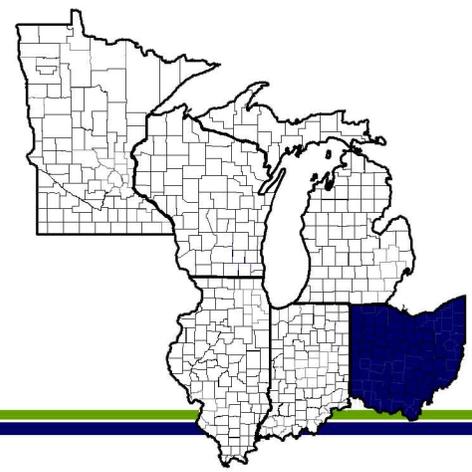


US EPA ARCHIVE DOCUMENT

# MIDWEST CLEAN DIESEL INITIATIVE



## Fact Sheet: Ohio

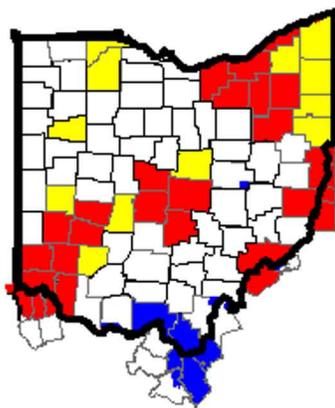
### Reducing Diesel Emissions: Regulatory and Voluntary Efforts

The Environmental Protection Agency (EPA) is requiring emission reductions from new heavy-duty diesel engines. In October of 2006, on-road diesel fuel will contain 97 percent less sulfur. In 2007, on-road heavy duty diesel engines will have to meet tougher air quality standards which phase in through the year 2014. This combination of ultra-low sulfur fuel and advanced pollution control technology will mean that over the coming years, new on-road and non-road diesel engines rolling off production lines will be up to 95 percent cleaner than today's models.

However, millions of older-model heavy duty diesel engines all across the Midwest will continue to emit more pollution than their newer counterparts. Regional turnover of aging diesel vehicles will take decades, as diesel engines can operate for 20-30 years before retirement. The Midwest Clean Diesel Initiative will accelerate fleet turnover through engine retrofitting and replacement, thus accelerating air quality benefits to the public.

The Midwest Clean Diesel Initiative is a voluntary public-private partnership committed to reducing diesel emissions in the Midwest through operational changes, technological improvements, and use of cleaner fuels. Our goal is to affect one million diesel engines by 2010.

### Meeting National Ambient Air Quality Standards



#### Ohio PM 2.5 and Ozone Nonattainment Areas

-  Ozone and PM 2.5 Nonattainment (52 Counties)
-  Ozone Nonattainment (52 Counties)
-  PM 2.5 Nonattainment (11 Counties)

USEPA has set National Ambient Air Quality Standards (NAAQS) for ozone and fine particulates (PM<sub>2.5</sub>). Currently, counties across the state of Ohio do not meet the ozone or PM<sub>2.5</sub> NAAQS. Diesel emissions contribute to these areas not attaining this standard.



*EPA's SmartWay Transport Partnership Program awarded the Ohio Department of Development \$500,000 to evaluate optimal locations for truck stop electrification in Ohio, with one facility being installed in at least one location. Also, the Ohio Environmental Protection Agency (OEPA) started a new diesel retrofit grant program to help school districts improve the environmental performance of their buses. OEPA expects to have as much as \$1 million in grant funds available for 2006-2007.*

# Impacts of Diesel Exhaust

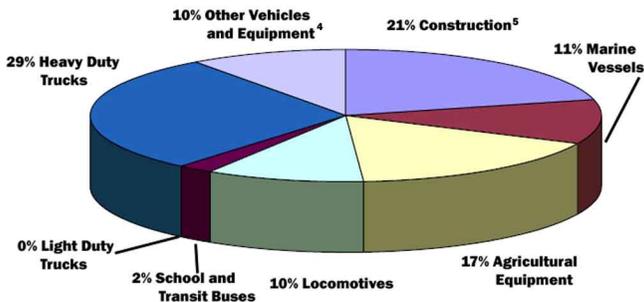
Emissions from diesel-powered engines contribute to oxides of nitrogen (NOx), particulate matter, and air toxics. NOx is one of the main ingredients involved in the formation of ground-level ozone, which can trigger serious respiratory problems. Reducing emissions from mobile, diesel-fueled sources (including trucks, buses, trains, construction equipment, and waterborne vessels) can reduce NOx levels across the Midwest.

Diesel emissions also contain air toxics, a class of pollutants which may cause negative health impacts including cancer and noncancer effects. EPA has concluded that diesel exhaust is likely to be carcinogenic to humans at occupational and environmental (ambient) levels of exposure. Diesel exhaust contains air toxics that are known carcinogens like benzene, in addition to gases that are classified as possible or probable carcinogens, such as formaldehyde, acetaldehyde, 1,3-butadiene, acrolein, and dioxin.

