



PO Box 19008
Walmer Rd.
Toronto, ON
M5S 3C9
on@cape.ca

July 10, 2026

To: Members of the Board of Health, City of Toronto

The Ontario Regional Committee of the Canadian Association of Physicians for the Environment (CAPE Ontario) respectfully submits its comments in support of motion **HL34.5 - Investigating the Increased Risk of Heart Disease, Lung Cancer, and Tumours from Bringing Jets to Toronto's Waterfront Communities**. Further, we recommend **amending the motion to include a firm report-back deadline of December 2026**.

CAPE is a non-partisan, physician-led organization with over 36,000 supporters across the country. It plays a unique role at the intersection of health, environment, and justice, bringing a credible, evidence-based perspective delivered by the trusted voices of doctors, other health professionals, and researchers to support community and planetary health.

As physician advocates for human health through the protection of environmental health, we have serious concerns about the negative health impacts of the proposed expansion of Billy Bishop airport. The increased air pollution from commercial jets, increased traffic-related air pollution, and heightened noise pollution would pose a significant threat to the health and well-being of people living in Toronto's densely populated waterfront and downtown communities. And, as is true of all environmental threats, the health burdens of this expansion would fall disproportionately on Toronto's most vulnerable populations, including seniors, children, low-income residents, and racialized communities.

A 2013 Health Impact Assessment commissioned by Toronto Public Health found that the impacts of expanding Billy Bishop airport to accommodate commercial jets would negatively impact the health of Torontonians and increase the burden on Toronto's healthcare system.¹ These impacts would be even greater under the provincial government's most recent proposal.

¹ Golder and Associates, Health Impact Assessment. Proposed Expansion to Billy Bishop Toronto City Airport, Submitted to Medical Officer of Health, Toronto. November, 2013.
<https://www.toronto.ca/wp-content/uploads/2017/11/9202-billy-bishop-airport-golder-associates-health-imp-act-assessment-report.pdf>

The Government of Ontario has indicated that it plans to expand the Billy Bishop airport with the goal of increasing the current volume of approximately 2 million passengers per year flying primarily on turboprop jets to approximately 10 million passengers per year flying on commercial jets.² **Compared with turboprop aircraft, commercial jets generate substantially higher emissions** because they must accelerate to higher speeds and climb to greater altitudes—raising fuel burn and reducing efficiency—resulting in **roughly 30 - 50% more CO₂ per passenger mile, significantly higher emissions per nautical mile on short-haul flights, and more pollution.**³

The pollutants emitted by commercial jets carry well-documented human health risks. These pollutants include ultrafine particles (UFPs), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and other harmful substances such as carbon monoxide, black carbon, volatile organic compounds, and hydrocarbons.⁴

UFPs are linked to multi-system diseases. Health harms occur when UFPs pass through the lungs or the gut into the bloodstream where they cause disease in multiple body systems. The smaller the PM (particulate matter), the more harmful to health. UFP exposure contributes to asthma, lung inflammation, bronchitis, pneumonia, heart disease, heart attacks, hypertension, and stroke. UFPs can also travel directly from the nose to the brain via the olfactory nerve, bypassing the blood–brain barrier and damaging brain tissue—an exposure pathway associated with dementia, Alzheimer’s disease, and stroke. Additional harms include increased rates of diabetes, lung cancer, and significant pregnancy risks. UFPs have been detected in placental tissue and are associated with low birth weight and possible birth defects.⁵

In Europe, a study of the health impacts specifically from aviation-derived UFPs found that 52 million people—more than 10% of Europe’s population—live within 20 km of the continent’s 32 busiest airports and are therefore particularly exposed to aircraft-related UFP emissions. Within 5 km of airports, air can contain average concentrations of 3,000–10,000 UFPs per cm³ attributable to aviation, and this exposure may be associated with an estimated 280,000 cases of high blood pressure, 330,000 cases of diabetes, and 18,000 cases of dementia across Europe.⁶

In Canada, a recent study of the effects of long-term exposure to ultra-fine particles and black carbon in Toronto and Montreal showed that of the 1.56 million people studied, approximately 1,100 deaths from heart and lung disease, stroke and lung cancer could be attributed to exposure to UFPs. Higher UFP levels and lower UFP size were linked to higher mortality rates.⁷

