CleanAir HAMILTON

2003-2004 Progress Report

November 2004

Table of Contents

Executive Summary

Clean Air Hamilton is a community initiative which promotes and supports improvements to air quality in the City of Hamilton. It has a diverse membership with representation from environmental organizations, businesses, academic institutions, and different levels of government. Initiated in 1998, *Clean Air Hamilton* works to improve air quality in Hamilton by:

- Initiating research on air quality;
- Providing policy advice to all levels of government;
- Encouraging emission reductions among companies operating in Hamilton; and
- Promoting behavioural changes among individuals living and working in Hamilton.

Clean Air Hamilton receives financial support from the City of Hamilton, reports annually to City Council, and provides direct benefits to the citizens of Hamilton. Viewed as a success at the federal, provincial and municipal levels, *Clean Air Hamilton*'s achievements are attributed in large part to the efforts of many volunteers and the funding provided by City Council. The City's funding is matched many times over by the in-kind support offered by experts and organizations that volunteer their resources to the *Clean Air Hamilton* process.

Clean Air Hamilton emerged out of the VISION 2020 process and addresses air quality issues identified initially by that process. *Clean Air Hamilton* initiatives aim to achieve the two VISION 2020 goals that are related to air quality and climate change:

- To ensure that the City has the best air quality of any major urban area in Ontario; and
- To reduce greenhouse gas emissions by 20% from 1990 levels.

As a partner with VISION 2020, *Clean Air Hamilton* programs are designed to address the following VISION 2020 theme areas:

- Natural Areas and Corridors
- Reducing and Managing Waste
- Consuming Less Energy
- Changing Our Modes of Transportation
- Land Use Issues in Urban Areas
- Personal Health and Well-being

Together with VISION 2020, *Clean Air Hamilton* 's community-based process for local air quality improvement earned the City of Hamilton the prestigious Dubai International Award for Best Practices in Improving the Living Environment in 2000.

Clean Air Hamilton sponsored its third biannual *Upwind/Downwind Conference* in March, 2004. As a result of exposure from the conference and the *Clean Air Hamilton* web site, inquiries continue to be received from municipalities throughout southern Ontario, Canada and the U.S. related to *Clean Air Hamilton*'s initiatives and activities. The value of the *Clean Air Hamilton* website is measured by the frequency of access. In 2004, it received, on average 723 hits per week (i.e. approximately 37,700 per year).

In the spring of 2004, *Clean Air Hamilton* convened a “visioning exercise” to re-examine its goals, structure, membership and recommendations to improve air quality. This visioning exercise was instigated to revitalize the initiative for future success and provide further benefits to the community. This process gave rise to a new mission statement, a clarification of the program's goals, a commitment to build and expand membership, and a re-assessment and prioritization of its recommendations for air quality improvements.

In 2002, *Clean Air Hamilton* published an updated air pollution health assessment which estimates that air pollution in Hamilton contributes to approximately 100 premature deaths and 620 hospital admissions each year. These estimates demonstrate that, while substantial improvements have been made with respect to Hamilton's air quality, air pollution continues to present a substantial risk to the respiratory and cardiovascular health of Hamilton residents.

Ten-year air quality trends for Hamilton demonstrate that:

- Significant improvements have been achieved for a number of industrial air pollutants;
- No progress has been made for air pollutants most closely related to the transportation sector; and
- Ambient air levels of ground-level ozone, which comes primarily from outside the Hamilton area, are getting worse.

The trends for Nitrogen Oxide (NO_2), ground level ozone and fine particulate matter ($PM_{10/2.5}$) suggest the need for greater reductions from transportation and industrial sources in Hamilton, as well as greater reductions in smog precursors from upwind sources.

While air quality in Hamilton has improved substantially over the last decade, the levels of air pollution remain higher than, or equal to, those in other communities in Ontario.

To gain further improvements in air quality, *Clean Air Hamilton* will have to move into a new phase that supplements voluntary contributions with committed funding from key stakeholders, including various levels of government, the City of Hamilton, local industries and academic institutions.

1.0 Introduction

1.1 Background

Clean Air Hamilton presents the 2003-2004 Progress Report on Air Quality to City Council. This report presents the activities undertaken by *Clean Air Hamilton* in 2003 and 2004 to help improve air quality in the City of Hamilton. This report gives an update on new initiatives and on activities that have continued from previous years. It includes four appendices:

- **Appendix A** is a summary of the outcomes of the Visioning Exercise undertaken by members of Clean Air Hamilton to revitalize the initiative in the coming years;
- **Appendix B** is a Strategic Action Plan that identifies and organizes the recommendations, actions and priorities that will guide the work of Clean Air Hamilton over the next few years;
- **Appendix C** presents updated Air Quality Trends and Comparisons for Hamilton; and
- **Appendix D** is a summary of the third biannual conference called Upwind/ Downwind: A Practical Conference on Improving Air Quality, held in March 2004 and hosted by Clean Air Hamilton and the City of Hamilton.

The former Regional Council endorsed the establishment of Clean Air Hamilton (then called the Hamilton-Wentworth Air Quality Improvement Committee or HAQIC) in 1998 following the publication of a series of reports by the Hamilton Air Quality Initiative (HAQI) in October 1997.

