

Clean Indoor Air Toronto

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Toronto Board of Health
Toronto City Hall
100 Queen Street West
Toronto, ON M5H 2N2

July 12, 2026

To the Board of Health;

Re: HL34.4 Public Health Role in Indoor Air Quality

We are [Clean Indoor Air Toronto \(CIATO\)](#), a group of concerned residents who are dedicated to improving indoor air quality in our built environments. Many members of our group are parents/caregivers of children attending TDSB schools; other members have or care for other people with chronic health conditions that make them highly vulnerable to air pollution and infectious diseases.

We thank Chair Chris Moise and the members of the Board of Health for accepting our petition and directing Toronto Public Health to review current Indoor Air Quality (IAQ) information (HL30.10, February 23, 2026). We also thank Toronto Public Health and the Medical Officer of Health, Dr. Michelle Murti, for preparing the report on IAQ, and TPH's role with regards to this issue, and for the opportunity to participate in the consultation process.

We are pleased to see the report highlights the importance of indoor air quality as a determinant of health and includes a website dedicated to indoor air quality. However, in order to accomplish TPH's priorities to strengthen health protection and disease prevention and advance health equity, all Toronto residents must have access to safe indoor air. In order to achieve this, the following three updates to the report are needed:

- 1. IAQ guidance with measurable standards for air quality**

We ask that Toronto Public Health work with Municipal Licensing & Standards, City Planning, and relevant stakeholders to develop IAQ guidance that includes (at a minimum) ranges for "good", "acceptable" and "poor" categories of the following common IAQ parameters: CO₂ (carbon dioxide), relative humidity, temperature, CO (carbon monoxide), TVOCs, and particulates. IAQ standards that include easily measurable IAQ parameters are needed by the public and building operators to know when to act (e.g., maintaining indoor CO₂ under 800 ppm is a prudent operational target for many settings), but currently this information is scattered across multiple sources. Defined ranges for IAQ parameters and their categories provide a framework for IAQ monitoring, and would allow effective use of IAQ monitors to identify spaces with poor IAQ. We have gathered the relevant information so that it may be translated into a plain language summary.

- 2. Recommendation to the Province of Ontario to update the Ontario Building Code and enact a Clean Air Act**

The Ontario Building Code relies on ASHRAE Standard 62.1 & 62.2 for ventilation standards. However, these standards are not designed to adequately handle the challenges of fine particulate air pollution (e.g. from wildfires, fossil fuel combustion) or airborne pathogens.

In addition to updating the Ontario Building Code, a Clean Air Act is needed. There is currently no IAQ policy or law, at any level of government, that ensures equitable access to clean, safe-to-breathe indoor air that is held at a safe temperature.

We are encouraged by the acceleration of the timeline for the maximum temperature bylaw for the City of Toronto. However, per the [City of Toronto's IAQ Policy for Office Environments](#), temperature is a component of IAQ. By treating temperature as a separate issue but not ensuring ventilation and filtration are adequate, residents may end up sealing themselves indoors, potentially concentrating air pollution indoors. An IAQ policy for the city would include safe temperature ranges. A Clean Air Act at the provincial level would help to ensure that all components of this issue are fixed, not just one.

3. A clearly defined plan for public health communications regarding IAQ and airborne hazards

Given that IAQ concerns are new for many people, a clear plan is needed for public health communications regarding IAQ and airborne hazards. Such a plan should address air pollution and airborne pathogens, and rely more on traditional methods of communication, such as pop-up information booths and information made available at community centres and libraries. It should also include high-level strategies for effective communications to the school community, e.g., guidance to school boards on how to share public health information, classroom presentations, and information sessions for staff and parents/caregivers.

More details on the above issues are provided in the attached document.

As community partners and stakeholders, we stand ready to assist with future updates to this report as well as any related actions to advance improvements to indoor air quality. We welcome the opportunity to engage again with Toronto Public Health on this matter.

Please do not hesitate to contact us if you require any additional information.

Yours Sincerely,

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Medical & Public Health Advisor

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Community Outreach

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Encl.: Clean Indoor Air Toronto - Comments on "Public Health Role in Indoor Air Quality" Report.

