CITY OF HAMILTON

Public Health Services
Health Protection Division

TO: Mayor and Members
Board of Health
WARD(S) AFFECTED: Ward 5

COMMITTEE DATE: September 27, 2010

SUBJECT/REPORT NO:
Pilot Project for Air Monitoring in the East End of Hamilton (BOH10022) (Ward 5)

SUBMITTED BY:
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SIGNATURE: E. Richardson

RECOMMENDATIONS:

(a) That one-time funding, in the amount of $69,500, for a Pilot Air Monitoring Project for the East End of Hamilton, be referred to the 2011 Budget Process for consideration.

(b) That the Item respecting the investigation of an air monitoring pilot project in the east end of Hamilton be identified as completed and removed from the Board of Health’s Outstanding Business List.

EXECUTIVE SUMMARY

At the April 26, 2010 meeting, staff was directed to report back to the Board of Health on a pilot project for air monitoring in the east end of the City. Staff have consulted with members of Clean Air Hamilton, the Ontario Ministry of the Environment, the Hamilton Air Monitoring Network, and Rotek Environmental Inc. about options for the placement, type, and cost of air monitoring equipment that would be ideal for a pilot project for air monitoring in the east end of Hamilton. A versatile air monitor called an “Airpointer” could be placed at the same location a former Ontario Ministry of the Environment air monitor was operated from 1985 to 1996 (Sam Manson Park – Ward 5) for a period of one year.
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The data obtained from the pilot project could be assessed upon completion and the findings, along with any recommendations would be provided to the Board of Health. The expected cost of the one-year pilot project is $69,500.

Alternatives for Consideration – See page 5

FINANCIAL / STAFFING / LEGAL IMPLICATIONS (for Recommendation(s) only)

Financial: Funding for this one-year pilot project is expected to cost $69,500. If this report is approved, the request for funding will be included in the draft 2011 capital budget for Council’s consideration.

Staffing: No additional staffing resources are required if the recommendations are approved.

Legal: No legal implications are expected if the recommendations are approved.

HISTORICAL BACKGROUND

Between 1985 and 1996, the Ontario Ministry of the Environment (MOE) operated an air monitoring station located in Ward 5 at Sam Manson Park. The monitor was named the “East Hamilton AQI Station”, and it measured coefficient of haze, ozone, sulphur dioxide, and total suspended particulates.

The MOE reports that the former East Hamilton AQI Station was removed in 1996 because the other three Hamilton AQI stations were sufficient to measure smog and long-range pollutants. A ministry review of air monitoring in the mid 1990’s indicated that the East Hamilton AQI station measured the best air quality for those contaminants being monitored, provided little data down wind of any industrial source, and was not providing information that could readily be used to deal with other suspected air quality issues in north and east Hamilton. The decision to remove the East Hamilton AQI station upset many area residents who felt that that the east end was no longer being represented by way of air monitoring.

The MOE presently operates 3 Air Quality Index (AQI) monitoring stations in the City: Hamilton Downtown (Ward 2 – Beasley Park), Hamilton Mountain (Ward 7 – Vickers Rd.), and Hamilton West (Ward 1 – Columbia College/ 403 on-ramp).

In May, 2010, Council forwarded a letter through the Mayor’s office to the Premier of Ontario requesting that an air monitoring station be re-instated in Hamilton’s east end. In response, the Premier of Ontario indicated that he will forward the letter of request to the Minister of the Environment for response, which to date has not been received.
POLICY IMPLICATIONS

The proposed pilot project to provide air monitoring in the east end of the City works toward satisfying objectives A1.3 and A5.1 of the Public Health Services Strategic Goal “A” Action Plan. The respective objectives as stated are to “Investigate technologies that will provide real-time air quality reporting, and allow for modelling and predicting air quality”, and “Investigate and make recommendations about opportunities for expanding air quality monitoring capacity in Hamilton”.

Public Health Services staff will work with Financial Services staff to ensure that Corporate Purchasing policies are followed in the event that a pilot air monitoring project is initiated.

RELEVANT CONSULTATION

Clean Air Hamilton (CAH)
Members of CAH were consulted on the issue of air monitoring in Hamilton’s east end and all support the idea of a pilot project for air monitoring there. Dr. Brian McCary, Chair of CAH, disagreed with the MOE’s decision to remove the air monitor from Sam Manson Park in 1996 and has suggested that the City of Hamilton should purchase Airpointer systems to be used at various locations around Hamilton for the purpose of air monitoring. CAH has had a long-term goal of expanding the fixed air monitoring network in Hamilton which would enhance the knowledge of local air emission sources and their impacts.

Hamilton Air Monitoring Network (HAMN)
Neil Buonocore, HAMN Administrator, was consulted on the matter of providing real-time data generated from a monitor on the HAMN website. Mr. Buonocore indicated that air monitoring data generated from a pilot project site in the east end could be received by HAMN and made available in real-time to the public through the HAMN website at an annual cost of $500.

MOE
The MOE was consulted on the history of the East Hamilton AQI Station and the reasons for why the station was removed.

