

# **New EPA Regulations for Utilities**

Rural Electric Management Association  
CEO and Board Chair Conference

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Commissioner

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# Presentation Outline


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- ❑ Agency Overview
- ❑ Air Quality in Minnesota
- ❑ National Ambient Air Quality Standards (NAAQS)
- ❑ Cost/Benefits
  - Clean Air Act
  - Energy Efficiency



# Agency Overview: Mission

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Working with Minnesotans to protect,  
conserve and improve our environment and  
enhance our quality of life.

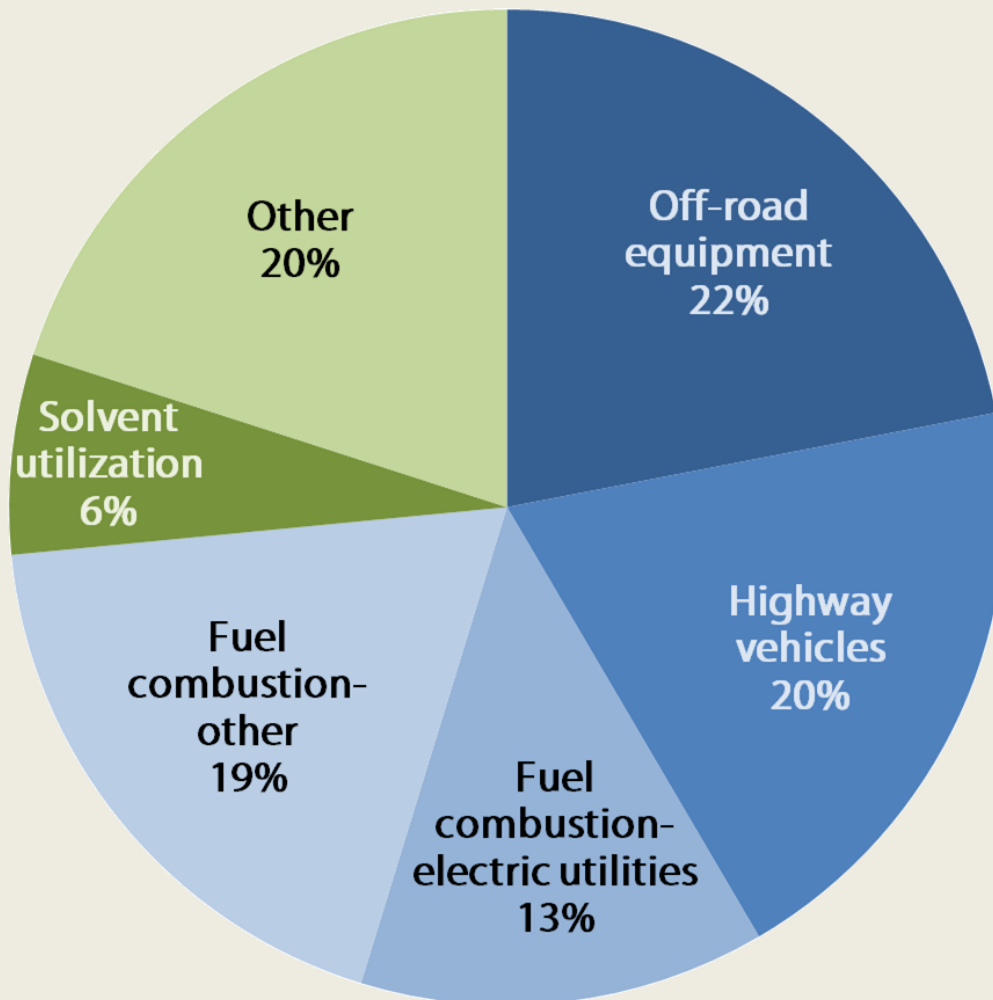


# Agency Overview: Strategic Direction

- ❑ Minnesotans take **responsibility** to protect our environment
- ❑ Minnesota's **air** is clean and clear
- ❑ Minnesota's **land** supports healthy ecosystems and sustainable land uses
- ❑ Minnesota has clean, sustainable surface and ground **water**
- ❑ **Excellence** in operations



