



Testimony of

Louis Rosado Burch
Coalition for Healthy Air in Schools

Before the
Finance, Revenue, and Bonding Committee

Re:

HB 5476 An Act Concerning the Provision of Partial Fee Reductions by Municipal Stormwater Authorities and the Inclusion of Heating, Ventilating and Air Conditioning Systems In School Building Project Grant Payments

March 21, 2022

Senator Fonfara, Representative Scanlon, honorable Vice-Chairs, Ranking Members, and distinguished rank-and-file members of the Finance, Revenue, and Bonding Committee. My name is Louis Rosado Burch, Legislative Coordinator for the Connecticut Education Association (CEA), and I thank you for the opportunity to submit testimony on this important matter.

I am testifying today on behalf of the **Coalition for Healthy Air in Schools**, which is comprised of parents, educators, labor unions, building trade workers, contractors, public employees, environmental advocacy groups, and healthcare workers. We stand in support of HB 5476, as we recognize the need to provide funding for heating, ventilation, and air conditioning (HVAC) systems in the school building construction program aimed at modernizing school buildings, aligning the state's school building construction policy with industry safety standards, and to provide for the safety and security of students and teachers alike. With that said, **we urge the committee to amend this legislation to ensure that temperature and humidity standards are established, and that HVAC work is undertaken by trained, certified technicians.**

When the coronavirus reached us in March of 2020, it became apparent that our failure to invest in maintaining and improving ventilation systems in our public buildings would have drastic consequences. Our desire to safely reopen our schools was significantly compromised by our inability to guarantee the necessary air filtration and minimum amount of ventilation for acceptable indoor air quality per ASHRAE Standard 62.1.

We know that indoor air quality can have adverse impacts on student's health and that indoor air temperatures can have a profound impact on their ability to learn. In Connecticut, **68%** of schools have reported indoor air quality issues.¹ This contributes to higher rates of respiratory health impacts and school absenteeism among Connecticut students, when compared to the national average. In fact, in a recent study by the Asthma and Allergy Foundation of America (AAFA), Hartford, CT ranked as the 7th worst city in the nation with respect to asthma and allergy sufferers, while New Haven, CT ranks as the 9th worst in the nation.² The prevalence of asthma in children in Connecticut is above the national rate, and this affects roughly 3 out of 20 of Connecticut's school-age children.³ Further, when a classroom is too hot, it can create "heat stress" for students and teachers, which can have adverse impacts on student achievement and exacerbate existing health concerns.⁴

Our coalition members rejoiced when they learned Governor Lamont's budget adjustments included \$90 million for improving indoor air quality. This funding is an important first step, but there is still much work to be done to adequately address the spectrum of indoor air quality issues plaguing our schools. **Legislative action is needed in order to:**

1. Set minimum indoor air quality, temperature, and humidity standards,
2. Establish monitoring and reporting requirements,
3. Guarantee HVAC work is undertaken by trained, certified technicians, and
4. Ensure a sustained long-term funding mechanism to fund necessary HVAC system installations, repairs, and upgrades moving forward.

Our coalition appreciates the time and attention committee members have already committed to this important issue in recent years. We wish to highlight that the Committee on Labor and Public Employees has also introduced a bill (SB 423) to address IAQ issues and establish health-protective standards, and the Finance Committee has also introduced measures to fund important HVAC system upgrades using school construction bond monies. **Given the commitment of so many legislators to address this issue, we ask members of this committee to support these efforts by creating a sustainable funding stream to support school HVAC repairs over time.**

In order to consistently maintain air quality standards required under ASHRAE standard 62, periodic HVAC system assessments are needed at least once every three years, if not more frequently. These assessments should be conducted by HVAC technicians certified by a body accredited by the American National Standards Institute (ANSI). To accomplish this in a sustained and meaningful way, a dedicated funding stream will be needed to support necessary HVAC repairs and replacement. Clear protocols are needed to provide oversight and ensure that school HVAC repairs are being performed by qualified licensed HVAC contractors and certified technicians. Additionally, we need specific standards to establish what acceptable indoor air quality and indoor air temperatures are for our children. Benchmarks are needed to evaluate the performance of HVAC systems so that old systems can be replaced as needed. This effort must not simply be about repairing aging, outdated HVAC systems. School districts must be equipped with the resources and standards needed to replace those systems where appropriate, using state of the art, high-efficiency HVAC and air filtration systems.

