

# Wisconsin Air Quality

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# Agenda

- DNR Organization
- Clean Air Act
- Air Management Program
- 2023 Trends Report
- Committed to Clean Air – PM2.5 and Ozone
- Public Involvement



## DNR Divisions

- Secretary's Office
- External Services
- Internal Services
- **Environmental Management**
- Forestry
- Fish, Wildlife & Parks
- Public Safety and Resources Protection



## Environmental Management Division

- **Air Management**
- Drinking Water & Groundwater
- Office of Great Waters
- Remediation & Redevelopment
- Waste & Materials Management
- Water Quality
- Office of Emerging Contaminants



# The Clean Air Act

Air Pollution Control Act of 1955 – first federal legislation involving air pollution; proposed funds for research

Clean Air Act of 1963 – established funding for study and control of air pollution; U.S. Public Health Service

Clean Air Act of 1970 – first comprehensive federal response for industrial and mobile sources; U.S. Environmental Protection Agency (EPA) established

Clean Air Act Amendments of 1977 – Prevention of Significant Deterioration (PSD) provisions; non-attainment area requirements; major permit review requirements to ensure attainment and maintenance

Clean Air Act Amendments of 1990 – broader authority to implement and enforce air regulations; increased emphasis on more cost-effective approaches; regulations for controlling toxic air pollutants; stratospheric ozone

*State and local governments are primary implementers of the Clean Air Act*



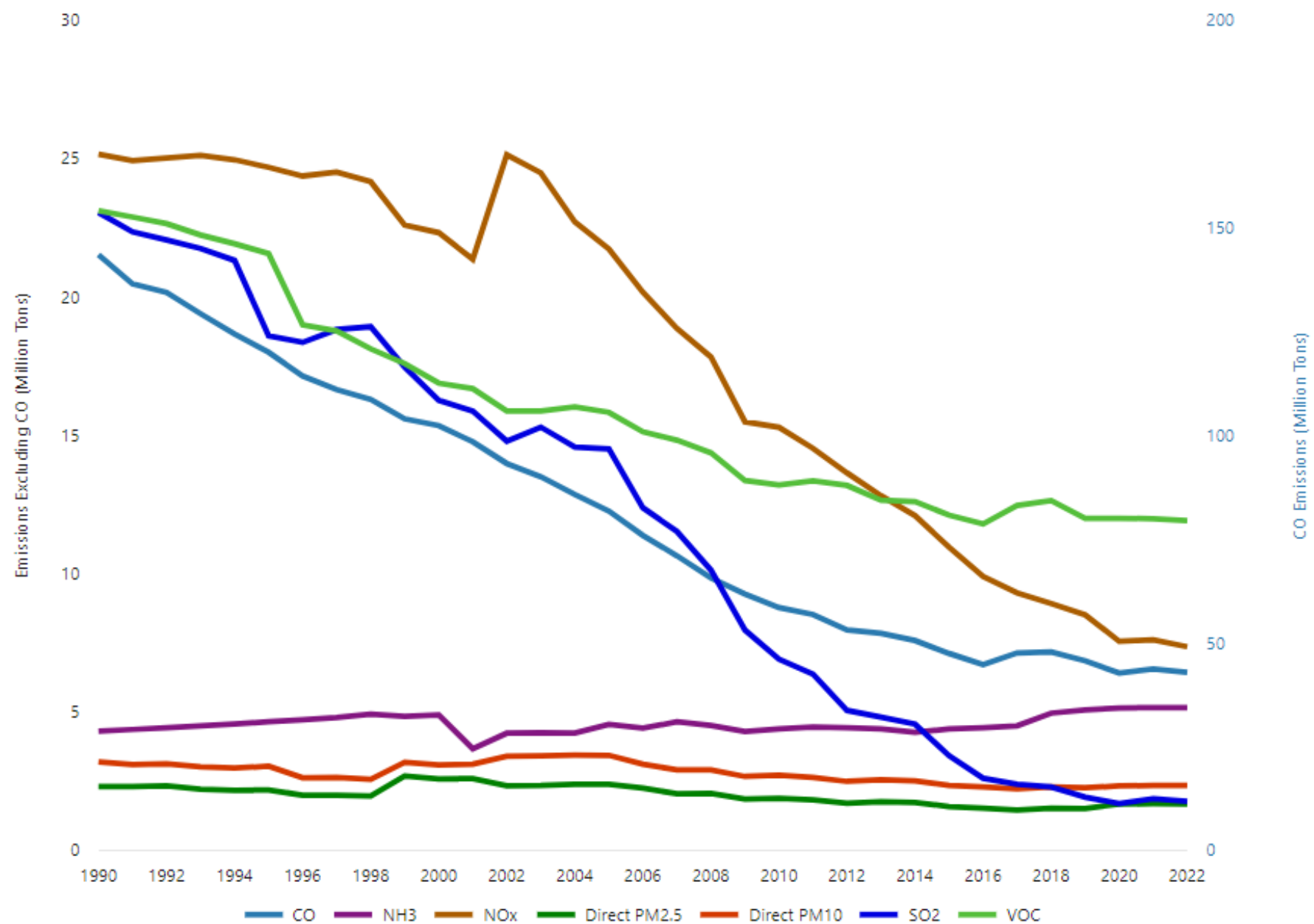
# National Ambient Air Quality Standards (NAAQS)

- Standards set by U.S. EPA
  - Scheduled to be reviewed and potentially updated every five years
- Primary Standards
  - Protect public health
  - Focus on “sensitive” individuals (asthmatics, children, elderly)
- Secondary Standards
  - Protect public welfare
  - Decreased visibility, damage to animals, crops, vegetation, and buildings





## Declining National Air Pollutant Emissions



Source: U.S. EPA National Emissions Inventory 2020



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# DNR's Air Management Program

Business Support

Air Quality Planning and  
Standards

Air Monitoring

Permits and Stationary  
Source Modeling

Compliance, Enforcement,  
and Emissions Inventory

# Business Support

## Primary mission

To ensure the Air Management Program is managed from a funding and technology perspective such that all essential work of the program can be completed in a manner that is timely, efficient, and appropriately utilizes resources.





# Air Quality Planning and Standards

## Primary mission

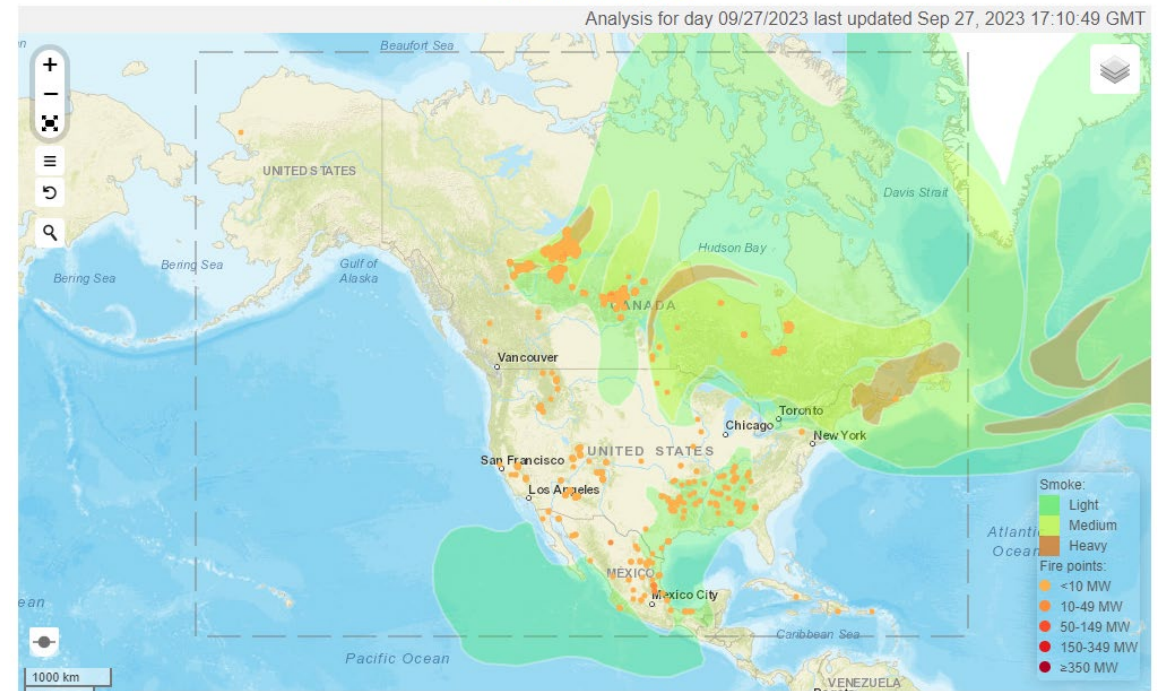
To ensure the Wisconsin State Implementation Plan meets the planning requirements of the Clean Air Act.