# Air Quality in Minnesota: Sources of key air pollutants

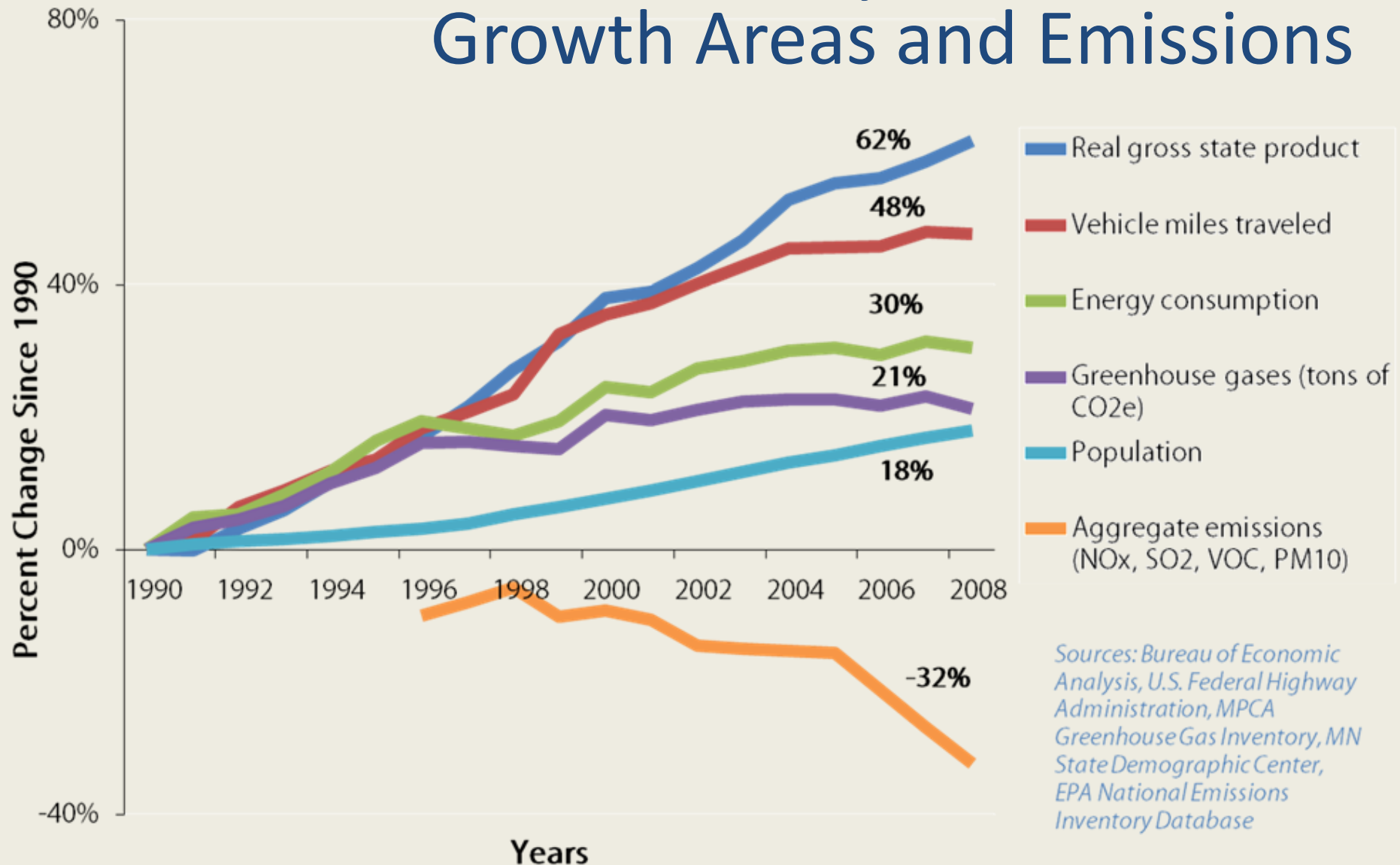


**75% of key air pollutants come from burning fuels**

*Source: 2008 emission estimates of  $NO_x$ ,  $PM_{2.5}$ ,  $SO_2$  and VOCs from EPA's National Emissions Inventory Database*