CEA recognizes the need to provide adequate funding for the continual improvement of school and classroom infrastructure, as well as the need to address health emergencies as they emerge. To this end, we feel strongly that addressing indoor air quality in our schools is a critical component for promoting safe, healthy learning environments for all. The undersigned organizations therefore support HB 5476 and commend committee members for including HVAC in the school construction bonding program. This is a wise and timely proposal that will enable schools to install, repair, and

update HVAC systems as they do roofs. Afterall, the air our children breath is as important as having a roof over their heads.

However, to truly address the problem of indoor air in our schools, we urge committee members to accompany this program expansion with temperature and humidity standards, and assurances that HVAC work is undertaken by trained, certified technicians. To this end, we have attached for your consideration a draft of legislation developed by our coalition to include these key pieces as well as other important reporting and oversight considerations.

Thank you in advance for your attention and your support for this important issue. We look forward to working with the committee to advance this legislation moving forward.

Respectfully Submitted.

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Connecticut Education Association

Jan Hochadel, President
American Federation of Teachers

Ed Hawthorne, President
CT AFL-CIO

Michael Thomas Mauro, Sr., President
Air Balancing Service Co.

Kimberly Glassman, Director
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Jody Barr, Executive Director
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Michael Rosario, Business Manager
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Anne Hulick, State Director
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Alex Rodriguez, Climate Advocate
Save the Sound

Sharon Lewis, Executive Director
Connecticut Coalition for Environmental Justice

Peter Millman, Coordinator
Eastern CT Green Action
People's Action for Clean Energy

**Coalition for Healthy Air in Schools Draft Bill Proposal:
An Act Improving Indoor-Air Quality in Public School Classrooms**

Section. 1. (Effective upon passage) **Section 31-367 of the general statutes is repealed and the following is substituted in lieu thereof:**

- (a) "Commissioner" means the Labor Commissioner or ~~his~~ [the commissioner's](#) designated agent;
- (b) "Commission" means the Occupational Safety and Health Review Commission established under this chapter;
- (c) "Person" means one or more individuals, partnerships, associations, corporations, limited liability companies, business trusts, legal representatives or any organized group of persons;
- (d) "Employer" means the state and any political subdivision thereof;
- (e) "Employee" means any person engaged in service to an employer in a business of his employer;
- (f) "Occupational safety and health standard" means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment in places of employment;
- (g) "Trade secret" means any confidential formula, pattern, device or compilation of information, known only to the employer and those employees in whom it is necessary to confide it, which is used in the employer's business and gives him an opportunity to obtain an advantage over competitors who do not know or use it.

[\(h\) "Local or regional boards of education" means local and regional boards of education as used in Title 10 of general statutes and shall also include regional educational service centers and state charter schools.](#)

[\(i\) "School facilities" means any permanent building or portable building or structure or commercial space owned, rented, operated, or leased by boards of education and charters, including donated space, used as a classroom or daycare or any other space for education services including, but not limited to, classrooms, cafeterias, staff lounges, staff offices, auditoriums, gymnasiums, or libraries.](#)

[\(j\) "HVAC system" means the equipment, distribution network and terminals that provide, either collectively or individually, heating, ventilation, or air conditioning to a building.](#)

[\(k\) "School activity hours" means any time of day in which students or school personnel occupy school facilities throughout the year.](#)

[\(l\) "ASHRAE Standard 62" means the most recent American National Standards Institute/ American Society of Heating, Refrigerating and Air-conditioning Engineers Standard 62.1 entitled "ventilation for acceptable indoor air quality."](#)

[\(m\) "Indoor-air quality" means the overall potential health factors within a school facility, including air quality, mold levels, and other potentially harmful toxins.](#)

[\(n\) "Routine indoor-air monitoring program" means testing procedures, testing protocols, and testing frequency to ensure that indoor-air quality and the maintenance and operation of HVAC systems are in accordance with Standard 62.](#)

[\(o\) "Public-school temperature range" means a temperature from 68°F to 76°F.](#)

[\(p\) "Public-school relative humidity range" means relative humidity levels within 20 to 60 percent.](#)

(q) "Properly licensed HVAC contractor" means a contractor that is licensed in accordance with Title 20 - Chapter 393 of the Connecticut State Statutes.

