MIDWEST CLEAN DIESEL INITIATIVE

SOLEC

November 3, 2006

FY 2006 Priorities

- Implement 8-hr Ozone, PM2.5 and Regional Haze Programs
- Implement the Clean Air Interstate Rule
- Implement the Clean Air Mercury Rule
- Implement the Integrated National Ambient Air Monitoring Strategy
- Reduce Emissions from Existing Diesel Engines and Equipment
- Implement Air Toxics Initiatives that focus on Multi-Media and Cumulative Risk
- Title V permits
- Implement Voluntary Programs and Initiatives

Diesel emissions contribute to:

- Ozone (NOx)
- Particulate Matter/Haze
- Air Toxics

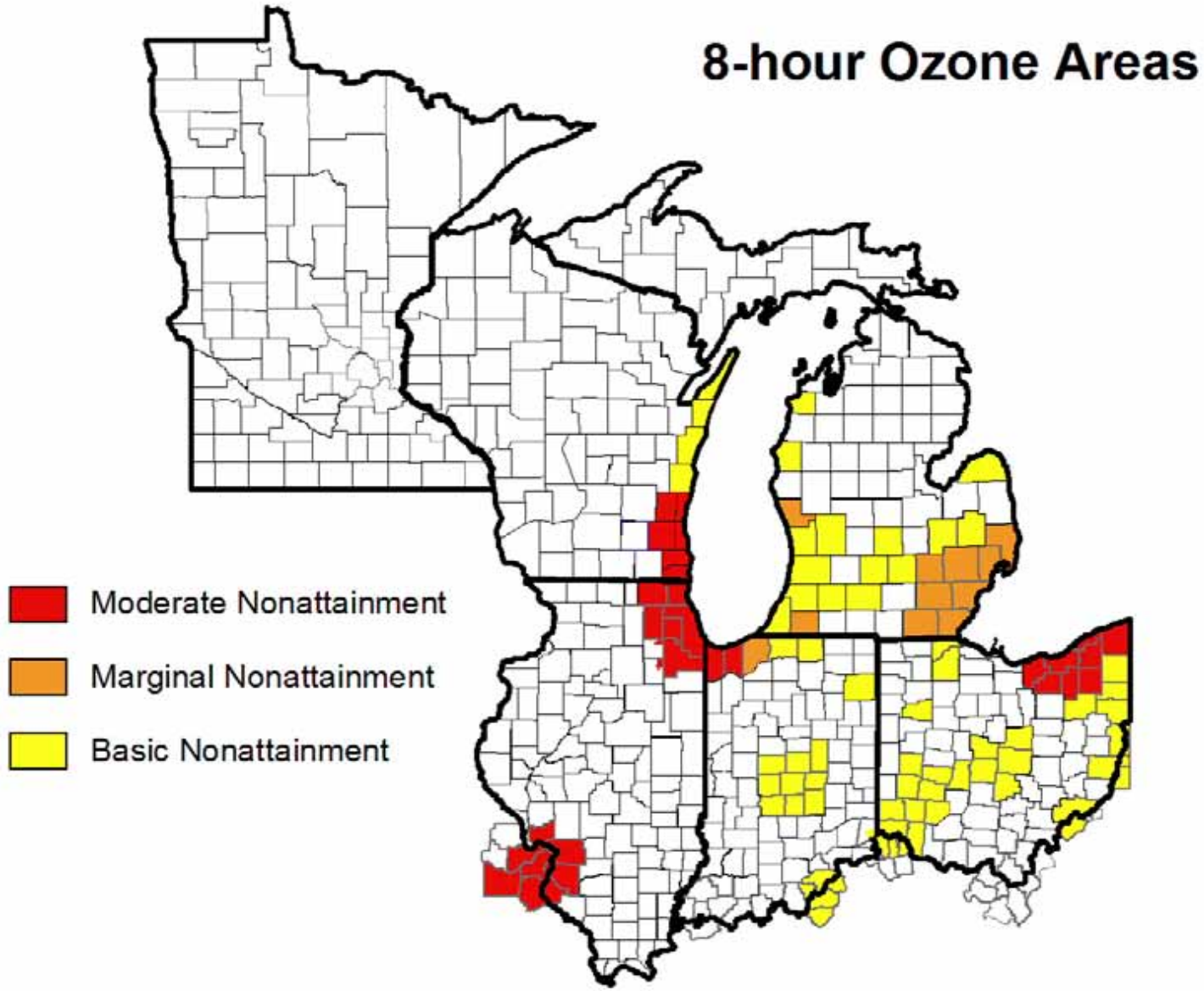
Diesel exhaust poses significant public health concerns:

