US EPA ARCHIVE DOCUMENT

MIDWEST CLEAN DIESEL INITIATIVE

Program Overview

We rely on diesel-powered engines every day as the workhorse of our economy: the heavy-duty trucks and locomotives that move freight across the country, the school buses transporting our children to school, the transit buses getting us to work, and the construction equipment used to build our highways and buildings. These diesel-powered engines are durable and efficient. Unfortunately, diesel exhaust negatively affects air quality and public health.

Reducing pollution from diesel engines is the goal of the Midwest Clean Diesel Initiative, a public-private partnership led by U.S. Environmental Protection Agency Region 5. EPA and its state and federal partners have joined with private industry to reduce diesel emissions that contribute to air pollution. Reducing emissions and improving fuel economy through operational changes, technological improvements and cleaner fuels helps a company's bottom line while improving the quality of the air we breathe. The Midwest Clean Diesel Initiative applies a combination of these approaches to three key sectors – ports, agriculture and rail. There's also an effort to reduce diesel emissions around border crossing areas between the United States and Canada.

Diesel emissions contain pollutants such as nitrogen oxide, which contributes to the formation of ground-level ozone, and fine particles. These pollutants have been linked to increased hospital admissions for heart and lung problems. Long-term exposure has been linked to lung cancer and premature death. Those most at risk for health problems from diesel emissions are children, the elderly, people who work outdoors and people with respiratory disease.

Cleaner Fuel, Cleaner Engines

New EPA rules are helping reduce emissions from heavy-duty diesel engines. Beginning in 2006, diesel fuel for on-road use will contain 97 percent less sulfur. In 2007, new heavy-duty trucks must meet tougher emission standards.

One advantage of diesel engines, however, is their durability. Today's diesel engines may last for 20 or 30 more years before being replaced with cleaner-burning models. To tackle this problem, the Midwest Clean Diesel Initiative is promoting the use of anti-idling technologies and policies, the use of alternative fuels, and the retrofit of existing diesel engines with technologies that can dramatically reduce air pollution.

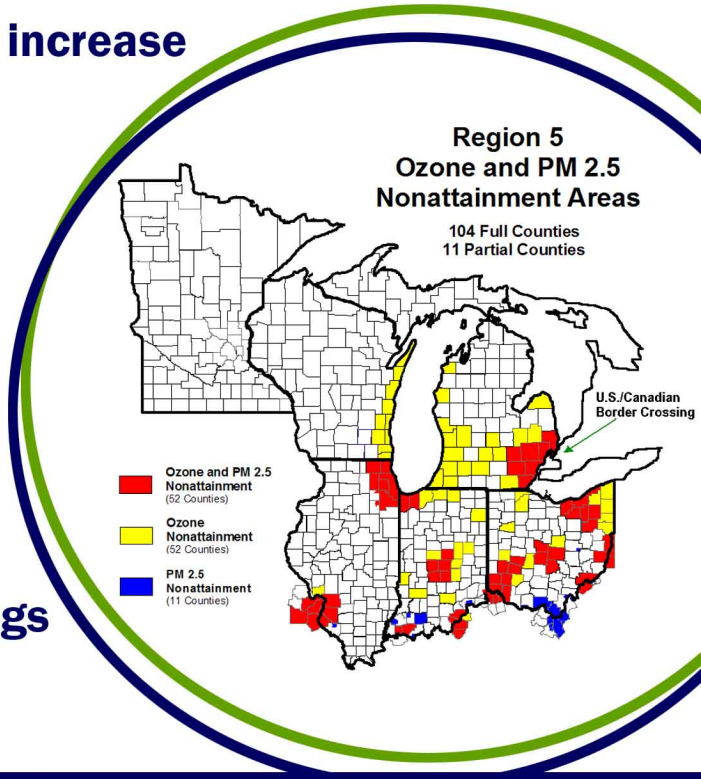
Reducing Unnecessary Idling

In just over an hour an idling truck wastes about one gallon of fuel, while idling locomotives can waste up to four gallons of fuel an hour. Not only does idling waste fuel, it also makes air pollution worse in areas surrounding rail yards, truck stops and other places where diesel equipment and vehicles idle unnecessarily.

Operators have traditionally left diesel engines idling at truck stops and train yards primarily to maintain comfort in the cab, as well as for engine operation and weather-related issues. New technologies provide alternative ways to keep the cab comfortable while shutting down the engine. Once again, this can save fuel costs as well as reduce air pollution.