Comments on “Public Health Role in Indoor Air Quality” Report

1. Need for IAQ guidance containing measurable standards for air quality

The Report states that “TPH will continue to review relevant provincial and federal guidance and incorporate applicable evidence into public health communications” (page 13), and Recommendation #1 states, “The Board of Health request the Medical Officer of Health continue to review emerging indoor air quality guidance and incorporate into local public health communication where appropriate”. This implies further review is needed, when in fact guidance regarding indoor air quality is already well established from decades of evidence and research.

Decades of research have already clearly established a multitude of negative impacts caused by poor IAQ; more than enough evidence already exists to warrant involvement on the part of Public Health. Published IAQ guidance already exists in the City of Toronto’s IAQ Policy, as well as Health Canada’s “Guidance for IAQ Professionals”, recommendations from the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) and Ontario Society of Professional Engineers (OSPE), in addition to published guidance by IAQ experts and other jurisdictions.

In accordance with TPH’s own stated 2024-2028 priorities and objectives to strengthen health protection and disease prevention, promote health, and advance health equity, we advocate for the Report to take a more proactive approach that is designed to protect the health of residents. In other words, apply the precautionary principle and err on the side of caution, i.e., disseminate existing evidence and guidance that supports universal access to clean indoor air. At present, the Report falls short of providing IAQ guidance containing measurable standards for air quality.

(a) The Report does not mention or summarize well established, published ranges for IAQ parameters that define acceptable IAQ. Health Canada, ASHRAE, OSPE, and the consensus of IAQ experts have published formal and technical briefs, but these are not easily accessible, understandable, or actionable for members of the public and policy makers. Communication from TPH is desperately needed to bridge this communication gap. Ranges for IAQ parameters are required for developing an IAQ policy and would provide a basis for policy makers to develop a regulatory framework. This information is also needed by the public and building operators to understand what constitutes “good”, “acceptable” and “poor” indoor air quality so they are empowered to protect their own health.

The Report should cite ranges for IAQ parameters that clearly define “good”, “acceptable”, and “poor IAQ”, drawn from the following documents:

- Guidance for IAQ Professionals. Health Canada, Government of Canada. Published September 19, 2025. <https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-indoor-air-quality-professionals.html>

“Epidemiological studies on CO₂ [carbon dioxide] concentrations and health effects showed that individuals exposed to CO₂ concentrations greater than 800 ppm were more likely to report mucous membrane or respiratory symptoms (for example, eye irritation, sore or dry throat, stuffy, congested or runny nose, sneezing, and coughing) than those exposed to lower CO₂ levels.”
 - Less than 800 ppm indoor CO₂ is deemed by OSPE as a prudent operational threshold and is considered indicative of “good IAQ” (<https://ospe.on.ca/advocacy/policy-win-health-canada-releases-new-iaq-guidance/>)
- ASHRAE Standard 62.1 Addendum ab (2023).
https://www.ashrae.org/file%20library/technical%20resources/standards%20and%20guidelines/standards%20addenda/62_1_2022_ab_20231031.pdf

- Indoor CO₂ concentration ~1000 ppm (600 ppm over ambient CO₂ concentration) is considered to be “acceptable” IAQ for most settings.
- ASHRAE Standard 44-2024, ASHRAE Design Guidance for Educational Facilities (2023):
 - Use MERV-13 filters for HVAC systems
- Table 1: Proposed parameter levels. Morawska L, Allen J, Bahnfleth W, et al. Mandating indoor air quality for public buildings. *Science*. 2024;383(6690):1418-1420. doi:10.1126/science.adl0677
 - Proposed IAQ parameter levels include (see attached Appendix 1):
 - 800 ppm indoor CO₂
 - Clean air supply rate of 14 Litres per second (Lps) per person
 - PM_{2.5} exposure level: 15 µg/m³ in 1 hour
- Appendix A, Appendix B. Indoor Air Quality (IAQ) Policy for Office Environments. City of Toronto. Reviewed & Revised by OHSCC April 26, 2016. Modified March 13, 2025.
<https://www.toronto.ca/city-government/accountability-operations-customer-service/city-administration/corporate-policies/people-equity-policies/indoor-air-quality-iaq-policy-for-office-environments/>
 - See attached Appendix 2 for list of IAQ parameters and ranges for each.
- Special Topics in Indoor Air Quality: Carbon Dioxide (2025). Ontario Society of Professional Engineers. <https://ospe.on.ca/wp-content/uploads/2025/06/Carbon-Dioxide-REPORT-Final.pdf>
 - “In outdoor air, CO₂ concentration is about 400 ppm, while indoors, 1,000 ppm is generally viewed as acceptable.”
 - “In settings such as schools and childcare facilities, rather than an absolute threshold, a differential of less than 600 ppm between indoor and outdoor carbon dioxide levels should be targeted.”
- WHO Global Air Quality Guidelines, 2021
 - Annual average concentrations of PM_{2.5} should not exceed 5 µg/m³; 24-hour average exposures should not exceed 15 µg/m³ more than 3 - 4 days per year

