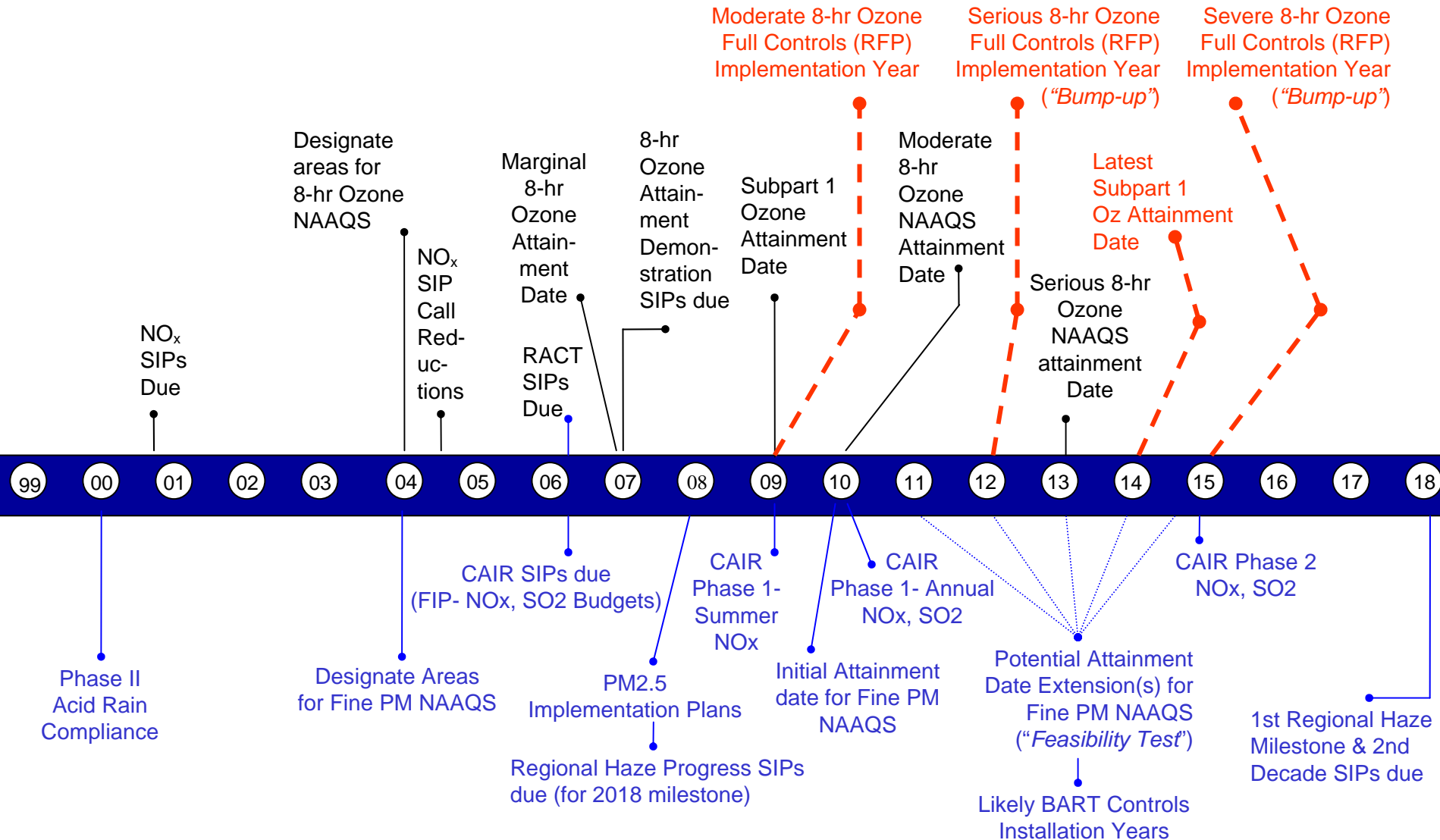
“One Atmosphere”



Regional Planning Efforts

- Schedule
- Organization
- Preliminary control strategy work

Ozone, PM_{2.5}, and Regional Haze Schedule (draft)



SIP 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

Key Questions

Will “on the books” and “on the way” (CAIR) controls be enough to provide for $O_3/PM_{2.5}$ attainment by 2009 and meet regional haze goals by 2018?