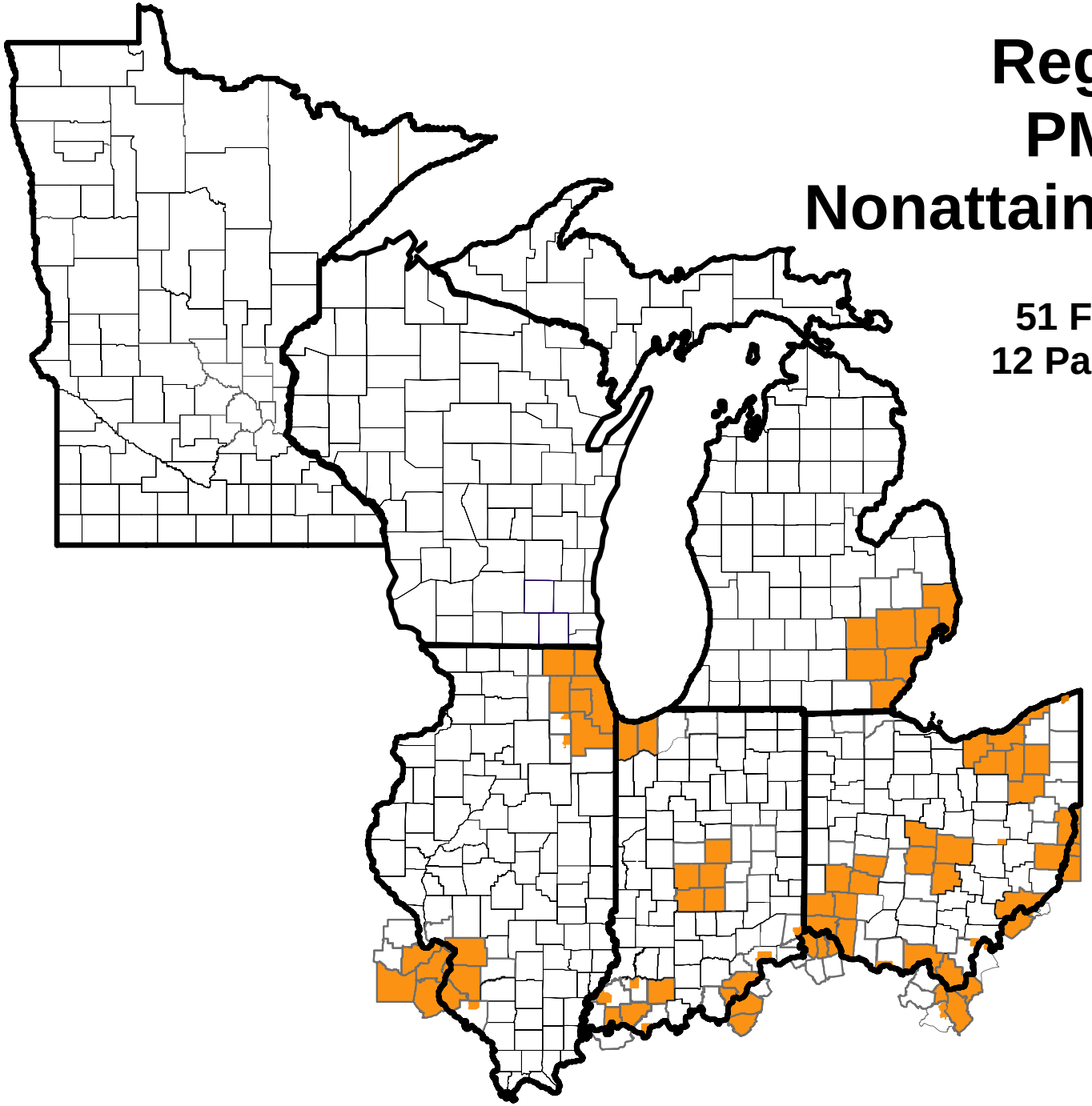
- exacerbates asthma, causes respiratory and cardiovascular illness and premature death
- likely human carcinogen at occupational and environmental exposure levels

