Summary of *Mobile Monitoring* an Air Quality Monitoring Project:
% of risk of adverse health effects in neighbourhoods

Jones Road and Arvin Avenue area


Air monitoring vehicle

Overview
In late 2010 to 2011, the *Mobile Monitoring* project collected air samples in designated areas using a specialized vehicle. Samples were taken in industrial areas, neighbourhoods and along roadways. (1a) Currently, there are stationary air quality locations, such as the Hamilton Air Monitoring Network (www.hamnair.ca). What makes this project unique is the mobility aspect and being able to collect data anywhere in the City.

This is a summary of the findings of the *Mobile Monitoring* project.

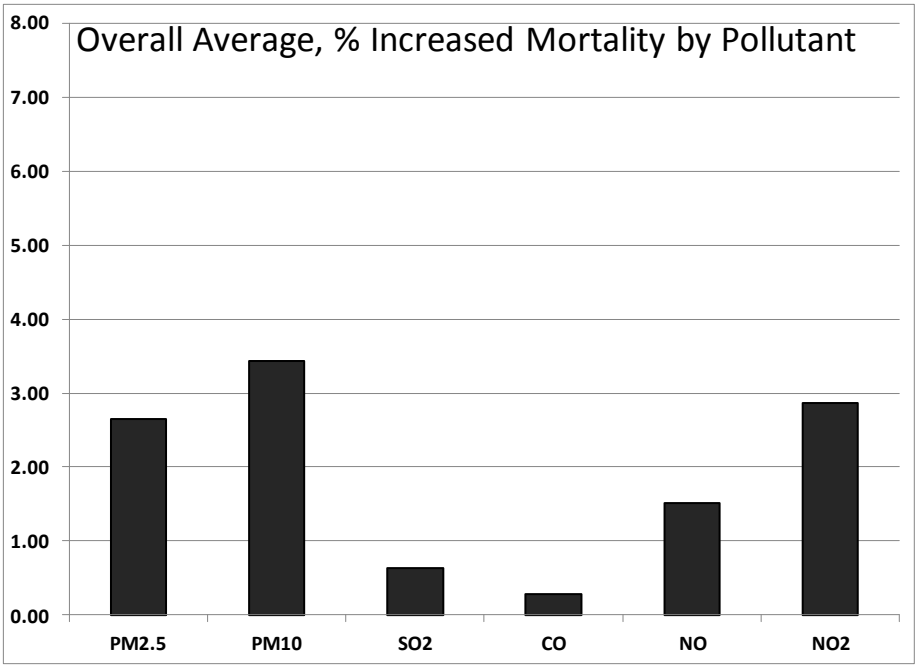
The main goal of *Mobile Monitoring* was to:

1. identify pollutants and its impacts on health, also known as Total Health Effects (increased mortality, ie deaths, due to air pollution) and;
2. to compare impacts on health in different areas of Hamilton.

With this information, residents can use this data to, for example, to reduce pollutants in their area.

Five contaminants that were measured (1b):

- Carbon Monoxide (CO)
- Oxides of Nitrogen (NO, NO2, NOX)
- Sulphur Dioxide (SO2)
- PM10 (Inhalable Particulates, is "coarse" an example is dust stirred up by traffic)
- PM2.5 (Respirable Particulates, is "fine" and found in smoke or haze and can only be viewed through a microscope)



This graph shows how much each pollutant increases morality. The City's average of calculated increased mortality is 11.5%.

That means for every 100 deaths (from non-traumatic reasons) 11 more deaths will be caused by air pollution.

In Hamilton, out of the 5 contaminants measured, particulate matter is the most predominant pollutant followed by nitrogen NO and NO2.