# Air Quality in Minnesota: Growth Areas and Emissions



Sources: Bureau of Economic Analysis, U.S. Federal Highway Administration, MPCA Greenhouse Gas Inventory, MN State Demographic Center, EPA National Emissions Inventory Database



# NAAQS Basics

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- ❑ Primary standards set to protect human health
- ❑ Set for six pollutants
  - Carbon monoxide
  - Lead
  - Nitrogen oxides
  - Sulfur dioxide
  - Ozone
  - Particles



# NAAQS: National standard revisions

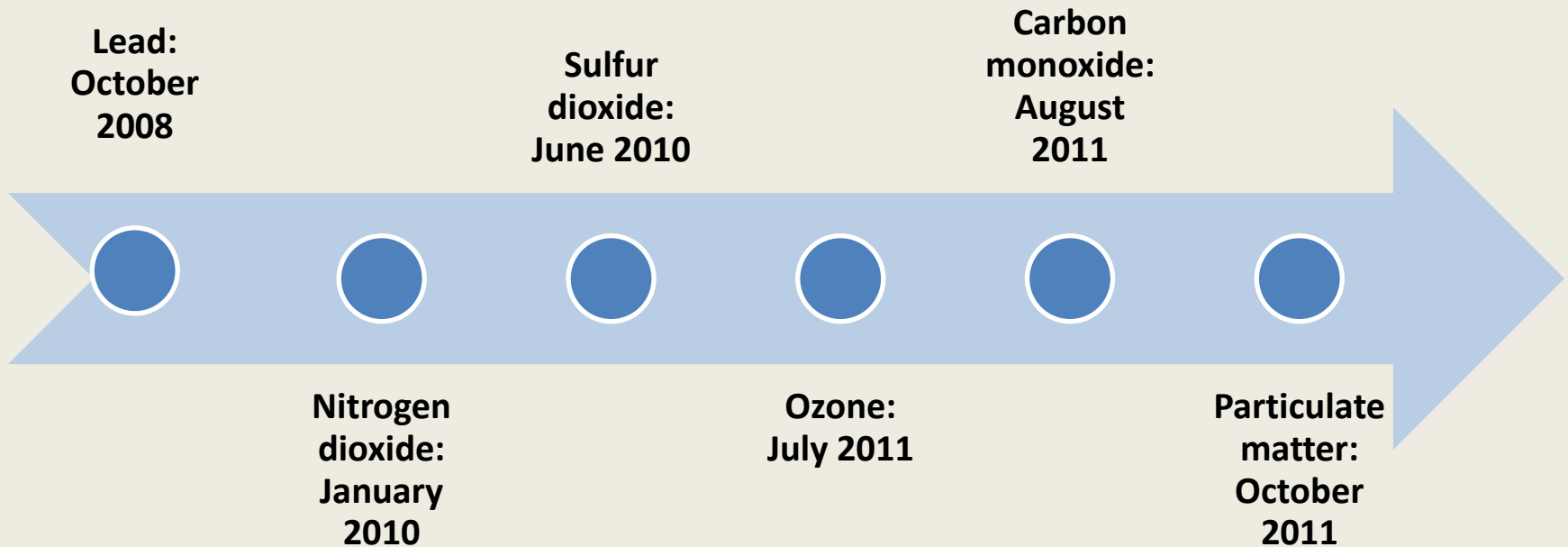
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- ❑ EPA must periodically review each standard
  - Must be reviewed every 5 years
  - Costs cannot be considered in setting the level
  
- ❑ EPA will review all between 2008 and 2012
  - Court ordered review for many
  - Reviews often result in lower standards and shorter averaging times



