



# Clean Air Zone Idaho

## Get into the Zone!

February 2007

### Get into the Zone

In 2004, the Idaho Department of Environmental Quality (DEQ) launched *Clean Air Zone Idaho*, a voluntary program to reduce children's exposure to diesel exhaust through anti-idling programs, alternative fuels, and cleaner technologies for school buses.

Since its inception, 273 schools have joined, with 1,216 buses committed to "turning off their engines." Over 110,000 Idaho children now attend *Clean Air Zone Idaho* schools.

In addition, DEQ is now offering financial assistance to schools and districts wishing to retrofit diesel buses with cleaner technologies. The goal is to retrofit every eligible bus in Idaho.

If your school is not part of *Clean Air Zone Idaho*, it's not too late to join! DEQ provides toolkits and anti-idling road signs to schools free of charge.

Call (208) 373-0502 or visit the *Clean Air Zone Idaho* Web site at [www.deq.idaho.gov/air/educ\\_tools/clean\\_air\\_zone\\_idaho/index.cfm](http://www.deq.idaho.gov/air/educ_tools/clean_air_zone_idaho/index.cfm).



### Diesel Exhaust and Health

Studies show that school buses are the safest way for children to get to and from school. However, levels of air pollution inside buses from diesel exhaust may be up to four times higher than outside. Children are particularly at risk because their lungs are still developing and they breathe at a faster rate than adults.

Did you know?

- ✓ The Idaho Department of Health and Welfare estimates that 130,000 Idahoans, and at least 10% of Idaho children, suffer from asthma.
- ✓ The Centers for Disease Control and Prevention cite asthma as the number one cause of absenteeism among school children nationwide.

By joining *Clean Air Zone Idaho*, your school can help reduce air pollution and protect student health. Join today!

### Communities Can Join, Too!

*Clean Air Zone Idaho* has expanded!



To date, over 40 communities have joined. Participating communities receive, at no cost, "turn off your engine" street signs and window decals

to post in drop-off zones, delivery areas, and drive-through windows. Look for signs and decals at public facilities statewide.

For more information, contact DEQ at (208) 373-0502.

### Know Before You Go

Does the air look hazy? Are there wildland fires in your area? Has a wintertime inversion settled over your community?

Many factors impact air quality in Idaho. Unfortunately, poor air quality can impact children's health and day-to-day school activities. When air quality is poor, schools may have to make tough decisions about whether to hold outdoor sports, recreation, and recess activities.

DEQ makes it easy for schools to monitor local air quality conditions. Each day, or when conditions change, DEQ issues air quality alerts.

### What do the alerts mean?

Green = Good
Yellow = Moderate
Orange = Unhealthy for sensitive groups
Red = Unhealthy
Purple = Very unhealthy
Maroon = Hazardous

View the daily air quality report at [www.deq.idaho.gov/air/aqindex.cfm](http://www.deq.idaho.gov/air/aqindex.cfm).

To receive daily e-mail alerts, visit [www.deq.idaho.gov](http://www.deq.idaho.gov) and look for the box that says "Sign up for E-mail Updates." Announcements are also sent to local news media. Stay up-to-date on air quality conditions and know before you go!

### In this newsletter...

- ✓ **Money for your school!** Learn about available funding to retrofit buses with cleaner technologies.
- ✓ **Air quality in the classroom.** Fun activities for every grade.
- ✓ **It's art!** Learn how one district turned alternative fuels into art.



## It's Art! Biodiesel Mural Project

Boise School District art students showcased their talents and helped the environment at the same time. The Boise Mural Project matched students with area business sponsors to create a series of murals about biodiesel. Biodiesel is a plant-based fuel that can be used in place of regular diesel. Benefits include lower tailpipe emissions, reduced dependence on petroleum-based fuel, and support for Idaho's farming economy. The students created panels showing how biodiesel is made, from the farmer's field to the processing plant, and how biodiesel is used to power vehicles. The mural, which is on fencing around a high-rise building project, was unveiled in May 2006 and will remain in place into 2007.