Exposure to diesel exhaust also likely causes noncancer health impacts. These impacts range from headaches, eye irritation, and nausea in acute (short term) exposures to respiratory system hazards in chronic (long term) exposures.

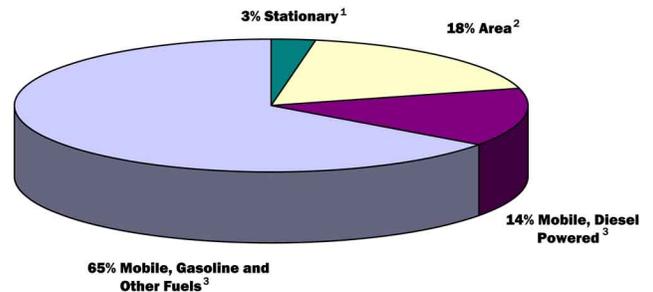
## Diesel Emissions in Ohio: A Closer Look

### Breakdown of Diesel PM<sub>2.5</sub> Emissions In Ohio<sup>6</sup>



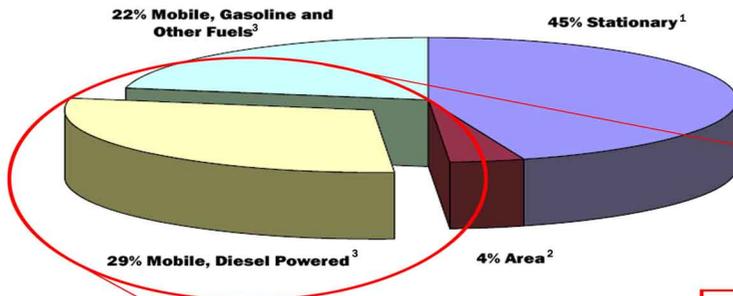
Diesel engines contribute to fine particulate matter across the region, which can cause premature death, and aggravate respiratory disease. In Ohio, mobile, diesel-powered sources contribute at least 10 percent of the PM<sub>2.5</sub> emissions in the state.

### Breakdown of Air Toxics Emissions in Ohio<sup>7</sup>



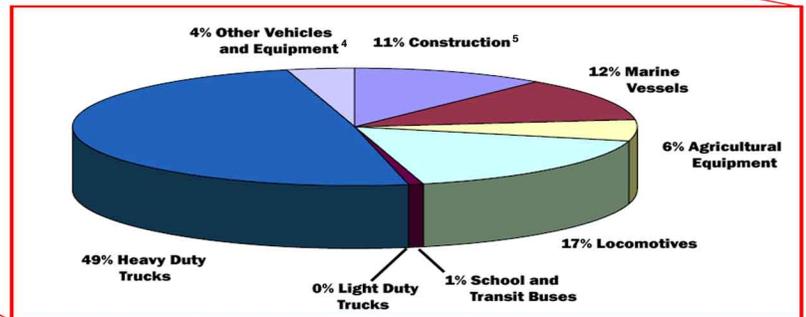
Diesel engines also contribute to air toxics emissions across the region. Toxic air substances found in diesel fuel include 1,3 Butadiene, Acetaldehyde, Acrolein, Benzene, and Formaldehyde. In Ohio, mobile, diesel-powered sources contribute 14% of total air toxics emissions of the aforementioned compounds.

### Ohio's NOx Emission Sources<sup>6</sup>



Almost of Ohio's diesel-related NOx emissions come from heavy-duty trucks. The second greatest source of diesel-related emissions come from locomotives, with almost equal contributions coming from marine and construction equipment. The Midwest Clean Diesel Initiative targets all sources of diesel emissions through operational and technological improvements, as well as cleaner fuels.

A significant portion of diesel emissions in the Midwest come from mobile, diesel-powered engines. NOx is a major component of diesel pollution, and can be used to illustrate the scope of diesel pollution. In Ohio, over 280,000 tons of NOx are emitted annually by mobile, diesel-powered engines.



### Ohio: Breakdown of Diesel NOx Emissions<sup>6</sup>

#### Notes:

- 1) Examples of stationary sources are fuel combustion and industrial processes.
- 2) Examples of area sources are solvent utilization and waste disposal, dry cleaning facilities, and gas stations.
- 3) Examples of mobile sources are cars, trucks, boats, trains, and construction equipment.
- 4) Other diesel vehicles and equipment include recreational, lawn and garden, commercial, logging, airport ground support, underground mining, oil field, and material handling equipment.
- 5) Railroad maintenance equipment is included in the construction category.
- 6) Data sources for these charts are derived from EPA's 2002 National Emissions Inventory.
- 7) Air toxics emissions information data sources for 1,3 Butadiene, Acetaldehyde, Acrolein, Benzene, and Formaldehyde are derived from the 2002 National Emissions Inventory.



For more information please visit us on the web at:  
<http://www.epa.gov/midwestcleandiesel/>

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