## Core work

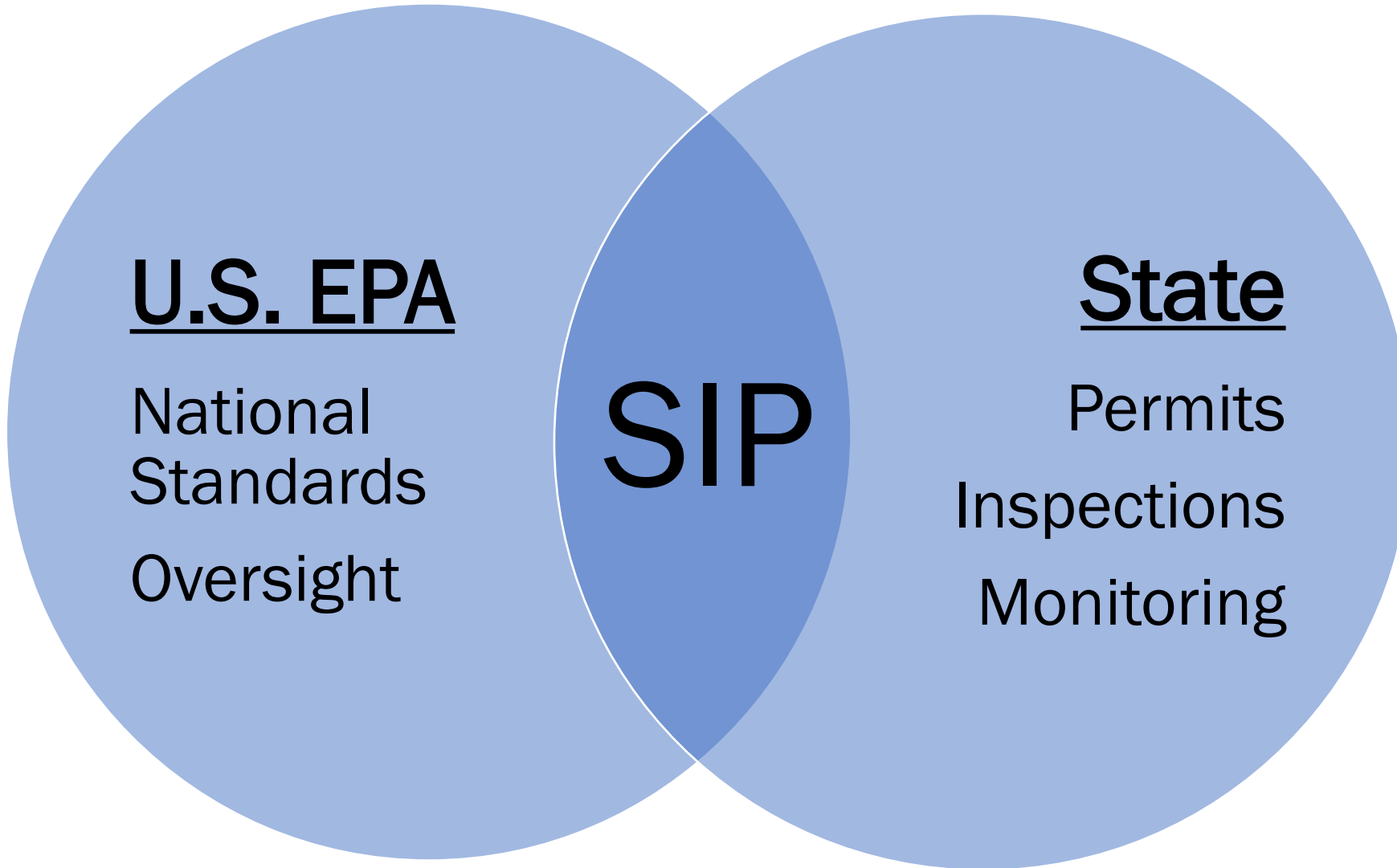
- Federal regulatory review and analysis
- State rulemaking and plan development
- Emission inventory maintenance and development
- Air quality modeling and forecasting