(b) Given that climate change-related events such as wildfire smoke are increasing in incidence and severity, a plan of action is needed to protect Torontonians beginning with IAQ guidance as outlined above.

A new Recommendation #5 can be added as follows:

5. The Board of Health request that the Medical Officer of Health work with Municipal Licensing & Standards, City Planning, and relevant stakeholders to develop IAQ guidance for residents and building operators.

2. Recommendation to the Province of Ontario to update the Ontario Building Code and enact a Clean Air Act

The current Ontario Building Code relies upon ASHRAE Standard 62.1 & 62.2 as the standard for ventilation in buildings. This standard is not adequate for the control of infectious aerosols or fine particulate air pollution. ASHRAE has published ASHRAE Standard 241, “Control of Infectious Aerosols” and Guideline 44-2024, “Protecting Building Occupants from Smoke During Wildfire and Prescribed Burn Events”. Neither of these ASHRAE documents, nor the recommendations therein, have been incorporated into the Ontario Building Guide, and have not been taken up by the Province of Ontario. In addition, the National Building Code of Canada will not be reviewed for updates until 2030.

Recommendation #4 can be amended to include:

4. The Board of Health request that the Province of Ontario take steps to improve indoor air quality by:

d. updating the Ontario Building Code to incorporate ASHRAE Standard 241 and ASHRAE Guideline 44-2024.

e. enacting a Clean Air Act to regulate indoor air quality and define standards for good, acceptable and poor indoor air quality.

3. A clearly defined plan for public health communications regarding IAQ and airborne hazards

The TPH report does not appear to contain a defined plan or strategy for public health communications regarding IAQ and airborne hazards.

During our deputations, we have highlighted a number of examples of where public health messaging has failed to reach target audiences.

- At present, TPH relies heavily on social media to push messages out to the general public, which are not accessible to all members of the public, particularly those with lower health literacy, barriers to accessing internet, etc. In addition, many people expect to receive public health information from health care providers, their child's school, and their employers.
- Known issues with communicating public health messages to the school community, with heavy reliance on information sent by email newsletter. Messages are not always delivered to the school community (students and their families, staff) in a timely manner or at all; messages have been unclear or confusing at times. Examples:
 - December 2024-January 2025: In response to CIATO's petition, TDSB Trustees requested and were given infographics to help reduce the spread of respiratory viruses. However, these infographics were not shared by most schools; only a few schools shared (at the request of CIATO members). The infographics were not shared with the general public: they were posted on the TPH website but not readily visible (i.e., they were placed behind a drop-down menu), and then removed shortly thereafter.
 - December 2025: Information sent to TDSB regarding influenza was not shared with the school community despite CIATO members noting that private schools had already shared this information with their communities. TDSB advised that the information would be shared in January after the winter break, 3 weeks after it was received from TPH. When TPH was alerted, there was no alternative messaging given to communities. Messaging was finally given out when students returned to school in January, after many had been infected with preventable illnesses over the break.
 - Attempts to connect the Elementary Teachers of Toronto (ETT, union with 11,000 members) with TPH to receive public health messaging was rejected by TPH staff. ETT was told to obtain the information from TDSB, despite TPH's knowledge that TDSB was not sharing information in a timely or complete manner.
- There appears to be a lack of messaging to the public regarding protections against airborne hazards, including steps that can be taken to improve IAQ, and airborne disease transmission.