*"Biodiesel is our latest 'green fuel' initiative and we are very excited about its future. The mural project in downtown Boise was a way to showcase biodiesel."*

- Charley Jones, President, Stinker Stores



## Tips for Posting *Clean Air Zone Idaho* "Turn off Your Engine" Signs

- ✓ Post signs in both bus and vehicle drop-off areas.
- ✓ Ensure signs are visible and aren't blocked by trees or vehicles.
- ✓ Educate parents, staff, and students as to where the signs are and what they mean.
- ✓ To minimize costs for placing the signs, mount underneath other signs or hang on existing structures such as fences and light posts.

## Air Quality in the Classroom

Capture air pollution in handmade traps. Compare exhaust from different cars. Play *Pollution Prevention Bingo*. Test and see if *Clean Air Zone* signs really work (they do!).

These are just a few of the activities created by DEQ to help bring air quality and environmental education into the classroom. DEQ's Environmental Education Program offers activities for all grade levels and can provide:

- ✓ Lesson plans and activity guides
- ✓ An air quality "trunk" full of ready-to-use activities, videos, and posters
- ✓ Classroom speakers
- ✓ Project-based learning activities

For a quick activity that demonstrates the difference we can all make, try this...

1. Mark off a large circle on the floor. This represents the air. Make sure nothing is in the circle.
2. Have students observe how "clean" the "air" (circle) is.
3. One by one, have students throw one of their shoes into the circle. The shoes represent pollution.
4. Have the students observe the "air" now. Note how each person only contributed one item, but that together it created a lot of pollution.
5. Repeat the process, but have students remove their shoes from the circle.
6. Observe the "air" once more. Note how each person only removed one item, but together cleaned the "pollution" out of the "air."
7. Discuss.

For more information and activities call (208) 373-0502 or visit [www.deq.idaho.gov/multimedia\\_assistance/educators\\_students.cfm](http://www.deq.idaho.gov/multimedia_assistance/educators_students.cfm).

## What Your School Can Do to Reduce Vehicle Idling

Schools and communities can address children's exposure to vehicle exhaust through some simple and cost-effective strategies. Actions include:

- ✓ Adopt a no-idling policy for your school.
- ✓ Post signs around major drop-off zones that encourage drivers to turn off their engines.
- ✓ Inform parents and other vehicle users, such as delivery trucks, about the no-idling policy.
- ✓ Include information on the no-idling policy in school newsletters.
- ✓ Ensure drop-off and delivery areas are situated away from building air intake vents.
- ✓ Designate a warm, indoor waiting area for drivers.
- ✓ Establish a program to recognize and reward drivers who successfully reduce idling.



# Money for Your School - Diesel Retrofit Project

## Grants awarded to three Idaho districts and counting...

Idaho's Diesel Retrofit Program is a statewide effort to retrofit school buses with new technologies designed to reduce emissions. 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 emission standards. In fact, pre-1990 buses may pollute as much as six times more than new buses. To reduce emission impacts, diesel buses can be fitted with devices designed to reduce emissions.

To date, DEQ has secured over one million dollars for the project and is working with school districts statewide to identify eligible buses to retrofit.

## Retrofit options for Idaho

Many retrofit options are available. DEQ is working with districts to evaluate their fleets and determine the best available technology for each bus.

For Idaho, the best retrofit option is likely a **diesel oxidation catalyst (DOC)**. A DOC is a control device formed by a porous, ceramic, honeycomb-like structure coated with a catalyst to accelerate the chemical reaction that reduces pollution. DOCs reduce emissions

of particulates by 25-50%. Hydrocarbons and carbon monoxide are reduced by 90% and hazardous air pollutants by 70%.

Most DOCs come with a 100,000 to 150,000-mile warranty and can last up to 15 years, rarely requiring maintenance. DOCs will be the primary retrofit technology used in Idaho due to price and compatibility with a variety of buses and fuel blends. A DOC is easily installed in one to three hours in place of the muffler. Each device costs about \$2,000.



DOC devices replace traditional mufflers

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



CCV devices reduce engine emissions

**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, school districts must submit information on their current bus fleet to DEQ. Information will be used to determine which buses are eligible for retrofit and identify the best retrofit technology for each bus. The technologies will be provided and installed by experienced contractors.

Funding for schools will be based on several criteria, including the age and condition of the fleet, ability to match each bus to the appropriate retrofit technology, school district commitment, and demonstrated participation in *Clean Air Zone Idaho*.