Hazard Mapping System Fire and Smoke Product

Current Analysis

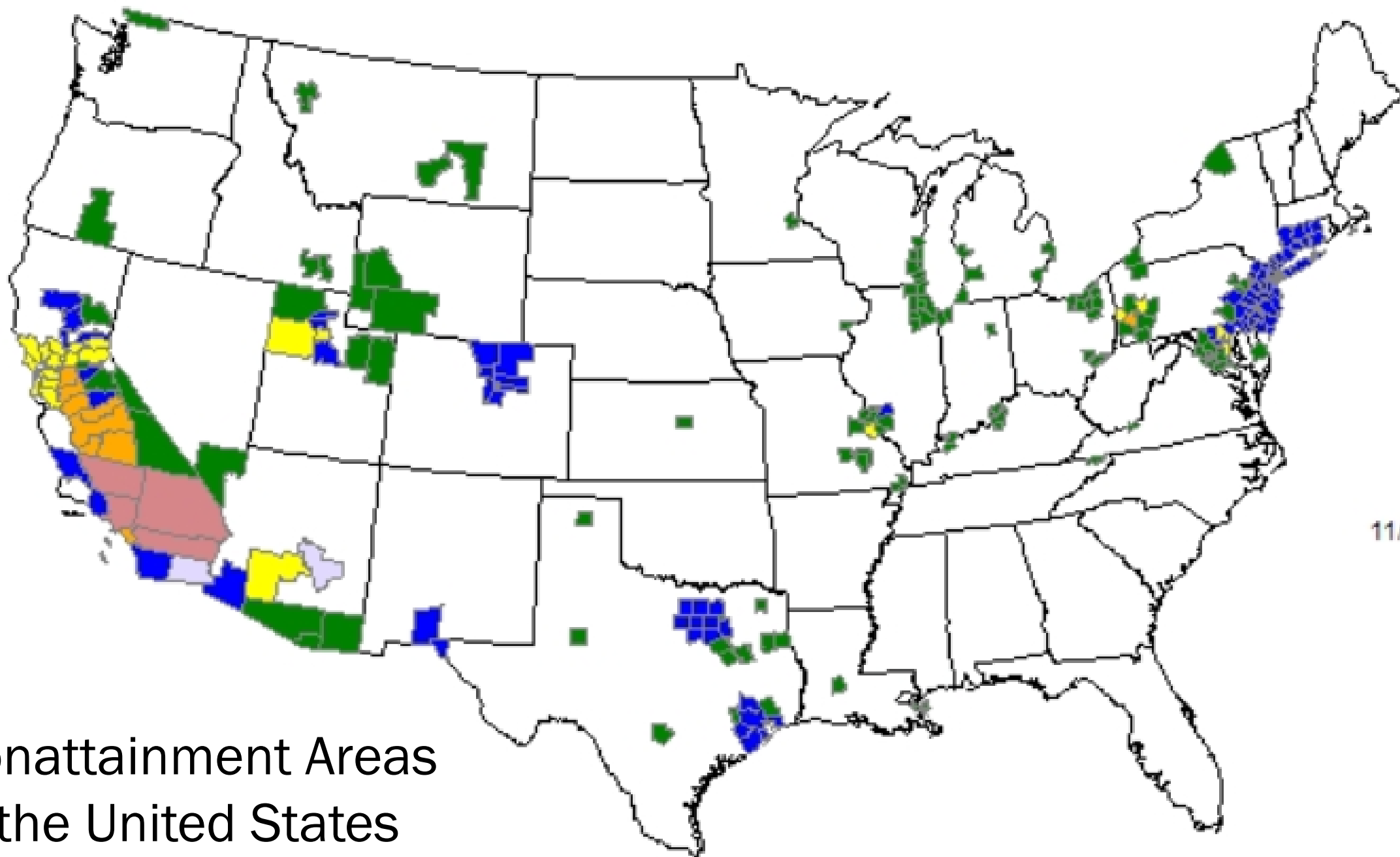


# State Implementation Plan





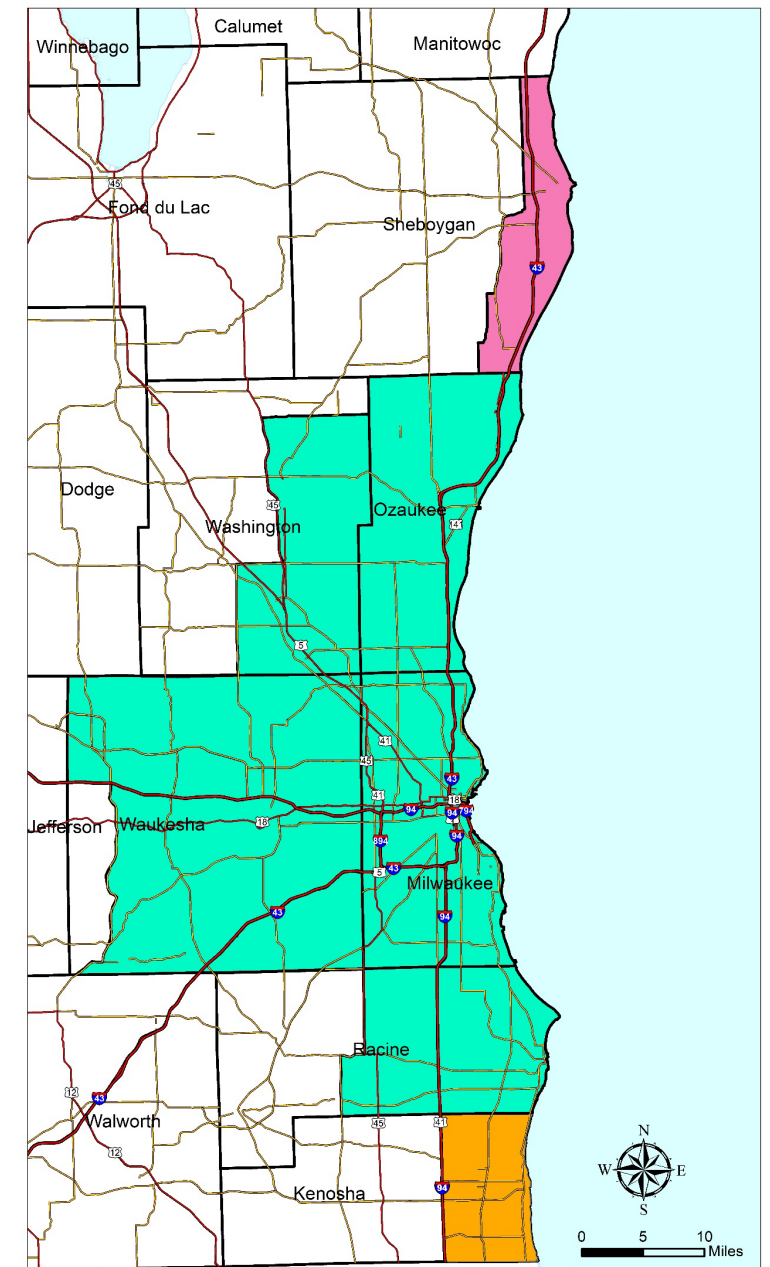
# Nonattainment Areas in the United States



11/30/2023

# Wisconsin's current Nonattainment Areas for the 2015 ozone NAAQS

- Sheboygan – partial county
- Kenosha – partial county
  - Part of the three state Chicago nonattainment area
- Milwaukee – full county Milwaukee, Ozaukee, partial county Racine, Washington, Waukesha





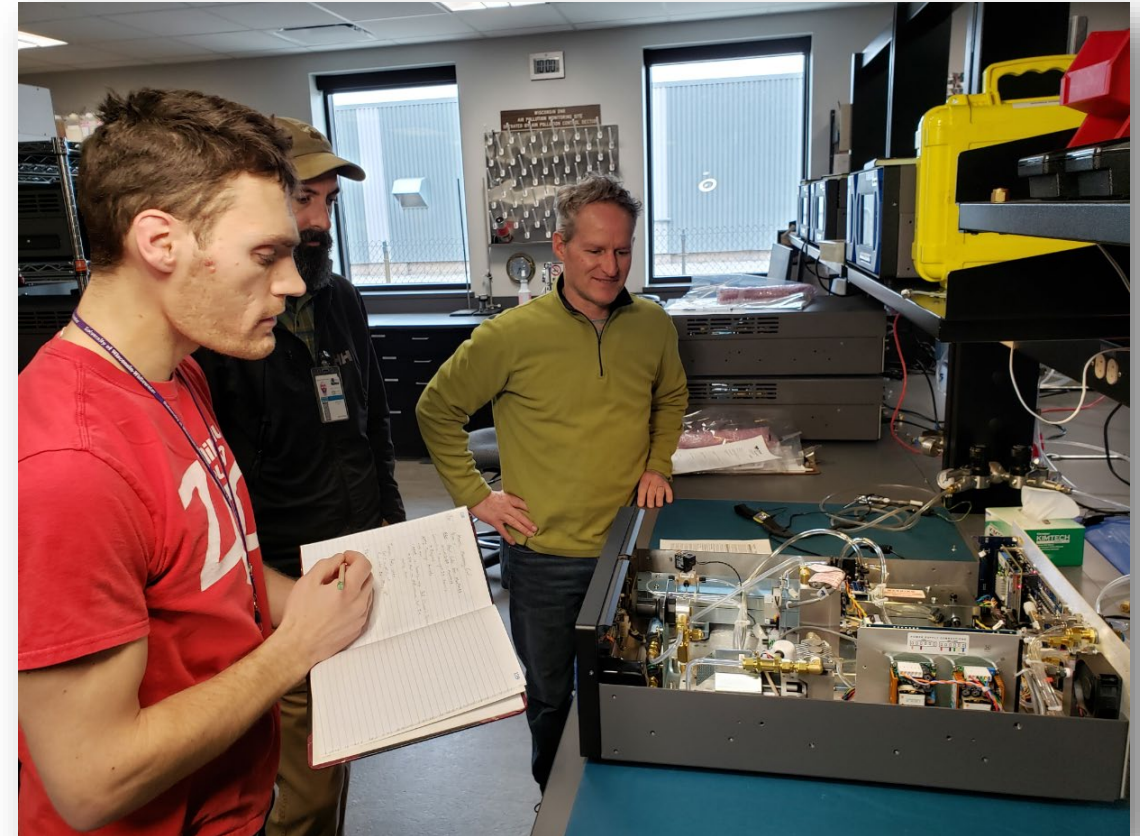
# Air monitoring

## Primary mission

To ensure National Ambient Air Quality Standards (NAAQS) are attained and maintained through monitoring of air quality.