The Report acknowledges the need for raising awareness and public education, but details of how this will be accomplished are needed. An effective public communications strategy can include:

- Using traditional forms of media to raise awareness: signage in public transit, community centres, libraries, etc.; radio/TV advertising; pop-up information booths at public events; information made available at community centres & libraries, and other public venues.
- A strategy for effective school communications that includes, for example:

- Guidance to school boards on how to share public health information: classroom presentations (e.g., webinar, in-person visit by public health nurses), newsletters, printed signage to be posted in classrooms and staff rooms.
- Information sessions for staff and parents/caregivers.
- Topics to cover:
 - Simple, practical methods to quickly improve indoor air quality with readily available tools such as portable IAQ monitors (see Appendix 3). CIATO has developed clear health communication materials that can be made available for use; other successful public health campaigns, e.g., the Durham County Department of Public Health and the California Department of Public Health, may be used as models.
 - Proper usage of well-fitted high-quality masks (N95 respirators, KN95/CAN95/KF94 masks), and their utility in protecting the wearer from inhaling air pollution and infectious pathogens, prevention of asthma and other lung disease exacerbations, and as a means to protect vulnerable members of the population such as infants and the elderly.
 - Air filtration and proper usage of portable air cleaners in homes and other settings.
 - Information to the public to advise that community centres and libraries as cleaner air spaces with air conditioning.

Appendix 1

Table 1: Proposed parameter levels. Morawska L, Allen J, Bahnfleth W, et al. Mandating indoor air quality for public buildings. *Science*. 2024;383(6690):1418-1420. doi:10.1126/science.adl0677

Table 1. Proposed parameter levels. Values may be adjusted to reflect local circumstances and priorities. (i) 24-hour level from (3). (ii) When 100% of air delivered to the space is outdoor air, assuming outdoor CO₂ concentration is 450 ppm; based on classroom scenario (see SM). (iii) Delta is the difference between the actual CO₂ concentration and the CO₂ concentration in the supply air. (iv) 8-hour averaging time, from (15). (v) Clean air supply rate in the breathing zone; see (12). At 25°C and 1 atm for CO 1 ppb = 1.15 µg/m³. Threshold is the concentration level of CO₂ that must not be exceeded.

	Level	Averaging time or setpoint
PM_{2.5}, µg/m³	15 ⁽ⁱ⁾	1-hour
CO₂, ppm	800 (absolute value) ⁽ⁱⁱ⁾	threshold
	350 (delta) ⁽ⁱⁱⁱ⁾	threshold
CO, mg/m³	100 ^(iv)	15 minutes ^(iv)
	35 ^(iv)	1 hour ^(iv)
	10 ^(iv)	8 hours ^(iv)
Ventilation (L/s/person)	14 ^(v)	When the space is occupied

Appendix 2

Appendices A and B of the City of Toronto's IAQ Policy for Office Environments contains ranges for IAQ parameters, that define what is considered acceptable IAQ. These ranges are based on compliance with ASHRAE Standard 62.1.

- Appendix A, B. Indoor Air Quality (IAQ) Policy for Office Environments. City of Toronto. Reviewed & Revised by OHSCC April 26, 2016. Modified March 13, 2025. <https://www.toronto.ca/city-government/accountability-operations-customer-service/city-administration/corporate-policies/people-equity-policies/indoor-air-quality-iaq-policy-for-office-environments/>

Appendix A

Heating, ventilating and air-conditioning (HVAC) system capabilities information to be requested prior to leasing third party office space or prior to relocating to a City-owned facility:

- What is total HVAC system capability in cubic feet per minute (cfm) or litres per second (L/sec) for space being considered for occupancy?
- What is HVAC system capability in cubic feet per minute (cfm) per floor or litres per second (L/sec) if more than one floor is to be occupied?
- What is area in square feet (ft²) or square meters (m²) of space being considered for occupancy?
- What is ceiling height in feet (ft) or meters (m) of space being considered for occupancy?
- Is HVAC system capable of providing the following temperature ranges?
- in winter: 20.5-25.5 °C (if 30% relative humidity) or 20-24 °C (if 60% relative humidity)
- in summer: 24.5-28 °C (if 30% relative humidity or 23-25.5 °C (if 60% relative humidity)
- Does HVAC system have central humidification capabilities?