HAQI began in 1995 as a cooperative initiative between all levels of government, the community-at-large, non-governmental organizations, and academia to assess the social, environmental, human health, and economic impacts of air pollution in the City. The HAQI reports concluded with 25 recommendations directed at actions needed to improve air quality, including suggestions and strategies for individuals, corporations and different levels of government.

1.2 Success Related to Contributions

Clean Air Hamilton has received attention regionally, nationally and internationally for its outstanding leadership and commitment to improving local air quality. Many innovative initiatives have emerged, directly and indirectly, from this program.

The City of Hamilton provides an annual budget of $88,000/year in support of Clean Air Hamilton. This money is matched many times over by the in-kind funding provided by volunteers in the community. It has been estimated that Clean Air Hamilton's volunteers provide time, energy and expertise that is worth about $400,000/year.

While members of Clean Air Hamilton are deeply committed and give generously of their time and resources, such a heavy reliance on their benevolence cannot be expected to continue indefinitely. Due to an ever-increasing work-load and the range of projects undertaken, the current members have felt over-worked. As a result of this dynamic, most of the programs running in 2003 and 2004 were programs that were initiated in previous years. It has become apparent that additional funds will be required in the future if Clean Air Hamilton is to make additional progress toward achieving its air quality goals. Clean Air Hamilton will continue to seek external sources of funding but committed sources of funding will be needed for future success.

2.0 Recommitting to Clean Air

2.1 Visioning Exercise

In the spring of 2004, Clean Air Hamilton undertook a Visioning Exercise to re-examine its goals, structure, membership and recommendations to determine how to revitalize the program for future success. This exercise took place over two days about one month apart and gave rise to a new mission statement, a clarification of Clean Air Hamilton's goals, a commitment to expand membership, and a reanalysis and prioritization of Clean Air Hamilton's recommendations for future action. The outcomes are described in the following sections and in **Appendices A** and **B**.

2.2 Mission Statement

"Clean Air Hamilton is an innovative multi-stakeholder agent of change dedicated to improving air quality in our community. We are committed to improving the health and quality of life of citizens through communication and promoting realistic, science-based decision-making and sustainable practices."

2.3 Goals

Clean Air Hamilton has identified the following goals to guide its work over the next 2 to 5 years:

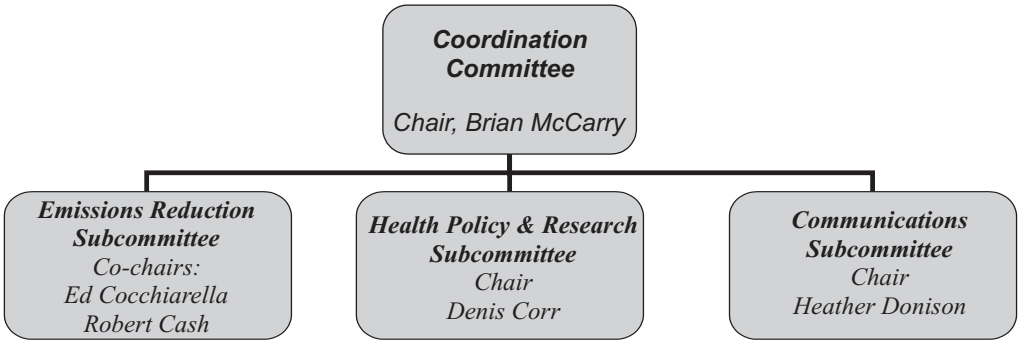
- To raise Clean Air Hamilton's visibility in the community and be recognized as the authoritative voice on air quality issues;
- To provide information and advice that decision-makers value;
- To influence decision-makers to choose sustainable alternatives;
- To improve air quality throughout the City to meet all ambient air quality criteria;
- To galvanize broad-based support for a process and an action plan to improve air quality; and
- To affect behavioural change to improve air quality.

2.4 Structure, Membership and Participation

It was decided that the structure of Clean Air Hamilton should be revised slightly to increase effectiveness and encourage participation by new partners. The Coordination Committee, the Communications Subcommittee, and the Emissions Reduction Subcommittee will remain the same in structure, while the former Health & Environmental Impacts Research and Policy Development Work Groups will be collapsed into one group, the Health Policy & Research Subcommittee (See **Figure 1**).

The Subcommittee chairs will be encouraged to recruit members who can share the workload. The Subcommittees will develop realistic work plans for their action plans and changes in those work plans will be approved by the Coordination Committee.

Figure 1: Organizational Structure of *Clean Air Hamilton*



Clean Air Hamilton is committed to advertising for members and recruiting members who are retired and have the time and expertise/interest for the committee work; representatives of schools or school boards; groups who can partner on one or more of the actions identified by the subcommittee; and members of the media (see **Appendix A** for more details on the outcomes of the Visioning Exercise).

2.5 Recommendations

At the Visioning session, *Clean Air Hamilton* members reviewed in detail the recommendations made by HAQI in 1997 and revised by *Clean Air Hamilton* in 2000. Recommendations which were still deemed necessary and relevant were clarified and refocused if necessary, whereas recommendations that were no longer considered relevant or had been completed were deleted. The list of revised recommendations were then organized into a Strategic Action Plan that identifies the actions associated with each recommendation, the *Clean Air Hamilton* body responsible, and the groups and/or individuals to be sought as members or partners to achieve these goals. *Clean Air Hamilton* will assign priorities to each action item (see **Appendix B** for the Strategic Action Plan).