For more information on how to apply to retrofit your school district's buses, call (208) 373-0502 or visit [www.deq.idaho.gov/air/educ\\_tools/clean\\_air\\_zone\\_idaho/diesel\\_retrofit\\_program\\_brochure2.pdf](http://www.deq.idaho.gov/air/educ_tools/clean_air_zone_idaho/diesel_retrofit_program_brochure2.pdf).



Congratulations to the following Idaho school districts...the first to receive diesel retrofit grants!

Basin School District  
Idaho Falls School District  
Meridian School District



## Participating *Clean Air Zone Idaho* Schools and School Districts

### Schools:

Adams Elementary, Boise  
 Early Learning Center, Pocatello  
 Falcon Ridge Public Charter, Kuna  
 Franciscan Cre-Act, Pocatello  
 Hillcrest Elementary, Boise  
 Holy Spirit Catholic, Pocatello  
 KASP/Wesleyan Preschool, Boise  
 Lakewood Montessori, Boise  
 Liberty Elementary, Boise  
 Magic Valley High, Twin Falls  
 Monroe Elementary, Boise  
 Nampa Christian Schools, Nampa  
 Northview Montessori, Boise  
 Oregon Trail Elementary, Twin Falls  
 Ririe Elem, Middle, and High, Ririe  
 Riverside Elementary, Boise  
 Roosevelt Elementary, Boise

Sorenson Elementary, Coeur d'Alene  
 Timberline High School, Boise  
 Trail Wind Elementary, Boise  
 White Pine Elementary, Boise

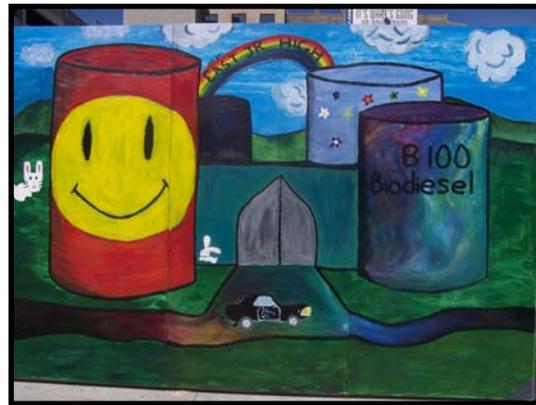
### Districts:

Basin #72 (2 schools)  
 Blackfoot #55 (11 schools)  
 Blaine County #61 (7 schools)  
 Bonneville Joint #93 (13 schools)  
 Cassia County #151 (17 schools)  
 Culdesac Joint #342 (1 school)  
 Firth #59 (3 schools)  
 Genesee #282 (1 school)  
 Grace Joint #148 (4 schools)  
 Idaho Falls #91 (19 schools)  
 Kamiah Joint #304 (3 schools)  
 Kellogg #391 (5 schools)  
 Kuna #3 (7 schools)

Lake Pend Oreille #84 (12 schools)  
 Lewiston Independent #1 (11 schools)  
 Madison #321 (11 schools)  
 Meridian #2 (43 schools)  
 Moscow #281 (7 schools)  
 Mountain Home #193 (9 schools)  
 Nampa #131 (21 schools)  
 Nez Perce Joint #302 (2 schools)  
 Orofino Joint #171 (7 schools)  
 Post Falls #273 (8 schools)  
 Prairie, Cottonwood #242 (3 schools)  
 Preston #201 (5 schools)  
 Rockland #382 (1 school)  
 Salmon #291 (5 schools)  
 Shelley #60 (4 schools)  
 Swan Valley #92 (1 school)  
 Weiser #431 (4 schools)  
 West Side Joint #202 (3 schools)

Is your school part of *Clean Air Zone Idaho* but not listed above? Would your school like to join? Individual schools and whole districts are invited to join *Clean Air Zone Idaho*. Contact DEQ at (208) 373-0502 or [patti.best@deq.idaho.gov](mailto:patti.best@deq.idaho.gov).

### Biodiesel Mural Project, Boise School District



*Printed on recycled paper. February 2007. Costs associated with this publication are available from DEQ in accordance with Section 60-202, Idaho Code.*

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