Are we getting as much as we can out of CAIR (e.g., maximize air quality benefits)?

If we need to do more, then what are the regional and local control measure options?

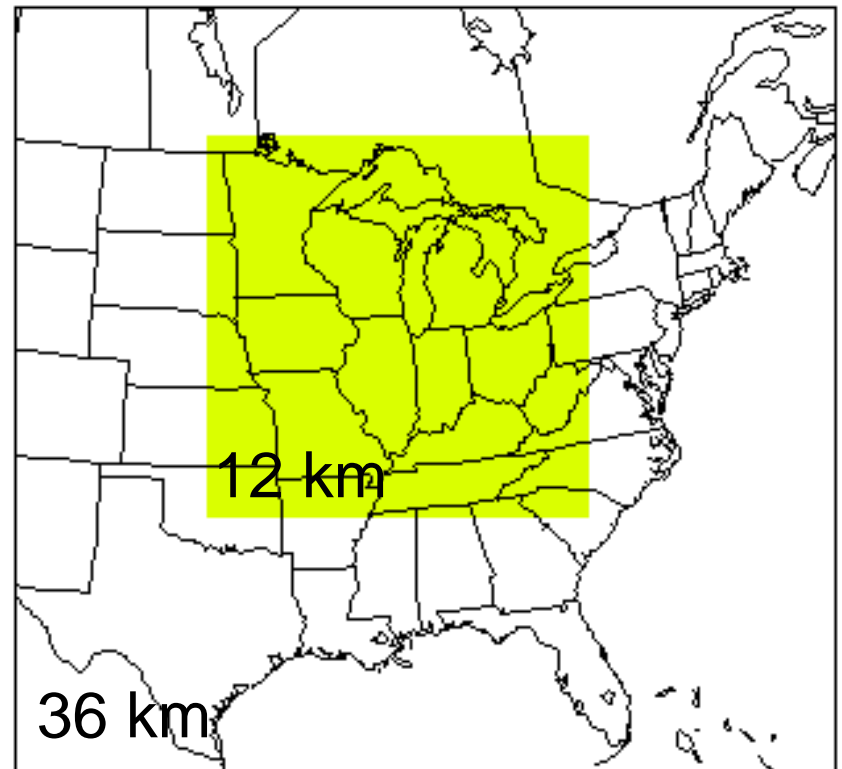
Technical Analyses: Modeling

Model: CAMx

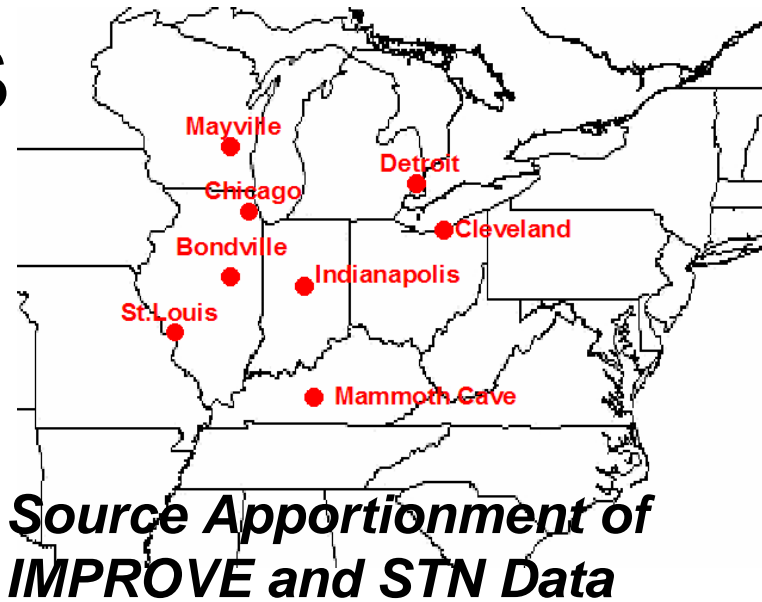
Domain/Grid: Eastern U.S.
(36 km), Midwest (12 km)