2.6 Co-ordination Group Members in 2003/2004

Dr. Brian McCarry, McMaster University, Chair
Heather Donison, Green Venture
Ed Cocchiarella, Dofasco
Sharon Mattiuz, Stelco
Robert Cash, Archer Daniels Midland
Carl Slater, Ministry of the Environment
Denis Corr, Focus/Rotek
Hossein Naghdianei, Environment Canada
Rob Hall, Public Health & Community Services, City of Hamilton
Mark Nazar, Public Health & Community Services, City of Hamilton
Bill Janssen, Planning & Development, City of Hamilton
Linda Harvey, Planning & Development, City of Hamilton
Kim Perrotta, Planning & Development, City of Hamilton

3.0 Hamilton Air Quality

3.1 Air Pollution Health Impacts

The 2002 air pollution health assessment report prepared by Michael Jerrett of the McMaster Institute of Environment and Health for the City of Hamilton estimated that the five key air pollutants, nitrogen dioxide (NO_2), ground-level ozone, inhalable particulate matter (PM_{10}), sulphur dioxide (SO_2) and carbon monoxide (CO), contribute to about 100 premature deaths, 140 respiratory hospital admissions and 480 cardiovascular hospital admissions each year in Hamilton **(see Figure 2 and Table 1).**

These estimates, which are based on the most recent health studies and Hamilton's air quality and health statistics, allow us to identify the air pollutants that are contributing most to the health impacts associated with air pollution in Hamilton.

As illustrated in **Figure 3** and **Table 1**, the estimates indicate that NO_2 and ozone are responsible for a significant proportion of the premature deaths and hospital admissions attributed to air pollution in Hamilton.

Figure 2: Air Pollution Health Impacts, Hamilton, 1997

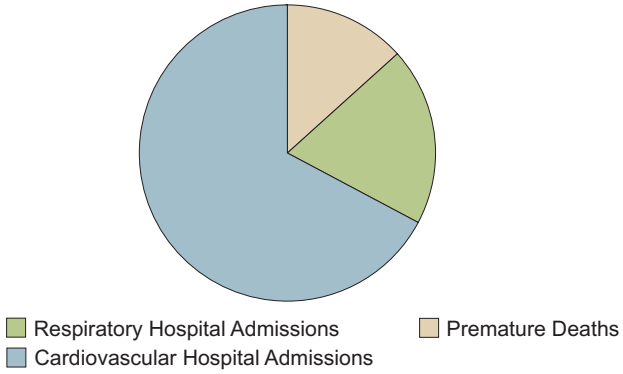


Figure 3: Contribution of Air Pollutants to Air Pollution Health Impacts, Hamilton (%)

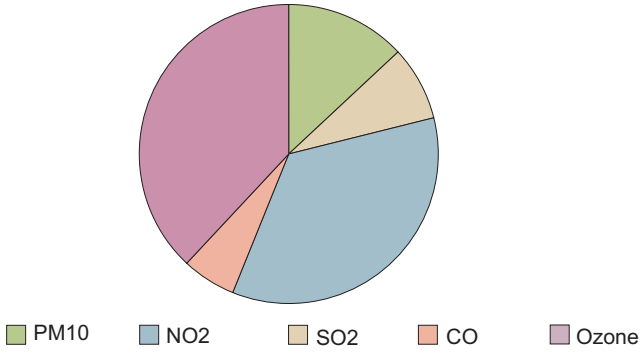


Table 1: Premature Deaths + Hospital Admissions Attributed to Five Key Air Pollutants, Hamilton, 1997

Pollutant	Premature Deaths	Respiratory Hospital Admissions	Cardiovascular Hospital Admissions	Total
PM_{10}	14	27	49	90
SO_2	16	20	26	62
NO_2	27	48	176	251
CO	3	NA	38	41
O_3	36	44	191	271
Total	96	139	479	714

Ref: Michael Jerrett & Talar Sahsuvaroglu. (2003). A Public Health Assessment of Mortality and Hospital Admissions Attributable to Air Pollution in Hamilton. McMaster Institute of Environment and Health.

3.2 Hamilton Air Quality - Trends and Comparisons

When we examine trends in ambient air quality in Hamilton over the last decade, it is apparent that air levels of pollutants such as benzene, benzo[a]pyrene, total reduced sulphur and SO_2 have been significantly reduced (see **Appendix C** for more details). Many of these reductions have arisen due to actions taken to reduce emissions from the industrial and transportation sectors.

Less progress has been made on other fronts: air levels of PM_{10} have decreased slightly; air levels of NO_2 have remained constant; and air levels of ozone, which vary substantially from year to year due to weather conditions, have been increasing (see **Appendix C**).

When we compare air levels in Hamilton to other large or industrialized communities in Ontario, it appears that:

- Levels of respirable particulate matter ($PM_{2.5}$) are slightly higher in downtown Hamilton than in other communities in Ontario;
- Levels of NO_2 in downtown Hamilton are fairly high and similar to those experience in downtown Toronto;
- Levels of ozone on the Hamilton mountain are fairly high and similar to those experienced by London and other southwestern communities; and
- Levels of SO_2 in Hamilton are lower than air levels in Sarnia, Windsor, Sudbury and Toronto (see **Appendix C**)

This represents a significant improvement from the situation 10 years ago

Air Quality in Hamilton is impacted by a number of factors that do not occur together in most communities in Ontario:

- Hamilton is affected by transboundary air pollution from the midwestern United States in a manner similar to that experienced by other communities in southwestern
- Hamilton is downwind of the Nanticoke coal-fired generating station;
- The roads in and around Hamilton are heavily used by both commuters and transport trucks;
- Hamilton is home to a number of large industries; and
- Hamilton's topography and weather conditions can concentrate air pollutants in the downtown core.