Diesel Contributes to PBT Emissions

- Diesel is a contributor to dioxin/furan emissions and B(a)P emissions
- Percentages are small, but important as larger emission sources are reduced through MACT/CWS
- A draft receptor modeling study indicates that diesel emissions are the greatest contributor to B(a)P in ambient air, e.g. about 80% in Chicago

Region 5 Ozone Nonattainment Areas

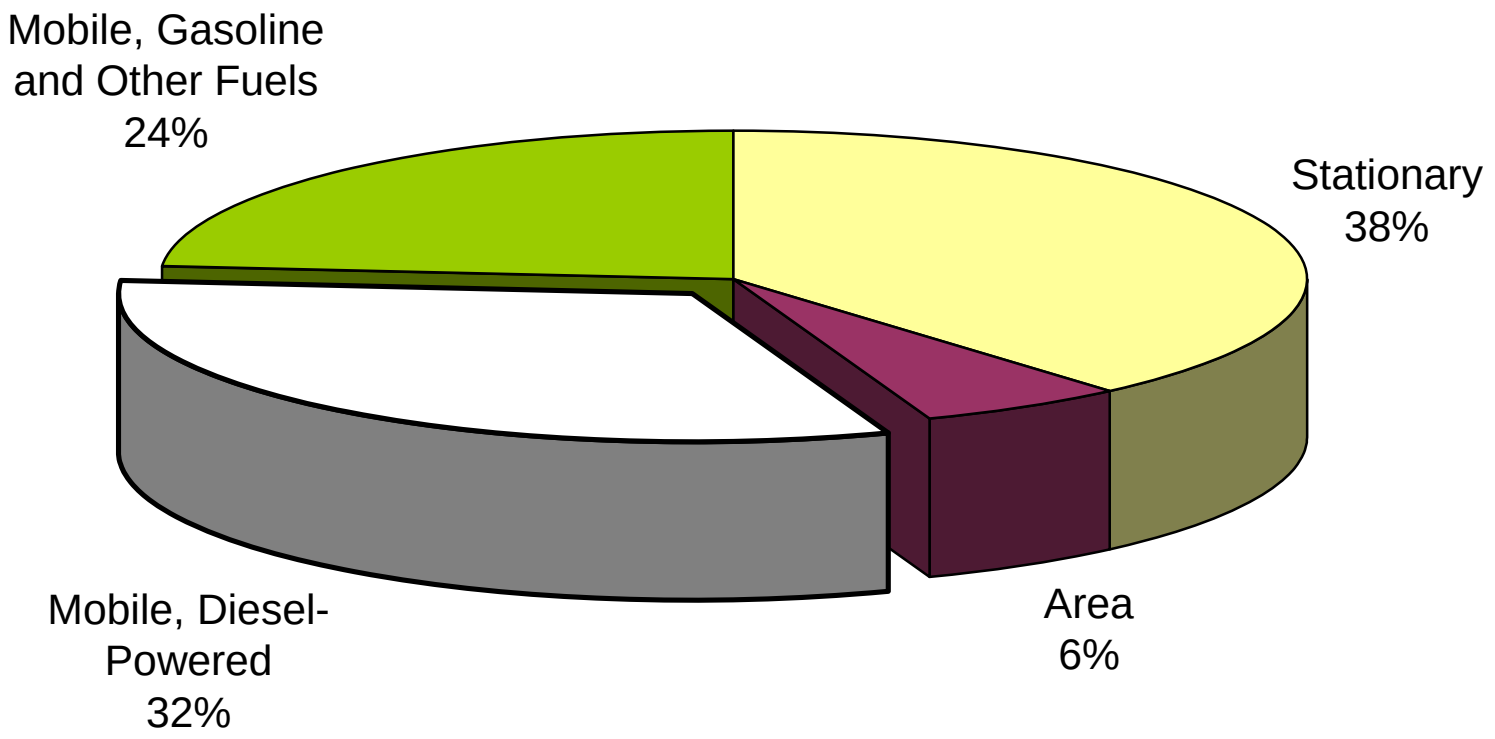




Region 5
PM 2.5
Nonattainment Areas

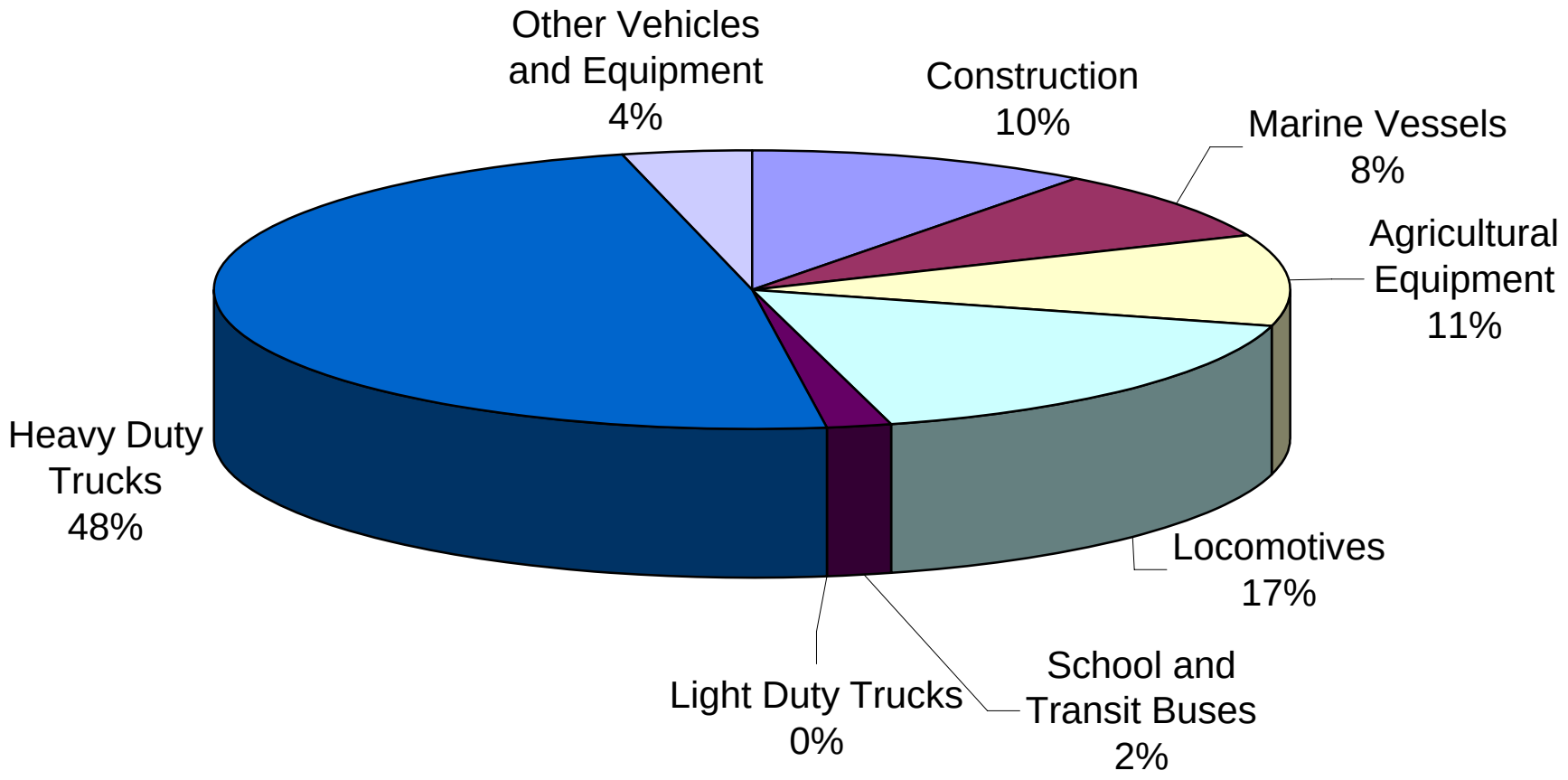
51 Full Counties
12 Partial Counties