Year: 2002 (full year)
- PM/haze, 36 km

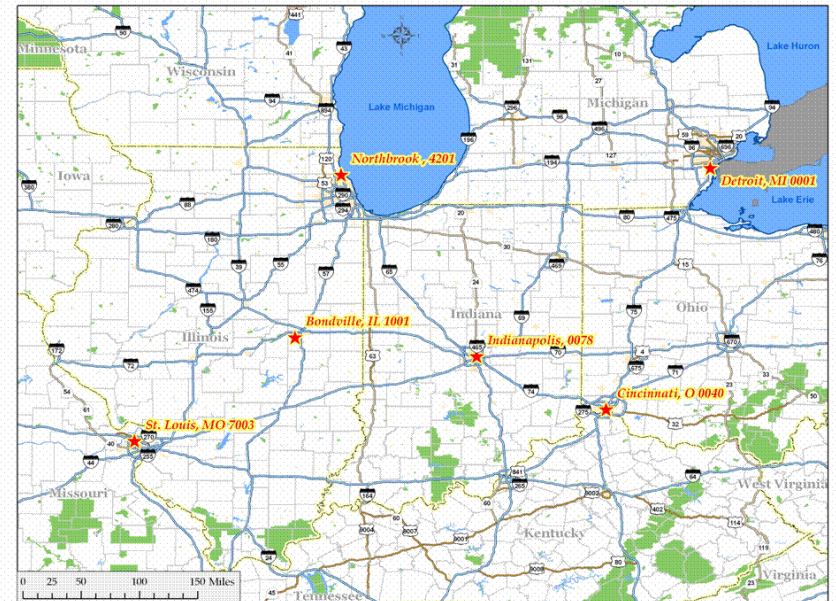
2001, 2002, 2003
(summer) – O₃, 12 km



Technical Analyses Monitoring and Data Analyses



Regional Ammonia Monitoring



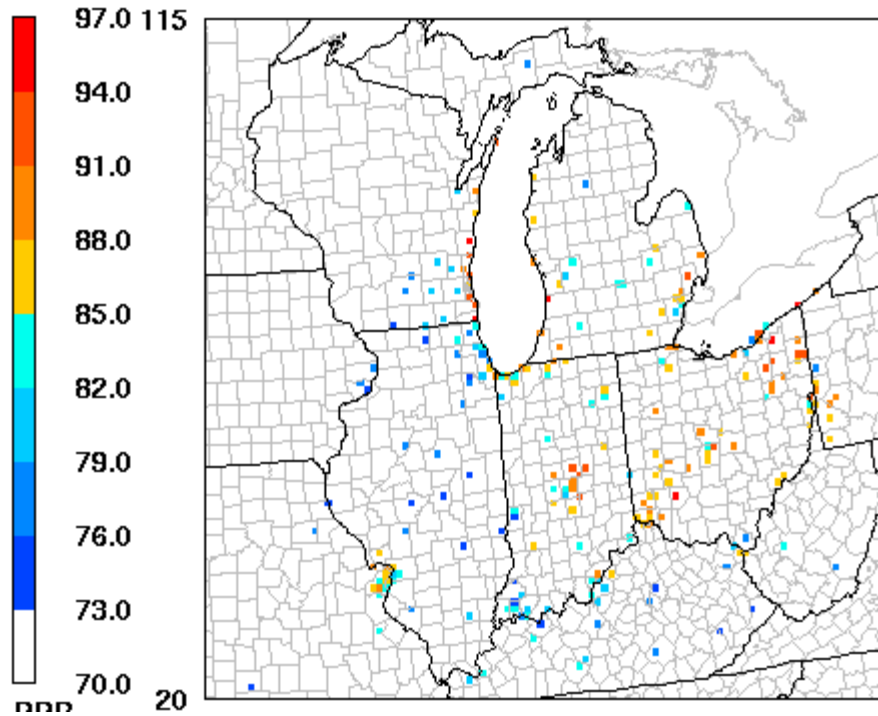
Urban Organics Study

Control Strategies

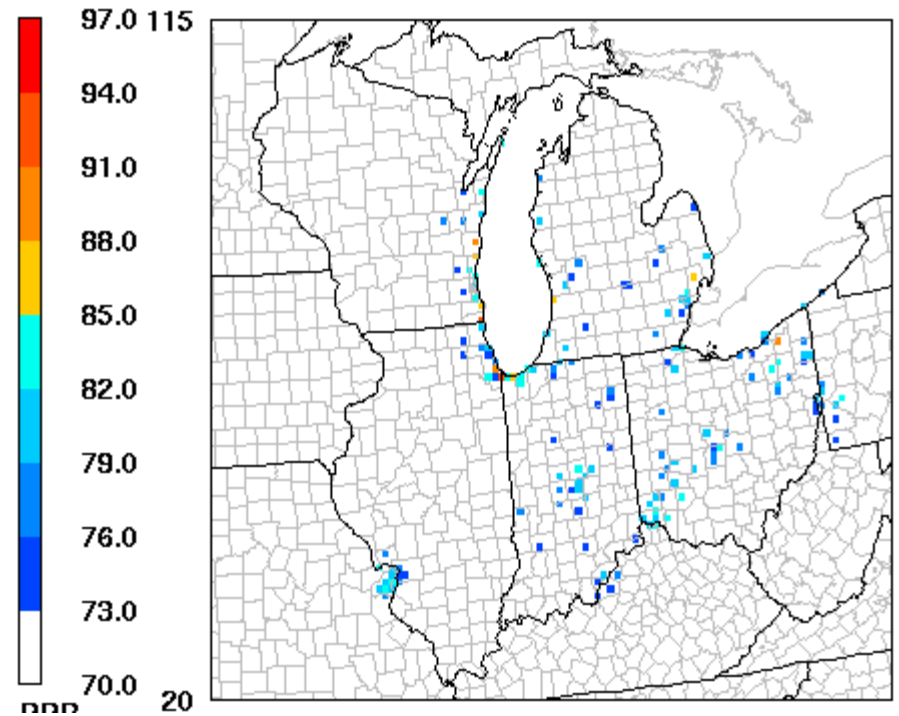
- “On the books” (existing)
- “On the way” (new)
 - CAIR
- CAIR + Regional Control Options
 - EGU1, EGU2
 - ICI Boilers
- CAIR + Local Control Options
 - Area Source VOC
 - Fuels Strategy

Ozone Results

2002 (observed)