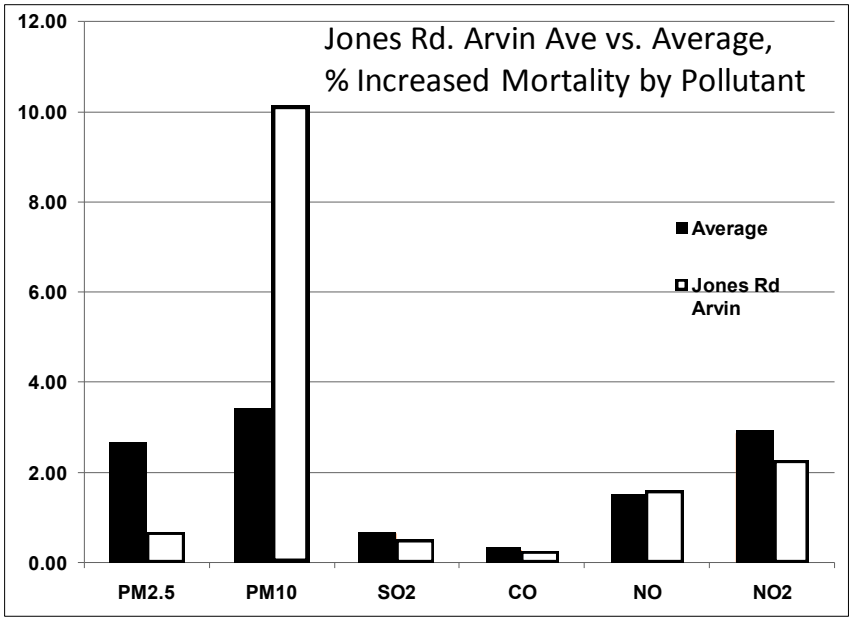
This project was funded by: Arcelor Mittal Dofasco and Clean Air Hamilton and is an initiative of Green Venture and Conserver Society of Hamilton and District. In partnership with Rotek Environmental Inc and Ministry of the Environment

Jones Road and Arvin Avenue area

Summary of findings: Each area showed various degrees of air pollution and its impact on health. The impacts vary from 6.8% to 18.4% increases in non traumatic mortality in City neighbourhoods Non traumatic mortality means all deaths not caused by accidents, etc. The City's average of 11.5% means that the total number of deaths in the City (of non-traumatic reasons) is increased by 11.5%.

In other words, for each 100 non trauma deaths in the City, 11 additional deaths are caused by air pollution. It should be cautioned that these percentages are not absolute, refer to specific, limited sampling times and may be best used as an indicator of the relative health impacts by neighbourhood. The most recent Canadian Medical Association estimate is 445 deaths each year from air pollution in Hamilton- Wentworth census district .

This graph shows the comparison between City averages and the Jones Rd / Arvin Avenue area. This area has calculated increased mortality of 15.3% compared to the City's average of 11.5%. There is consistently high levels along the QEW highway.
The additional risk is entirely due to particulate, mostly PM 1010. Identification and control actions should be therefore be directed at particulate sources, including resuspended road dust.



This graph represents calculated increased mortality and compares Jones Rd and Arvin Avenue to the City's average.

The full version of this report, *2011 Hamilton Neighbourhoods: Mobile Air Quality Monitoring to Determine Local Impacts,* is available at: **http://www.cleanair.hamilton.ca/default.asp?id=72**
To see boundaries of each area studied, go to: **http://g.co/maps/m5nj4**

For more information on the organizations involved, see the following links:
Green Venture: www.greenventure.ca
Clean Air Hamilton: www.cleanair.hamilton.ca
Conserver Society of Hamilton and District: www.conserversociety.ca

References:
1a. Originally, 11 locations were monitored: Beach Blvd / Eastport Drive, Delta, Dundas, Jones Road / Arvin Avenue, Lawrence Avenue to Burlington Street, Limeridge Mall, McAnulty Blvd, near Mountain, North West End, Red Hill neighbourhoods, Wentworth North. After neighbourhood interest, two locations had previously collected data analyzed: Kirkendall and Strathcona Neighbourhoods.
1b. Also noted were wind speed, wind direction and ambient temperature.

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