3.3 Emission Sources within Hamilton

The information needed to produce a comprehensive and current inventory of emission sources within the City of Hamilton is not available. **Table 2**, derived from Environment Canada's 1995 Criteria Air Contaminant emissions database, does provide a gross estimate of the sources of key air pollutants within the City.

Table 2: Estimated Emissions by Source, Hamilton, 2001 (Tonnes/year)

Source	PM_{10}	$PM_{2.5}$	SO_2	NO_X	VOCs	CO
Industrial	10,167	2,764	25,771	10,903	28,540	501,768
Area Sources*	4,212	1,571	427	1,469	6,908	8,566
Transportation	879	810	1,638	14,217	10,282	107,808
(Off-Road)* *	(523)	(482)	(464)	(7,271)	(5,514)	(68,572)
(On-Road)	(256)	(241)	(191)	(6,320)	(4,105)	(41,330)
Road Dust***	6,992	1,366	NA	NA	NA	NA
Total	22,250	5,145	27,836	26,589	45,244	618,142

Ref: RWDI Inc. (2004). Transportation Master Plan - Air Quality Policy Paper (May 2004 Draft). Prepared for the IBI Group for the City of Hamilton.

*Includes fireplaces & furnaces in homes & businesses & general solvent use

**Excludes marine, railroad and aircraft; Includes vehicles and equipment used for construction, farming, and lawn and garden maintenance.

***Road dust includes fine particulate matter from vehicle exhaust, tire wear and construction/industrial sites that can become airborne when disturbed.

As illustrated in **Figures 4 to 8**, the data suggests that:

- The transportation sector is the leading source of NO_X emissions within the City followed closely by the industrial sector, with off-road sources presenting the greatest share of the emissions from the transportation sector;
- The industrial sector is the leading source of directly-emitted $PM_{2.5}$, followed by road dust and area sources such as fireplaces;
- The industrial sector is the leading source of SO_2; and
- The industrial sector is the leading source of volatile organic compounds (VOCs) followed by releases due to general solvent use and the trans- transportation sector.

SO_2 and NO_2 are air pollutants that can harm human health directly or when transformed in the atmosphere to sulphates and nitrates that contribute to air levels of $PM_{2.5}$. Nitrogen oxides (NO_x) can also react with VOCs in the atmosphere to produce ground level ozone.

Figure 4: Emission Sources by Sector, Nitrogen Oxides, Hamilton, 2001 (%)

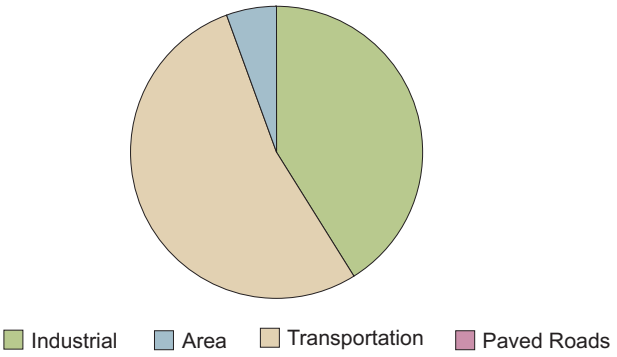


Figure 5: Emission Sources by Sector, Volatile Organic Compunds, Hamilton, 2001

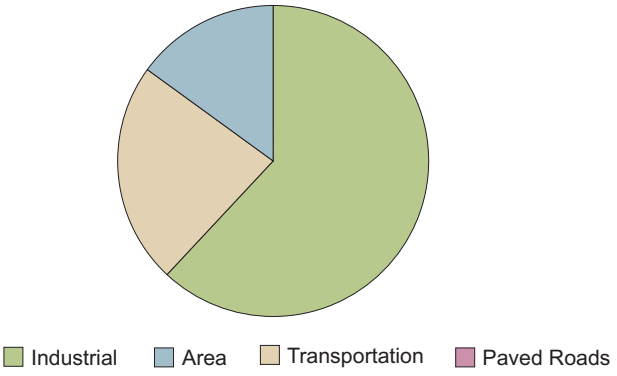


Figure 6: Emission Sources by Sector, Fine Particulate Matter ($PM_{2.5}$), Hamilton, 2001 (%)

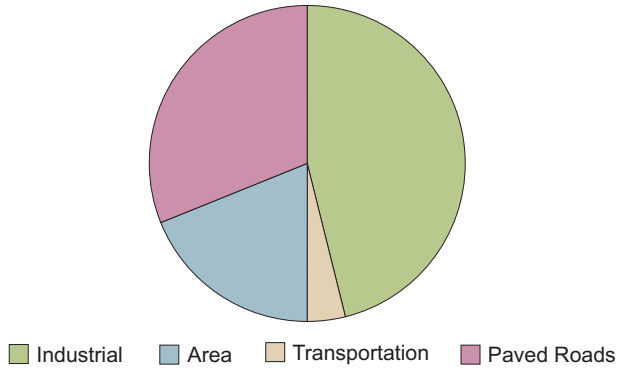


Figure 7: Emission Sources by Sector, Sulphur Dioxide, Hamilton, 2001 (%))