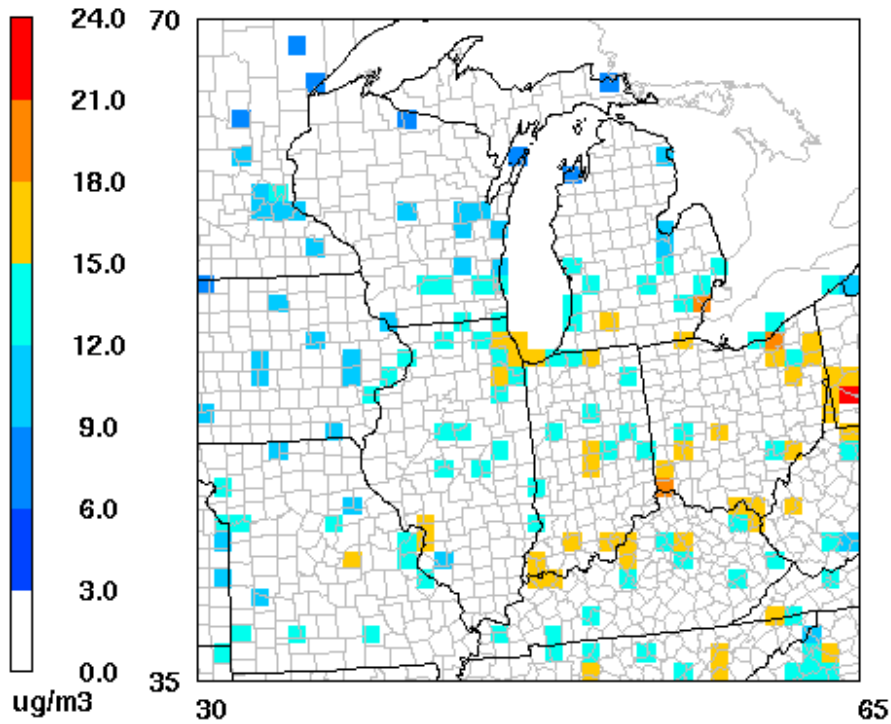


2009 CAIR

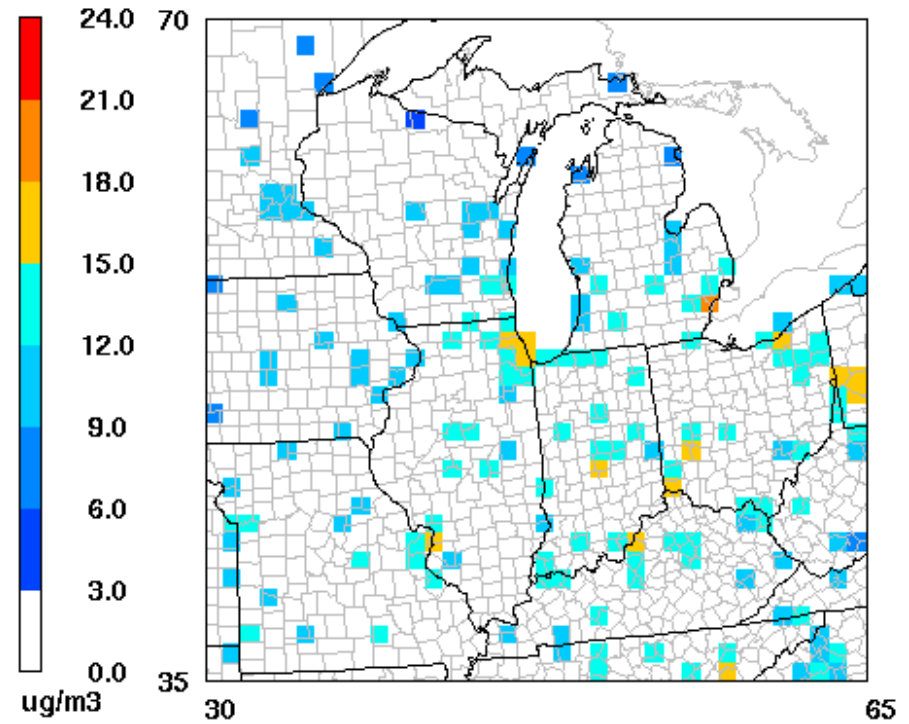