## Core work

- Set up and operate monitoring sites
- Collect ambient air samples
- Analyze and quality assure data
- Communicate air quality data to the public







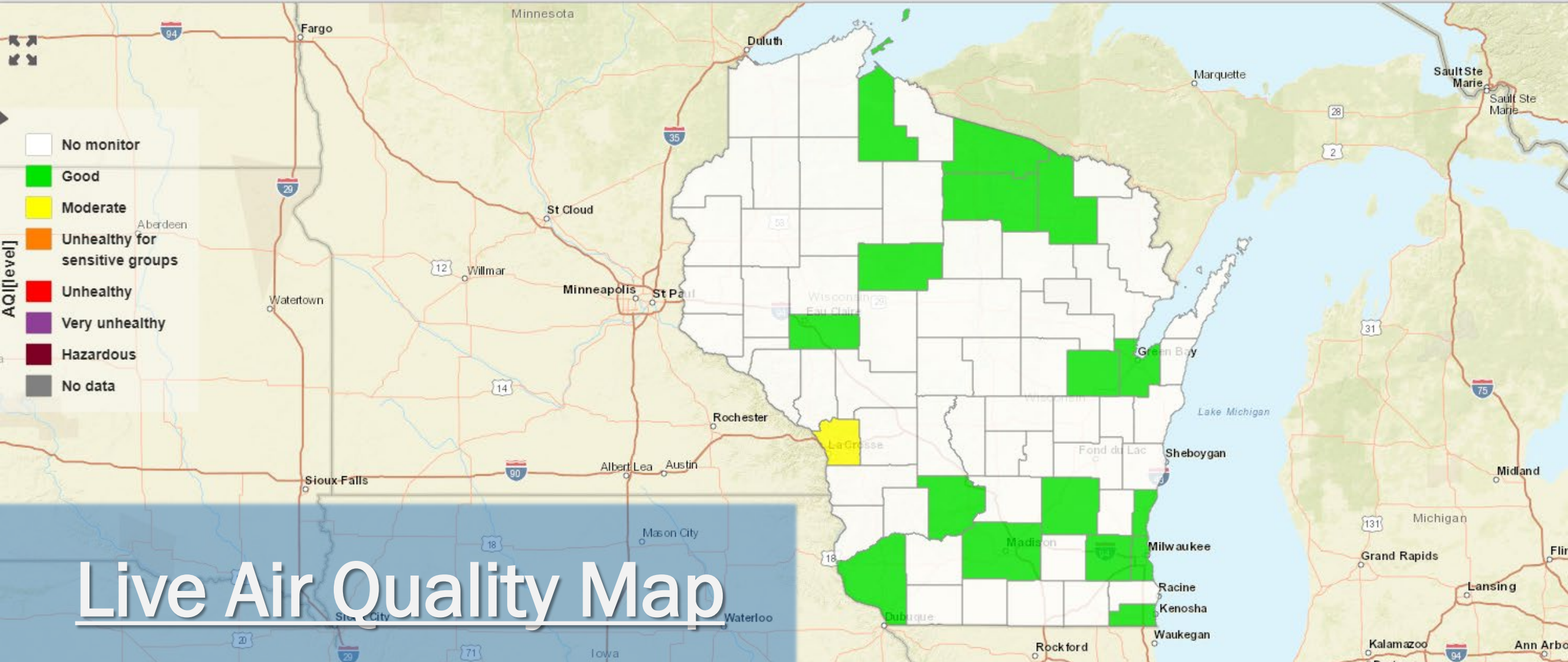




# Wisconsin Air Quality Monitoring Data

[Interactive Maps](#)[Reports](#)[Information](#)[Forecast](#)[Air Quality Index \(AQI\)](#)

Air Quality Index ▼

[ALL](#)[CO](#)[NO2](#)[OZONE](#)[PM10](#)[PM2.5](#)[SO2](#)



# Permits and Stationary Source Modeling

## Primary mission

Apply the federal and state air pollution control rules to the operation of stationary sources through issuance of permits

Consistent  
Accurate  
Timely  
Transparent

## An air pollution control permit is

A legal document that includes all the air pollution regulations and requirements that apply to a source.

# Permits and Stationary Source Modeling

## Construction Permits

- New facilities
- New Projects
- Facility changes

## Operation Permits

- Whole facility
- 5 year renewal cycle

# Compliance, Enforcement, and Emissions Inventory

## Primary mission

To assure compliance with federal and state air pollution rules to protect public health and the environment.

## Core work

Activities focus on compliance assistance and compliance monitoring in the areas of air pollution stationary sources, asbestos demolition and renovation projects, and refrigerant recovery operations.





# Compliance Assurance

- Inspections
- Stack testing
- Air Emissions Inventory Reporting



# Compliance Enforcement

## Stepped enforcement

- Letter of inquiry
- Letter of noncompliance
- Notice of violation
  - Bring in enforcement specialist
  - Enforcement conference
- Referral
  - Send case to DOJ

