

Department of Legislative Services
Maryland General Assembly
2009 Session

FISCAL AND POLICY NOTE

Senate Bill 319 (Senator Gladden)
Education, Health, and Environmental Affairs
and Finance

Respiratory Illness Prevention Act

This bill makes it illegal to vent crankcase emissions from any public school bus beginning July 1, 2011, and requires local school systems to equip diesel-powered school buses with emissions-reducing equipment by January 1, 2012, subject to extensions. It also requires State contractors to equip diesel-powered nonroad vehicles, heavy equipment, and generators with emissions-reducing equipment by specified dates. The State reimburses local school systems for the full cost of school bus retrofits and reimburses contractors for 50% of the cost of equipment retrofits if they have not received reimbursement under prior contracts.

Fiscal Summary

State Effect: General, special, and federal fund expenditures increase by \$10.1 million in FY 2010 to reimburse local governments for the cost of installing diesel retrofit technology. Out-year expenditures reflect the cost of reimbursing local governments based on the bill's implementation timeline. Legislative Services cannot reliably estimate the cost of reimbursing State contractors for half of the cost of similar retrofits. General fund expenditures by the Department of Health and Mental Hygiene increase by \$39,917 in FY 2010 to administer reimbursements. Out-year expenditures reflect annualization and inflation. State expenditures (all funds) for construction contracts may increase. The Maryland Department of the Environment (MDE) can issue new regulations and assess the availability of diesel retrofit technology with existing resources.

(in dollars)	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Revenues	\$0	\$0	\$0	\$0	\$0
GF Expenditure	39,900	46,300	48,200	50,200	52,400
GF/SF/FF Exp.	10,050,000	10,050,000	20,100,000	0	0
Net Effect	(\$10,089,900)	(\$10,096,300)	(\$20,148,200)	(\$50,200)	(\$52,400)

Note:() = decrease; GF = general funds; FF = federal funds; SF = special funds; - = indeterminate effect

Local Effect: Local government expenditures on diesel retrofits for public school buses may be fully reimbursed by the State through a grant program. To the extent only partial reimbursement is available, local expenditures increase to pay for a portion of the cost of retrofitting school buses. **This bill may impose a mandate on a unit of local government.**

Small Business Effect: Potential meaningful.

Analysis

Bill Summary: The bill establishes three levels of emissions reduction for diesel-powered engines:

- Level 1 controls reduce particulate matter (PM) emissions by at least 25% from uncontrolled engine emission levels;
- Level 2 controls reduce PM emissions by at least 50%; and
- Level 3 controls reduce PM emissions by at least 85% or to less than or equal to 0.01 grams of PM per brake horsepower-hour.

By January 1, 2012, all public school buses operated in the State must have Level 3 controls installed and properly maintained. That requirement is phased in, with half of all school buses in each fleet required to have Level 3 controls installed by July 1, 2011. School bus transportation contracts must include a clause that they will comply with the requirements by January 1, 2011.

School buses that already have Level 1 controls installed by October 1, 2009, have two additional years to comply with the new requirement, and school buses with Level 2 controls installed by the same time have four additional years. A fleet consisting of five or fewer buses has two additional years to comply. If the Maryland Department of the Environment (MDE) finds in writing that no Level 3 controls exist for a particular school bus, the bus must have the highest level of emissions control available by the appropriate date.

The retrofit requirements for State contractors apply only to construction contracts valued at more than \$2 million and to nonroad vehicles, heavy equipment, and generators that remain on-site for more than three days. The implementation deadlines vary by project start date and by engine size, but they begin January 1, 2011, with full compliance required for projects that begin on or after July 1, 2014.

The bill also requires that construction contracts prohibit the venting of crankcase emissions from, and nonessential idling by, diesel nonroad vehicles and heavy-duty diesel vehicles used to perform the work.

MDE must develop regulations to reduce the venting of crankcase emissions from public school buses. The Asthma Control Program within the Department of Health and Mental Hygiene (DHMH) must (1) include the installation of diesel retrofit technology on school buses in its statewide asthma plan; and (2) administer the reimbursement program for counties. Funding for both the county and contractor reimbursements is specified to come from federal Congestion Mitigation and Air Quality (CMAQ) grants, Diesel Emissions Reduction Act (DERA) funds, any other designated federal funds, and any appropriated State funds.