Appendix B

Acceptable Indoor Air Quality Guidelines

Table outlines general indoor air quality parameters and recommended ranges as well as jurisdiction from which recommendation is derived

General Indoor air quality parameter	Recommended guideline	Jurisdiction
Carbon dioxide	<1000 ppm or <700 ppm above outdoor carbon dioxide concentration	ASHRAE, MOL
Temperature*	If 30% Relative Humidity	ASHRAE
	24.5-28°C (summer)	
	20.5-25.5°C (winter)	
% Relative Humidity	<60	ASHRAE

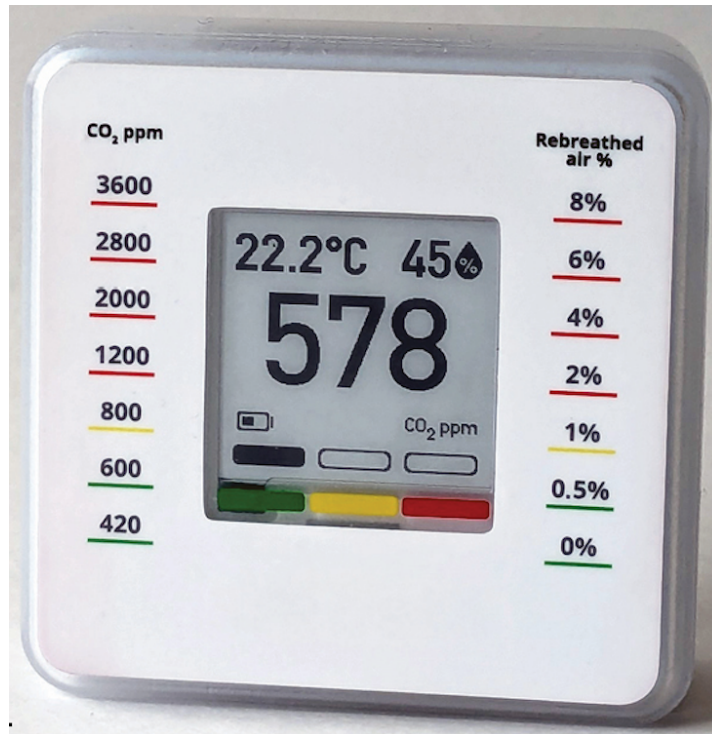
*Adopted from the Canadian Centre for Occupational Health and Safety (CCOHS) website

Specific Indoor air quality parameter	Recommended guideline	Jurisdiction
Carbon monoxide	<9 ppm	ASHRAE
Formaldehyde	<0.1 ppm	Health Canada
TVOC's	1 mg/m ³ (target level)	Health Canada
	5 mg/m ³ (action level)	
Particulates (**PM10)	150 µg/m ³ (averaged over 24 hours)	ASHRAE

**PM10 refers to particulate matter less than 10 microns

Appendix 3

Example of graphic that may be used for public communication of carbon dioxide (CO₂) as an indicator of ventilation. The image shows a sticker that is designed to be applied to a commercially available CO₂ monitor: the sticker shows a scale on each side of the display, and the percentage of rebreathed air according to CO₂ level. This provides rapid, accurate, and actionable information to users for assessing indoor air quality.





**Clean Indoor
Air Toronto**

Toronto Board of Health Meeting 34

HL34.4 Public Health Role in
Indoor Air Quality

July 13, 2026

Louise Hidinger, PhD

Currently no regulation of IAQ...

The ventilation standard, ASHRAE Standard 62.1/62.2, that the Ontario Building Code relies on was not designed to handle:

- Fine particulates (PM_{2.5})
 - Microbes including airborne diseases
- Buildings are built to the ventilation standard that existed at the time
 - Compliance is assumed but never verified
 - Many buildings don't meet the current standard

→ No legally enforceable standards that define clean & safe indoor air
→ No IAQ policies or legislation at any level of government



City of Toronto
has an IAQ policy
for its offices...