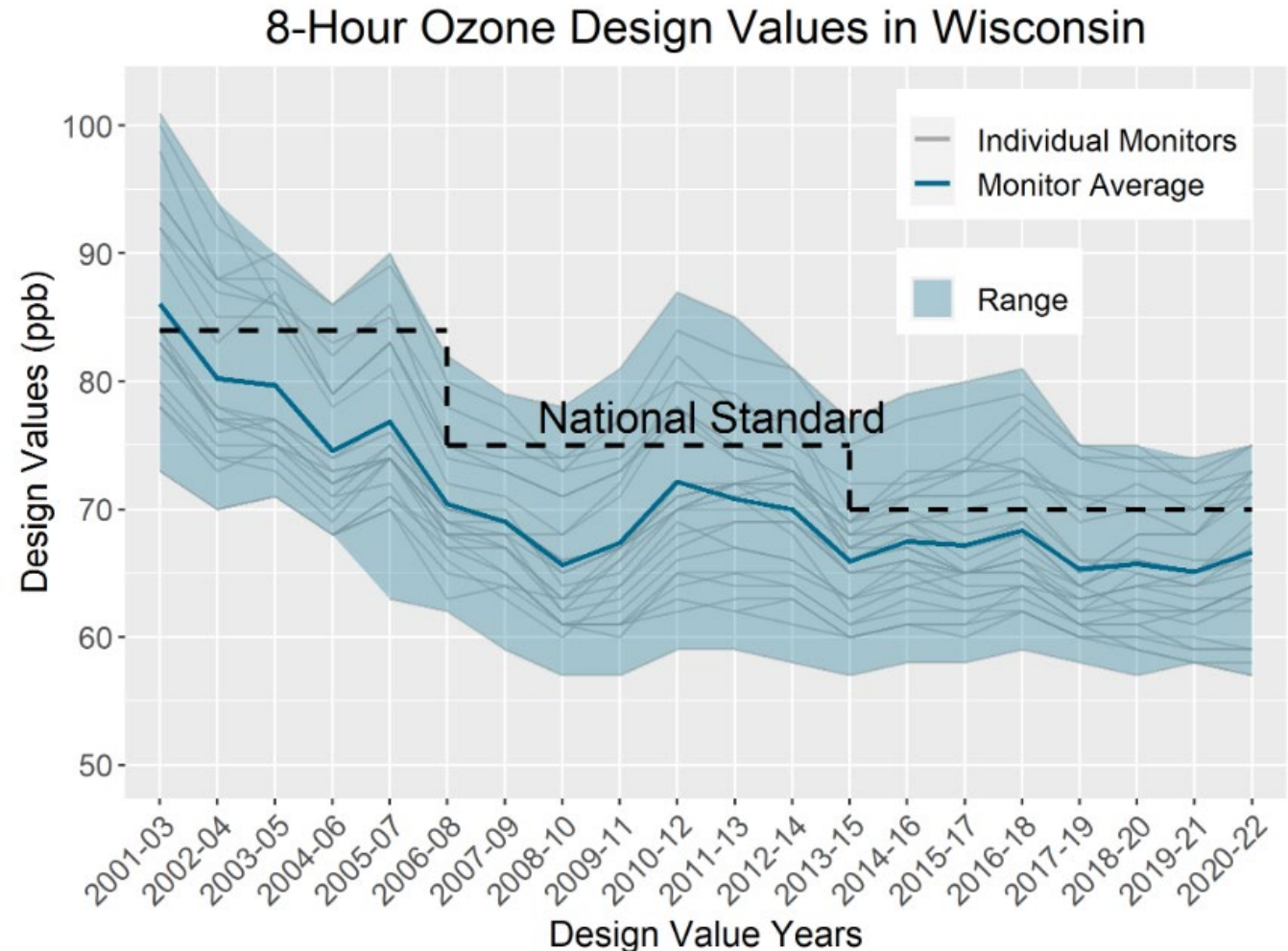
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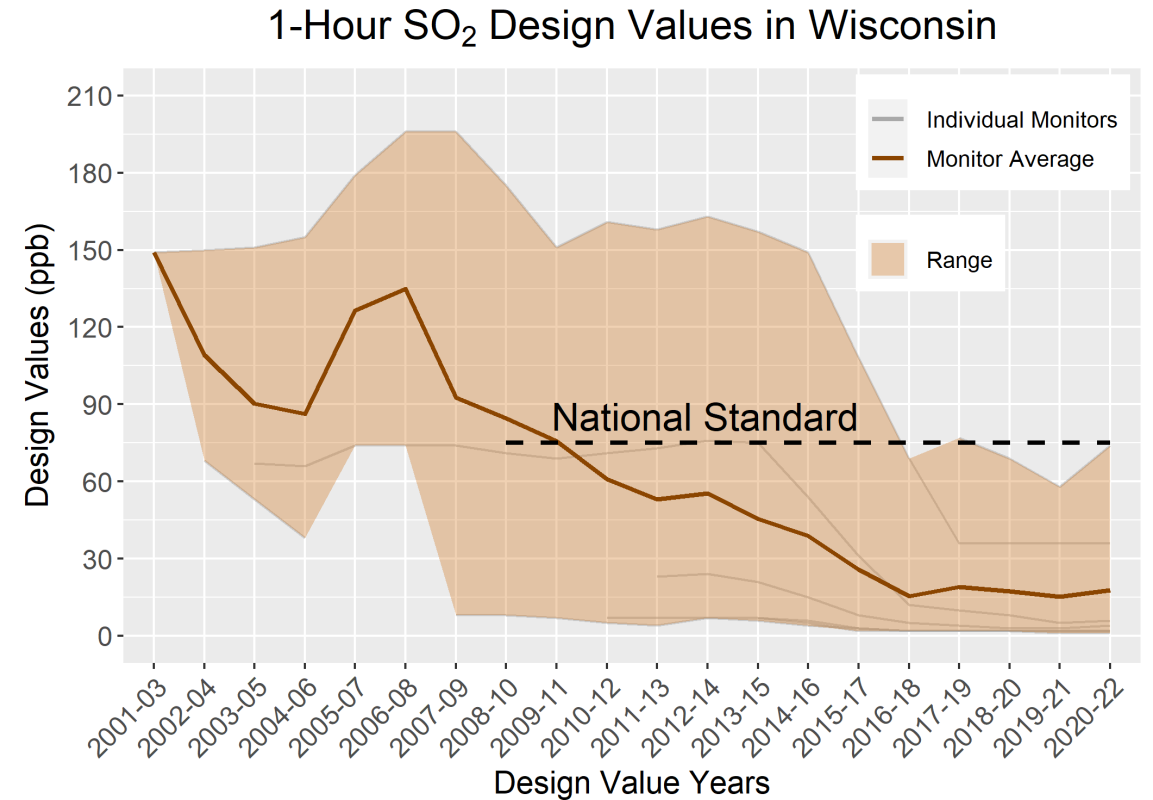
# 2023 Wisconsin Air Quality Trends Report

- Detailed information on Wisconsin's historic air quality trends over the past 20 years
- [Webpage](#)
- [Report](#)
- [Story map](#)



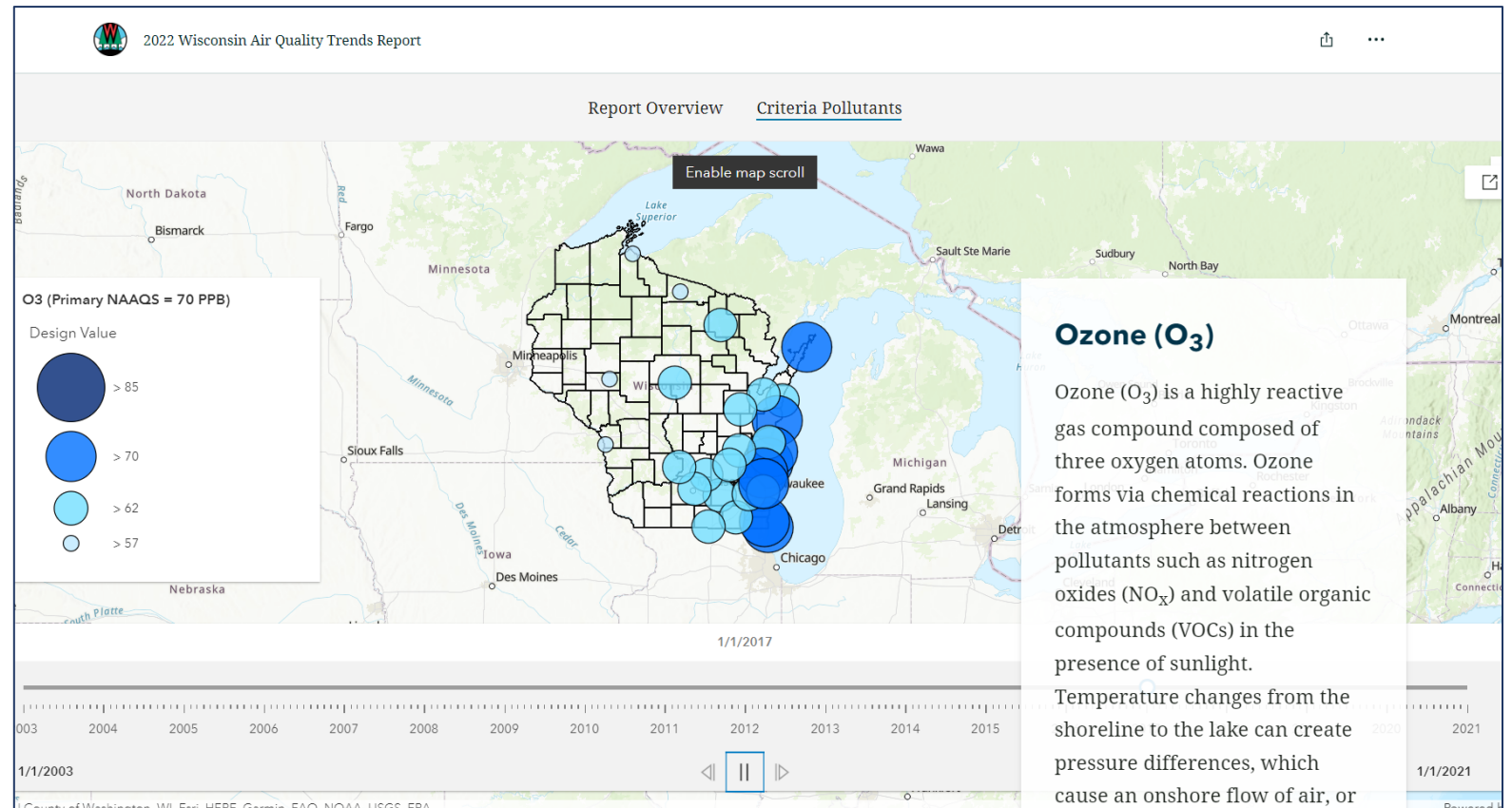
# 2023 Wisconsin Air Quality Trends Report