Current Law: Federal regulations require that diesel engines produced since 2007 reduce PM emissions by more than 90%. As of October 2006, all on-road diesel vehicles are required to use ultra low sulfur fuel, which even when used in older engines can reduce PM emissions by about 10%; beginning in 2010, federal regulations require nonroad vehicles to use ultra low sulfur fuel.

The State does not require that diesel-powered public school buses or construction equipment be equipped with retrofit technology.

Background:

Diesel Emissions Reduction:

Diesel engines are the predominant source of power for heavy-duty applications because they are more powerful, efficient, and durable than gasoline-powered engines. Diesel engines are found in two-thirds of farm and construction equipment, over 90% of commercial trucks, and the vast majority of school buses. Older diesel engines, however, emit higher levels of PM, sulfur, and nitrous oxide than their gasoline-powered counterparts.

Recent advances in diesel-engine technology, fuel processing, and government regulation have addressed many of the environmental concerns related to diesel fuel. However, the durability of diesel engines works against efforts to reduce emissions because the vast majority of diesel-powered engines still in use were produced before new technology and federal regulations went into effect.

To accelerate the reduction of PM emissions, vehicle and equipment operators can retrofit existing diesel engines with various types of emissions-reducing devices. The U.S. Environmental Protection Agency and the California Air Resources Board have

categorized these devices according to the reductions in emissions they have been shown to produce. **Exhibit 1** summarizes their key traits.

Exhibit 1
Diesel Engine Retrofit Devices

	<u>Most Common Device</u>	<u>PM Emissions Reduction</u>	<u>Cost per Vehicle</u>
Level 1	Diesel oxidation catalyst	25%	\$1,000 to \$2,000
Level 2	Flow-through filter	50%	Unknown
Level 3	Diesel particulate filter	85%	\$5,000 to \$10,000

Source: U.S. Environmental Protection Agency, California Air Resources Board

Federal Programs:

The U.S. Congress reauthorized CMAQ, which dates to 1991, in 2005 to provide funding to state transportation departments and transit agencies to invest in emissions reduction initiatives. CMAQ funding may be used only in areas that do not meet federal air quality standards (nonattainment areas) and former nonattainment areas that are now in compliance (maintenance areas). States must give priority in distributing CMAQ funds to diesel engine retrofit projects and other cost-effective emissions reduction activities.

In fiscal 2009, the Maryland Department of Transportation (MDOT) received approximately \$42 million in CMAQ funds. Except for a small pilot project with the Baltimore Metropolitan Planning Organization, the funds are not distributed to local governments. Instead, the State Highway Administration and the Maryland Transit Administration share the funds to pay for new and cleaner buses, ride sharing, Park & Ride lots, synchronization of traffic lights (to reduce idling), and other emissions reduction efforts.

The U.S. Congress adopted DERA in 2005 to fund state and local efforts to retrofit existing diesel engines with emissions control devices. A portion of total funding – 30% – is divided equally among the 50 states and the District of Columbia, while the remainder – 70% – is distributed to regions for competitive grants. The American Recovery and Reinvestment Act of 2009 (ARRA) includes \$300 million in one-time funds for DERA.

In fiscal 2009, MDE received \$196,000 in DERA formula grants; by fulfilling matching requirements, it received an additional \$98,000. Although final awards have not been made, MDE expects to distribute those funds to three local governments to fund retrofits

of school buses and other diesel vehicles. MDE expects \$1.7 million in DERA funds from ARRA in fiscal 2010 under the state formula grants; there is no State match for the next round of funding. Competitive grant awards available to states and local governments will likely range in size from \$1 million to \$7.5 million. Future availability of DERA and CMAQ funds hinges on reauthorization of both programs. CMAQ is well-established, but DERA is a relatively new program, so future funding is less certain.

State Fiscal Effect: Legislative Services has determined that the available federal program funds specified in the bill are insufficient to provide the level of reimbursement to local governments and State contractors that the bill requires. The precise level of federal funding is subject to a competitive grant process and federal reauthorization, as explained above. However, even if the State secures the maximum available federal funds in fiscal 2010, they are insufficient to fund the level of reimbursement required by the bill. Legislative Services assumes that additional general or special funds are appropriated to fill that gap so that the costs of the mandated retrofits do not fall on local governments or State contractors.

