



## STAFF REPORT INFORMATION ONLY

### Update on Air Pollution from Toronto's Airports

<b>Date:</b>	October 27, 2009
<b>To:</b>	Board of Health
<b>From:</b>	Medical Officer of Health
<b>Wards:</b>	All
<b>Reference Number:</b>	

#### **SUMMARY**

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Many activities at airports have potential environmental health impacts, including contributing to local air pollution. Some of these impacts can be reduced by implementing environmental plans and programs. Although airports are not required by any authority to report on environmental initiatives they may be undertaking, they may choose to make this information available to the public.

The two main airports in Toronto are Toronto Pearson International Airport and the Toronto City Centre Airport. The Medical Officer of Health previously reported on air quality at these airports in June 2008. Where possible, this report updates information about voluntary actions by the airports to reduce emissions.

The Greater Toronto Airport Authority (GTAA) has a comprehensive environmental program for Toronto Pearson International Airport. To reduce emissions, they are working to decrease energy use, reduce emissions from aircraft and vehicles, and support environmental activities in the local business community.

The Medical Officer of Health previously reported that there is not enough information on activities at the Toronto City Centre Airport to describe specific air pollution sources or mitigation measures. The Toronto City Centre Airport did not provide Toronto Public Health with any new information for this report.

#### **Financial Impact**

There are no financial implications arising from the adoption of this report.

## DECISION HISTORY

The report “Reporting on Air Pollution from Airports” was presented to the Board of Health on June 16, 2008. The report described the sources of air pollution at airports and explained the difficulties associated with estimating the health impacts of airport-related air pollution ([http://www.toronto.ca/health/hphe/pdf/air\\_pollution\\_airports.pdf](http://www.toronto.ca/health/hphe/pdf/air_pollution_airports.pdf)). The Board of Health requested that the Medical Officer of Health report back on any new air quality-related information and improvement measures at the Toronto City Centre Airport or Toronto Pearson International Airport in 2009.

## ISSUE BACKGROUND

Exposure to air pollution is associated with ill health. The mix of air pollution present in cities is linked to premature mortality, cardiovascular illness, and respiratory illness including reduced lung function, asthma, and chronic obstructive pulmonary disease. Some of the pollutants in Toronto’s air are known carcinogens.

Airports contribute to air pollution in Toronto. The pollution that comes from airports is similar to the pollution from other important sources in the city such as traffic, industrial activity, and fuel that is burned to heat homes and commercial buildings. The air pollution mix typically includes carbon monoxide (CO), particulate matter (PM), nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), ground level ozone, and other toxic pollutants. Airports also contribute to emissions of greenhouse gases such as carbon dioxide (CO<sub>2</sub>) which contribute to climate change.

Air pollution and greenhouse gases come from many different sources at airports, including aircraft engines, ground support equipment, service vehicles, and fire training activities. Fuel storage tanks, refuelling, and de-icing also release pollutants to the air. Traffic bringing passengers to and from the terminals is also a source of emissions.

Toronto Pearson International Airport is located in Mississauga, close to the intersection of Highway 401 and Highway 427. The Greater Toronto Airports Authority (GTAA) manages, operates, and maintains Toronto Pearson International Airport. It is Canada’s busiest airport, handling 429,262 aircraft takeoffs and landings, and over 32.3 million passengers in 2008. Pearson Airport mainly handles large aircraft, which are used for commercial flights and long-distance travel.

The Toronto City Centre Airport (TCCA) is located on the Toronto Islands and handled 93,404 aircraft takeoffs and landings in 2008. The operation of the airport is governed by a tri-partite agreement. The signatories are the Toronto Port Authority, the Federal Government, and the City of Toronto. Most of the aircraft operating from TCCA are small; it is used mainly for privately-owned aircraft, small charters, and emergency flights. In the past, aircraft such as Air Canada operated commercial flights from TCCA. In 2006, Porter Airlines became the exclusive commercial carrier at TCCA, operating flights using 70-seat turboprop aircraft on a projected maximum of 600,000 passengers annually by 2011.

## **COMMENTS**

Similar to industrial operations, airports must meet regulated standards for environmental compliance. For example, airports must comply with regulations governing waste management, hazardous material storage, and the need to conduct environmental assessments for new construction projects.

Airports may choose to undertake environmental initiatives to directly or indirectly reduce their environmental impacts. Transport Canada sets and enforces all airport safety and security standards, and certifies and regulates all airports. However, airports are not required to report information about environmental performance or environmental initiatives to Transport Canada.

### **Toronto Pearson International Airport**

The GTAA has an environmental policy which focuses on continuous improvement, environmental compliance, and pollution prevention. Toronto Pearson International Airport was the first North American Airport to achieve and maintain ISO 14001 certification. ISO 14001 certification is an environmental management system which enables organizations to identify and control the environmental impact of their activities. It includes continuous improvement to environmental performance, implementing a systematic approach to setting environmental objectives and targets, and demonstrating that these have been achieved.

