

JARED SOLOMON
Legislative District 18
Montgomery County

Appropriations Committee
Subcommittees

Education and Economic Development
Oversight Committee on Personnel



The Maryland House of Delegates
6 Bladen Street, Room 222
Annapolis, Maryland 21401
301-858-3130 · 410-841-3130
800-492-7122 Ext. 3130
Fax 301-858-3233 · 410-841-3233
Jared.Solomon@house.state.md.us

THE MARYLAND HOUSE OF DELEGATES
ANNAPOLIS, MARYLAND 21401

Sponsor Testimony on HB 686 – The Safe School Indoor Act

February 25, 2022, Environment & Transportation Committee

Chair Barve, Vice Chair Stein, Esteemed Colleagues,

Thank you for the opportunity to present today on my legislation HB 686, The Safe School Indoor Act.

The COVID-19 pandemic has highlighted Maryland’s need for open, safe, and healthy schools, which require safe air. COVID-19 is an airborne disease that transmits between people like cigarette smoke. The best way to minimize the potential long-range transmission of airborne diseases (including influenza, respiratory syncytial virus (RSV), measles, and SARS-CoV-2) in enclosed spaces like classrooms is to increase *ventilation* and *filtration*.

Increased ventilation decreases the air concentrations of chemicals associated with building materials, cleaning agents, and the students themselves. Better ventilation not only alleviates airborne transmission of disease, but helps improve cognitive function and test scores, decreases asthma symptoms, and results in fewer missed school days due to illness for students and staff. Unfortunately, even before the pandemic, many Maryland classrooms were under ventilated.

What Does This Bill Do?

This legislation does three important things:

1. It codifies the indoor air standards, best practices, and educational sufficiency standards already recommended by the Maryland State Department of Education (MSDE) and the Interagency Commission on School Construction (IAC).
2. The bill establishes a process for regularly testing and identifying under ventilated classrooms, and annually reporting the results – similar to the longstanding system in place for lead in school drinking water.
3. Finally, the bill lays out a reasonable process to fix ventilation in problematic classrooms.

Quickly Identify Under Ventilated Classrooms

The IAC Public School Facilities Educational Sufficiency Standards and the MSDE School and Childcare COVID-19 Guidance all state that classrooms should be ventilated so that carbon dioxide concentration does not exceed 1200 ppm. In addition, modeling classrooms demonstrates that under nearly all conditions a classroom that exceeds 2000 ppm is not meeting

industry standard ventilation requirements.

Measurement of carbon dioxide concentration is a consistent and universally applicable method to all the HVAC systems we find in our school buildings and classrooms. Because of its high concentration compared to other chemicals and emissions from people, carbon dioxide is a good proxy of emissions (including potential airborne diseases) from humans and air quality.

Carbon dioxide can be used to determine the fraction of your breath that has been in other people's lungs. The percentage of inhaled air that is unfiltered, or unsanitized rebreathed air, is directly related to risk of airborne infection. For a classroom with a constant number of students (at a consistent activity level and carbon dioxide emission level), increased ventilation with outdoor air results in lower carbon dioxide concentration in the classroom and less airborne disease transmission risk. Therefore, carbon dioxide concentration in the classroom can be monitored to get a relative estimate of airborne infection risk in each classroom.

It is important that carbon dioxide monitoring occurs in a robust manner. Just like cigarette smoke, carbon dioxide will build up in a classroom over time. In addition, building operation and weather will both influence the amount the concentration increases. Hence, best practice is to monitor the carbon dioxide concentration in the fully occupied classroom for a full day or at least after the room has been consistently occupied for three plus hours. Consistent with scientific best practices, HB 686 requires that classrooms should be tested twice a year, once during the heating and once during the cooling seasons to address varying HVAC operation and weather factors. **This bill sets out a best practice system of testing and reporting for school systems to follow to ensure that we know our classrooms are safe – similar to what is already state law for monitoring and addressing lead in school drinking water.**

Fix Ventilation in Problematic Classrooms

After identifying the classrooms with problematic ventilation, the bill lays out a process to remediate and repair the problems:

- Classrooms exceeding 2000 ppm must be prioritized for action to temporarily address the underventilation issue within three months of the test. Faulty dampers, fans, or sensors should be immediately replaced. Schools where all classrooms exceed these values should be targeted for increased HVAC repair or replacement funding. Carbon dioxide measurement should be repeated in these classrooms after the issue has been addressed to verify that ventilation meets current standards.
- Classrooms with carbon dioxide concentration between 1200 ppm and 2000 ppm indicate that ventilation is not ideal. Mechanical ventilation systems for these classrooms should be inspected. If no issues are found, supplemental mechanical filtration should be in place to help remove airborne viruses. Supplemental mechanical filtration includes portable air filtration units in each classroom and/or improved filtration in recirculating HVAC units.
- While temporary measures must be put in place within three months of a test result, this bill also requires school systems within one year to develop and implement a plan for a permanent solution to fix more substantial and systemic HVAC and air circulation issues.