(r) "Properly certified testing, adjusting, and balancing technician" means a technician certified to perform testing, adjusting, and balancing of HVAC systems by the Associated Air Balance Council (AABC), National Environmental Balancing Bureau (NEBB), or the Testing, Adjusting and Balancing Bureau (TAB), or individuals trained under the supervision of a TAB certified technician, or a person certified to perform ventilation assessments of heating, ventilation and air conditioning system through a certification body accredited by the American National Standards Institute."

(s) "Skilled and trained construction workforce" means a workforce, managed in conformance with the Davis-Bacon Act of 1931 (Public Law 107-217, 40 U.S.C. § 3145 et seq.), in which at least 60% of the workers are graduates of or registered in and attending an apprenticeship program registered with the Connecticut Department of Labor Office of Apprenticeship Training.

Section 2. (NEW) (Effective July 1, 2022) *Temperature and Relative Humidity Standards and Air Quality Monitoring in Public Schools.*

(a) On or before August 15, 2022, the Department of Labor shall, in accordance with the definitions in Section 1 (a)(12) and Section 1 (a)(13), establish: (1) a mandatory public-school temperature range of sixty-eight degrees to seventy-six degrees Fahrenheit and (2) a mandatory public-school relative humidity range of twenty to sixty percent. The temperature and relative humidity readings for public-school facilities must be taken in a location or locations that are illustrative of the highest and lowest temperature and relative humidity in the school facility during school activity hours.

(b) (1) On or before June 30, 2023, the Commissioner of the Department of Labor, in consultation with the Commissioner of the Department of Education and the Secretary of the Office of Policy and Management, or their designees, shall establish a routine school indoor-air quality assessment and ventilation monitoring program that is consistent with the minimum requirements of ASHRAE Standard 62 and the provisions of this section, for use by local and regional boards of education and post the requirements of such program on its website.

(2) The routine indoor-air quality assessment and ventilation monitoring program established in subparagraph (1) of this subsection shall require any ventilation assessment be performed by a certified Testing, Adjusting, and Balancing (TAB) technician or a mechanical engineer. The ventilation assessment shall verify whether the existing mechanical ventilation system is operating in accordance with design parameters, meets the requirements of the Department of Labor, and follows the recommendations of the American Society of Heating, Refrigerating and Air-Conditioning Engineers for ventilation needs during the 2020 coronavirus disease pandemic. The ventilation assessment for a heating, ventilation and air conditioning system shall include:

- (A) Testing for maximum filter efficiency;
- (B) Physical measurements of outside air rate;
- (C) Verification of operation of ventilation components;
- (D) Measurement of all air distribution inlets and outlets;
- (E) Verification of unit operation and that required maintenance has been in accordance with ASHRAE Standard 62.1 - 2019 Section 8 and Table 8 - 1 performed;
- (F) Verification of control sequences;
- (G) Verification of carbon dioxide sensors;
- (H) Collection of field data for the installation of mechanical ventilation if none exist.

(3) The indoor air quality and ventilation assessment shall result in a written report reviewed by a mechanical engineer and shall include appropriate corrective actions needed for the mechanical ventilation system or the heating, ventilation and air conditioning infrastructure, including

installation of appropriate filters, installation of carbon dioxide sensors and additional maintenance, repairs, upgrades or replacement.

(4) On or before July 1, 2024, and every three years thereafter, each local and regional board of education shall conduct an indoor-air quality and ventilation assessment in a manner consistent with the Department of Labor's routine school indoor-air quality assessment and ventilation monitoring program established in this section. The written assessment report shall be made available for public inspection, posted on the local or regional board of education's website, and submitted to the Department of Labor.