PM_{2.5} Results

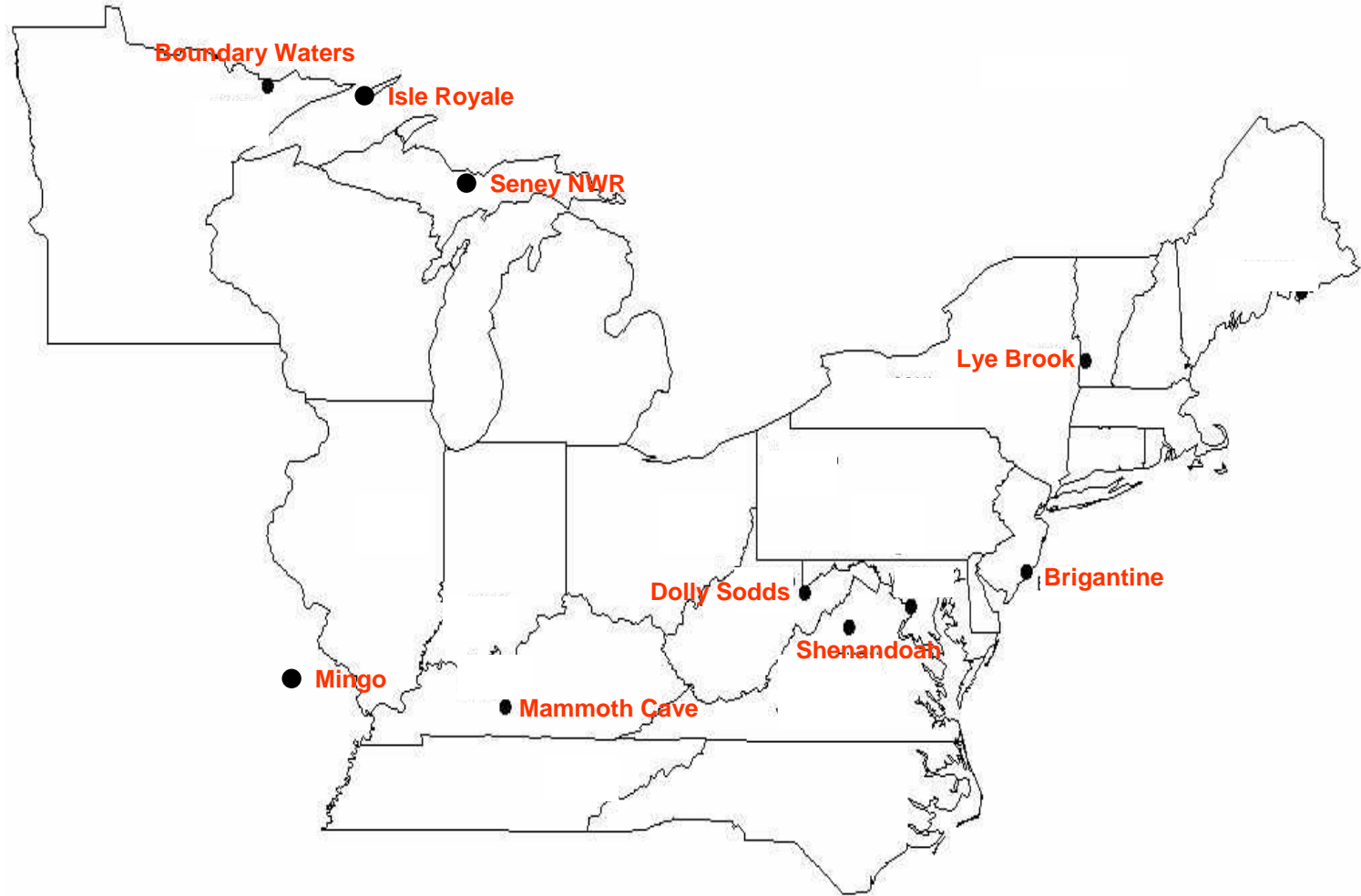
2002 (observed)