- Since the early 2000's
  - SO<sub>2</sub> dropped 88%
  - Ozone
    - Lakeshore dropped 17%
    - Northern region dropped 11%
    - Inland region dropped 20%
  - PM2.5 dropped 26%
  - The entire state meets federal standards for particulate matter, nitrogen dioxide, carbon monoxide, sulfur dioxide and lead.



# 2023 Wisconsin Air Quality StoryMap

As part of its effort to communicate air quality improvements over time, the DNR released the interactive [2023 Wisconsin Air Quality Trends StoryMap](#).





# Agenda

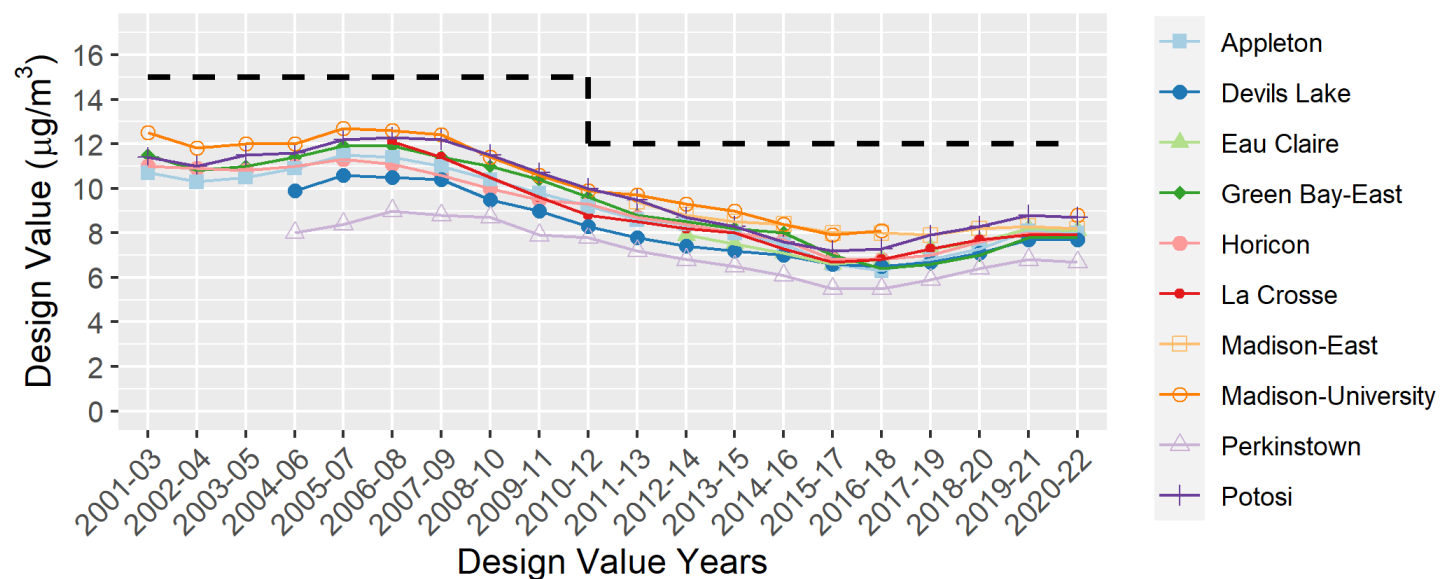
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1. PM enters body through nose/mouth

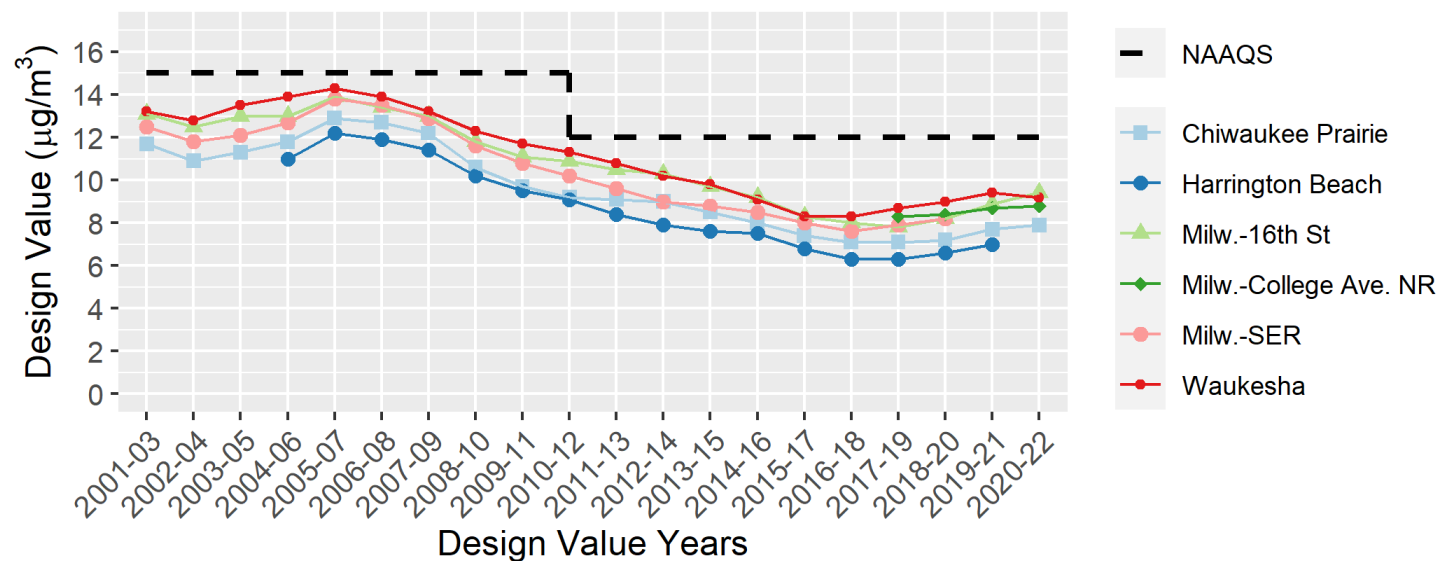
2. Small particles like PM 2.5 continue to lungs as bloodstream

3. Serious health risks for lungs and heart

### Annual PM<sub>2.5</sub> Design Values - Inland Region



### Annual PM<sub>2.5</sub> Design Values - Southeast Region




# PM NAAQS Review

- EPA is currently reviewing the PM NAAQS.
- EPA proposed a revision to the PM standard in January 2023 and is expected to finalize revisions to that standard soon.

