The Clean Air Act (CAA)

The Clean Air Act (CAA) requires EPA to set National Ambient Air Quality Standards (NAAQS) for criteria air pollutants considered harmful to public health and the environment

What are Criteria Pollutants?

- The Clean Air Act (CAA) identifies six common air pollutants, known as “Criteria Pollutants”:
  - Ozone
  - Particulate Matter
  - Carbon Monoxide
  - Nitrogen Dioxide
  - Sulfur Dioxide
  - Lead

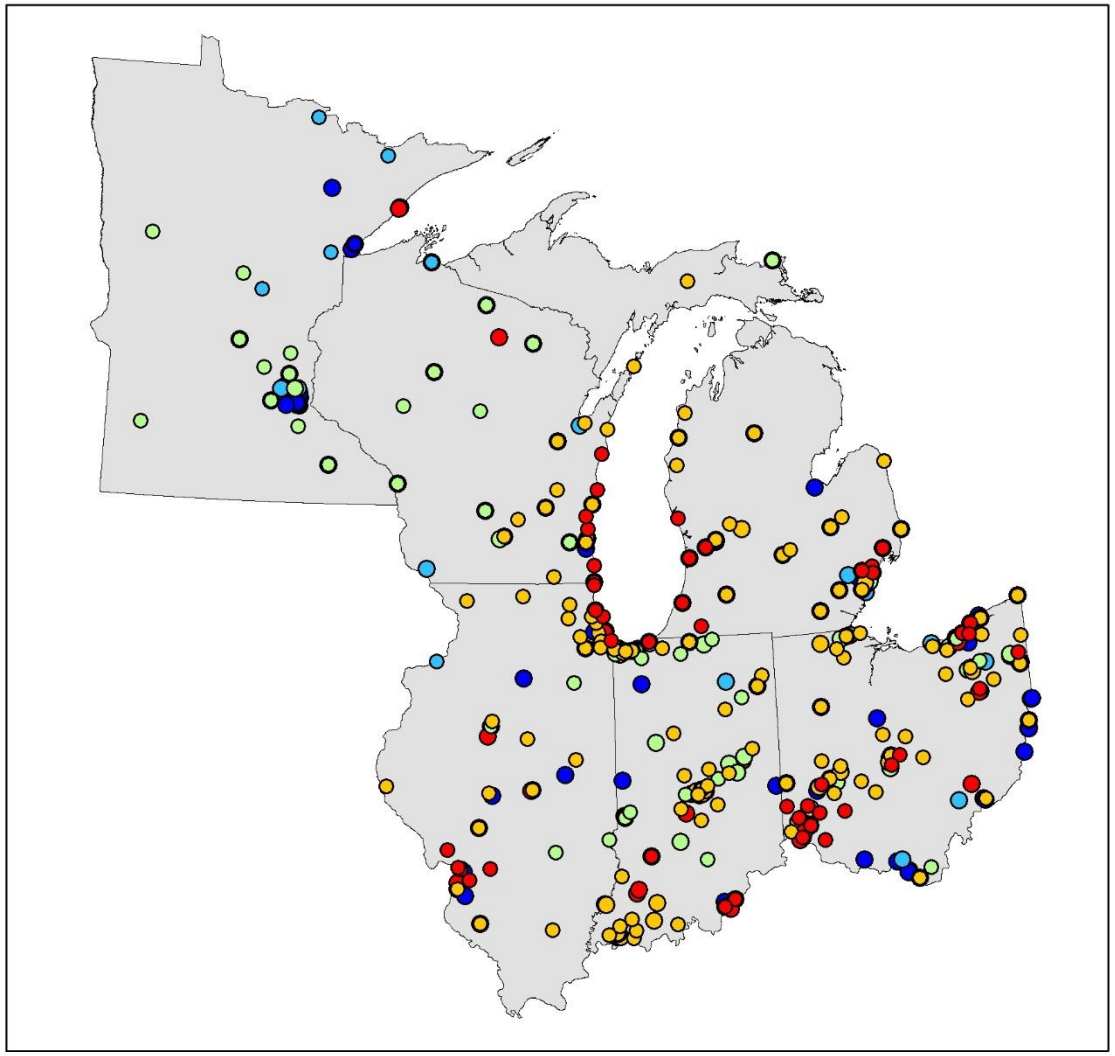
Code of Federal Regulations Title 40 (Part 50)