# NAAQS: Timeline for new standards

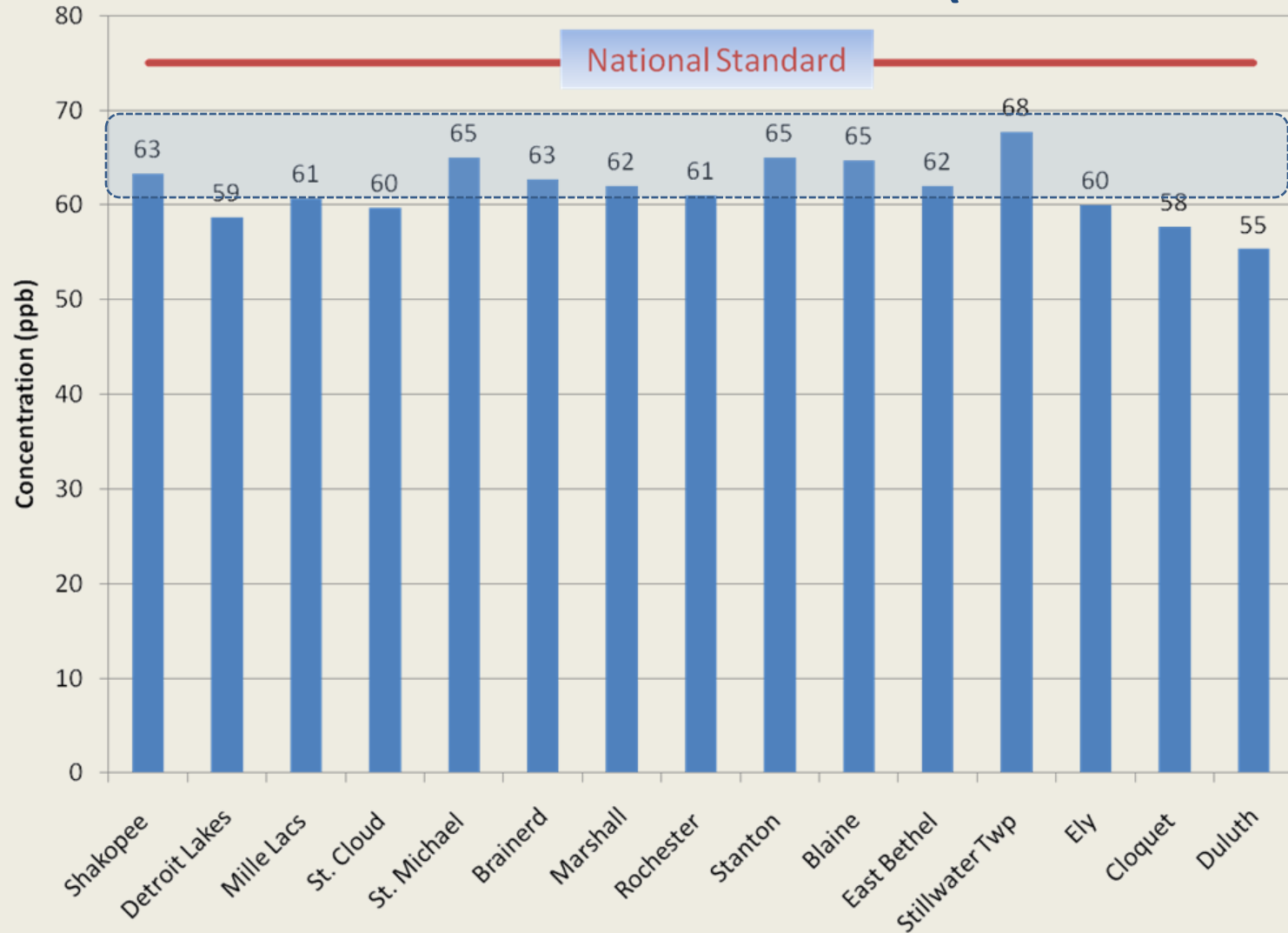
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*Timeline as of February 2011*