NAAQS	Current standard	New proposed range
PM <sub>2.5</sub> 24-hour standard	35 µg/m <sup>3</sup> (set in 2006)	No change
PM <sub>2.5</sub> annual standard	12 µg/m <sup>3</sup> (set in 2012)	<b>9-10 µg/m<sup>3</sup></b>
PM <sub>10</sub> 24-hour standard	150 µg/m <sup>3</sup> (set in 1987)	No change





*Good ozone*

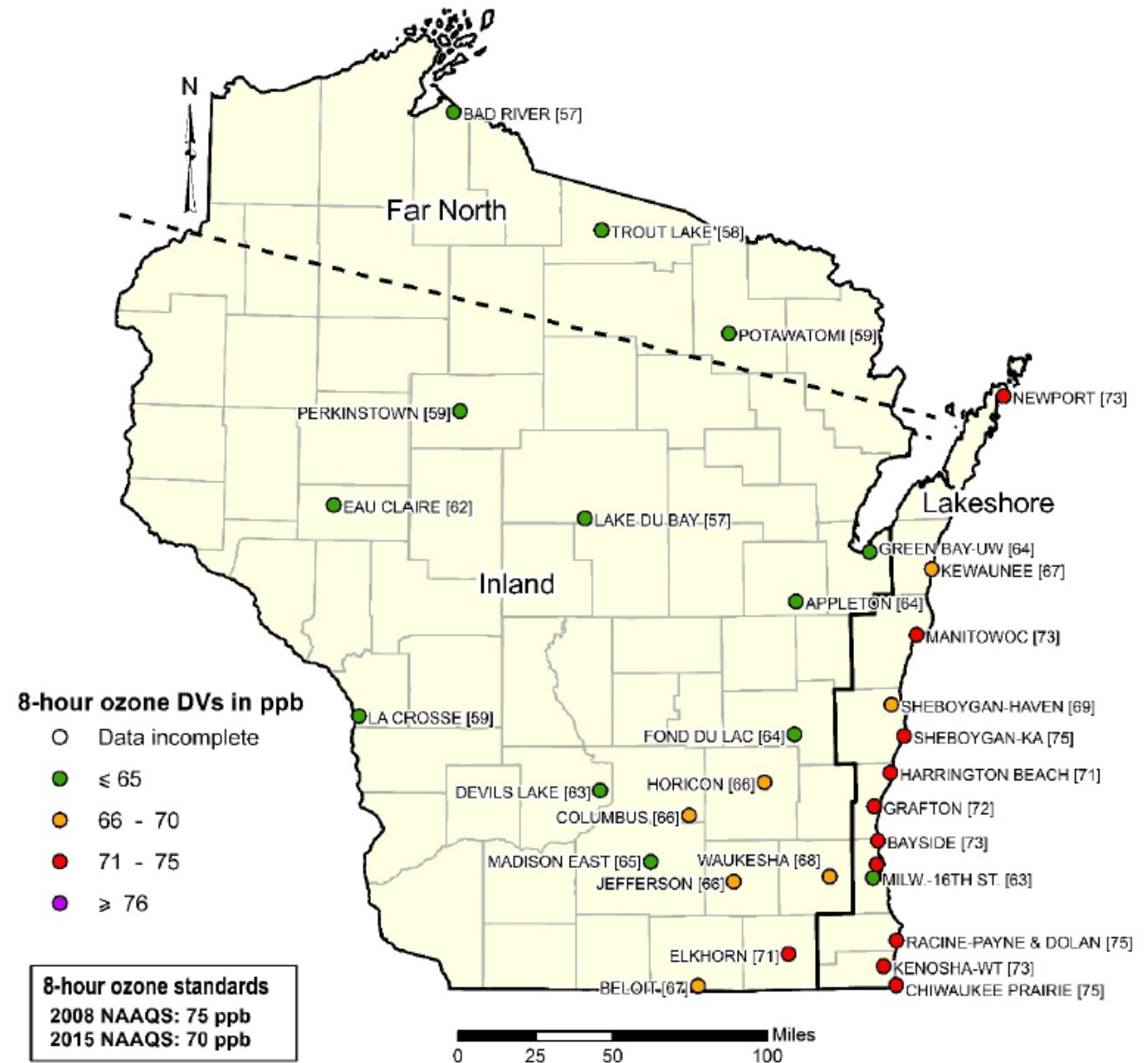
*Bad ozone*

# Ozone

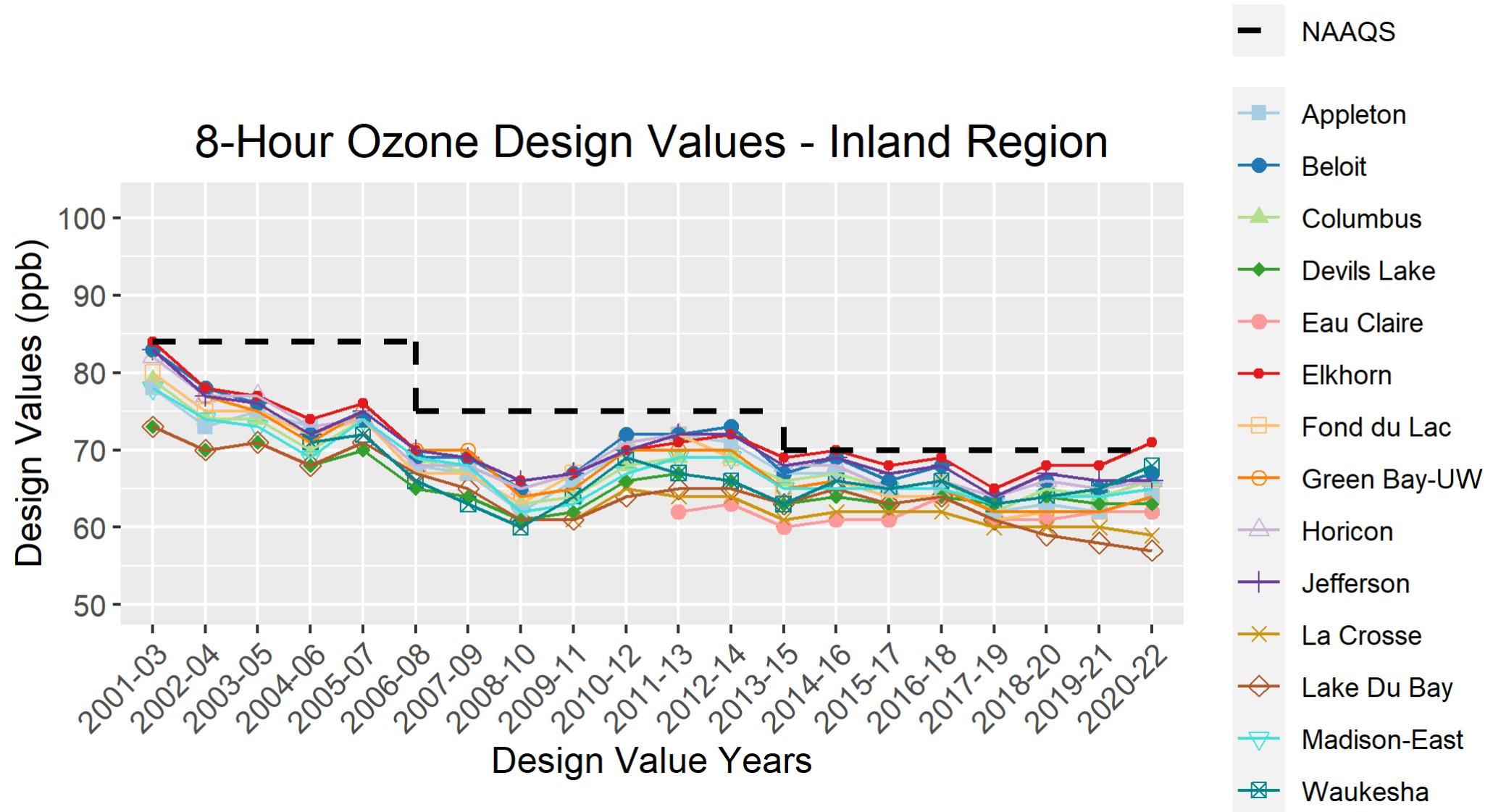
- EPA reviews and recommends revisions to standard as required by the Clean Air Act (CAA)
  - 1979 – 1-hour standard 0.12 ppm
  - 1997 – 8-hour standard 0.08 ppm
  - 2008 – 8-hour standard 0.075 ppm
  - 2015 – 8-hour standard 0.070 ppm
- Reconsideration of the Ozone NAAQS
  - Determination anticipated Spring 2023

