# **Research and Recommendation on**

# **School Bus and Automobile Idling**

**March 3, 2008**

**Revised: April, 2016**

*“The following recommendation is made to the State Health Services Council by the Texas School Health Advisory Committee in order to provide assistance in establishing a leadership role for the Department of State Health Services in the support for and delivery of coordinated school health programs and school health services.”*

## Background Information

Restricted idling can improve air quality within school buses and in the vicinity of schools where children congregate.

School Buses in Texas:

* More than 95 percent of school buses are diesel-powered.
* Diesel engines are one of the largest sources of fine particulate matter in the air.
* A child riding in a school bus is likely to breathe in 7-70 times more diesel exhaust in a single day than a resident in an urban area.

Diesel Engine Exhaust:

* Fine particulate matter (PM 2.5) is small enough to penetrate deep into the lung, where it may remain for long periods of time.
* There are more than 100 carcinogenic or potentially carcinogenic components in diesel emissions.

Factors Affecting Diesel Exhaust Levels:

* If a bus idles for more than three minutes, it will generate 66 percent more fine particle pollution than a bus that was shut off and restarted.
* The highest levels of carbon and particulates are found in queued, idling buses with open windows.
* Diesel pollution can migrate to adjacent areas, exposing students and school staff.

Legislation/Programs that Reduce Bus Idling in Texas:

* In 2007, the Texas legislature passed a bill but it was vetoed.
* It is imperative for districts to implement their own protective policies related to school bus idling.
* Texas Commission for Environmental Quality awarded $7 million to schools between 2008-2010 to retrofit school buses.
* School bus emissions decrease by 90 percent when older diesel engines are retrofitted with pollution-reducing devices.

Legislation/Programs that Limit Bus Idling in Other States:

* California, Minnesota, Maine
* Connecticut—<https://www.cga.ct.gov/2002/act/Pa/2002PA-00056-R00HB-05663-PA.htm>
* Massachusetts—[M.G.L. Chapter 90, Section 16A](http://www.mass.gov/legis/laws/mgl/90-16a.htm); [Air Pollution Control Regulations](http://www.mass.gov/dep/air/laws/regulati.htm#apc)
* New Jersey—[www.nj.gov/dep/stopthesoot/sts-idlingsum.htm](http://www.nj.gov/dep/stopthesoot/sts-idlingsum.htm)

## Health Effects

In addition to the elderly and anyone with existing heart or lung disease, asthma or other respiratory problems, children are among the most sensitive to the health effects of diesel exhaust exposure due to their developing body and lungs. Children breathe 50 percent more air per pound of body weight than do adults.

* Acute effects: Irritation of eye, nose, throat; coughing; and headache, nausea, vomiting, light headedness, numbness of extremities
* Carcinogenic: Increased risk of lung cancer (approximately 30 percent)
* Respiratory/Lung damage: Increased frequency and intensity of asthma attacks; aggravation of chronic respiratory conditions
* Decreased lung function and development: Significant, chronic effects during period of rapid lung development (ages 10-18 years)
* Premature deaths: 15,000/year nationwide due to particulate matter
* Cardiovascular disease: Increased heart attacks, strokes, and death associated with long-term exposure to fine particulate air pollution
* Hormonal effects in animal studies: Decreased estrogen and sperm production

## Recommendations

The purpose of this document is to assist local School Health Advisory Councils (SHACs) to revise or update Wellness Policies or other district policies/regulations to limit school bus idling.

An example of a Wellness Policy related to school bus idling:

*Buses should not idle while waiting for students during field trips, extracurricular activities, or other events where students are transported off school grounds.*

## Anti-Idling and Smart Driving Practices

The Texas School Health Advisory Committee (TSHAC) recommends that every local SHAC review the anti-idling and smart driving practices based on the U.S. Environmental Protection Agency’s (EPA’s) School Bus Program, as well as cited research, to limit school bus idling.

The EPA’s Clean School Bus Program National Idle Reduction Campaign (<https://www.epa.gov/cleandiesel/clean-school-bus>) includes an instructional video/DVD for fleet managers and bus drivers to educate them regarding the hazards of diesel exhaust and smart driving and anti-idling practices. Recommended anti-idling and smart driving practices include the following:

* Ensure that both the fleet managers and bus drivers understand the potential risks to the children’s and their own health from breathing diesel exhaust and the benefits of not idling or caravanning.
* Train school bus drivers to turn off their buses as soon as they arrive at loading and unloading areas and to refrain from restarting their buses until they are ready to depart.
* Limit idling time during early morning warm-up to what is recommended by the manufacturer (generally 3-5 minutes).
* Post “No Idling” signs in loading and unloading zones as reminders to bus drivers and passenger cars.
* Revise bus schedules and operational logistics to minimize school bus caravanning. Inform drivers that following other diesel vehicles too closely can contribute to higher concentrations of diesel exhaust inside and outside the bus.
* Assign cleanest buses to the longest trips.
* Institute a program to recognize drivers who successfully reduce idling.
* Consider changing circuit configurations, if necessary, to power flashing lights with the battery.
* Encourage parents to eliminate idling as they wait for their children to be dismissed from school.

When developing policies and regulations to reduce bus idling, some consideration needs to be given to the fact that at times it is necessary to exempt school buses from idling restrictions in order to maintain, for example, safe driving and temperature conditions.

The following is an example of a section of a school bus idling policy related to an exemption from idling:

*Weather. Limit the idling time of a school bus to the minimum time necessary to heat or cool the bus before departure, provided that the engine is turned off when students get on or off the bus at a school or event.*

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## Resources

[TexasCleanSchoolBus.org](http://www.tceq.texas.gov/p2/clean-vehicles/school-buses.html)

<http://www.epa.gov/cleandiesel/clean-school-bus>

This document was developed by the TSHAC and presented to the State Health Services Council of the DSHS. For additional information about the committee, go to <http://www.dshs.texas.gov/shadvise.shtm>.
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