National Ambient Air Quality Standards (NAAQS)

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 μg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	12.0 μg/m^3	annual mean, averaged over 3 years
		secondary	1 year	15.0 μg/m^3	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 μg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 μg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Monitoring

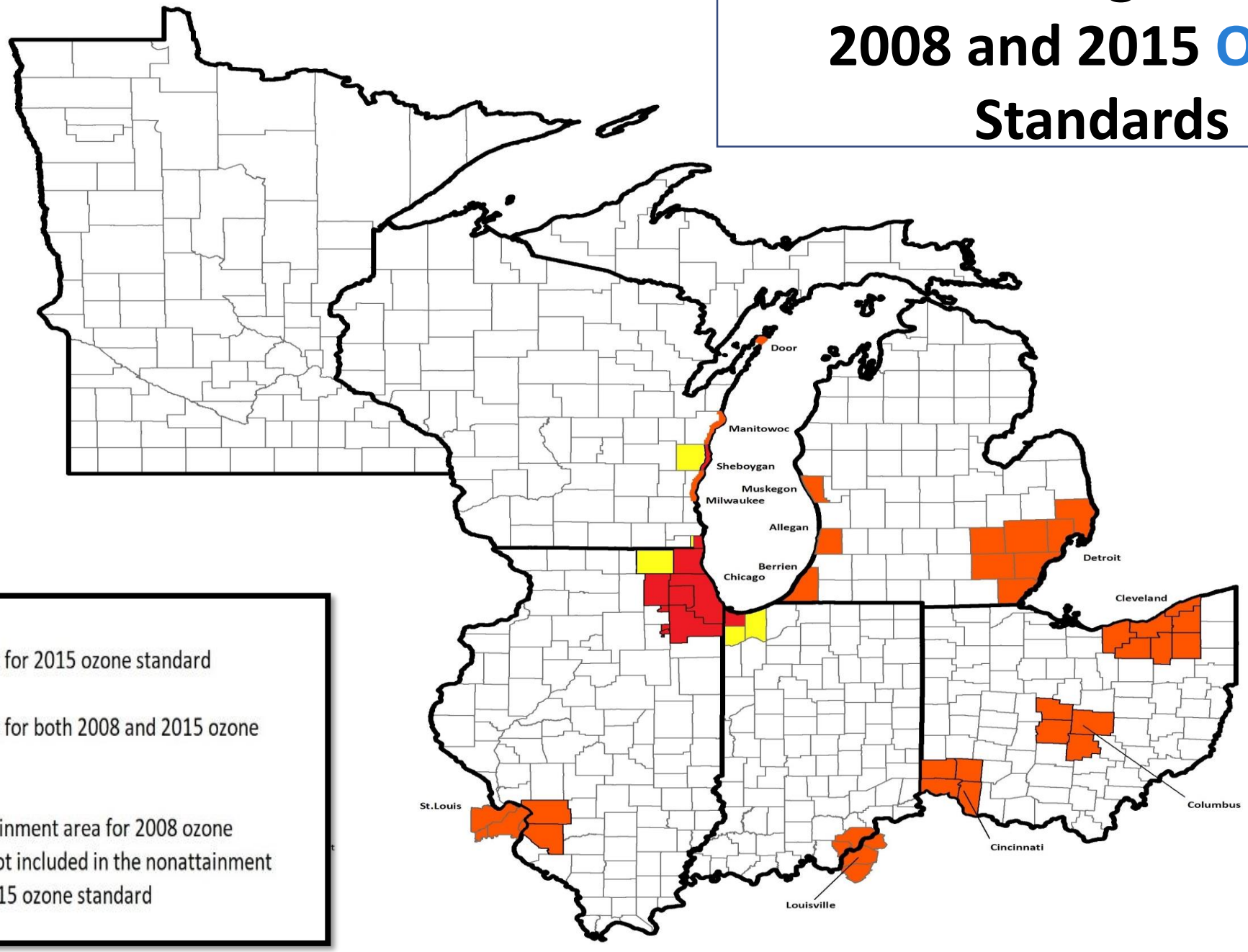
- Monitoring air quality is the best way to tell if the air is getting cleaner
- State local and tribal agencies perform the ground work for monitoring
- Region 5 oversees these programs to ensure we're monitoring in the right places and meeting data quality requirements



