

## 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

### Idaho Department of Environmental Quality

**State Office**  
**Air Quality Division**  
1410 N. Hilton  
Boise, ID 83706  
(208) 373-0502

**Michael Hahn**  
(208) 373-0216

### Regional Offices

**Boise**  
1445 N. Orchard  
Boise, ID 83706  
(208) 373-0550  
toll-free: (888) 800-3480

**Coeur d'Alene**  
2110 Ironwood Parkway  
Coeur d'Alene, ID 83814  
(208) 769-1422  
toll-free: (877) 370-0017

**Idaho Falls**  
900 N. Skyline, Suite B  
Idaho Falls, ID 83402  
(208) 528-2650  
toll-free: (800) 232-4635

**Lewiston**  
1118 F Street  
Lewiston, ID 83501  
(208) 799-4370  
toll-free: (877) 541-3304

**Pocatello**  
444 Hospital Way #300  
Pocatello, ID 83201  
(208) 236-6160  
toll-free: (888) 655-6160

**Twin Falls**  
650 Addison Ave. W,  
Suite 110  
Twin Falls, ID 83301  
(208) 736-2190  
toll-free: (800) 270-1663

### Web Resources

**Vehicle Emissions and Air**  
[www.deq.idaho.gov/vehicle-emissions](http://www.deq.idaho.gov/vehicle-emissions)

**Clean Air Zone Program**  
[www.deq.idaho.gov/clean-air-zone-schools](http://www.deq.idaho.gov/clean-air-zone-schools)

**Clean School Bus Program: EPA Region 10**  
[www.epa.gov/r10/airpage.nsf/webpage/clean+school+bus+program,+region+10](http://www.epa.gov/r10/airpage.nsf/webpage/clean+school+bus+program,+region+10)



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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](http://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

Contact DEQ to learn how to participate and receive free or low-cost retrofits. Schools are asked to submit information on their current bus fleets. This information is used to determine which buses are eligible for retrofits and to identify the best retrofit technology for each bus.

Funding decisions are 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 Michael Hahn  
at (208) 373-0216.



## Clean Air Zone Idaho

Turn off  
your engine



Clean Air Zone

*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, more than 300 schools and child care facilities in Idaho 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/clean-air-zone-schools](http://www.deq.idaho.gov/clean-air-zone-schools).

### 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).