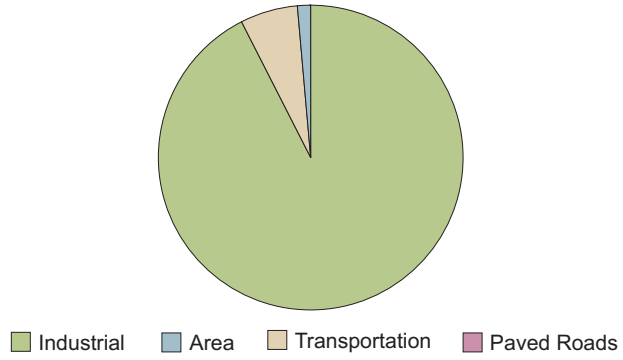
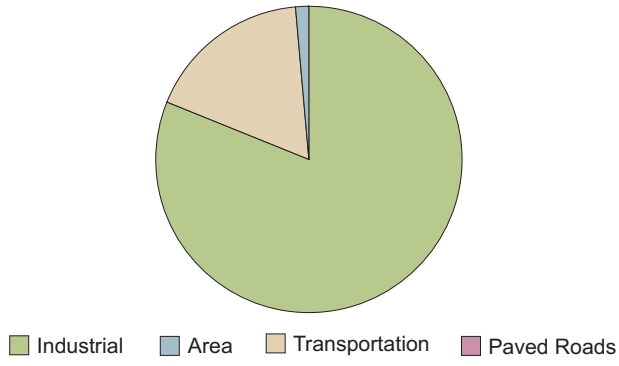


Figure 8: Emission Sources by Sector, Carbon Monoxide, Hamilton, 2001 (%)



3.4 Transportation Sector - Contribution to Air Pollution & Health Impacts

Within Hamilton, there is a great awareness of the contribution of the City's industrial sector to air quality concerns within the City. However, there is less awareness of the contribution of the transportation sector to air pollution and its resultant negative health impacts. With advances in health-based research, there is a better understanding of the contribution of NO_2 and ozone to the health impacts associated with air pollution. This knowledge has shifted attention towards the transportation sector which is often the leading source of NO_2 in a community and a significant source of the precursors of ground-level ozone.

In addition, in recent years, a number of studies have been directed at determining that health impacts associated with living near traffic corridors. These studies suggest that levels of air pollutants can be higher along roadways than is indicated by ambient air monitors and that pollution-related health impacts can be greater among people who live or work near busy roadways. For example, a study team led by Dr. Finkelstein at McMaster University has demonstrated that Hamilton residents who live near major roads may live 2.5 fewer years than those who do not. Studies such as this emphasize the need to reduce air pollution associated with the transportation sector.

While legislated vehicle emission and fuel standards have significantly reduced the emissions associated with individual vehicles over the last decade, these improvements have been off-set by an increase in the number of vehicles used in and around Hamilton and the in the average number of kilometers driven. Future improvements in transportation-related air quality will require a shift towards other modes of transportation as well as a shift towards alternative fuels and technologies.

The significant contribution of the off-road sources to the transportation sector suggests the need for research to identify those sources within Hamilton, and to identify the actions that can be taken to reduce them.

4.0 *Clean Air Hamilton* Program

4.1 Current Programs

Clean Air Hamilton received $88,000 in funding from the City of Hamilton in 2003 and 2004. Funding from the City of Hamilton for *Clean Air Hamilton* was committed to the following programs/activities:

- Upwind/Downwind Conference
- Residential Energy Efficiency Project/Wise Energy Use *
- Visioning Exercise
- Commuter Challenge*
- Anti-idling Campaign & Smog Plan Materials
- Media Kit
- Homeowner Tree Subsidy*
- Trees Plantings for Award Winners & Conference Speakers
- Heritage Seeds & Trees

** Implemented by Hamilton-Wentworth Green Venture Inc.*

4.2 Hamilton Air Monitoring Network

The Hamilton Air Monitoring Network (HAMN) officially took over operation of all Hamilton air quality monitoring stations, except for the three Air Quality Index (AQI) stations, on May 1, 2003. The network is run by a consortium of companies in Hamilton. The West Central Region Office of the Ontario Ministry of the Environment (MOE) has given HAMN the responsibility to operate, maintain and upgrade all the industrial air monitoring equipment previously operated by the MOE in Hamilton. The cost of operating and upgrading the network will be borne by the members of the network. HAMN will supply air quality monitoring reports to the MOE on a regular basis. The MOE will continue to operate the three AQI sites in Hamilton and will make this data available to the industrial partners in this consortium.

4.3 Commuter Challenge

The Commuter Challenge is a week-long, friendly competition where Canadian cities compete to reduce air pollution by using active and sustainable modes of transportation. Participants make a commitment to walk, jog, cycle, rollerblade, take public transit, carpool or telecommute during a pre-established week, called *National Environment Week*.