² Government of Ontario, “Ontario Expanding Billy Bishop Airport” March 23, 2026, news.ontario.ca/en/release/1007209/ontario-expanding-billy-bishop-airport

³ Bjorn Fehrm. “Carbon Footprint: Regional Jet versus Turboprop, How Large Is the Difference? - Leeham News and Analysis.” *Leeham News and Analysis*, 27 Jan. 2022, leehamnews.com/2022/01/27/carbon-footprint-regional-jet-versus-turboprop-how-large-is-the-difference/

⁴ Bendtsen, Katja M., et al. “A Review of Health Effects Associated with Exposure to Jet Engine Emissions in and around Airports.” *Environmental Health*, vol. 20, no. 1, 6 Feb. 2021, [ehjournal.biomedcentral.com/articles/10.1186/s12940-020-00690-y](https://doi.org/10.1186/s12940-020-00690-y), <https://doi.org/10.1186/s12940-020-00690-y>.

⁵ Dean E. Schraufnagel. “The Health Effects of Ultrafine Particles.” *Experimental & Molecular Medicine*, vol. 52, no. 3, 1 Mar. 2020, pp. 311–317, [www.nature.com/articles/s12276-020-0403-3](https://doi.org/10.1038/s12276-020-0403-3), <https://doi.org/10.1038/s12276-020-0403-3>

⁶ Daan van Seters, Stefan Grebe, Jasper Faber, *Health Impacts of Aviation UFP Emissions in Europe*, Delft, CE Delft, May 2024, https://uploads.transportenvironment.org/production/files/CEdelft_Final_Study.pdf?dm=1727691306

⁷ Scott Weichenthal et al. “Long-Term Exposure to Outdoor Ultrafine Particles and Black Carbon and Effects on Mortality in Montreal and Toronto, Canada.” *Research Reports: Health Effects Institute*, July 2024, pmc.ncbi.nlm.nih.gov/articles/PMC11480997/

Local monitoring confirms that UFP levels near Billy Bishop Airport are already elevated.

Researchers from the University of Toronto's Transportation and Air Quality Research Group found that airport activities are the primary source of UFP in the Bathurst-Quay neighbourhood. When the wind blows from the airport during operating hours, UFP levels can spike to 2 – 3 times from baseline, possibly exceeding 100,000 particles per cubic cm.⁸ This exceeds what the World Health Organization considers “high” for UFPs, which is 20,000 particles per cubic cm for a one-hour average.⁹ Under the proposed plan, these spikes would be more frequent and the increased UFP levels would result in even greater risks to the health and well-being of residents.

In addition to UFPs, the proposed expansion of Billy Bishop airport to accommodate commercial jets would result in increased exposure to nitrogen dioxide (NO₂), a pollutant associated with premature death; respiratory disease (including asthma, COPD, and airway inflammation); cardiovascular events (such as heart attack, heart failure, atherosclerosis, and stroke); lung cancer, diabetes, pregnancy risks (including low birth weight and prematurity), and neurodevelopmental delays, including intellectual disabilities and behavioral disorders.¹⁰ The World Health Organization (WHO) 2021 Air Quality Guidelines establish an annual mean NO₂ limit of <10 µg/m³, however, the WHO explicitly states there is no safe threshold for exposure, as adverse health effects like respiratory inflammation can occur even at the lowest measurable concentrations.¹¹

A third pollutant of concern from commercial jets is sulfur dioxide (SO₂). Large multi-country studies and meta-analyses consistently show that short-term and long-term exposure to SO₂ increases the risk of premature mortality, particularly from cardiovascular and respiratory causes. Respiratory health harms from exposure to SO₂ include asthma, chronic obstructive pulmonary disease (COPD), airway inflammation, and measurable reductions in lung function. And beyond respiratory impacts, SO₂ exposure has been linked to cardiovascular events such as heart attacks and angina; pregnancy-related risks, including low birth weight, prematurity, and certain birth defects; and neurodevelopmental disorders, including developmental delays and ADHD.¹² The WHO sets the 24-hour mean guideline for sulfur dioxide at 40 µg/m³, but acknowledges that health risks exist below this level too.¹³

Noise pollution presents an additional major health concern. Aviation noise is widely regarded as the most disruptive form of environmental noise, and the World Health Organization

