



State of New Jersey

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DIESEL RISK REDUCTION PROGRAM 2008 HIGHLIGHTS

The Diesel Risk Reduction Program implements strategies that are reducing public exposure to diesel exhaust, improving air quality, and reducing black carbon contribution to global warming.

Diesel engines emit a variety of pollutants, with diesel particulate matter having potentially the greatest health impacts. Diesel particulate matter can cause or aggravate a number of health problems and has been linked with illnesses and deaths from heart and lung disease. These effects have been associated with both short-term exposures (up to a 24 hour period) and long-term exposures (over many years). Also, when compared to a stationary source, mobile diesel engines emit at levels where people breathe, and they are often concentrated in urban areas, which already experience a disproportionate share of air pollution.

In addition, recent studies estimate that the global warming net effect of black carbon for the 2000 to 2003 period is much higher than previous years. If this recent trend holds, black carbon could potentially be the second most important contributor to global warming. Because the atmospheric lifetime of black carbon is weeks, compared to the longer life of other greenhouse gases, reductions in black carbon can potentially have a significant influence on global warming in the short term.

Demonstration projects, an inspection and maintenance program, and a mandatory retrofit program, are improving air quality and reducing public exposure to diesel exhaust.

Diesel Demonstration Projects

The Program oversees and helps manage over \$10 million in voluntary demonstration projects to reduce diesel emissions. NJDEP does not have a dedicated source of funding for these projects, but does receive federal grants and enforcement settlement funds.

Camden Retrofits

NJDEP, in cooperation with USEPA and NESCAUM, has completed one of its largest, voluntary diesel reduction projects involving retrofits of both on-road and off-road vehicles in the Camden area. A total of \$381,167 was spent to retrofit 54 vehicles (48 on-road vehicles, 6 off-road vehicles) with either Diesel Oxidation Catalysts (DOC) and Diesel Particulate Filters (DPF). These retrofits are expected to avoid a total of 1040 lbs PM, 942 lbs CO, and 458 lbs HC annually.

Truckers Challenge

Using \$750,000 of USEPA grant funds, NJDEP partnered with the N.J. Motor Truck Association to develop a reimbursement program to allow truckers operating in N.J. to purchase Auxiliary Power Units, Bunk Heaters and tailpipe retrofits. The auxiliary power units and bunk heaters reduce emissions by providing heat, air-conditioning and electric power to truckers without the need to idle the main engine, resulting in large savings of fuel and money. This grant program, provided 38 bunk heaters, 113 Auxiliary Power Units, and 23 tailpipe retrofits.

South Jersey Port Retrofits

Funding of \$500,000 from an enforcement settlement is being used to retrofit, re-power or replace cargo-handling equipment at the South Jersey Port in Camden.

N.J. Clean Construction Program for Construction Vehicles

\$600,000 in USEPA Clean Diesel grants will be used to fund retrofits on construction vehicles used in wastewater and drinking water projects funded by the N.J. Environmental Infrastructure Trust. We expect to receive additional funding in 2009, under the American Recovery and Reinvestment Act, to expand this project.

NJDEP partially funds hybrid yard hostlers at the Ports of Newark/Elizabeth

The USEPA, the Port Authority of NY/NJ, APM Terminals, Kalmar Industries, Parker Inc. and the NJDEP have partnered to develop hybrid-drive yard hostlers for Port Newark and Port Elizabeth. A yard hostler is especially designed for moving shipping containers in and around the port. The hybrid drive system that is being developed will combine a diesel engine with a hydraulic pump/accumulator system as a secondary source of energy. The hybrid drive is expected to have comparable or better performance, increased fuel efficiency and decreased air pollution. The emissions reductions realized will be up to 93% in Particulate Matter and 93% in NOx. Fuel savings are anticipated to be approximately 30%. The total cost of this project is approximately \$660,000, with NJDEP contributing \$70,000. The first yard hostler is scheduled to be deployed in the Spring of 2009.