Designation Definitions

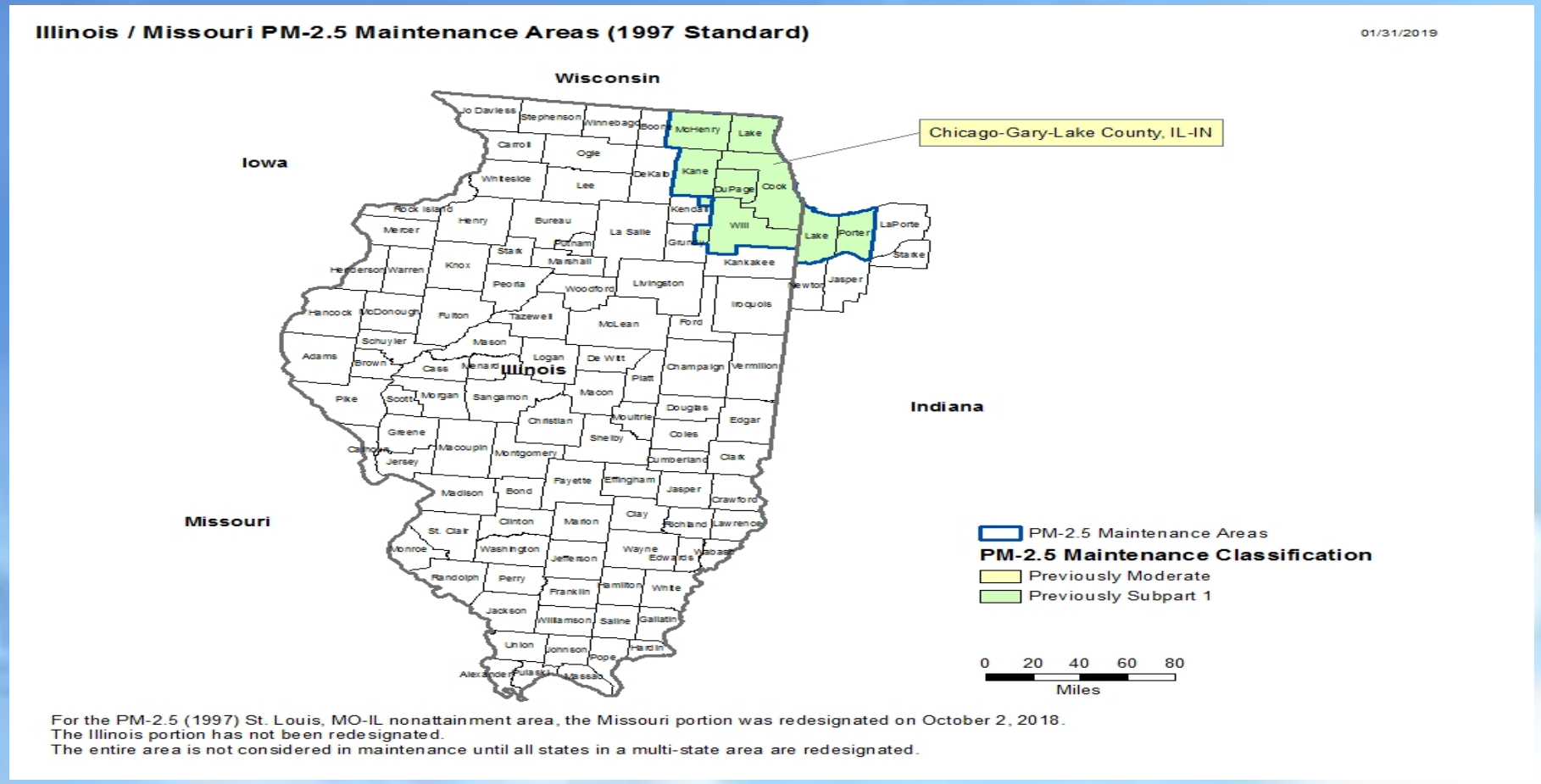
- Attainment
  - Any area that meets the NAAQS
- Nonattainment
  - Any area that does not meet primary and secondary NAAQS for that pollutant
  - Any area that contributes to the ambient air quality in a nearby areas that does not meet primary and secondary NAAQS for that pollutant
- Unclassifiable
  - Any area with insufficient air quality data to determine the status for that area