Regional NOx Emissions



Source: 2002 National Emissions Inventory

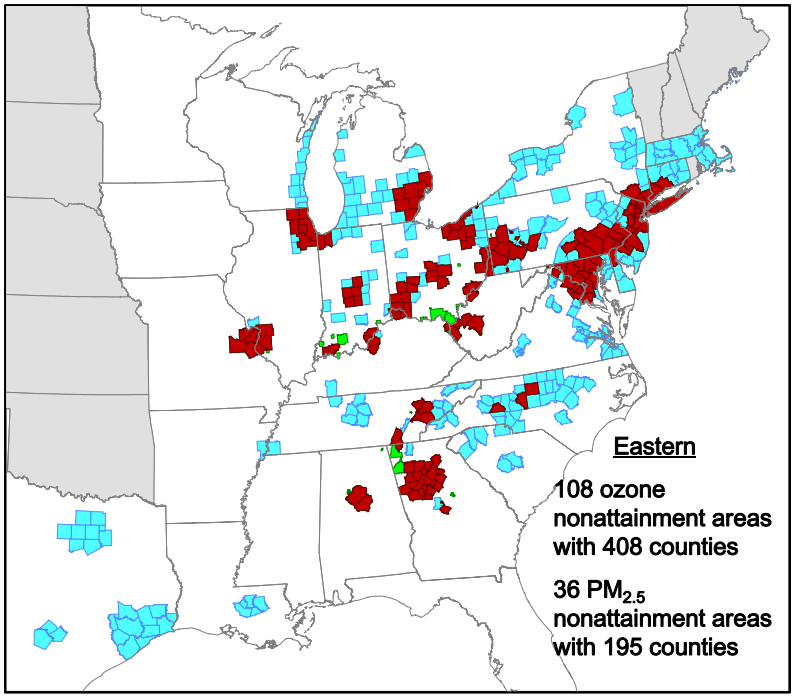
Region 5 Diesel Engine NOx Emissions



Source: 2002 National Emissions Inventory

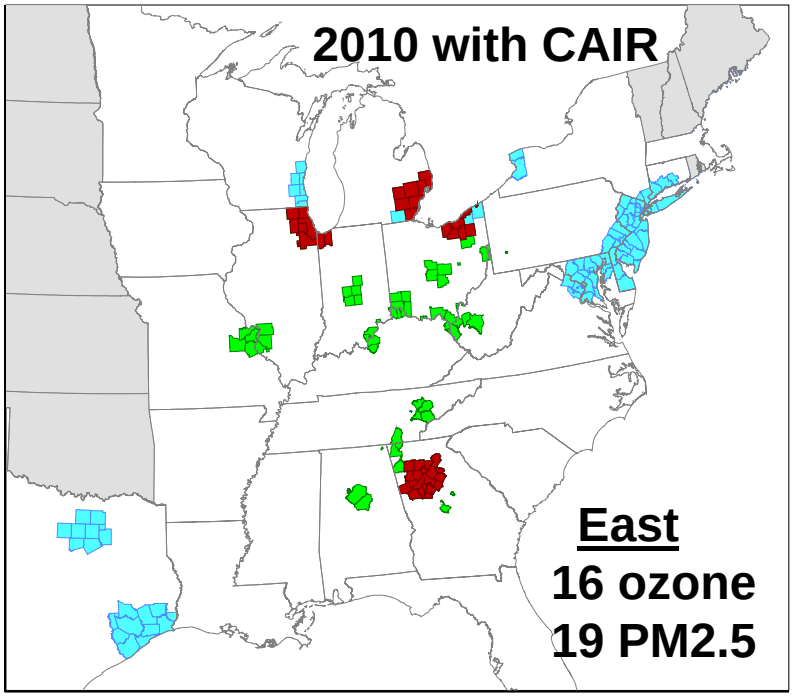
Summary of the Clean Air Interstate Rule