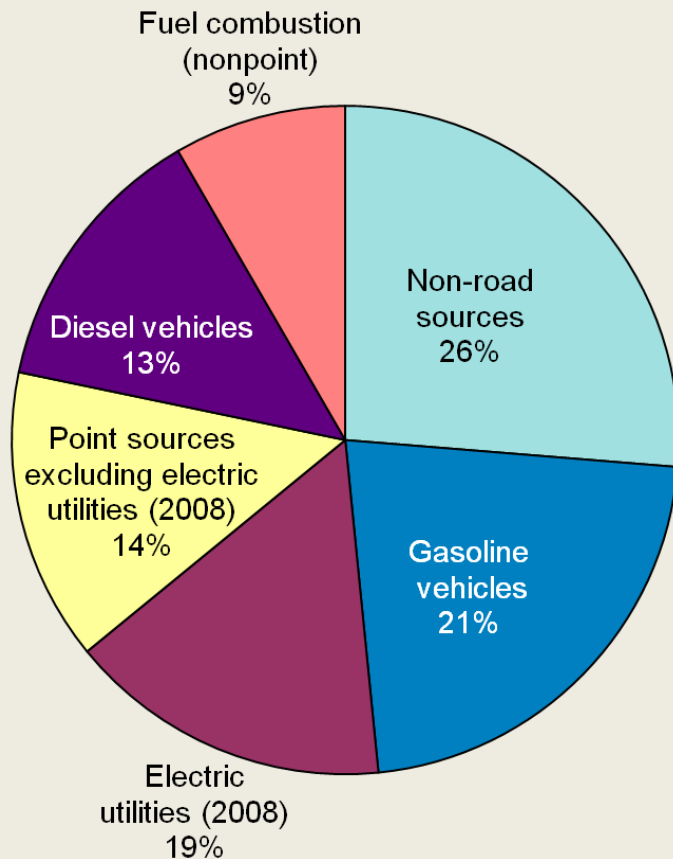


# NAAQS: Ozone (2007-2009)

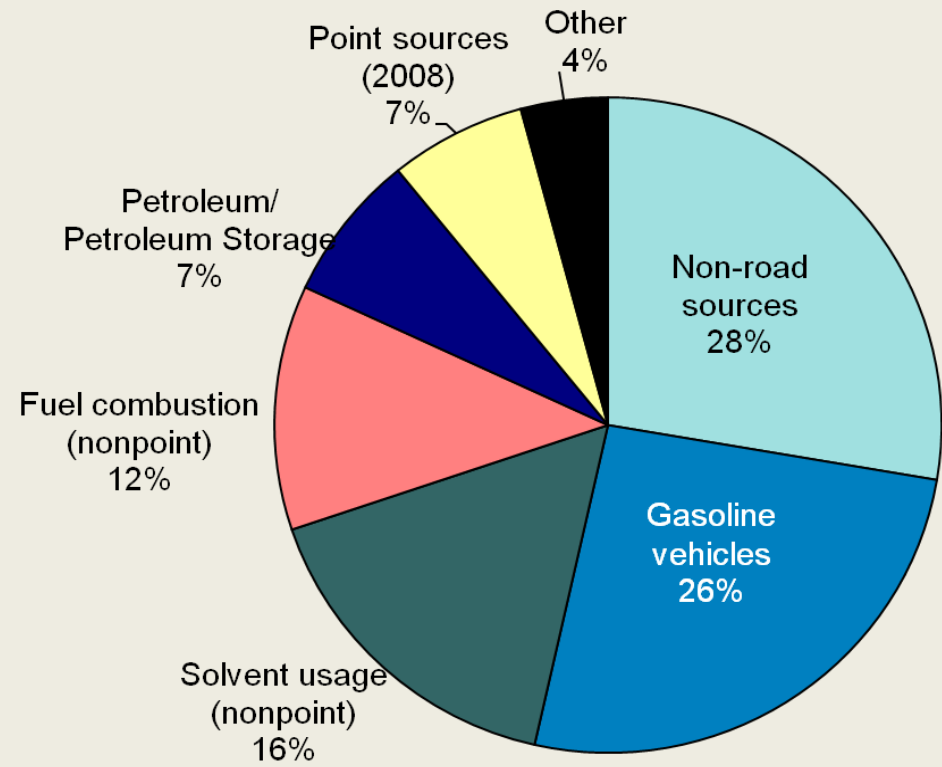


# Sources of Ozone (2005 data)

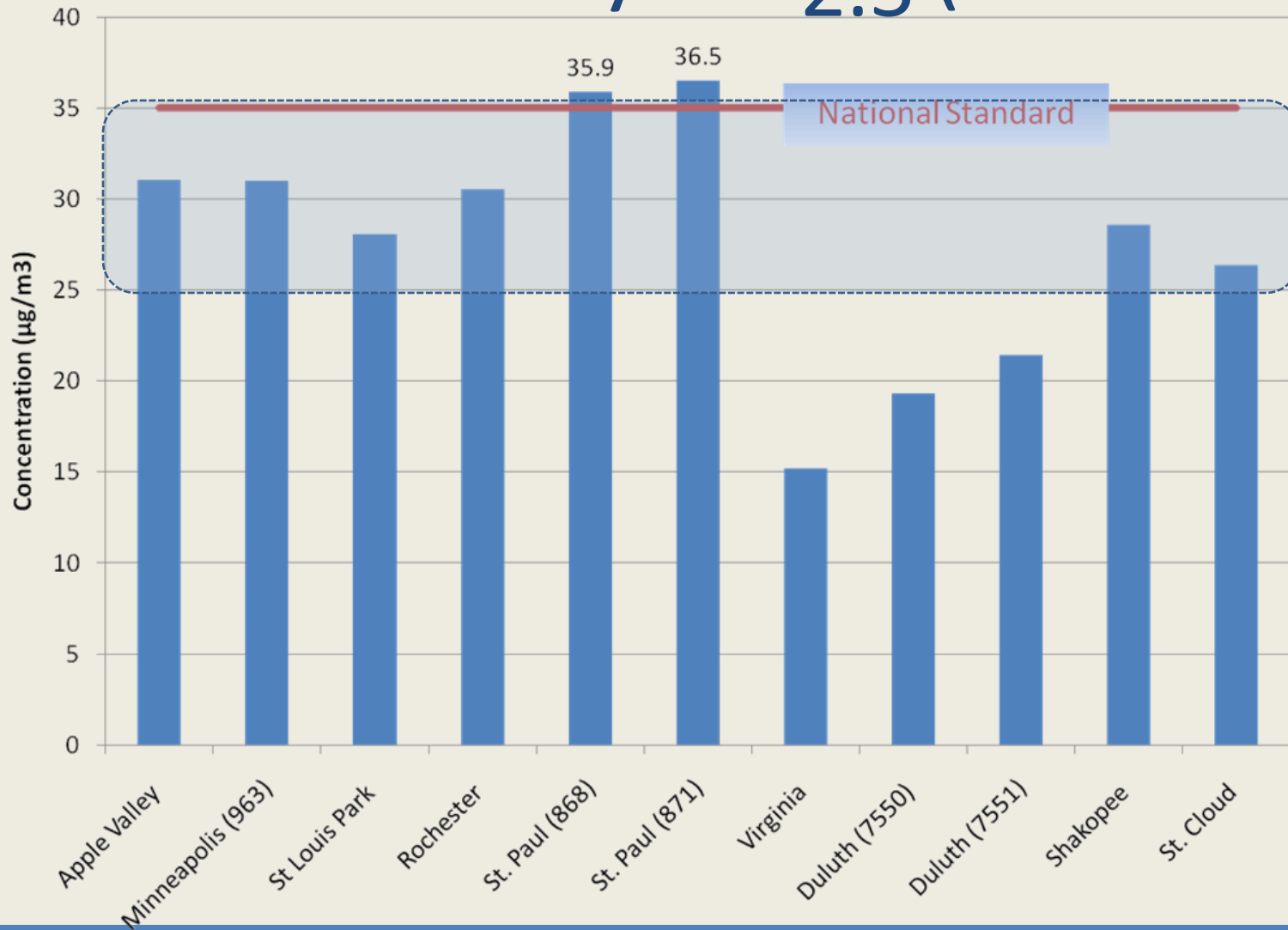