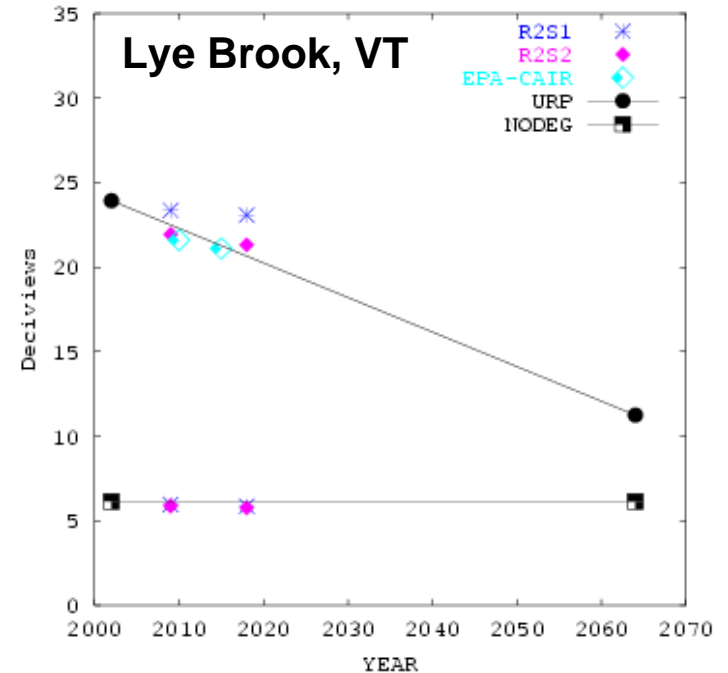
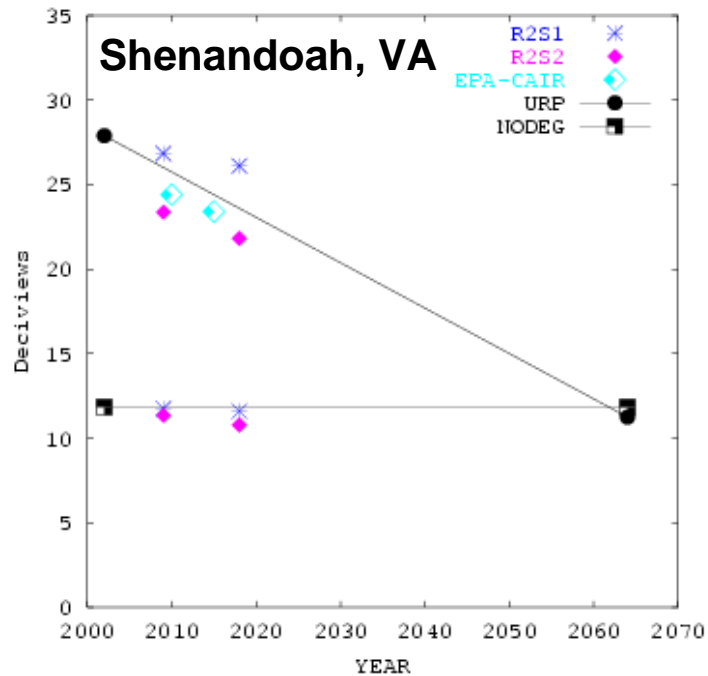
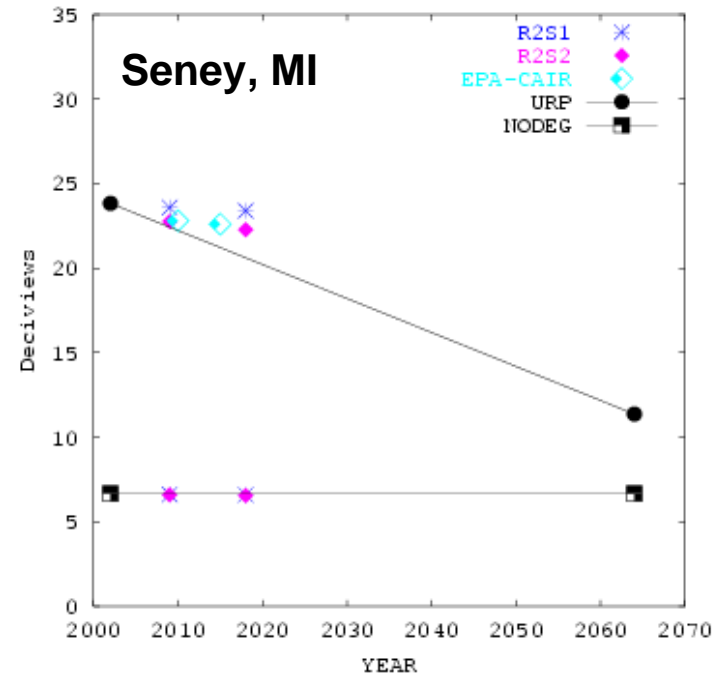
2009 CAIR