⁸ Junshi Xu, et al. “Aircraft Activities and Ultrafine Particle Concentrations near a City Airport: Insights from a Measurement Campaign in Toronto, Canada.” *ACS ES&T Air*, vol. 1, no. 8, 18 June 2024, pp. 801–814, <https://doi.org/10.1021/acsestair.3c00114>

⁹ WHO *global air quality guidelines*. Particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. Executive summary. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO: 7. <https://iris.who.int/server/api/core/bitstreams/b729bbc4-7032-4799-898e-d112faa16f22/content#:~:text=Such%20measurements%20should%20not%20replace,for%20ambient%20BC/EC%20concentrations.&text=E2%89%A4%2010%20nm%20and%20no,SDS%201>

¹⁰ Shiwen Huang et al. “Long-Term Exposure to Nitrogen Dioxide and Mortality: A Systematic Review and Meta-Analysis.” *Science of the Total Environment*, vol. 776, July 2021, p. 145968, <https://doi.org/10.1016/j.scitotenv.2021.145968>

¹¹ WHO *global air quality guidelines*. Particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. Executive summary.

¹² O'Brien, Edward, et al. “Short-Term Association between Sulfur Dioxide and Mortality: A Multicountry Analysis in 399 Cities.” *Environmental Health Perspectives*, vol. 131, no. 3, 1 Mar. 2023, [www.ncbi.nlm.nih.gov/pmc/articles/PMC9994178/](https://doi.org/10.1289/ehp11112), <https://doi.org/10.1289/ehp11112>.

¹³ WHO *global air quality guidelines*. Particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. Executive summary.

identifies it as a significant health hazard. Chronic exposure to aircraft noise is strongly linked to cardiovascular disease.¹⁴ A 2025 meta-analysis found increased risks of hypertension, ischemic heart disease, and stroke among people living near airports.¹⁵ Noise exposure also affects mental health, with meta-analytic evidence showing roughly a 40% increase in risks for depression, anxiety, substance use disorders, and cognitive impairment.¹⁶ Children face heightened vulnerability. Aircraft noise has been associated with hyperactivity, inattention, and deficits in reading comprehension and memory. A study from Germany showed that children's cognitive performance improved after one airport closed and declined again when a new airport opened, underscoring the impact of noise pollution on young learners.¹⁷

Given the health harms from elevated air and noise pollution from airports, it is not surprising that **studies consistently show that people living closest to airports face greater health impacts.** Research from Europe has found that residents living within 5km of an airport have approximately 20% higher risks of diabetes and dementia, along with about a 7% higher risk of high blood pressure. Evidence also suggests that elevated health risks can extend up to 20 km from major airports.¹⁸ A 2015 study found that aviation-derived particulate matter pollution causes approximately 5000 premature deaths within 20km from airports.¹⁹

These findings are especially relevant to the proposed expansion of Billy Bishop Airport, which is located near one of the most densely populated areas in Canada. Whereas an estimated 120,000–150,000 people live within 5 km of Pearson Airport, approximately **400,000–450,000 people live within 5 km of Billy Bishop Airport.**²⁰ Planned housing for an additional 40,000 residents in the Port Lands—also within 5 km—would further increase the number of people exposed.²¹ **We are particularly concerned about the lifelong health impacts on local children.** Unlike Pearson Airport, Billy Bishop Airport is situated within 500 metres of three schools and a childcare facility. Expanding commercial jet traffic would disproportionately expose these developing children to harmful aviation pollution.

CAPE Ontario is also gravely concerned by the compounding impacts of climate change. Commercial jets are significant contributors to the emissions driving climate change which, in turn, is fueling the frequency and intensity of local heat waves. Current projections indicate that if we remain on our current emissions trajectory, Toronto will experience 66 days per year with

¹⁴ Constantin-Cristian Topriceanu et al. "Higher Aircraft Noise Exposure Is Linked to Worse Heart Structure and Function by Cardiovascular MRI." *Journal of the American College of Cardiology*, vol. 85, no. 5, Jan. 2025, <https://doi.org/10.1016/j.jacc.2024.09.1217>

