

Department of Legislative Services
 Maryland General Assembly
 2022 Session

FISCAL AND POLICY NOTE
First Reader

House Bill 686 (Delegate Solomon, *et al.*)
 Environment and Transportation and
 Appropriations

Public Schools – Health and Safety – Carbon Dioxide Monitoring in Classrooms
(Safe School Indoor Air Act)

This bill establishes the Safe School Indoor Air Program within the Maryland Department of the Environment (MDE) to improve indoor air quality in public school classrooms. MDE, in consultation with the Maryland State Department of Education (MSDE), must administer the program and adopt regulations. MDE must develop and conduct training on carbon dioxide (CO₂) monitoring in classrooms, and public schools must conduct ongoing classroom CO₂ monitoring, implement necessary remediation measures, and submit annual reports, as specified. Public schools must conduct at least biannual CO₂ monitoring and remediation (as necessary) and report findings to county boards. The bill also establishes annual reporting requirements for county school boards. **The bill takes effect July 1, 2022.**

Fiscal Summary

State Effect: General fund expenditures increase by \$692,600 in FY 2023; out-years reflect annualization, inflation, and ongoing costs. State revenues are not affected.

(in dollars)	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Revenues	\$0	\$0	\$0	\$0	\$0
GF Expenditure	692,600	400,500	410,400	419,800	429,800
Net Effect	(\$692,600)	(\$400,500)	(\$410,400)	(\$419,800)	(\$429,800)

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

Local Effect: Local school system expenditures increase, potentially significantly in some local school systems, beginning as early as FY 2023 for monitoring and remediation. Revenues are not affected. **This bill imposes a mandate on a unit of local government.**

Small Business Effect: Potential meaningful.

Analysis

Bill Summary: “Elevated carbon dioxide reading” means a CO₂ reading in a classroom that is 2,000 parts per million or more. “Particle removal process” includes portable HEPA only filters and minimum efficiency reporting value (MERV) 13+ filters in recirculating HVAC systems.

Training, Monitoring, and Remediation Requirements

MDE, in consultation with recognized indoor air quality experts, must develop and conduct training on CO₂ monitoring in classrooms. Each public school must designate at least three school personnel to take the training and conduct CO₂ monitoring in classrooms. The monitoring may be conducted by appropriately trained school personnel or entities the public school or county board contracts with to provide such services.

Each school classroom must be monitored at least twice each school year, and the monitoring must be conducted (1) at least three months apart, with at least one measurement during the cooling season and at least one measurement during the heating season and (2) for an entire school day while the classroom is fully occupied.

The bill establishes varying requirements for classrooms depending on the CO₂ reading results. For a classroom with CO₂ reading results between 1,200 and 2,000 parts per million, the bill establishes inspection requirements and procedures that must be followed if a classroom fails the required inspection. For a classroom with an elevated CO₂ reading, the bill requires specified remediation, including notifying the school community that uses an affected classroom, developing a remediation plan, implementing temporary remediation measures (including adding exhaust fans or additional air filters and adjusting the activity density in the classroom), and conducting additional inspections and monitoring. The bill specifies timeframes within which certain remediation measures must be implemented. Among other things, within one year from the date of the CO₂ monitoring, a school must put permanent remediation measures in place to address an elevated CO₂ reading, which include replacing, repairing, and/or adding mechanical ventilation systems. Remediation measures must be repeated each time a classroom has an elevated CO₂ reading.

Required Plans and Annual Reports

By June 1, 2023, each county school board must develop a policy and implementation plan that describes how inspections and remediation of classrooms with elevated CO₂ readings will occur. The plan must include who is responsible for school-level HVAC systems. Each county board must submit its written plan to MDE within one year of its adoption.

By November 1 each year, each public school must report specified information about CO₂ readings and related measures for each classroom in the school to the county board. By December 15 each year, each county board must (1) compile the information reported by each public school; (2) send the information to MDE and MSDE; (3) make the information available on the county board's website; and (4) send notification that includes specified information to the school community.

Current Law:

Air Quality Monitoring in Schools

Any new construction or a building that is remodeled must conform to all applicable State and county building, electrical, fire, and plumbing regulations and codes. Additionally, all new and substantially remodeled buildings must install an approved carbon monoxide detectors in areas of new and existing education occupancies where fuel fired equipment is present. There are no statewide requirements to conduct CO₂ monitoring or remediation in public schools.

Interagency Commission on School Construction and the Maintenance of Public Schools

The Interagency Commission on School Construction (IAC) is an independent commission within MSDE. Among other things, IAC is charged with establishing sufficiency standards or a uniform set of criteria and measures for evaluating the physical attributes and educational suitability of public elementary and secondary school facilities in the State. IAC's sufficiency standards address classroom air quality and require each general, science, and fine arts classroom to have an HVAC system that continually moves air and is capable of maintaining a CO₂ level of not more than 1,200 parts per million. Air quality must be measured at a work surface in the approximate center of the classroom.