Current Designations for 2008 and 2015 Ozone Standards

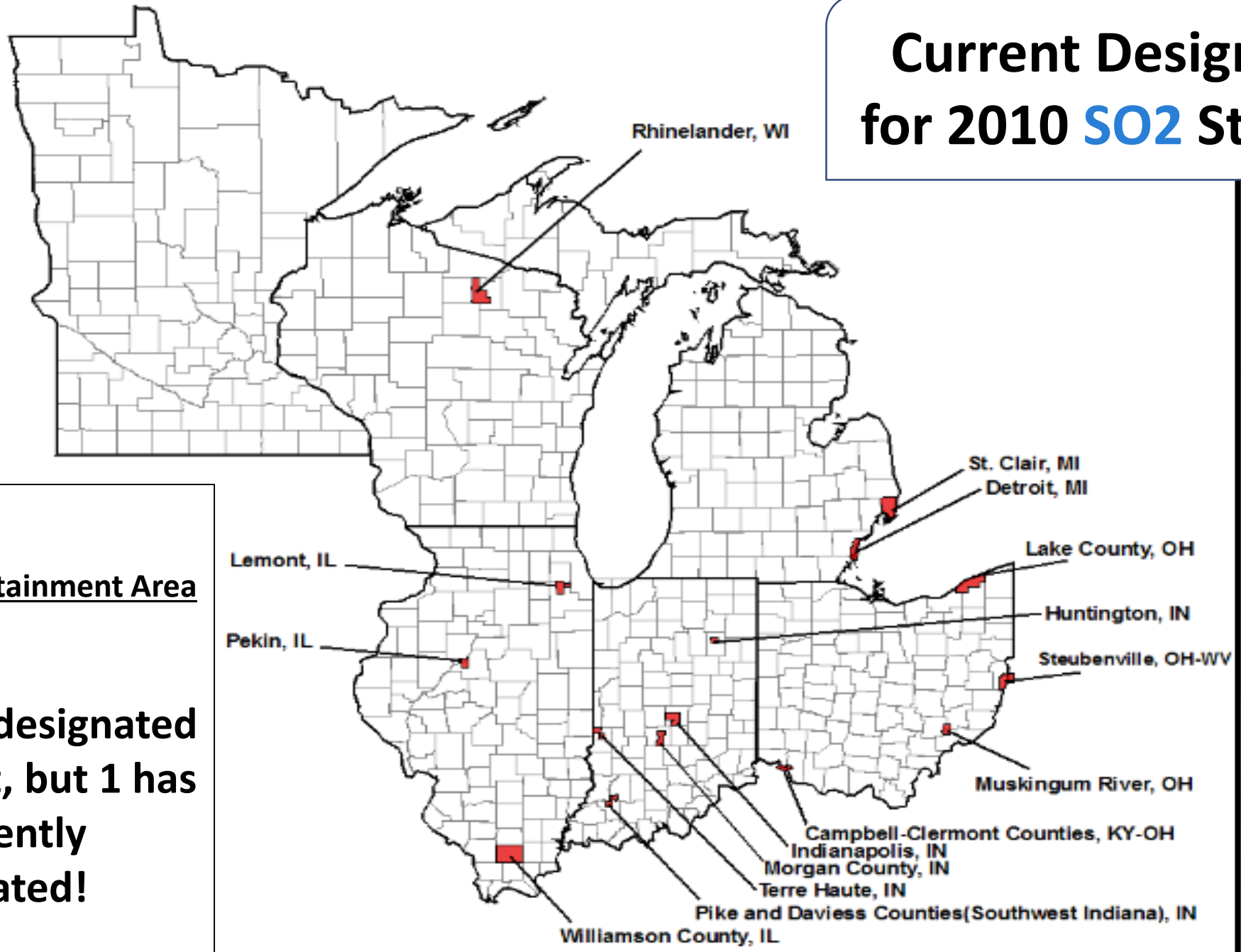


70ppb	Nonattainment for 2015 ozone standard
	Nonattainment for both 2008 and 2015 ozone standard
75 ppb	Part of nonattainment area for 2008 ozone standard but not included in the nonattainment area for the 2015 ozone standard

$PM_{2.5}$ NAAQS


Illinois / Missouri PM-2.5 Maintenance Areas (1997 Standard)
01/31/2019
Wisconsin
Iowa
Indiana
Missouri
Chicago-Gary-Lake County, IL-IN
McHenry
Lake
Kane
DuPage
Cook
Will
Porter
LaPorte
Kankakee
Jasper
Newton
Iroquois
Ford
Livingston
Woodford
Peoria
Tazewell
McLean
Champaign
Vermilion
Macon
Sangamon
Christian
Douglas
Edgar
Coles
Shelby
Macoupin
Montgomery
Clark
Fayette
Effingham
Bond
Madison
Clinton
Marion
Clay
Richland
Lawrence
St. Clair
Washington
Jefferson
Wayne
Edwards
Wabash
Randolph
Perry
Franklin
Hamilton
White
Jackson
Williamson
Saline
Gallatin
Union
Johnson
Pope
Hardin
Alexander
Pulaski
Massac
PM-2.5 Maintenance Areas
PM-2.5 Maintenance Classification
Previously Moderate
Previously Subpart 1
0 20 40 60 80
Miles
For the PM-2.5 (1997) St. Louis, MO-IL nonattainment area, the Missouri portion was redesignated on October 2, 2018.
The Illinois portion has not been redesignated.
The entire area is not considered in maintenance until all states in a multi-state area are redesignated.