In 2003, about 150 City employees participated in the Commuter Challenge. This represents about one half of the people who participated in 2002. The decline in participation is attributed in part to the late arrival of marketing materials provided by the national organizers of the campaign. The community-based program, run by Green Venture, experienced the same decrease in participation; 36 organizations and 990 individuals in the community participated in Commuter Challenge in 2003, which is less than half of the numbers who participated in 2002. Participation in the City's Commuter Challenge campaign improved in 2004; 355 of the City's employees, or 5.3% of all City staff, participated. While this number fell short of the Mayor's goal – to have 10% of City employees participate -- it represents a significant improvement over participation experienced in 2003. Over the course of the week, City staff collectively reduced their travel by 30,600 kilometers, while preventing about 28,350 grams of NO_x and 5,840 kilograms of. greenhouse gases from entering the atmosphere.

The community-based Commuter Challenge program also succeeded in revitalizing its numbers in 2004; 38 organizations and 1,900 individuals participated in 2004. Over the course of the week, individuals in the community collectively reduced their travel by about 155,170 kilometers, while preventing about 163,700 grams of NO_x and 33,700 kilograms of greenhouse gases (i.e. eCO_2) from entering the atmosphere.

4.4 Upwind/Downwind Conference

Clean Air Hamilton and the City of Hamilton hosted the third bi-annual conference on air quality in March 2004. The 2-day conference aimed to cultivate an understanding of the links between air quality, human health, urban sprawl and urban planning. The conference also highlighted the ways in which industry, community groups and governments can contribute to improvements in air quality. Approximately 115 planners, public health professionals, environmental professionals and citizens participated in the event. Positive feedback was received from all delegates. The Conference, which cost $29,171.00 to organize, brought in $36,626.00 in revenues; $11,626 from registration fees and $25,000.00 from sponsors for a net profit of $7,455 (see **Appendix D** for more details)(Refer to November 12, 2004 report # Pd04314).

4.5 Tree Planting Programs

Homeowner Tree Planting Program

There are many reasons to encourage tree planting within a community: trees act as carbon sinks that can off-set the release of greenhouse gases; they provide shade that can mitigate the “urban heat island effect”; they offer shade that can protect people from the damaging effects of the sun's ultra-violet light; they can provide cool retreats for people during heat waves; and they may remove many pollutants from the atmosphere.

The City, in partnership with *Clean Air Hamilton* and Green Venture, offers homeowners in Hamilton subsidies of $29.99 per tree for up to two native trees to be planted on their properties. This program was improved in several ways in 2003. The on-line order form was improved to make it easier for customers to place their orders and faster for Green Venture to process orders. Delivery and planting services were offered to customers for the first time on a cost recovery basis. In 2003, Green Venture delivered and planted almost 20% of all trees ordered. The number of tree species was expanded as well, and the newly introduced Tulip Tree represented 11% of all tree sales. In total, approximately 320 trees were planted in the community in 2003.

Twenty per cent more trees were sold in the first half of 2004 than the total sold in 2003. By June 30th, 2004, 400 trees had been sold under the Tree Planting Program. Further improvements were made to the program in 2004. Tree planting services were expanded to include the provision of wood chips, compost, and optional consultations with respect to ideal planting locations. In addition, a greater emphasis was placed on program promotion which has increased the client base. A comprehensive web site, launched in 2002, provides detailed information on the Tree Planting Program (www.greenventure. on.ca/tp.asp).

Heritage Tree Program

The City has partnered with *Clean Air Hamilton*, the Hamilton Industrial Environmental Association (HIEA), the Royal Botanical Gardens, the Bay Area Restoration Council (BARC), the Hamilton Waterfront Trust, Halton Conservation and the City of Burlington to reintroduce tree species that were once native to this area. The project involves collecting seeds from surviving trees, propagating them in a greenhouse, and then planting the seedlings in and around the Hamilton Harbour. To date, 900 seedlings or "whips" have been propogated. The first stage of planting will begin in the spring of 2005.

VISION 2020 Award Tree Planting

Each year, as an expression of gratitude to those in the community who work to support the goals of VISION 2020 and *Clean Air Hamilton*, trees are planted in the name of winners of the VISION 2020 Sustainable Community Awards.

4.6 Corporate Smog Response Plan

Whenever the Ontario Ministry of the Environment issues a smog advisory for the City of Hamilton, the City enacts its Corporate Smog Response Plan. In so doing, the City modifies its activities and thereby reduces emissions of smog- forming pollutants, which would otherwise contribute to the problem. Departmental leads train employees on departmental policies that come into effect on smog days.

4.7 Anti-idling Program & Policy

The City of Hamilton does not currently have a vehicle idling control policy or program. City staff have drafted an idling control policy to be directed at City staff who operate City-owned vehicles. This policy, which has been drafted in consultation with the Fleets Department, has the objectives of saving money, reducing greenhouse gas emissions that contribute to climate change, and reducing emissions of air pollutants that contribute to localized air quality concerns.

City staff have been developing an idling awareness campaign that would be directed at the broader community as well. This campaign would have the dual objectives of reducing greenhouse gas emissions that contribute to climate change and reducing emissions that can produce air quality concerns in localized areas. This campaign will aim to encourage behavioural change among those who live and work in Hamilton through education and awareness. Much of the developmental work for this campaign has been completed; 18 signs have been produced, sign posting locations have been identified, and brochures have been printed. City staff will work with the Communications Subcommittee to launch this campaign.

