Clean Indoor Air Toronto

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Board of Trustees
Toronto District School Board
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April 22, 2025

To The Governance and Policy Committee, and the Trustees of the Toronto District School Board (TDSB);

This letter is being submitted on behalf of *Clean Indoor Air Toronto* (CIATO), a group of concerned Toronto residents dedicated to improving indoor air quality (IAQ) in our shared public spaces, including schools. Many of us are parents of children attending TDSB schools and know first-hand the impact IAQ can have on students, their teachers, our families and the broader community.

The TDSB's current IAQ policy is essentially a complaint process from 2016, wholly inadequate to address the challenges now facing our schools. We are aware of the more recent actions taken by the TDSB to improve IAQ, including the release of ventilation reports, however, these initiatives lack the specifics—and the teeth—needed to not only meaningfully improve IAQ, but also maintain it at a level high enough to keep students and staff safe and healthy. Because of that, we are urging the TDSB to implement a new evidence-based IAQ policy that provides an actionable framework for improving the air quality across all TDSB buildings.

IAQ affects our bodies, minds, and even test scores. Various studies have connected it to improved productivity and academic performance, including this study[i] that found that air filtration in classrooms improved test scores to the same degree as reducing class size by a third, and this more recent one[ii] that found a "…statistically significant evidence of associations between lower CO_2 concentrations and higher cognitive test scores over the low range of CO_2 exposures in these classrooms." A proper IAQ policy would support students in reaching their academic potential and help position the TDSB as a true leader in optimizing learning.

This policy would reduce the presence of allergens and air pollutants[iii], which can negatively impact students' health and academic performance[iv]. And perhaps most critically, it would reduce staff and students' exposure to the airborne pathogens that cause measles, pertussis, RSV, COVID-19, influenzas, and many other illnesses. Some of these diseases cause not just acute sickness but can also lead to serious, even life-long health conditions. For example, each infection from COVID, now a common illness people regularly catch, risks triggering "more than 50 long-term effects[v] including to the brain and can leave the immune system vulnerable to other infections[vi], which of course are easier to catch in spaces with poor IAQ.

By decreasing the spread of illness, a new IAQ policy would help reduce employee absences[vii] and students' sick days[viii]. In addition to shrinking staffing costs, this reduction would help prevent employee burnout and turnover, resulting in a more stable and lower-stress environment for staff and students.

We are just scratching the surface of IAQ's many impacts, impacts that have long been underappreciated and ignored. However, the last few years have seen a growing push for improving IAQ. The Boston Public School system offers an IAQ dashboard[ix] for families to follow; the California Department of Public Health is adopting new air quality-related standards[x] for that state's public schools, and closer to home, the Waterloo Region District School Board[xi] has passed its own indoor air quality policy.

CIATO is asking for the TDSB to join this community of leaders in ensuring students and staff breathe clean air by developing and implementing a board-wide IAQ policy that covers the following:

(i) A minimum ventilation rate of 10 litres per second (lps) per person, preferably 14 lps/person, targeting an equivalent clean air delivery rate (CADR) of 20 lps/person per person (wherein equivalent CADR may be a combination of clean air supplied by ventilation and air filtration), based on the latest recommendations by ASHRAE and the Ontario Society of Professional Engineers (OSPE) for control of infectious aerosols and fine particulates (PM2.5), including a maximum CO_2 level of 1000 ppm or 600 ppm above ambient level, wherein action must be taken if CO_2 rises above this level;

(ii) MERV-13 filters installed in all air handling units;

(iii) A policy regarding portable air purifiers:

- In combination with ventilation, the selected air purifier is to contribute clean air delivery with the goal of meeting the target of 20 lps/person equivalent CADR;
- The selected air purifier is sized appropriately for the classroom or ventilation zone based on its clean air delivery rate (CADR);[xii, xiii]
- Placement of at least one air purifier in each room/zone; larger spaces, including spaces with ceilings higher than 8 feet (245 cm), may require more than one air purifier;
- The air purifier(s) must be turned on when the room/zone is occupied and kept at the highest setting possible that noise level permits (wherein 48-55 dB is the highest tolerable background noise level);[xiv, XV]
- Guidelines on appropriate placement of the air purifier within the room/zone to maximize air filtration; and
- When the building is in use, e.g., during the school day, the air purifier should be turned to the highest setting while the room/zone is not occupied.