IAC completed an initial statewide facilities assessment in Summer 2021. In accordance with current law, the assessment will be repeated on a four-year rotating basis in the future. IAC must also conduct periodic inspections of school buildings and report on their condition. Each local school system must develop and adopt preventative maintenance schedules for their public schools that are based on industry standards. The Workgroup on the Assessment and Funding of School Facilities published a [report](#) in January 2022 that recommended, among other things, that future IAC assessments include data on sufficiency standards in specified manners, including that local education agencies should report annually to IAC on any schools with deficiencies in the areas of temperature, humidity, CO₂, and acoustics, and the nature of those deficiencies.

Enforcement

The Secretary of the Environment is required to carry out and enforce the provisions of the Environment Article.

State Expenditures: Although the bill does not specifically assign enforcement of its provisions to MDE, this analysis assumes that MDE must enforce the bill's provisions consistent with the Secretary of the Environment's statutory responsibility. Therefore, general fund expenditures increase by \$692,582 in fiscal 2023, which accounts for a 90-day start-up delay from the bill's July 1, 2022 effective date. This estimate reflects the cost of hiring five employees (one division chief, one administrative specialist, and three natural resources planners) to (1) assist with/oversee development of the training program and regulations; (2) track CO₂ monitoring and remediation efforts in schools throughout the State; (3) conduct trainings; and (4) generally implement the Safe School Indoor Air Program. It includes salaries, fringe benefits, one-time start-up costs (including the cost of purchasing vehicles and contractual costs to develop the required training and regulations), and ongoing operating expenses, including ongoing contractual costs to maintain and update the training materials as necessary. The information and assumptions used in calculating the estimate are stated below:

- there are thousands of affected classrooms in the State, and implementing a robust monitoring and remediation program requires permanent, dedicated staff; and
- based on experience with developing and conducting other new regulatory and training programs, MDE needs contractual assistance.

Positions	5.0
Salaries and Fringe Benefits	\$256,790
Contractual Costs	300,000
Purchase of Three Vehicles	93,114
Other Operating Expenses	<u>42,678</u>
Total FY 2023 State Expenditures	\$692,582

Future year expenditures reflect full salaries with annual increases and employee turnover as well as annual increases in ongoing operating expenses.

MSDE School Facilities Branch can consult with MDE to develop regulations, provide contacts with the local school systems, and identify a location to store information received with existing budgeted staff and resources.

Local Expenditures: Costs for local school systems increase, potentially significantly for some local school systems, likely beginning as early as fiscal 2023 (since the final policy and implementation plans are required to be finalized by June 1, 2023) for local school

systems to develop the required policy and implementation plans, for staff to attend mandatory training, to conduct the required CO₂ monitoring, and for any necessary remediation. Actual costs depend on the number of affected classrooms and the extent that additional monitoring and remediation is necessary, and thus, cannot be reliably estimated at this time.

For example, Baltimore City Public Schools advises that it has approximately 5,574 classrooms that are currently in use, and that the school system needs to hire a contractual support team and three employees to be the designated in-house school personnel. Overall, Baltimore City estimates that implementation costs range from \$3.9 million in fiscal 2023 to \$4.3 million by fiscal 2027, primarily for staff, training, equipment, and laboratory testing.

St. Mary's Public Schools advises that it has 1,091 classrooms, and that the school system needs to hire three employees, with annual costs ranging from \$324,696 in fiscal 2023 to \$344,588 by fiscal 2027.

Anne Arundel County Public Schools did not have a specific estimate but anticipates that costs increase significantly and notes that the school system has 14 million square feet of infrastructure.

As mentioned earlier, remediation costs depend on the results of monitoring and cannot be reliably estimated. Regardless, it is assumed that remediation costs increase, potentially significantly, particularly if schools need to reduce classroom density by spreading out the number of students in an affected classroom. This could potentially result in needing to expand schools and/or hire additional staff.

Small Business Effect: The bill may result in a meaningful increase in business opportunities for any small businesses that provide CO₂ inspection and remediation services in the State, as local school systems throughout the State will need these services to comply with the bill.

Additional Information

Prior Introductions: None.

Designated Cross File: None.

Information Source(s): Maryland State Department of Education; Maryland Department of the Environment; Baltimore City Public Schools; Anne Arundel County Public Schools; St. Mary's County Public Schools; Interagency Commission on Public School Construction; Workgroup on the Assessment and Funding of School Facilities; Department of Legislative Services

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