No Idling Zone Sign Sales

No Idling Signs

The Diesel Risk Reduction Program’s Outreach section created “No Idling Signs” in 2005, to raise awareness of the need to reduce idling and emissions, and to promote compliance with the state’s three-minute idling regulations for both diesel and gasoline vehicles. Property owners who receive violations of the idling law are also given the opportunity to install No Idling Signs. Sales of No Idling Signs (at cost) exceeded \$19,000 for year 2008, with a total of 1,795 signs sold in 2008. The most popular sign is the newly developed “Universal” No Idling Sign which features a truck, a car and a bus. Over 170 different companies and school districts have ordered and posted signs, including several from around the country.



Diesel Inspection and Maintenance Program

Since 1998, the Diesel Inspection and Maintenance Program has been regulating smoke emissions from heavy-duty diesel vehicles (greater than 18,000 pounds), including approximately 70,000 trucks and 26,000 school and commercial buses. Inspections are performed annually by approximately 300 licensed Diesel Emissions Inspection Centers and randomly at several roadside locations throughout the state by teams comprised of the State Police and Motor Vehicle Commission staff. A well-maintained, normally operating engine at normal operating temperature does not emit smoke in the exhaust for more than a few seconds, and never continuously.



Smoke standards tightened

In 2008, NJDEP proposed to tighten the smoke opacity standards, strengthen the visible smoke standards, and clarify the exemption for emergency vehicles. These new rules will encourage owners and operators to maintain and repair their engines, and will be published in the May 4th New Jersey Register.

Light diesel vehicles to undergo emission testing

Light weight diesel vehicles (less than 8,500 pounds) such as passenger trucks and cars currently receive a safety inspection, but not an emissions inspection. Rules are planned to be proposed to incorporate these lighter weight vehicles into the emissions inspection program.

Mandatory Retrofit Program

The Diesel Retrofit Law of 2005 required that certain classes of diesel vehicles be retrofitted with tailpipe or engine controls to reduce particulate matter emissions, and a subsequent constitutional amendment provided a dedicated funding source to reimburse vehicle owners for these control devices. While there are federal engine emission standards in place for newer

vehicles, heavy-duty diesel engines have a long service life allowing an older technology, higher-emitting engine to pollute for many decades before it is replaced with a newer, cleaner engine. To address this gap, the New Jersey Legislature adopted the Diesel Retrofit Law.

Garbage trucks begin emission reduction process

Solid waste vehicles that are publicly-owned or used to perform solid waste services under a public contract were required to begin the process to install tailpipe emission control devices on their vehicles. In 2008, approximately 170 fleets representing 2600 vehicles submitted the required information to the NJDEP and are expected to install the retrofit devices during 2009.



School buses begin emission reduction process

All publicly and privately owned school buses in New Jersey are required to install closed crankcase ventilation systems by June 2010. In 2008, we received the required information from over 100 fleets, representing almost 5000 vehicles. We expect the remaining 4000 vehicles to begin the compliance process during the next 1.5 years.



School Bus Volunteer Tailpipe Program

The NJDEP accepted nine (9) school bus owners to participate in the School Bus Volunteer Tailpipe Program. These participants agreed to retrofit their school buses with tailpipe controls, which are not currently required, in addition to the required closed crankcase ventilation systems. This offers the benefit of having reduced student and vehicle operator exposure to diesel exhaust both within and around the school bus. The participants accepted into the program operate within or near an urban complex: Trenton Board of Education, Secaucus Board of Education, Jersey City Schools, Wayne Township Board of Education, Hunterdon County Educational Services, Clifton Board of Education, Kevah Konner Inc, Mary Help of Christians Academy and Passaic County Technical Institute.

NJ School Bus Emissions Study

In October 2007, NJDEP posted the initial results for the "In-Cabin Particulate Matter Quantification and Reduction Strategies" study to determine if the installation of tailpipe controls on a school bus would significantly reduce the levels of particulates inside a school bus. The NJDEP subsequently identified errors and unrepresentative operating conditions that warranted the repeat of data collection and analysis. A new study was completed in 2008 and will undergo external peer review in early 2009. NJDEP will then evaluate the results to determine if tailpipe controls significantly reduce the risk of fine particle concentrations inside the school bus.