(5) The department of labor shall require all local and regional boards of education to make the appropriate corrective actions identified in the ventilation assessment report. The corrective actions shall include testing, adjusting and balancing the public school mechanical ventilation system and, if necessary or cost effective, repairs, upgrades or replacement of the existing heating, ventilation and air conditioning system or the installation of a stand-alone mechanical ventilation system. The corrective actions identified in the ventilation assessment may include general maintenance, reading and adjustment of ventilation rates, filter replacement to meet a minimum efficiency reporting value of at least 13 if equipment allows while assuring the pressure drop is less than the fan's capability, carbon dioxide monitor installation or whole system installation or replacement. Portable filtration and air cleaners shall be used only if the existing heating, ventilation and air conditioning infrastructure cannot meet minimum filtration and ventilation requirements or, as recommended by a mechanical engineer, as a supplemental enhancement to the permanent heating, ventilation and air conditioning infrastructure when the desired indoor air quality cannot be maintained with the mechanical ventilation system or there are concerns with outdoor air contaminants such as those created by wildfires and pollution.

(e) Any remediation, additions or alterations to an HVAC system shall be performed by a properly licensed HVAC contractor employing a skilled and trained construction workforce consisting of, journey person(s), and registered apprentice(s) pursuant to Title 31 of the general statutes in accordance with Title 20 - Chapter 393 of the Connecticut General Statutes.

(f) All testing and certifications of an HVAC system shall be performed by a properly certified testing, adjusting, and balancing technician.

(g) The Commissioner of the Department of Labor, in consultation with the Commissioner of the Department of Education and the Secretary of the Office of Policy and Management, or their designees, shall approve the routine indoor-air monitoring program at least every three years to ensure the efficacy of the routine indoor-air monitoring program, And shall review the program in the event of a public health emergency or other event potentially impacting indoor air quality in schools across the state.

(h) Local and regional boards of education shall be responsible for the ongoing maintenance of HVAC systems in a manner enabling such systems to continually maintain indoor-air quality, temperature, and humidity ranges in school facilities during school activity hours in accordance with standards adopted by the Department of Labor pursuant to this act. Each local and regional boards of education shall participate in the U.S. Environmental Protection Agency's Air Quality Flag Program for Schools.

(i) Each local and regional boards of education shall close a school for the day if the mandated public-school temperature range cannot be maintained by the school for two or more consecutive school activity hours. Any school closure required pursuant to this subsection shall not result in a diminishment of pay for any Board of Education employees or any employee contracted to work for such Board of Education who was scheduled to work on such day or days.

(j) On or before June 30, 2026, and each year thereafter, each local and regional boards of education shall have in place, a heating, ventilation, and air conditioning system capable of being in full compliance with the temperature, humidity, and routine indoor-air monitoring program standards established pursuant to this act, and shall operate and maintain such system in accordance with such standards.

Sec. 3 (Effective upon passage) *Extending the State School Construction Bonding Program to Include HVAC.*

Subsection (b) of Section 10-283 of the general statutes is repealed and the following substituted thereof:

(b) (1) Notwithstanding the application date requirements of this section, at any time within the limit of available grant authorization and within the limit of appropriated funds, the Commissioner of Administrative Services, in consultation with the Commissioner of Education, may approve applications for grants and make payments for such grants, for any of the following reasons: (A) To assist school building projects to remedy damage from fire and catastrophe, (B) to correct safety, health and other code violations, (C) to replace roofs, including the replacement or installation of skylights as part of the roof replacement project, (D) to remedy a certified school indoor air quality emergency, (E) to install insulation for exterior walls and attics, (F) to purchase and install a limited use and limited access elevator, windows, photovoltaic panels, wind generation systems, building management systems, a public school administrative or service facility or portable classroom buildings, provided portable classroom building projects shall not create a new facility or cause an existing facility to be modified so that the portable buildings comprise a substantial percentage of the total facility area, as determined by the commissioner, ~~(G)~~ (G) for school security projects, including, but not limited to, making improvements to existing school security infrastructure or installing new school security infrastructure, or for the installation, remediation, or replacement of HVAC systems necessary to continually maintain indoor-air quality, temperature, and humidity ranges in school facilities during school activity hours in accordance with standards adopted by the Department of Labor pursuant to Section 2 of this act.

