

Backgrounder



June 7, 2005

POLITICIANS ACROSS THE GTA PARTICIPATE IN AIR QUALITY SAMPLING

Urban air pollution and its social and economic effects in the GTA continue to be of significant concern. The Ontario Medical Association estimates premature deaths, emergency room visits, direct health care hospital costs, and lost productivity costs that can be attributed to poor air quality. These numbers and costs continue to rise annually. In 2004 in the Greater Toronto Area (GTA), estimates include 900 premature deaths, 18,560 emergency room visits, \$283.2 million in direct health care hospital costs and \$255.2 million in lost productivity costs.

The air quality sampling conducted on May 30 with participating GTA politicians will alert the GTA residents to the staggering costs to society and is meant to provoke action by all levels of government to work collectively to reduce these losses.

Environmental Engineering professor, Dr. Greg Evans is supervising the University of Toronto students who assisted in the sampling. The sampling will show that air pollution is both a local and a regional issue and must be tackled by all levels of government in the GTA.

The outcomes of the air sampling will be unveiled at a media conference at Queen's Park on June 7th, where science, health, and environmental experts join the media to describe emission reduction strategies needed to improve the quality of air we breathe.

The air quality sampling is part of the annual Smog Summit. At the Smog Summit on June 8th representatives from all levels of governments commit to clean air initiatives by signing the *Inter-governmental Declaration on Clean Air*.

Air Quality Sampling

Politicians from municipalities across the GTA used hand-held instruments, provided by Health Canada, to measure particulate matter produced from direct vehicle tailpipe emissions. Particulate matter is so small that it is measured in microns. This small dot (.) is equal to about 600 microns. Two sizes of particulate matter (PM) were measured; fine particulate matter, less than 2.5 microns in size (PM_{2.5}) and sub-micron 'ultrafine' particulate matter, less than 0.1 micron in size (PM_{0.1}). Individual particles cannot be seen with the naked eye, but together they can appear as grey haze or soot causing reduced visibility.

Each participating municipality sample area included a busy road, a residential street, and along side an idling vehicle to compare the different concentrations of particulate matter showing the local and regional effects. PM_{2.5} is a regional concern due to its ability to stay in the air for days or weeks and travel for hundreds of miles. PM_{0.1} is a more localized concern because of its size; however, research is still in its early stages.

Air Quality and Health

There is a strong association between air pollution and increases in premature mortality and hospitalizations. Effects are wide ranging and include acute and chronic bronchitis, asthma attacks, cardiac symptoms and reduced lung function. Young children, the elderly, and those with pre-existing respiratory and heart conditions are most at risk of adverse effects.

The Ontario Air Quality Index (AQI) measures six common air pollutants, sulphur dioxide, ozone, nitrogen dioxide, sulphur compounds, carbon monoxide, and fine particulate matter. Particulate matter (PM_{2.5}) is among the most harmful of the common air pollutants.

Ontario uses the AQI as an indicator of our air quality. The lower the value of the AQI, the better the air quality. Ontario's AQI uses 45ug/m³ (3 hours) for PM_{2.5} to trigger a "poor" rating for air quality. Unfortunately this is not adequate warning for the population-at-risk where adverse health conditions are triggered at levels as low as 15 ug/m³, considered "*very good*" on an AQI reading.

Poor air quality at ground level can be closely linked with traffic volume in the immediate transportation corridors. Cars, trucks and buses release pollutants at ground level where they are readily inhaled by people, causing adverse health effects, even when regional levels indicate a "*very good*" air quality rating.

The GTA residents must be informed on air pollution issues so that they can make decisions and take action to reduce air pollution and minimize the health risks.

Air Quality and Transportation

The transportation sector is one of the largest sources of air pollution. The recent gains made in stricter vehicle emissions requirements have been negatively offset by the increased volume and frequency of vehicle use. Urban sprawl is blamed for the increase in kilometers traveled, higher rates of vehicle ownership, increased congestion and air pollution. In June 2000, the Greater Toronto Services Board estimated that congestion in the GTA costs the economy \$2 billion annually due to delays in shipping goods, without taking into account time lost by individuals.

The 5.3 million population of the GTA is expected to grow by an additional three million people over the next 25 years. This population growth pattern emphasizes the need to expand and sustain the public transit infrastructure and investigate alternative modes of transportation.

Improvements in transportation should include research and education, improved vehicle and fuel technologies, high occupancy vehicles lanes, subsidized public transit infrastructure, and alternative transportation modes including cycling lanes.

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