Current Designations for 2010 SO2 Standards



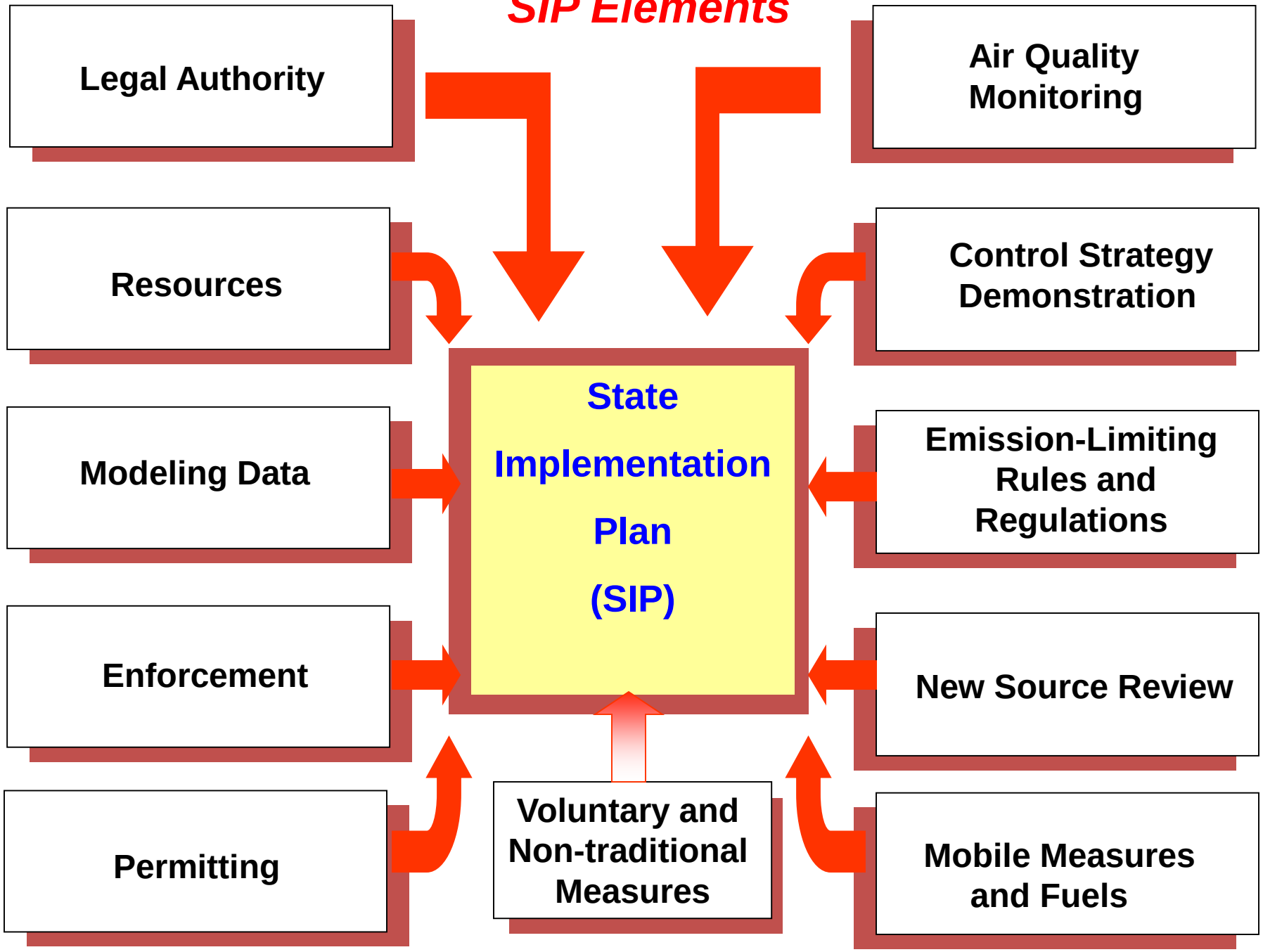
75ppb **Nonattainment Area**

16 areas were designated nonattainment, but 1 has been recently redesignated!

State Implementation Plans (SIPs)

- States develop plans to reduce pollution and prevent further episodes in nonattainment areas
- EPA approves the SIP elements and makes sure the plans include permanent, enforceable measures
- Collaborative process between EPA, States, Local, and Tribal (S/L/T) agencies

SIP Elements



SIP Process: Review and Roles

- SIP Development:
  - S/L/T authorities develop SIPs in response to
    - New or revised NAAQS
    - SIP Calls
    - New or revised State regulations
    - Changes in attainment status
- SIP Adoption and Submittal
  - Authority: Governor or his/her designee.
  - Generally delegated to Environmental Secretary or equivalent.
- SIP Review Approval
  - EPA Regional Administrators are delegated the authority to receive, return, approve, or disapprove SIPs

Voluntary Mobile Programs

- **Midwest Clean Diesel Initiative**
  - Reduce diesel pollution through technological, operational solutions
    - Replacement of old engines with new engines
    - Replacing vehicles/equipment
    - Installation of emission control devices
  - National grant opportunities
    - 2019 Request for Applications open until March: www.epa.gov/cleandiesel
    - Approximately $40M available nationally
    - EPA Region 5 accepts applications up to $3M
  - EPA-provided state grant opportunities
    - See www.epa.gov/midwestcleandiesel for state partner information
- **SmartWay Transport Partnership**
  - Shipping and transport efficiency
  - Partners reduce fuel use and save money on fuel costs
  - www.epa.gov/smartway

CMAQ

- Congestion Mitigation Air Quality
  - USDOT Program run through Chicago Metropolitan Agency for Planning (CMAP)
  - Basic criteria
    - transportation projects
    - Generates emissions reductions
    - Located in nonattainment or maintenance area
  - CMAP Process
    - Formal committee
    - https://www.cmap.illinois.gov/mobility/strategic-investment/cmaq