Regional Haze Results



Regional Haze Results



What will it take to provide for attainment and meet regional haze goals?

Candidate Control Measures

http://www.ladco.org/Regional_Air_Quality.html

- **Stationary Point Sources**

- Electric Generating Units
- Industrial/Commercial/Institutional (ICI) Boilers
- Cement Kilns
- Petroleum Refineries
- Iron & Steel Plants
- Chemical Plants
- Surface Coating
- Degreasing

- **Area Sources**

- Industrial Surface Coating
- Degreasing
- Architectural Coatings
- Portable Fuel Containers
- Consumer Products
- Auto Refinishing
- Gasoline Dispensing Facilities

What will it take to meet regional haze goals?

				2018	2018	2018	2018	2018	2018
Site	Type	DV	Goal	OTB	CAIR	BART	EGU1	EGU1(MW)	EGU2
BOWA1	Worst 20%	20.07	17.78	19.56	18.91	18.84	18.26	17.11	18.14
VOYA2	Worst 20%	18.70	16.74	18.31	17.97	17.95	17.72	16.75	17.68
ISLE1	Worst 20%	20.97	18.45	20.31	19.60	19.43	18.70	18.01	18.52
SENE1	Worst 20%	23.83	20.61	23.39	22.27	22.12	21.33	20.72	21.13
MING1	Worst 20%	27.70	23.46	26.34	23.66	23.56	22.44	21.57	22.13
MACA1	Worst 20%	30.10	25.31	28.71	24.83	24.74	24.19	23.41	24.00
DOSO1	Worst 20%	27.44	23.28	26.10	21.15	21.08	20.69	20.40	20.53
SHEN1	Worst 20%	27.89	23.60	26.10	21.81	21.74	21.11	20.88	20.95
LYBR1	Worst 20%	23.93	20.66	23.07	21.32	21.29	21.03	20.90	20.98
BRIG1	Worst 20%	27.87	23.59	26.85	23.62	23.58	23.25	23.11	23.17

Summary

- Regional, multi-pollutant planning approach
 - Regional air quality workshops: Nov 17, 2004, Mar 8-9, 2005, June 28-29, 2005
- SIPs for ozone (8-hour) and PM_{2.5} due in mid-2007 and early 2008, respectively
 - Need to identify control strategies by late 2005/early 2006
- Modeling shows “on the books” and “on the way” controls will improve air quality, but not enough to meet air quality standards
- Examination of additional, candidate control measures is on-going