4.8 Clean Air Awards

The *Clean Air Hamilton* Air Quality Awards are given out as part of the VISION 2020 Sustainable Community Recognition Awards. These awards acknowledge the important contribution of individuals and organizations who work to improve air quality in the City. This year marked the

inauguration of the Waterfront Trail Project, where all past and future recipients of an Air Quality award will be commemorated on plaques located on trail markers along the Waterfront Trails. These bronze plaques are funded through the cash prize received as part of the United Nations-Dubai Municipality Award for Best Practices to Improve the Living Environment. In 2000, the VISION 2020 Sustainable Community initiative and *Clean Air Hamilton* partnership were recognized, from a field of 770 applicant communities, as one of the 10 best practices in the world that integrate good governance with community empowerment and integrating the concept of sustainability into policies and program management.

In 2003, Clean Air awards were given to the Community Advisory Panel of the Hamilton Industrial Environmental Association (HIEA) and to the Hamilton Air Monitoring Network. In 2004, awards were given to Denis Corr of the Ontario Ministry of the Environment in recognition of a lifetime of service directed at improving Hamilton's air quality; Green Hamilton Committee, a committee of HIEA that has collaborated in the planting of 170 trees in the northeastern portion of the City since 1999; and Jordan Bowman, a grade 10 student who won silver medal in the 2004 Canada-wide Science Fair for a project that examined the air quality impacts associated with the development of a new neighbourhood beside a nearby school.

4.9 *Clean Air Hamilton* Communications

In 2003 and 2004, *Clean Air Hamilton* developed and produced a media kit that includes concise and user-friendly summaries on: *Clean Air Hamilton*, the health impacts associated with air pollution, the sources of air pollution, and some of the actions that can be taken to reduce air pollution.

5.0 Conclusions and Recommendation

The 2002 air pollution health assessment study demonstrated that air pollution continues to present a significant risk to public health in Hamilton. Commissioned by *Clean Air Hamilton*, this study estimated that five key air pollutants contribute to approximately 100 premature deaths and 620 hospital admissions in Hamilton each year. While air pollution health impacts are associated with a synergistic reaction between the key air pollutants, NO_2 and ground-level ozone appear to be the ones contributing most to health impacts in Hamilton.

The trends in levels of air pollutants in the City demonstrate that significant progress has been made on some pollutants. Air levels of benzene, benzo(a)pyrene, total reduced sulphur and SO_2 have been substantially reduced over the last decade in response to actions taken to reduce emissions from both the industrial and transportation sectors. These improvements have been particularly evident in the communities located near the industrial core of the City. However, little progress has been made to reduce air levels of fine particulate matter (e.g. PM_{10} and $PM_{2.5}$).

The air quality trends also demonstrate that little progress has been made on air levels of NO_2 and ground-level ozone. The transportation sector continues to be a major source of NO_2 and ozone despite significant improvement in emission standards. This suggests the need to examine how land use and transportation planning decisions impact on air quality and human health. It also suggests the need to examine how alternative fuels and technologies can be used to reduce emissions associated with both on-road vehicles and off-road equipment.

The trends for NO_2, ground-level ozone and $PM_{10/2.5}$ suggest the need for greater reductions from the transportation and industrial sources in Hamilton, as well as greater reductions in smog precursors from upwind sources.

With the Visioning Exercise undertaken in the spring of 2004, *Clean Air Hamilton* has identified the mission, goals and recommendations that will guide its work in the coming years. Recruiting new members has been identified as essential to the revitalization of the initiative. Action is to be directed in three directions: towards research that clarifies which air pollutants and emissions sources contribute most to poor air quality and negative health impacts in the City; towards actions that reduce emissions from significant sources within the City; and towards education and social marketing that encourages the changes in behaviour needed from individuals working and living in the City.

In 2005, Clean Air Hamilton will continue to seek additional sources of external funds to support its initiatives. It will, for example, explore the funding opportunities that may be presented by the environmental commitments made by the provincial and federal governments. It will work to expand its membership and to cultivate partnerships with organizations that have goals that are consistent with those of Clean Air Hamilton. It will also continue to develop relationships with City staff across the Corporation to ensure that air quality goals are integrated into the decision-making processes across Divisions within the City.

Appendix A

Clean Air Hamilton: Visioning Exercise

(Adapted from the June 2004 Strategic Plan Report prepared by PMHubbard and Associates)

Vision Statement

"Clean Air Hamilton is an innovative multi-stakeholder agent of change dedicated to improving air quality in our community. We are committed to improving the health and quality of life of citizens through communication and promoting realistic, science-based decision-making and sustainable practices."

Goals

Clean Air Hamilton identified the following goals to be focused on over the next 2-5 years:

- To raise Clean Air Hamilton's visibility in the community and be recognized as the authoritative voice of AQ issues
- To provide information and advice that decision-makers value
- To influence decision-makers to choose sustainable alternatives
- To improve Air Quality throughout the City to meet all ambient Air Quality criteria
- To galvanize broad-based support for a process and an action plan to improve air quality
- To affect behavioural change to improve Air Quality

Structure, Membership and Participation

Clean Air Hamilton will consist of:

- Coordinating Committee Chaired by Brian McCarry. Membership to consist of current membership.
- Health Policy and Research Subcommittee Denis Corr
- Emissions Reduction Subcommittee Ed Cocchiarella, Robert Barlow Cash
- Communications Subcommittee Sharon Mattiuz, Heather Donison

Sub-Committee chairs will recruit committee members and distribute workload. The sub-committees will develop realistic work plans for their action plans. If changes are requested to action plans, the changes will be approved by the Coordinating Committee.