¹⁵ Samira Tabaei et al. "The Relationship between Noise Pollution and Cardiovascular Diseases: An Umbrella Review on Meta-Analyses." *BMC Cardiovascular Disorders*, vol. 25, no. 1, 26 Aug. 2025, <https://doi.org/10.1186/s12872-025-04864-9>

¹⁶ Manfred E. Beutel, et al. "Noise Annoyance Is Associated with Depression and Anxiety in the General Population- the Contribution of Aircraft Noise." *PLOS ONE*, vol. 11, no. 5, 19 May 2016, p. e0155357, www.ncbi.nlm.nih.gov/pmc/articles/PMC4873188/, <https://doi.org/10.1371/journal.pone.0155357>

¹⁷ Staffan Hygge, et al. "A Prospective Study of Some Effects of Aircraft Noise on Cognitive Performance in Schoolchildren." *Psychological Science*, vol. 13, no. 5, Sept. 2002, pp. 469–474, <https://doi.org/10.1111/1467-9280.00483>

¹⁸ Daan van Seters, Stefan Grebe, Jasper Faber, *Health Impacts of Aviation UFP Emissions in Europe*, Delft, CE Delft, May 2024. https://uploads.transportenvironment.org/production/files/CEdelft_Final_Study.pdf?dm=1727691306

¹⁹ Steve H L Yim et al. "Global, regional and local health impacts of civil aviation emissions." *Environmental Research Letters*, 2015. doi: 10.1034001 <https://iopscience.iop.org/article/10.1088/1748-9326/10/3/034001>

²⁰ Sean Marshall, "ELECTION: Population Disparities between Toronto's 25 Wards - Spacing Toronto." *Spacing Toronto*, 6 Sept. 2022, spacing.ca/toronto/2022/09/06/an-imbalance-of-power-population-disparities-between-torontos-25-wards/

²¹ City of Toronto, et al. *Port Lands Open House Progress on the Port Lands*. 2026. <https://www.toronto.ca/wp-content/uploads/2026/04/8e64-city-planning-port-lands-open-house-boards.pdf>

temperatures exceeding 30°C.²² **Heat accelerates the formation of ground-level ozone, a pollutant that triggers strokes and worsens chronic respiratory illnesses.**²³ Introducing additional aviation pollution into a warming urban environment therefore presents a compounding risk to public health.

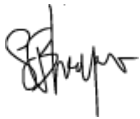
There are, furthermore, **elevated public-safety and environmental risks posed by aviation facilities located in dense city centres.** Airspace intrusion from tall buildings and construction cranes increases the likelihood of conflicts during takeoff and landing, while bird-strike risks rise due to the higher concentration of birds in urban parks and green spaces. City centres also tend to have more congested airspace, with private aircraft and helicopters operating nearby, adding complexity and collision risk.²⁴

The Board of Health is mandated to protect and promote the well-being of all Torontonians. Given the profound health and safety risks associated with expanding Billy Bishop Airport, CAPE Ontario urges the Board to support **Motion HL34.5**. To safeguard the public's right to transparent, evidence-based decision-making regarding these severe health threats, we further urge the Board to **amend the motion to establish a firm report-back deadline of December 2026.**

Respectfully, on behalf of CAPE Ontario,



Dr Mili Roy, Co-chair, Canadian Association of Physicians for the Environment (CAPE), Ontario Committee



Dr. Sehjal Bhargava, Co-chair, Canadian Association of Physicians for the Environment (CAPE), Ontario Committee



Dr. Samantha Green, President, Canadian Association of Physicians for the Environment (CAPE)

²² Toronto's Future Weather and Climate Driver Study, Summary of the SENES Consultants Ltd Study by Toronto Environment Office October 30, 2012.

<https://www.toronto.ca/wp-content/uploads/2018/04/982c-Torontos-Future-Weather-and-Climate-Drivers-Study-2012.pdf>

²³ Yunxing Jiang et. al., "Ozone pollution and hospital admissions for cardiovascular events," *European Heart Journal*, Volume 44, Issue 18, 7 May 2023: 1622–1632. <https://doi.org/10.1093/eurheartj/ehad091>

²⁴ Flight Safety Foundation, *2025 Safety Report*, Alexandria, Virginia.
<https://flightsafety.org/wp-content/uploads/2026/02/2025-Safety-Report-FINAL.pdf>