# 2023 Ozone Network

- 30 DNR network sites
- More densely located along the Lake Michigan shore
- DNR ozone season April 1 – Oct 15 for most sites



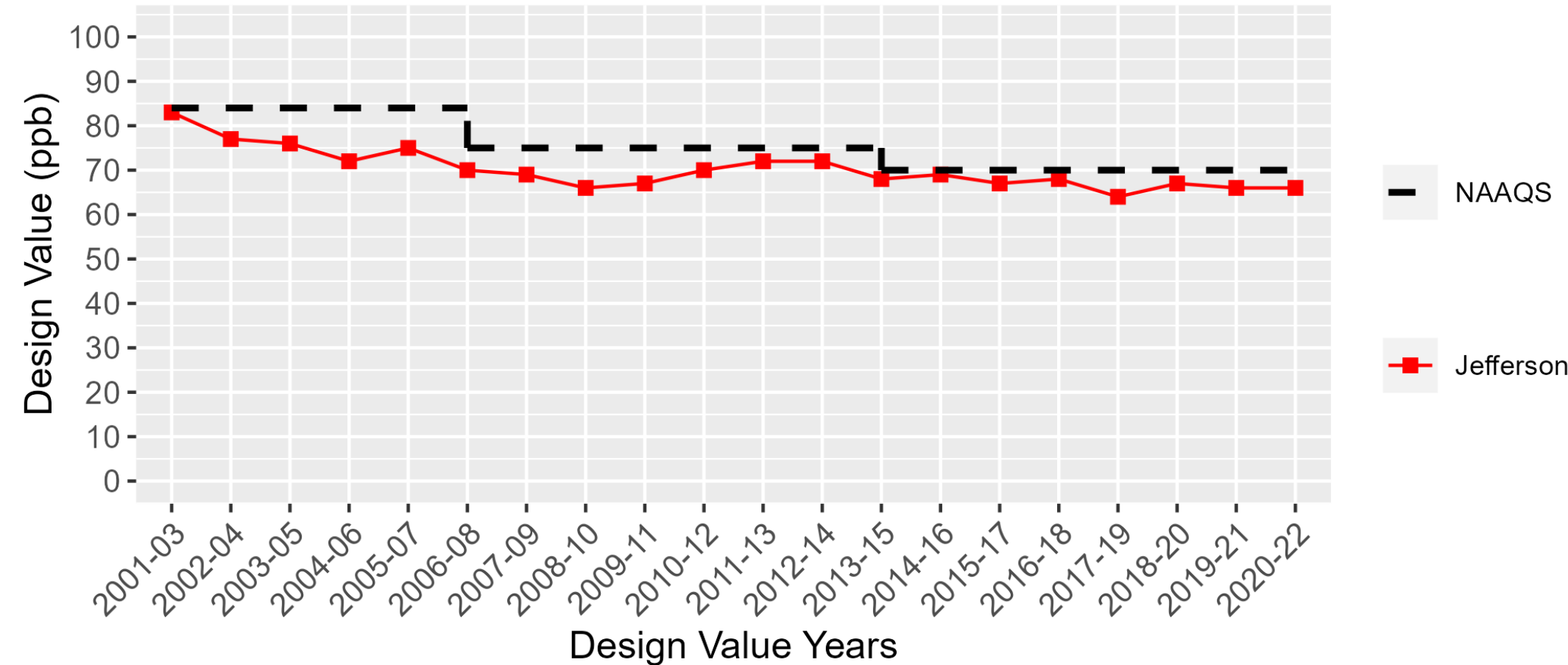
# Ozone Network Trends





# Jefferson County Ozone Trends

8-Hour Ozone Design Values - Jefferson County



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- **Public Involvement and Environmental Justice**

# Public Comments

The public has opportunities to get involved in setting air policies, rules, and permit requirements

- Provide comments on proposed state and federal rules
- Comment on the annual monitoring network plan
- Review and provide comments on air program policies and guidance



# Permit Public Notice Website

[Air Permit Public Involvement](#) | [Wisconsin DNR](#)

DNR updated the webpage for posting public notices

- Easier access to permit review documents available for public comment
- Created additional webpages with links to factsheets and other helpful information
  - Flow Charts describing the permit review process
  - Plain language guides to the Analysis and Preliminary Determination and other permit review documents
- Added a new table with links to permit applications currently under review prior to public notice
- Added a new table with links to final permit decisions and supporting documents

# Permitting and public involvement

- Air Permit Applications Received
  - View application
- Air Public Notices
  - Submit comments, view public notice, application, draft permit and analysis documents
- Air Permit Final Decisions
  - View final permit decisions and responses to public comments

# Environmental Justice Efforts

- Enhanced outreach for public notice and hearing process
- Make documents more accessible
- Translate documents
- Plain language project descriptions

*“Fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”*



# Air Quality Sensors

- PurpleAir Sensors are most common
- Resources
  - PurpleAir Study and correction factors
  - Considerations for designing your study
  - EPA Sensor Toolbox and Guidebook

# Do a Little, Save a Lot

- Buy Local
- Grow your own
- Green lawn care
- Save energy at home
- Travel wisely

## WINTER TIPS

### DO A LITTLE, SAVE A LOT

Whether staying indoors around the fireplace or enjoying outdoor activities, air quality and energy remain important parts of winter life.

Daily use of electricity and fuel contributes to air pollution. The choices we make every day can directly affect air quality and human health.

The outside temperatures are dropping, but energy bills do not have to skyrocket. Each year the average family spends \$1,165 on energy bills. By making a few energy-saving home improvements or eco-friendly, everyday decisions, the average American can stay warm, reduce emissions and save money all at the same time this winter.

In The Yard

In The Home

Travel And Commute

At Work

Green Gift Giving

### IN THE YARD

Look no further than the yard for ways to improve air quality. Consider these air pollution prevention tips.

- Use a shovel instead of a snow blower. Snow blowers use gasoline and/or electricity, both of which add pollutants into the air.
- Use LED holiday lights to decorate the yard. These lights last 10 times as long and use 93% less energy as standard incandescent mini-lights.
- Consider planting shrubs or evergreen trees to serve as a windbreak. Keeping the wind from blowing through the house will save energy and keep the heat in the home.



Example of a wind break.

# Clean Air Month

- Clean Air Month [webpage](#)
- [Air, Air Everywhere poetry contest](#) – March to May



# CONNECT WITH US

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"WILD WISCONSIN:  
OFF THE RECORD"



Below is a list of links we referenced throughout the presentation.

- Air Quality Monitoring Data map [Interactive maps](#)
- Air Management Program [outreach publications](#)
- [Multimedia resources](#) (videos and podcasts)
- [Air News](#) newsletter
- [2023 Wisconsin Air Quality Trends Report](#) - data through 2022
- [2023 Wisconsin Air Quality Trends StoryMap](#)
- [Air permit public involvement](#) webpage
  - [Air Permit applications received](#)
  - [Air Permit public notices](#)
  - [Air permit final decisions](#)
- [Air Regulations, Policies and Guidance Public Notices](#)
- [Air Quality sensors](#) webpage
- [Do a little, save a lot](#) webpage