Annually report monitoring of ventilation in schools

Building trust within a school community, particularly during these difficult times, among students, staff, and parents is critical. **As part of building trust, this legislation would require test data to be shared publicly and posted online, like the existing Maryland requirement to report lead concentration in school drinking water.** Already done by the District of Columbia Public Schools and Howard Count Public Schools, this bill codifies best practices to keep our children and educators safe and healthy.

Funding Concerns

I know that additional financial burdens on local schools are always a concern so included with this testimony is information that should alleviate many of those issues. Most local school systems in Maryland have already purchased the devices and systems to address the air quality improvements required in this bill. Since the beginning of the pandemic, local school systems received COVID relief funds through a number of programs, including the CARES Act, the Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act, and the American Recovery Plan Act (ARPA) to purchase portable air purifiers with filters, replacement filters, HVAC filters, portable AC units, HEPA filters, MERV-13 filters, and MA-112 filters. Based on data we received from the Department of Legislative Services and MSDE, through the CARES Act ESSER fund, the CRRSA ESSER II fund, the ARP ESSER III fund, and the ARP State and Local Fiscal Relief Fund, **14 local school systems allocated a total of \$35.2 million towards these activities.**

Some examples include:

Baltimore City:

- Baltimore City's re-opening plan included the following steps:ⁱ
 - 81 schools will receive MERV 13 upgrades
 - 67 schools will receive portable air purifiers (most of these schools have systems that service common and administrative spaces that will receive MERV 13 filter upgrades)

Carroll County:

- Total of 1,922 purifiers purchased in FY 2021 and FY 2022

Frederick County:

- Total of \$8,393,948 on HVAC improvements
- Total of \$2,173,184 on air purifiers; 2,500 purifiers and replacement filters

Harford County:

- Budgeted \$1 million for HVAC improvements
- Budgeted \$20,000 for air purifiers; 36 purifiers (~\$1,500)

Howard County

- Howard County announced the intention to purchase of 4,600 HEPA unitsⁱⁱ
- HCPSS also required HEPA filters in every school's isolation room and in all portable classrooms which did not have HVAC systemsⁱⁱⁱ

Montgomery County

- Montgomery County's school reopening plan also included replacing HVAC filters as part of this 5 step process:^{iv}
 - Assessed all existing systems and equipment, and categorized schools by risk mitigation approach,
 - Scheduled the replacement of all HVAC filters, upgrading them to the highest MERV efficiency possible for improved air filtration,
 - Increased the fresh air ventilation in buildings,
 - Purchased portable air cleaners for installation in identified classrooms, multi-occupant offices, health rooms, and areas that will be used as isolation rooms for those experiencing symptoms while at school, and
 - Modified HVAC system operations to include an extended run time that will allow the air in buildings to be "flushed" before and after the facility is occupied

Prince George's County:

- Plans to purchase ADIBOT-S Disinfection System to disinfect air and surfaces; \$765,000 expenditure; 51 units

Wicomico County:

- Budgeted \$40,837,500 (in ESSER 2 and ARP funds) to address air quality issues
- Purchased 24 air purifiers without HEPA filters

Additionally, the IAC received **\$40 million** in ARPA funding that was allocated through the Healthy School Facility Fund (HSFF) program in November 2021 specifically for HVAC improvement projects. Using these funds, HVAC systems were replaced in multiple school throughout Baltimore City, as well as Anne Arundel, Baltimore, Calvert, Carroll, Charles, Dorchester, Garrett, Howard, Queen Anne's, and Wicomico counties. This money was on top of the annual allocation.

There is another \$90 million allocated in the Fiscal Year 2023 budget for the HSSF that could be used by primary and secondary schools to improve the health of school facilities, including to purchase portable air filters, fans, as well as HVAC replacement and repair.

While there may some additional costs for personnel and the initial small cost of purchasing carbon monitors, the benefits to our students and educators are even greater. This bill establishes a process for identifying, reporting on, and fixing under-ventilated classrooms. The process will allow schools to effectively and efficiently identify classrooms with the greatest need in order to

prioritize actions to provide a clean and safe classroom environment for students, particularly in older, crowded schools in underserved communities. This testing and remediation requirement will be of particular benefit to low income children who might be more prone to asthma and other chronic respiratory issues.

I urge the Committee to provide a favorable report on HB 686.

ⁱ “In-Person Air Quality Plan,” Baltimore City Schools. <https://www.baltimorecityschools.org/in-person-air-plan>

ⁱⁱ “HCPSS to Acquire 4,600 HEPA Filters to Further Enhance Classroom Air Quality,” HCPSS News. <https://news.hcpss.org/news-posts/2021/09/hcpss-to-acquire-4600-hepa-filters-to-further-enhance-classroom-air-quality/>

ⁱⁱⁱ “Update on HCPSS Measures for Enhancing Air Quality in School Buildings, August 26, 2021,” HCPSS News. <https://news.hcpss.org/news-posts/2021/08/update-on-hcpss-measures-for-enhancing-air-quality-in-school-buildings/>

^{iv} “DFM Facilities and COVID-19 FAQ,” Montgomery County Public Schools. <https://www.montgomeryschoolsmd.org/departments/facilities/default.aspx?id=674569>