## Nitrogen oxides



## Volatile organic compounds



# NAAQS: Daily PM<sub>2.5</sub> (2008-2010)



# Sources of PM<sub>2.5</sub>

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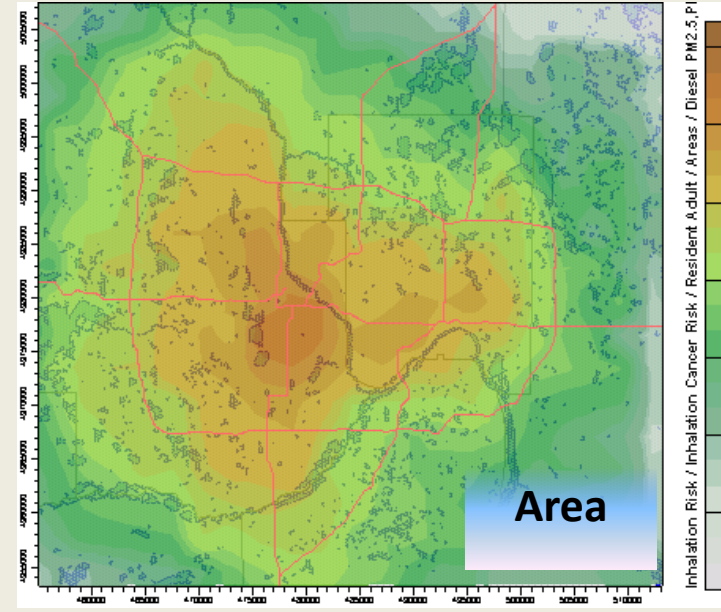
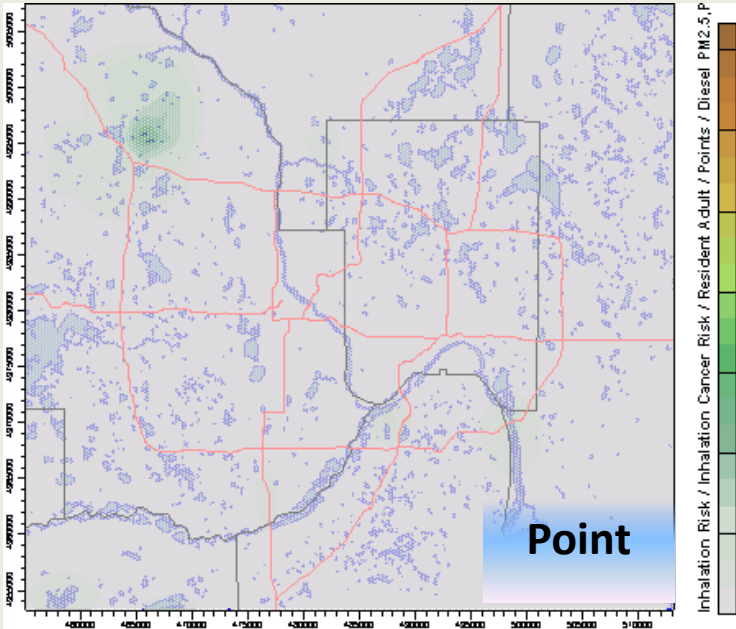
## □ Better understood sources

- On-road vehicles
- Non-road equipment
- Ammonia sources
- Coal burning power plants