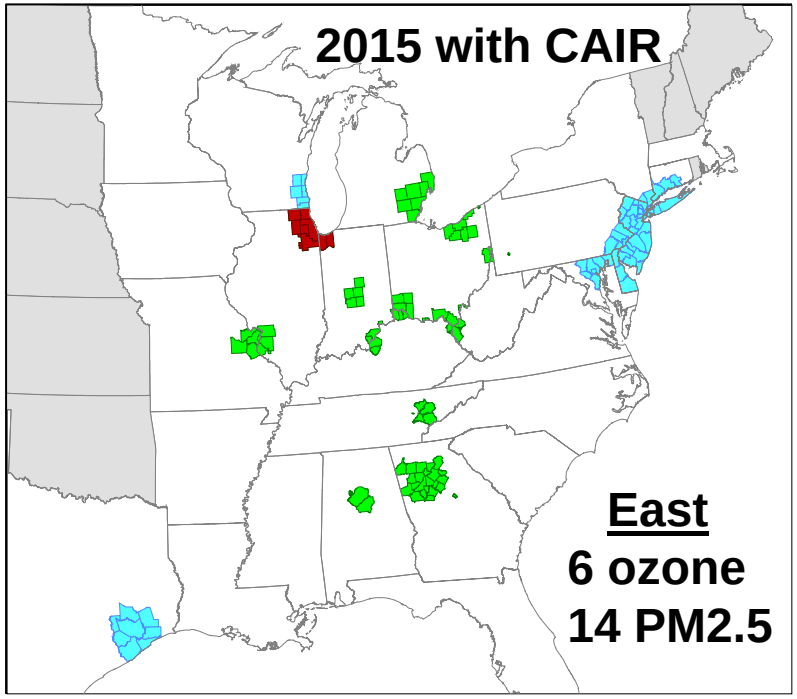
- CAIR will permanently cap emissions of sulfur dioxide (SO2) and nitrogen oxides (NOx) in the eastern United States.
- CAIR achieves large reductions of SO2 and/or NOx emissions across 28 eastern states and the District of Columbia.
- When fully implemented, CAIR will reduce SO2 emissions in these states by over 70 percent and NOx emissions by over 60 percent from 2003 levels.
- This will result in $85 to $100 billion in health benefits and nearly $2 billion in visibility benefits per year by 2015 and will substantially reduce premature mortality in the eastern United States. The benefits will continue to grow each year with further implementation.



Ozone & Fine Particle Nonattainment (Apr. 05)

Projected NAs in 2010 and 2015 after reductions from CAIR and existing CAA programs





CAIR and Other CAA Programs Will Help Bring Many Eastern Areas into Attainment - However, a number of areas are projected to not attain through 2010 and 2015

Nonattainment areas for 8-hour ozone pollution only

Nonattainment areas for fine particle pollution only

Nonattainment areas for both 8-hour ozone and fine particle pollution

Projections concerning future levels of air pollution in specific geographic locations were estimated using the best scientific models available. They are estimations, however, and should be characterized as such in any description. Actual results may vary significantly if any of the factors that influence air quality differ from the assumed values used in the projections shown here.

National Regulatory Program for Diesel Engines

- Clean Diesel Truck and Bus Rule (Dec 2000)
- Clean Air Non-road Diesel Rule (May 2004)

- When fully implemented in 2030, these regulations will annually prevent up to:
  - 12,000 premature deaths,
  - One million lost work days,
  - 15,000 heart attacks, and
  - 6,000 children's asthma-related emergency room visits

- Combined, these stringent regulations will achieve over $150 billion in benefits

MIDWEST CLEAN DIESEL INITIATIVE

- But what can be done with the 11 million engines in use today?
- Public-private partnership to accelerate diesel emission reductions in the Midwest
- Midwest Clean Diesel Initiative is part of the voluntary National Clean Diesel Campaign
  - Clean School Bus
  - Clean Construction
  - Clean Ag
  - Clean Ports
  - SmartWay Transport Partnership

MIDWEST CLEAN DIESEL INITIATIVE

- Approximately 3.3 million diesel engines in Region 5
- The goal is to reduce emissions from 1 million diesel-powered engines by 2010
- Targeted sectors: Ports, Agriculture-Grain Transport, and Rail
- Southeast Michigan/Canada Border Area
- Continue work on school buses, municipal vehicles, construction sector
- SmartWay Transport Partnership

The 5 Rs + Operational Strategies

• Refuel- Use of advanced diesel fuels, i.e. ULSD can lower emissions (now available for on-road >90% of all pumps, but can reduce emissions in non-road)

• Retrofit- Installation of exhaust aftertreatment devices such as Diesel Oxidation Catalyst (DOC), Diesel particulate filters (DPF), etc

• Repair/Rebuild- regular engine maintenance plays a critical role in maintaining emissions performance while engine rebuilding can upgrade emissions performance of older engines.