Region 5: Overview

- **More than 28 million people live in areas that don't meet air quality standards for ozone or fine particles, or both.**
- **Roughly one-third of all the nation's freight moves through the Midwest.**
- **By 2020, Midwest freight is expected to increase by 50 percent.**
- **Chicago is home to the world's third-busiest intermodal hub, surpassed only by Hong Kong and Singapore.**
- **The U.S.-Canadian border in southeast Michigan has the busiest border crossings in North America.**



Ports

A variety of goods and commodities pass through Midwest ports daily, including steel, grain, iron ore, coal, petroleum, chemicals, crude and raw materials, manufactured goods, farm products, and waste.

The big diesel engines in the vessels that carry these materials produce their share of pollution. But there's another source of emissions in our ports – materials-handling equipment such as yard tractors, cranes, container handlers, forklifts, heavy-duty trucks and locomotives.

Agriculture

Cereal grains have the highest total freight flow, in ton-miles, of any commodity in the Midwest. About 63 percent of Midwest grain travels by water, 25 percent by rail and 12 percent by truck. Ultra low sulfur diesel fuel will be phased in for farm equipment and other off-road machinery through 2014. Fortunately, these engines can use ultra low sulfur diesel fuel designed for on-road vehicles, and they can be equipped with diesel oxidation catalysts and other technologies. They can also use biodiesel, which can be made from soybeans grown on American farms.

Rail

The expansion of the United States was fueled in part by the vast rail network that criss-crosses the country, and the Midwest is still the nation's rail hub. There are an estimated 1,900 diesel locomotives operating today on more than 28,550 miles of track in the Region 5 states. Initiatives such as the Chicago Regional Environmental and Transportation Efficiency program can make a difference. CREATE is a public-private partnership that will improve passenger rail service, reduce motorist delays, increase safety and improve air quality in the Chicago area.

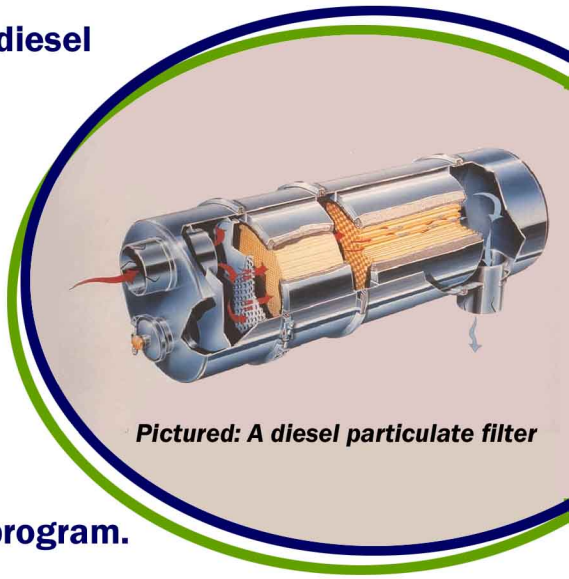
Canada

The United States and Canada share several border crossings in the Midwest, including the busiest U.S./Canadian border crossing – the crossing between southeast Michigan and southwest Ontario. Heavy traffic and congestion in these areas lead to increased emissions. The Midwest Clean Diesel Initiative is working with Canadian partners to reduce emissions in these busy commercial corridors.

Cleaning Up Diesel: Options

There are many ways to reduce diesel emissions, which range from replacing the whole vehicle to simply turning it off when not in use. Options include:

- Retrofit diesel equipment with pollution control devices like diesel particulate filters or diesel oxidation catalysts.
- Install auxilliary power units on long-haul trucks to reduce engine idling at stops.
- Implement idling reduction policies/regulations.
- Convert diesel engines to run on alternative fuels, such as biodiesel, compressed natural gas, propane or electricity.
- Enlist companies in EPA's SmartWay Transport Partnership program.
- Replace the oldest, most polluting diesels with newer, cleaner-running models.



Pictured: A diesel particulate filter

MCDI On the Web

For more information about the Midwest Clean Diesel Initiative, please visit us on the web at:
http://www.epa.gov/midwestcleandiesel

Receive our MCDI e-Update by emailing Jon Nichols at nichols.jonathan@epa.gov

SmartWay℠ Transport Partnership
U.S. Environmental Protection Agency

Joining EPA's SmartWay Transport Partnersip is the smart way to save fuel, money, and the environment