

2014 Clean Diesel Program

In 2014, the Department of Natural Resources received a grant from the U.S. Environmental Protection Agency (EPA) to fund the Missouri Clean Diesel Program. The department's Air Pollution Control Program solicited projects to repower tugboat engines in the state. The department awarded a subgrant to St. Louis Regional Clean Cities to administer the project. Mr. Mike, a tugboat operating in the St. Louis area, was repowered with new engines meeting the latest emission standards.

The projected annual and lifetime emission reductions and fuel savings from the 2014 Missouri Clean Diesel Program appear in the table below. The Department of Natural Resources determined these figures by using the **EPA Diesel Emissions Quantifier**. (Click on the highlighted words for more information.)

Projected Emission Results from 2014 Missouri Clean Diesel Program Environmental Benefits of Replacing Engines in Tugboat						
	NO_x	PM	HC	CO	CO₂	Diesel Fuel (Gallons)
Annual Reductions (tons/year)	13.974	0.396	0.122	0.892	180.4	16,254
Lifetime Reductions (tons)	195.637	5.548	1.706	12.485	2,525.90	227,556

Tugboats operate in the ports of major metropolitan areas. Ports receive disproportionately large amounts of diesel emissions, and they are often located in or near densely populated areas. Many tugboats operate around the clock the entire year, only coming out of service a handful of times for routine maintenance. The installation of new, more efficient, and cleaner-burning engines in tugboats not only conserves diesel fuel and improves the operational sustainability of the fleet, but it also is an effective method of improving air quality in areas struggling to achieve and maintain air quality standards.



The Department of Natural Resources is committed to reducing diesel emissions in Missouri. Diesel emissions contain oxides of nitrogen as well as volatile organic compounds, which in the presence of sunlight, react to form ground-level ozone, the pollutant of most concern across Missouri. Ozone is known to cause and aggravate respiratory diseases, such as asthma. Missouri currently has several areas in the state violating or close to violating EPA's National Ambient Air Quality Standard, which establishes limits on ground-level ozone concentrations to protect public health.

Diesel emissions also contain fine particulate matter, which can penetrate people's lungs by breaching natural defenses. This can lead to various lung and respiratory diseases, including lung cancer. Reducing diesel emissions is vital to the department's mission of protecting public health.