...but many buildings in
Toronto lack adequate
ventilation, air filtration,
and air conditioning!



City of Toronto IAQ Policy for Office Environments

Appendix B

Acceptable Indoor Air Quality Guidelines

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Temperature*	If 30% Relative Humidity	ASHRAE
	24.5-28°C (summer)	
	20.5-25.5°C (winter)	
% Relative Humidity	<60	ASHRAE

*Adopted from the Canadian Centre for Occupational Health and Safety (CCOHS) website

Specific Indoor air quality parameter	Recommended guideline	Jurisdiction
Carbon monoxide	<9 ppm	ASHRAE
Formaldehyde	<0.1 ppm	Health Canada
TVOC's	1 mg/m ³ (target level)	Health Canada
	5 mg/m ³ (action level)	
Particulates (**PM ₁₀)	150 µg/m ³ (averaged over 24 hours)	ASHRAE

**PM₁₀ refers to particulate matter less than 10 microns

IAQ Guidance: Morawska et al., Science (2024)

Table 1. Proposed parameter levels. Values may be adjusted to reflect local circumstances and priorities.

(i) 24-hour level from (3). (ii) When 100% of air delivered to the space is outdoor air, assuming outdoor CO₂ concentration is 450 ppm; based on classroom scenario (see SM). (iii) Delta is the difference between the actual CO₂ concentration and the CO₂ concentration in the supply air. (iv) 8-hour averaging time, from (15). (v) Clean air supply rate in the breathing zone; see (12). At 25°C and 1 atm for CO 1 ppb = 1.15 µg/m³. Threshold is the concentration level of CO₂ that must not be exceeded.

	Level	Averaging time or setpoint
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	10 ^(iv)	8 hours ^(iv)
Ventilation (L/s/person)	14 ^(v)	When the space is occupied

1. Need IAQ guidance with measurable standards

	Good IAQ	Adequate IAQ	Poor IAQ
Carbon dioxide (CO ₂)	< 800 ppm ¹⁻³	< 1000 ppm or < 600 ppm over ambient level ⁴	> 1000 ppm or > 600 ppm over ambient levels ⁴
PM2.5	< 15 µg/m ³ in 1 h ³	< 15 µg/m ³ in 24 h ^{3,5}	> 15 µg/m ³ in 24 h ^{3,5}

References:

1. Guidance for IAQ Professionals. Health Canada, Government of Canada. Published September 19, 2025.
2. Policy win: Health Canada releases new IAQ Guidance. Ontario Society of Professional Engineers. Published October 10, 2025
3. Morawska et al. Mandating indoor air quality for public buildings. *Science*. 2024;383(6690):1418-1420.
doi:10.1126/science.adl0677
4. ASHRAE Standard 62.1 Addendum ab (2023).
5. WHO Global Air Quality Guidelines (2021).

1.(cont.) Recommendation for IAQ Guidance

Defined ranges for IAQ parameters and their categories provide a framework for IAQ monitoring, and would allow effective use of IAQ monitors to identify spaces with poor IAQ.

Recommendation (NEW)

5. The Board of Health request that the Medical Officer of Health work with Municipal Licensing & Standards, City Planning, and relevant stakeholders to develop IAQ guidance for residents and building operators.

2. Recommendation to Province of Ontario

The Ontario Building Code should be updated to incorporate latest standards from ASHRAE and latest recommendations from ASHRAE, OSPE, other expert organizations, and IAQ experts.

Recommendation (NEW)

4. The Board of Health request that the Province of Ontario take steps to improve indoor air quality by:

d. updating the Ontario Building Code to incorporate ASHRAE Standard 241 and ASHRAE Guideline 44-2024.

e. enacting a Clean Air Act to regulate indoor air quality and define standards for good, acceptable and poor indoor air quality.

3. Plan for public health communications regarding IAQ and airborne hazards

Traditional communications:

- Signage in public transit, community centres, libraries
- Pop-up info booths/tables at public events
- Information at community centres & libraries

Strategy for school communications:

- Clear guidance to school boards on how to share public health information
- Presentations to classes
- Information sessions for staff and parents/caregivers