• Repower – replacing older engines with newer cleaner engines

• Replace- replacing the entire equipment to ensure that your new purchase utilizes the most cost effective emission reduction technology

• Operational Strategies- utilizing various strategies to reduce idling

Verification Process

- EPA and CARB have verification process
- Designed to identify products with “real” emissions reductions
- EPA has signed a reciprocity agreement with CARB
- **EPA-** http://www.epa.gov/OMS/retrofit/retroverifiedlist.htm
- **CARB-** http://www.arb.ca.gov/diesel/verdev/verifiedtechnologies/cvt.htm

Clean Construction

- Many large projects have contract language requiring retrofits and/or cleaner fuels (IL DOT/Dan Ryan, O'Hare Modernization, Big Dig, World Trade Center Reconstruction).

The Power of Partnerships

MIDWEST CLEAN DIESEL INITIATIVE

www.epa.gov/midwestcleandiesel

Drive Green, Illinois! Clean School Bus Program

Illinois Environmental Protection Agency

Tomorrow's Buses for Today's Children — CLEAN SCHOOL BUS USA

DIESEL WISE INDIANA

Indiana Department of Environmental Management

DEQ Department of Environmental Quality

Minnesota Pollution Control Agency

Environment Canada | Environnement Canada

WISCONSIN DEPT. OF NATURAL RESOURCES

PROJECT GREEN FLEET

OhioEPA Ohio Environmental Protection Agency 122 S. Front St. Columbus OH 43215 (614) 644-3020

great CITIES PARTNERSHIP PROGRAM U.S. EPA REGION 5

SmartWay Transport Partnership U.S. Environmental Protection Agency

Clean Cities U.S. Department of Energy

CityofChicago.org

DPW

Department of Environment

Midwest Clean Diesel Initiative Accomplishments

- Partners are implementing many cost-saving and cost-effective strategies to reduce diesel emissions in the Midwest
- Over $35 million has been invested in public and private funding; 1:1 federal/non-federal funding ratio
- Over 350,000 engines have been affected equating to over 1,800 tons of pollution removed per year
- EPA and Environment Canada co-development of voluntary diesel emission reduction plan for Ontario

Midwest Clean Diesel Initiative Accomplishments

- Awarded $2.2 million to school districts across the Region – Clean School Bus USA
- $6.7 million in Federal Supplemental Environmental Projects
- 120 SmartWay partners in the Midwest
- Educational Forums, Media Events, Website
- $1 million in Clean Diesel and Clean School Bus Funding will be announced soon

Future Federal Funding

Diesel Emission Reduction Act (DERA) – Provision in the Energy Policy Act

Authorization	$200 million
President's budget request	$49.5 million
House	$28 million
Senate	$20 million

- Federal funding will not be sufficient to address this challenge alone
- Incentives and Financing Programs are needed
  - Sept. 6-7, Tools and Incentives for Green Diesel Technology: Lower Emissions, Higher Profits

Recommendations for Reducing Emissions from the Legacy Diesel Fleet

- Potential benefits of cleaning up the legacy fleet are significant and worth the investment
- Given breadth of technologies and applications, it is important to provide a range of funding options and incentives for maximum impact
- Education and outreach is essential to spread the word and maximize impact
- The 2005 SAFETEA-LU and Energy Bill provide new opportunities for addressing diesel emissions

Source: Clean Air Act Advisory Report – April, 2006

Further Information

U.S. EPA:

-http://www.epa.gov/otaq/retrofit

Midwest Clean Diesel Initiative

-http://www.epa.gov/midwestcleandiesel

EPA
United States
Environmental Protection
Agency