Information provided by the GTAA describes environmental programs that address air quality, airport development, ecology, environmental emergency planning, noise, property management, resource use, spills, waste, water quality, and wildlife control. The GTAA's emissions reduction program focuses on reducing energy use, eliminating aircraft engine use at gates, reducing aircraft taxi times, reducing vehicle-related emissions, and green buildings. In total, about ten staff are dedicated to environmental issues, with another ten responsible for noise issues.

The following describes environmental initiatives for which new data became available since June 2008. Ongoing environmental initiatives that were described in the June 2008 report (such as anti-idling and use of hybrid vehicles) are not described here.

The GTAA set a goal to reduce electrical power consumption by 10% over 2006 levels by 2012. Some ways that the GTAA reduces energy use are through co-generation, changes in operating procedures, and using environmental design in buildings:

- the GTAA operates a co-generation facility when it is financially beneficial (usually during summer and winter). In 2008, the facility operated for 3407 hours, and the steam produced during co-generation saved about 2 million cubic metres of natural gas;
- during Earth hour 2009, GTAA reduced electricity usage by 10.5%. As a result of lessons learned during Earth hours 2007 - 2009, the GTAA changed some standard airport operating procedures, resulting in permanent energy savings at the airport. Electricity usage is being reduced by optimizing lighting with fewer fluorescent bulbs, installing

- motion sensors and turning off lights in unoccupied areas, changing to compact fluorescent light bulbs, and adjusting the temperature in buildings;
- the GTAA strives for Leadership in Energy and Environmental Design (LEED) silver certification for any new facilities or major renovations. The fire training facility is the first LEED silver building at TPIA, and plans for a new hotel incorporate geothermal technologies and meet LEED silver standards.

The GTAA estimates that reducing power needs saved between \$1,000,000 to over \$3,000,000 each year since 2004.

Aircraft emit large amounts of pollution while waiting to take off. Since 2005, operational changes were made and new runways and taxiways were designed to reduce the amount of time aircraft spend queuing and taxiing. One of these changes is the introduction of an “early turn procedure”. This allows aircraft to turn towards their destination as soon as possible, saving fuel and reducing emissions during take-off. It also reduces wait times for aircraft that must idle while waiting up to take off. In 2008, the GTAA began trials to expand the procedure to the north/south runways and to apply it to additional aircraft types.

Reducing the numbers of vehicles that come to the airport limits vehicle-related air pollution that is indirectly generated by air travel. Signage was recently improved in Terminal 1 to help passengers find TTC and GO transit stops. Over the past year, GTAA has also supported transit enhancement proposals that would further reduce individual car travel by employees and passengers, such as the proposed Eglinton Avenue light rail line and a link to the Georgetown GO railway expansion.

Previous reports from the Medical Officer of Health reviewed available information from the GTAA, Transport Canada, and Environment Canada about air quality near Pearson airport. The reports concluded that more information about the air quality near the airport and sources of air pollution in the areas around each airport would improve Toronto Public Health’s ability to comment on health risks from air pollution in nearby communities.

A new report completed for the GTAA estimates emissions of air pollutants and greenhouse gases from the airport for 2007. While GTAA staff indicated in June that the report would soon be posted on the GTAA’s public website, it is not yet available.

The GTAA owns air monitoring equipment which can track the concentrations of twelve air toxics as well as carbon monoxide and particulate matter, but this equipment is currently out of service and needs repair. A letter from the GTAA to the Board of Health in June 2008 indicated that funds are allocated to repair the equipment in 2009. In October 2009, staff at GTAA indicated that they anticipate that maintenance will be complete by the end of the year.

The GTAA is also a founding member of Partners in Project Green, a community of businesses working with the Toronto and Region Conservation Authority to find cost-effective ways of reducing their environmental impacts by creating an internationally-recognized “eco-business zone” around Toronto Pearson Airport. The program was launched in October 2008 and helps businesses reduce energy and resource costs, uncover new business opportunities, and address

everyday operational challenges in a green and cost-effective manner. The GTAA works to foster environmental values in the community through a number of activities such as trails development along Etobicoke Creek, annual creek clean-ups, and participation in Earth Hour and Earth day.

## **Toronto City Centre Airport**

The June 2008 report to the Board of Health found that most of the available information about operations at the Toronto City Centre Airport is outdated, and that it is not possible to describe sources of air pollution at the airport. Toronto City Centre Airport did not respond to requests from Toronto Public Health to provide information about its operations or environmental activities for this report.

Starting in February 2009, Toronto Public Health staff tried to obtain information from the Toronto City Centre Airport through phone calls and emails to the airport's senior staff.

The questions directed to TCCA by email and letter mail included general questions about whether the TCCA has an environmental plan or strategy and the types of actions that TCCA takes to promote a healthy environment at or near the airport facility. Specific questions about air quality asked whether any specific features of the airport design or operational practises promote better air quality, whether the TCCA does any onsite ambient air monitoring, and whether leaded airplane fuel is still in use at TCCA.

Requests to provide information, or to schedule a call or visit to obtain information about new environmental initiatives at the airport were not answered. A letter from the Medical Officer of Health dated June 2009 requesting information from the airport did not produce a response.

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## **SIGNATURE**

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Dr. David McKeown  
Medical Officer of Health

**ATTACHMENT**

Attachment 1: Letter from GTAA to the Board of Health (June 13, 2008)