Rotek Environmental Inc.
Rotek was consulted on the technical options for air monitoring for a pilot project. Information provided by Rotek about option advantages and disadvantages. Rotek Environmental Inc. is responsible for providing technical services to HAMN.
Air monitoring allows for the collection of outdoor air quality data that can be used to identify local sources of air emissions and to evaluate the potential health impacts on humans due to these exposures. Hamilton has a limited network of fixed air monitors at present where many areas of the City and a number of emissions sources are not adequately monitored, creating gaps in local knowledge of air quality and air emissions.

A one-year pilot project could be initiated where a “4D Airpointer” air monitor system could be rented and placed at Sam Manson Park. The Airpointer system is capable of measuring 4 air pollutant parameters from a suite of tests available. The pollutants being recommended for monitoring as part of this pilot project are ozone, oxides of nitrogen, particulate matter (2.5 micron), and sulphur dioxide. Measuring these pollutants will allow for comparability of data from this location to MOE-operated AQI stations across Ontario. The primary advantages of utilizing an Airpointer system for this pilot project are that the unit has a smaller space requirement compared to other options, it requires minimal power consumption relative to other options, and it can be re-located with relative ease if air monitoring is required at another location.

The site location of Sam Manson Park is being recommended for three primary reasons: 1) this site satisfies the criteria of being located in Hamilton’s east end, 2) the former East Hamilton AQI Station was operated from 1985 to 1996 at this site, which would allow for comparability of historic data to newly acquired data, and 3) this site has an existing power supply necessary to operate the proposed Airpointer system.

The City of Hamilton is a supporting affiliate of the Hamilton Air Monitoring Network (HAMN), which is a group committed to carrying out air quality monitoring as part of the MOE’s Source Emissions Monitoring program. The City has an opportunity to be progressive by conducting the proposed pilot project for air monitoring in the east end and adding to the body of information about air quality in Hamilton. Data obtained from the pilot project air monitoring station could be managed by the HAMN Administrator and be made available in real-time for public viewing through the HAMN website (www.hamnair.ca). Upon completion of the one-year pilot period, data gathered could be assessed by members of CAH, and a summary report along with any recommendations could be provided to the Board of Health.

The total cost of renting the proposed Airpointer for one year and having HAMN manage and provide data to the public through their network website is $69,500.
STATEMENT OF PROBLEM:

Background:

The air quality in the industrial areas of the East End of Hamilton has been a recurring concern for residents and businesses alike. The Hamilton Health Board has expressed particular concern over levels of particulate matter and nitrogen oxides in these areas. Due to the industrial nature of this area, it is highly likely that there will be sources of pollution that may negatively impact the health of residents. Therefore, it is necessary to determine the levels of pollution and to determine their sources. This pilot project will allow for the testing of new and innovative methods for measuring pollution.

ALTERNATIVES FOR CONSIDERATION:

1. Purchase air monitoring equipment and have HAMN operate.
   The cost of purchasing the proposed Airpointer system would be $110,000. In addition to this capital cost, annual operating costs of approximately $25,000 are required. The primary advantage of owning the proposed Airpointer system is that the unit can be re-located to different areas of the City with relative ease. This feature comes with its own multiple advantages: it could allow air quality data to be collected from areas of the City where historic gaps in data exist; investigations concerning air quality could be improved by utilizing the Airpointer, and; the unit could also enhance the air monitoring response provided in the event of environmental emergencies. However, costs could be increased if different pollutants needed to be measured. The City could decide to explore this option further after the initial one year pilot.

   Financial: The capital cost of purchasing an Airpointer is approximately $110,000 with an annual operating cost of approximately $25,000. If this alternative is approved, the request for funding will be included in the draft 2011 capital budget for Council’s consideration.

   Staffing: No additional staffing resources are required if this alternative is approved.

   Legal: No legal implications are expected if this alternative is approved.

2. Increase the number of pollutants monitored through rental or purchase of a different system.
   A larger fixed site would be required and costs would be increased. The pollutants measured through the Airpointer are those most commonly associated with human health effects and will give information to determine if there are intra-city differences in air quality. The added testing is not required for this pilot.

   Financial: The cost of renting a mobile trailer equipped to monitor 4 pollutants is approximately $69,500. If more than 4 pollutants are monitored, additional sensors could be added at a cost range of approximately $6,000 to $9,000 per sensor, depending on the pollutant monitored. If this alternative is approved, the request for funding will be included in the draft 2011 capital budget for Council’s consideration.

   Staffing: No additional staffing resources are required if this alternative is approved.

   Legal: No legal implications are expected if this alternative is approved.

3. Do Nothing.
   There is no need for any additional resources within this option, however, no additional air monitoring in the East End of Hamilton will occur.
Financial: No additional funding is required if this alternative is approved.

Staffing: No additional staffing resources are required if this alternative is approved.

Legal: No legal implications are expected if this alternative is approved.

**CORPORATE STRATEGIC PLAN**

The recommendations put forward in this report uphold the following objectives contained in the Corporate Strategic Plan:

*Environmental Stewardship*
- City providing environmental leadership by attempting to learn more about the quality of air in the east end of Hamilton

*Healthy Community*
- Provides air quality information to the public in real-time to assist with informing decisions about outdoor activities.

**APPENDICES / SCHEDULES**

None.