(iv) Monitoring of CO_2 and PM2.5 levels in each classroom/zone, with public real-time reporting of this data.

(v) Training/education for all staff on actions that need to be taken to improve IAQ when CO_2 rises above 1000 ppm or 600 ppm above ambient level, including the policies laid out in items (i) to (iv), governing management of the building's ventilation system, and how the portable air purifiers and IAQ sensors for measuring CO_2 and PM2.5 are used.

(vi) General IAQ education for staff, students and their families that includes an easy-to-follow action plan for immediately addressing poor IAQ with available tools.

The air quality inside each TDSB building impacts every person who spends time inside those spaces, as well as those individuals' household members and community acquaintances. By implementing a well-designed indoor air policy, the lives of hundreds of thousands of Toronto residents can be improved.

This is especially true for lower-income communities, which tend to have more buildings with lower air quality, and which City of Toronto data[xvi] has shown are more vulnerable to airborne disease. Additionally, certain medical conditions such as asthma[xvii] — which hospitalizes more children than any other chronic illness[xviii] —can be aggravated by poor IAQ. In other words, IAQ is both an equity and an accessibility issue

and by addressing it, the TDSB will better position itself to meet its policies related to those topics as well as the board's Multi-Year Strategic Plan.

Taking action to clean the air in schools also directly aligns with the goals of the TDSB 2024-2025 Climate Action Plan, in terms of emissions reduction and energy efficiency while improving ventilation and air filtration. HVAC upgrades, including replacement of gas furnaces with heat pumps, and upgrading air handling units would provide increased ventilation, allow for MERV-13 filters, and provide air cooling. The IAQ policy can be used to manage ventilation and filtration in an energy efficient manner, while protecting students and staff from climate change and pandemics.

We are interested in working with the Environmental and Sustainability Community Advisory Committee to develop an IAQ policy that will help the TDSB reach its goals laid out in the 2024-2025 Climate Action Plan, and accelerate the changes needed to improve air quality in schools.

We recognize that the TDSB has many demands on its limited resources. By creating the requested policy, the TDSB will be able to better meet those demands while more efficiently using its resources, resulting in a safer, more productive, and healthier environment for students and staff.

If you have any questions about anything raised in this letter, please reach out.

Yours Sincerely,

On behalf of Clean Indoor Air Toronto (CIATO):

[19 Signatories]

CIATO & Ontario School Safety
[2 Signatories]

Safe Air Collective

Showing Up for Racial Justice – Toronto

Between April 16, 2025 and April 22, 2025, we collected the signatures of the following concerned community members:
[296 Signatories]

References

[i] Gilraine M. Air Filters, Pollution and Student Achievement | EdWorkingPapers. Edworkingpapers.com. Published March 31, 2020. Accessed April 12, 2025. https://edworkingpapers.com/ai20-188.

[ii] Dedesko S, Pendleton J, Young AS, Coull BA, Spengler JD, Allen JG. Associations Between Indoor Air Exposures and Cognitive Test Scores Among University Students in Classrooms with Increased Ventilation Rates for COVID-19 Risk Management. *Journal of Exposure Science & Environmental Epidemiology*. Published online April 9, 2025. doi:https://doi.org/10.1038/s41370-025-00770-6.

[iii] Indoor Air Quality and Indoor Air Pollution. Allergy & Asthma Network. November 22, 2024. Accessed April 12, 2025. https://allergyasthmanetwork.org/indoor-air-quality/.

[iv] The Importance of Asthma and Health Programs in Improving Academic Performance. Indoor Air Quality in Schools -United States Environmental Protective Agency. June 16, 2024. Accessed April 12, 2025. https://www.epa.gov/iaq-schools/importance-asthma-and-health-programs-improving-academic-performance.