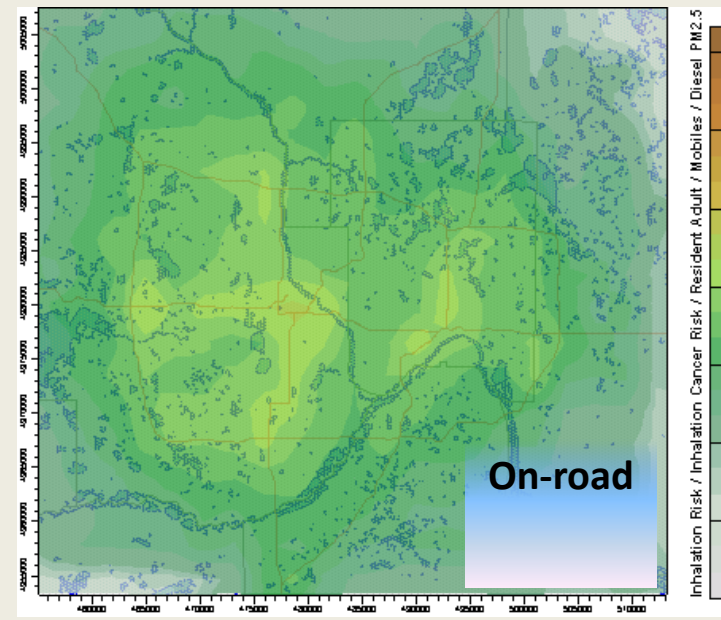
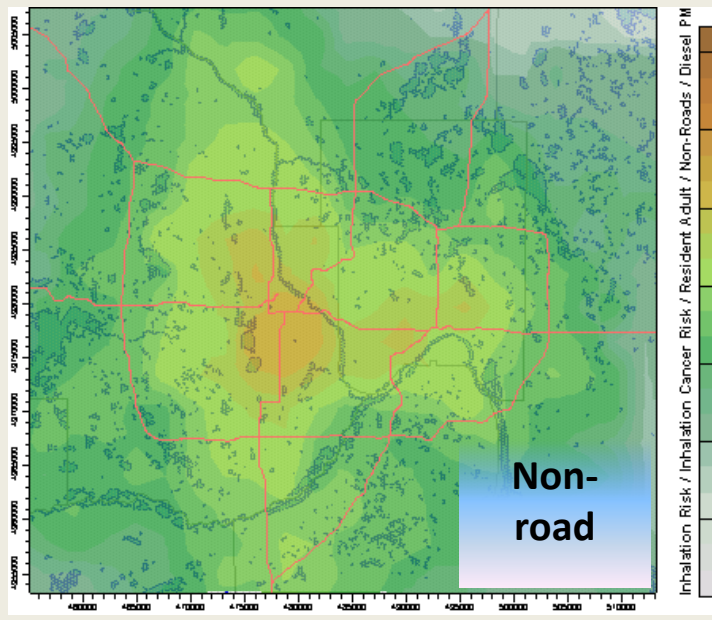
## □ Less understood sources

- Biomass combustion
- Wood burning
- Soil and dust





Metro Area – diesel PM<sub>2.5</sub>



# NAAQS Non-Attainment

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- ❑ Significant consequences for businesses, government and citizens
  - Air permits
  - Federally approved pollutant reduction plan
  - Increased monitoring and modeling
  
- ❑ Resource-intensive reduction work will have long term benefits for human health and the environment.



# New Regulations Specific to Utilities

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- ❑ In addition to the new pollutant standards, a number of new and soon to be promulgated rules will impact electric generating units
  - Clean Air Transport Rule
  - Greenhouse Gas PSD BACT
  - Coal Combustion Residues Rule
  - Cooling Water Intake Rule
  - Toxics Rule (MACT)
  - New Source Performance Standards for Utilities
  - State Renewable Energy and Energy Efficiency objectives



# Cost /Benefits: NAAQS Non-Attainment

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## □ 1999 MN Chamber Report

- Economic impact of being an EPA designated non-attainment area
- Twin Cities: \$189-\$266 million annually

## □ A lot has changed since 1999

- Conservative estimates in today's dollars would be in the \$100s of millions



# Cost /Benefits: 1990 Clean Air Act Amendments

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- ❑ Benefits of reducing fine particle and ozone pollution: Approximately \$2 trillion by 2020
- ❑ In 2010 alone, amendments prevented
  - 160,000 premature deaths
  - 130,000 heart attacks
  - 13 million lost work days
  - 1.7 million asthma attacks
- ❑ <http://www.epa.gov/air/sect812/feb11/fullreport.pdf>



# Summary

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- ❑ Minnesota air quality has been improving
- ❑ More stringent NAAQS driven by increased understanding of health affects of air pollution
- ❑ Nearly 75% of air pollution is from energy use and fuel combustion
- ❑ Minnesota may be in non-attainment – depending where final standards set
- ❑ Coordinated/holistic approach to implementation is currently in development



# Closing Thought

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- ❑ MPCA has been doing health impact modeling based on 2005 air emissions inventory
- ❑ Dioxin is one of the top concerns
- ❑ Dioxin source = Burn Barrels!
- ❑ Statewide estimate = 250,000 households using burn barrels
- ❑ MPCA can use your help and ideas