Sec. 4 (NEW) (Effective upon passage) *Safe Harbor for Boards of Education with HVAC Improvements in Process*

(a) Any local or regional board of education, regional educational service center, or charter school, commencing a project to remediate, replace, or install an HVAC system shall be considered to be in compliance with the provisions of subsection (j) of section 2 of this act .

(b) Any local or regional board of education, or charter school, eligible for reimbursement for school construction projects pursuant to Chapter 173 of the general statutes that submits a completed application to remediate, replace, or install an HVAC system to continually maintain indoor-air quality, temperature, and humidity ranges in school facilities during school activity hours shall be considered to be in compliance with the provisions of subsection (j) of section 2 of this act.

Sec. 5 (NEW) (Effective July 1, 2022) *Procedures for Indoor Air Quality Complaints in Public Schools.*

(a) Each superintendent for a local or regional board of education, regional educational service center, or charter school shall:

(1) designate an individual within each local and regional board of education to be responsible for receiving complaints of mold, evidence of pest infestation, hazardous odors or chemicals, and poor indoor-air quality, and reporting such complaints to the superintendent;

(2) make available on the district's website the procedure for any party to file such a complaint with the designated individual;

(3) duly forward any such complaints, in writing, to each bargaining agent representative representing members who work or visit the affected building, including but not limited to teachers, paraeducators, nurses, custodians, administrative staff, and bus workers; and,

(4) report complaints in writing to their board of education at the earlier of the next regularly scheduled meeting or within 60 calendar days.

(b) Any indoor-air quality complaint filed under subsection (a) shall be investigated by local and regional boards of education, including documentation of any physical symptoms exhibited by students, staff, or visitors, including, but not limited to, urgent care referrals, blood tests, OSHA 301 form or incident report forms, or workers' compensation claims and the testing of any visible substance, such as mold, chemicals, pest droppings or infestations, or other such substance for the presence of a health hazard. Upon confirmation of the presence of a health hazard, the local or regional board of education shall notify the Connecticut Department of Labor's Occupational Safety and Health Administration office of such hazard, and the local or regional board of education shall create and implement a plan for remedying such hazard.

(c) No employer that is a local or regional board of education, regional educational service center, or state charter schools shall retaliate, discipline, or terminate against any employee for filing a complaint or reporting conditions regarding indoor air quality under this act.

(d) Any employee of local and regional boards of education, regional educational service centers, and state charter schools who believes that such employee has experienced discipline, discrimination, retaliation, or termination by their employer for filing a complaint or reporting conditions regarding indoor air quality under this act may submit a complaint alleging such violation in accordance with Section 31-379 of the general statutes.

Sec. 6 (Effective upon passage) *Extending the State School Construction Bonding Program for Schools Within the State Technical Education and Career System to Include HVAC.*

Subsection (a) of Section 10-283b of the general statutes is repealed and the following substituted thereof:

Sec. 10-283b. School building projects for the Technical Education and Career System. (a) On and after July 1, 2011, the Commissioner of Administrative Services shall include school building projects for the Technical Education and Career System on the list developed pursuant to section 10-283. The adoption of the list by the General Assembly and authorization by the State Bond Commission of the issuance of bonds pursuant to section 10-287d shall fund the full cost of the projects. On or after July 1, 2011, the Commissioner of Administrative Services, in consultation with the Commissioner of Education, may approve applications for grants to assist school building projects for the Technical Education and Career System to remedy damage from fire and catastrophe, to correct safety, health and other code violations, to replace roofs, to remedy a certified school indoor air quality emergency, [for the installation, remediation, or replacement of HVAC systems necessary to continually maintain indoor-air quality, temperature, and humidity ranges in school facilities during school activity hours in accordance with standards adopted by the Department of Labor pursuant to Section 2 of this act,](#) or to purchase and install portable classroom buildings at any time within the limit of available grant authorization and to make payments on such a project within the limit of appropriated funds, provided portable classroom building projects do not create a new facility or cause an existing facility to be modified so that the portable buildings comprise a substantial percentage of the total facility area, as determined by the Commissioner of Administrative Services. Such projects shall be subject to the requirements of chapters 59 and 60.