

What Is Idaho's Diesel Retrofit Program?

Idaho's Diesel Retrofit Program is a statewide effort to retrofit school buses with new technologies designed to reduce emissions. The goals of the program are to improve air quality and protect public health, especially among school children, by reducing exposure to harmful emissions.

The Diesel Retrofit Program is a key component of *Clean Air Zone Idaho*, a statewide program designed to reduce children's exposure to vehicle exhaust. (Learn more about *Clean Air Zone Idaho* inside.)

Why Retrofit School Buses?

Buses, like all vehicles, emit pollutants into the air, including carbon monoxide, carbon dioxide, hydrocarbons, nitrogen oxides, sulfur oxides, and volatile organic compounds.

Diesel vehicles are very durable, which means some school buses remain in service for over 20 years. Many school buses on the road today were manufactured under older, less stringent emissions standards. In fact, buses built before 1990 may pollute as much as six times more than new buses. Luckily, diesel buses can be fitted with devices designed to reduce emissions.

Retrofit technology can cost between \$600 and \$2,500. The Idaho Department of Environmental Quality (DEQ) is working to obtain federal grants to help pay for diesel retrofits. To date, three school districts have received retrofit grants.

For More Information

Contact DEQ:

State Office
1410 N. Hilton
Boise, ID 83706

Air Quality Division: (208) 373-0502
Pollution Prevention Program: (208) 373-0146

Regional Offices

Boise Regional Office
1445 North Orchard
Boise, ID 83706
(208) 373-0550

Twin Falls Regional Office
1363 Fillmore Street
Twin Falls, ID 83301
(208) 736-2190

Coeur d'Alene Regional Office
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
(208) 769-1422

Pocatello Regional Office
444 Hospital Way #300
Pocatello, ID 83204
(208) 236-6160

Lewiston Regional Office
1118 F Street
Lewiston, ID 83501
(208) 799-4370

Idaho Falls Regional Office
900 Skyline, Suite B
Idaho Falls, ID 83402
(208) 528-2650

Log on:

DEQ's Vehicle Emissions and Air Quality Web page:
www.deq.idaho.gov/air/prog_issues/pollutants/vehicles.cfm

DEQ's Clean Air Zone Program:
http://www.deq.idaho.gov/air/educ_tools/clean_air_zone_idaho/index.cfm

U.S. EPA's Clean School Bus USA Program:
www.epa.gov/otaq/schoolbus/index.htm



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Idaho's School Bus Diesel Retrofit Program



*Using
Today's Technology
to Improve
Air Quality
and Protect
Children's Health*



Idaho Department of
Environmental Quality
www.deq.idaho.gov

What Types of Retrofit Technologies Can Be Used?

Many retrofit technologies are available, although some require special fuels not yet sold in Idaho. DEQ can help districts evaluate their fleets to determine the best available technology or technologies for each bus. Here are several options:

Diesel Oxidation Catalyst

For most Idaho buses, the best retrofit option is a diesel oxidation catalyst (DOC). A DOC uses a chemical process to break down pollutants in the exhaust stream into less harmful components and is installed in place of a muffler.

DOCs can reduce emissions of particulate matter by up to 50%, hydrocarbons by 75%, and carbon monoxide by 90%. DOCs cost about \$600 to \$2,000, come with a 100,000 to 150,000-mile warranty, and can last up to 15 years, rarely requiring maintenance. DOCs are the primary retrofit technology for Idaho buses due to price and compatibility with a variety of buses and fuel blends.

Closed Crankcase Ventilation Devices

In many diesel engines, crankcase emissions, known as “blow-by” are released directly from the engine. Closed crankcase ventilation (CCV) devices provide a cleaner engine environment by capturing and returning oil in blow-by gases to the crankcase.

CCV devices also direct nitrogen oxides, hydrocarbons, and air toxics back to the intake system for re-combustion. Particulates are collected in a filter and removed from crankcase vapors. CCV devices cost approximately \$1,200.

Engine Pre-Heaters

Engine pre-heaters complement other technologies and are an option for some buses. Aftermarket auxiliary heaters can be used to

warm up engines and passenger compartments in colder months.

This equipment runs off the school bus fuel tank or an electric outlet and includes a timer that can be programmed to automatically start the heating function. Depending on the type, pre-heaters cost between \$1,200 and \$2,500. Fuel use is reduced by 87% or more during warm up, resulting in fewer air emissions.

How to Get Involved

To participate and receive free or low-cost retrofits, contact DEQ at (208) 373-0502. Schools will be asked to submit information on their current bus fleets. This information will be used to determine which buses are eligible for retrofits and to identify the best retrofit technology for each bus.

Funding decisions will be based on several criteria, including the age and condition of the fleet, ability to match each bus to the appropriate retrofit technology, and an anti-idling program demonstrated by participation in *Clean Air Zone Idaho*, Idaho’s program to reduce vehicle emissions around schools.

To participate in
Idaho’s Diesel Retrofit Program,
contact Jorge Garcia
at (208) 373-0502.

***Congratulations to Idaho’s first
diesel retrofit grant recipients:***

- ***Basin School District***
- ***Idaho Falls School District***
- ***Meridian School District***

Clean Air Zone Idaho



Clean Air Zone Idaho is a statewide program designed to reduce children’s exposure to vehicle exhaust. *Clean Air Zone Idaho* helps schools reduce vehicle idling around schools, try alternative fuels, and retrofit buses with cleaner diesel technologies.

To date, over 150 schools have joined *Clean Air Zone Idaho* and posted “Turn Off Your Engine” signs in loading and unloading zones. For more information on the *Clean Air Zone Idaho* program or to obtain free “Turn Off Your Engine” signs for your school, visit www.deq.idaho.gov/air/educ_tools/clean_air_zone_idaho/index.cfm.

How to Join Clean Air Zone Idaho

Contact
DEQ’s Pollution Prevention Coordinator
at (208) 373-0146
or your nearest
DEQ Regional Office
(contact information on reverse).