There are currently 7,146 public school buses in operation in Maryland, of which slightly more than half are owned by local governments and the rest are owned by contractors. The bill requires that all school buses comply with the retrofit requirements regardless of ownership. Based on data provided by two school systems and by MDE, Legislative Services estimates that approximately 25% of those buses (1,787) either have Level 1 retrofits and do not require a retrofit until 2013 (two-year extension), or were purchased after 2007 and therefore do not require any retrofit. Legislative Services is not aware of any school buses in the State with Level 2 retrofits.

The total cost of retrofitting the remaining 5,359 buses with Level 3 retrofits is between \$26.8 million and \$53.6 million based on a per bus cost of \$5,000 to \$10,000. It is assumed that school bus contractors also receive full reimbursement of costs through State grants provided to the counties that contract with them. Half of that cost is incurred in fiscal 2010 and 2011 to meet the initial July 1, 2011 deadline. The other half is incurred in fiscal 2012 to meet the final January 1, 2012 deadline. Based on this timeline, the fiscal 2010 cost of school bus retrofit reimbursements is between \$6.7 million and \$13.4 million. Additional costs are incurred in fiscal 2014 for the school buses that receive a two-year extension because they have Level 1 retrofits.

Legislative Services cannot reliably estimate the cost of reimbursing State contractors for half the cost of retrofitting heavy equipment used on State construction projects, but expects the cost to be substantial. Legislative Services also assumes that contractors pass on at least a portion, if not all, of any nonreimbursed costs for diesel retrofits to the State in the form of higher contract costs for State construction projects.

Expected fiscal 2010 DERA funding of \$1.7 million is clearly insufficient to cover the cost of reimbursing local governments and State contractors as required by the bill. If the State receives the largest competitive grant available from DERA, which is not assured, the combined total of \$9.2 million may be sufficient to cover the cost of school bus retrofits, but it may also fall short; additional costs for State contractor reimbursements make that level of funding insufficient. Moreover, the DERA program is not authorized in the federal budget beyond 2010. To the extent that the State's CMAQ funds are diverted to pay for reimbursements, the State either needs to backfill those funds with general or special funds, or scale back its existing emissions reductions projects, which runs counter to the purposes of this bill.

DHMH requires one full-time equivalent (FTE) contractual position to administer the reimbursement program for local governments from fiscal 2010 through 2014. This assumes that few, if any, school buses have Level 2 retrofits, which would extend the reimbursement program to fiscal 2016. Therefore, general fund expenditures increase by \$39,917 in fiscal 2010, which accounts for the bill's October 1, 2009 effective date. This estimate reflects the cost of hiring one contractual FTE program administrator to administer the reimbursements for local governments. It includes a salary and fringe benefits, one-time start-up costs, and ongoing operating expenses.

Contractual Position	1
Salary and Fringe Benefits	\$33,624
Start-up Costs	4,335
Operating Expenses	<u>1,958</u>
Total FY 2010 State Expenditures	\$39,917

Future year expenditures reflect a full salary with 4.4% annual increases and 6.8% employee turnover and 1% annual increases in ongoing operating expenses.

It is assumed that State contractor reimbursements are administered as part of State construction contracts.

Small Business Effect: Small construction companies that participate on State projects must pay to retrofit their nonroad vehicles and other heavy machinery with emissions reduction technology prior to contract award. Only half of their costs are directly reimbursed by the State, so contractors' costs may increase. To the extent that they pass along those costs as higher contract prices, their costs may be lower.

Additional Information

Prior Introductions: None.

Cross File: HB 189 (Delegate Morhaim, *et al.*) - Health and Government Operations and Ways and Means.

Information Source(s): U.S. Environmental Protection Agency; California Air Resources Board; Diesel Technology Forum; Charles, Frederick, Montgomery, and Somerset counties; Board of Public Works; Department of Budget and Management; Maryland State Department of Education; Maryland Department of the Environment; Department of Health and Mental Hygiene; Maryland Department of Transportation; University System of Maryland; Department of Legislative Services

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Analysis by: Michael C. Rubenstein

Direct Inquiries to:
(410) 946-5510
(301) 970-5510