[v] Lopez-Leon S, Wegman-Ostrosky T, Perelman C, et al. More than 50 Long-Term Effects of COVID-19: A systematic review and meta-analysis. *Scientific Reports*. 2021;11(1):16144. doi:https://doi.org/10.1038/s41598-021-95565-8.

[vi] Cai M, Xu E, Xie Y, Al-Aly Z. Rates of Infection with Other Pathogens after a Positive COVID-19 Test Versus a Negative Test in US Veterans (November, 2021, to December, 2023): a Retrospective Cohort Study. *The Lancet Infectious Diseases*. Published online April 2025. doi:https://doi.org/10.1016/s1473-3099(24)00831-4

[vii] Milton DK, Glencross PM, Walters MD. Risk of Sick Leave Associated with Outdoor Air Supply Rate, Humidification, and Occupant Complaints. *Indoor Air*. 2000;10(4):212-221. doi:https://doi.org/10.1034/j.1600-0668.2000.010004212.x

[viii] Fabby C. School Attendance: Time to clean the air? SecEd. March 4, 2024. Accessed April 12, 2025. https://www.sec-ed.co.uk/content/blogs/school-attendance-time-to-clean-the-air.

[ix] Indoor Air Quality Sensor Dashboard. Boston Public Schools. Accessed April 12, 2025. https://www.bostonpublicschools.org/students-families/respiratory-illness-protocols/air-quality/indoor-air-quality-sensor-dashboard.

[x] Bayer C. California Department of Public Health Adopts Healthy Buildings Recommendations for California classrooms. Harvard T.H. Chan School of Public Health. November 22, 2024. Accessed April 12, 2025. https://hsph.harvard.edu/environmental-health/news/california-department-of-public-health-adopts-healthy-buildings-recommendations-for-california-classrooms/.

[xi] Waterloo Region District School Board Notice and Agenda. Waterloo Region District School Board. October 21, 2024. Accessed April 12, 2025. https://www.wrdsb.ca/wp-content/uploads/2024-10-21-COW-Package.pdf.

[xii] Health Canada. Using a Portable Air Cleaner to Improve Indoor Air. Government of Canada. December 24, 2021. Accessed April 15, 2025. https://www.canada.ca/en/health-canada/services/air-quality/indoor-air-contaminants/choosing-portable-purifier.html

[xiii] Air Filtration Standards. Association of Home Appliance Manufacturers (AHAM) Verified, ahamverfide.org. Accessed April 15, 2025. https://ahamverifide.org/ahams-air-filtration-standards/#:~:text=Follow%20the%202%2F3%20Rule,CADR%20of%20at%20least%2080.

[xiV] Noise in Classrooms: Preventing the Effects on Health and Interference with Learning Appendix A. Elementary Teachers Federation of Ontario (ETFO). Published 2019. Accessed April 8, 2025. https://etfohealthandsafety.ca/site/wp-content/uploads/2019/06/Noise-Lobby-Booklet.pdf.

[xv] Woolworth D, Phinney P. Classroom Acoustics for Architects. Acoustical Society of America. Published 2015. Accessed April 8, 2025. https://acousticalsociety.org/wp-content/uploads/2022/01/Classroom_Acoustics_for_Architects_4_18_15.pdf.

[xvi] City of Toronto. Covid 19: Ethno-Racial Identity & Income. City of Toronto. February 8, 2023. Accessed April 12, 2025. https://www.toronto.ca/community-people/health-wellness-care/health-programs-advice/respiratory-viruses/covid-19/covid-19-pandemic-data/covid-19-archived-dashboards/covid-19-ethno-racial-identity-income/.

[xvii] Breysse PN, Diette GB, Matsui EC, Butz AM, Hansel NN, McCormack MC. Indoor Air Pollution and Asthma in Children. *Proceedings of the American Thoracic Society*. 2010;7(2):102-106. doi:https://doi.org/10.1513/pats.200908-083rm

[xviii] Asthma at School. Asthma Canada. Accessed April 12, 2025. https://asthma.ca/get-help/asthma-in-children/asthma-at-school/#:~:text=For%20Canadian%20children%2C%20asthma%20is,than%20any%20other%20chronic%20illness.