Clean Air Hamilton will advertise for members and recruit:

- Those who are retired and have time and expertise/interest for the committee work
- Representatives from schools or school boards;
- Groups who can partner on one or more of the actions identified; and
- Media

Committee members should be able to commit to at least one year. A succession plan is needed.

Recommendations

In the 1997 HAQI report and in the 2002 CAH Progress Report several recommendations are listed for CAH to take actions on. The 2004 Clean Air Hamilton Strategic Planning Sessions reviewed the recommendations and revised or deleted recommendations that were no longer considered relevant. The following is the revised list of recommendations that will form the basis of the action plan. The numbers refer to the numbering of the recommendation in the 1997 HAQI report. Recommendations that are not included in this list have been either completed or work has stopped on them because they are no longer relevant.

1. Advocate for the implementation of Code of the Best Practice Guidelines.
2. Advocate for Best Available Control Technology economically achievable and practices for major sources of pollutants.
3. Monitor the implementation of the Strategic Options Process (SOP) for the iron and steel sector.
4. Reduce the number of single vehicle occupancy auto trips through:
    - Supporting the link between population, employment growth and transportation needs
    - Enhancing HSR bus services;
    - Designing sustainable urban development;
    - Promoting cycling;
    - Promoting walking;
    - Discouraging downtown parking.
5. Minimize the emissions resulting from private vehicle use by:
    - Promoting car-pooling;
    - Offering discounts on vehicle tune-ups; and
    - Minimizing discretionary trips.
6. Support standards for vehicle emissions and on-going vehicle emissions standards.
7. Advocate for anti-idling by-laws.
8. Achieve more efficient commercial vehicle flow.
9. Greening of fleets:
    - Advocate for hybrid vehicles;
    - Schedule off-peak trucking shipments;
    - Replace old trucks;
    - Alter fleet technology;
    - Advocate for the use of alternative fuels;
    - Specify trucks and vehicles that meet or exceed current standards in purchase contracts
    - Switch to rail/marine for shipping of goods.
10. Advocate for control of fugitive dusts by:
    - Establish paving by-laws;
    - Establish fugitive dust control by-laws;
    - Establish operating standards for trucks;
    - Establish fugitive dust control by-laws;
    - Use best available control technology;

11. Advocate for reduced trans-boundary pollution.

12. Advocate for the development and implementation of energy conservation measures including:
    - Municipal energy reduction programs;
    - Industrial energy reduction programs;
    - Alternative energy pilot programs;
    - Subsidies for energy audits;
    - District heating and co-generation projects;
    - Landfill gas recapture;

13. Promote public awareness through social marketing:
    - Videos
    - Pamphlets
    - Updates in print media
    - Combine with high profile municipal initiatives
    - Website
    - School Boards

14. Expand capability for respirable particulate, nitrogen oxides and ozone monitoring.

15. Maintain current Air Quality monitoring network.

16. Expand mobile/portable monitoring capabilities.

17. Promote and advocate for research about the origins, characteristics and health impacts of particulates and gaseous pollutants.

18. Analyze and model transportation emissions.

19. Promote and advocate for research on the impact of air toxics on ecosystems and agriculture.

20. Recommend and advocate for the development of a comprehensive emissions inventory, including greenhouse gases and atmospheric modeling.

21. Review and continue refining of environmental priorities.

22. Advocate for the development of a sustainable urban development planning strategy that addresses air quality issues.

23. Recommend and advocate the adoption of a health- based air quality index & the development of an asthma index; both indices should be part of daily air quality forecasts.

24. Establish public and private support for Clean Air Hamilton's actions.

25. Develop educational and communication programs to improve the public's knowledge of air quality issues.

26. To advocate for reductions in greenhouse gas emissions, recognizing the co benefits to local air quality and human health impacts.

Recommendations by City Council:

1. Develop and/or enhance tree planting for air quality improvement; and
2. Develop a Community Smog Response Plan.

Action Plan

CAH developed a Strategic Action Plan in which recommendations have been organized into categories with a lead committee or individual and a target date for completing the action. The action plan should be reviewed quarterly by the Committees and dates revised if necessary. An annual review of each goal by the Clean Air Hamilton Coordination Group should take place as well (see **Appendix B** for the Strategic Action Plan)**.**

Appendix B

Strategic Action Plan - 2004

Key:
CC Coordinating Committee
Comm-Communications Subcommittee
Policy Research & Health Policy Subcommittee
AQC- Air Quality Coordinator
Emiss Emissions Reduction Subcommittee

Goal	Recom-mendations	CAH Group	Actions	Resources, Pressures &/or Opportunities	Potential Partners
CAH Effectiveness: 1.Build authority/ Visibility of CAH. 2.Galvanize broad-based support for CAH process & plans	 Inform & educate decision makers Establish support networks	**Comm & CC**	Distribute reports to decision makers. Do presentations(eg. new MOE Director, MOE Minister, Reg. Dir. Gen of Env Can) Meet with decision-makers. Engage Councillors. Use press to educate broader public. Engage neighbourhood associations.		
Education & Social Marketing: 1.Inform Community & Affect Behavioural Change. 2.Educate children	Public Awareness Campaign. Reduce Energy use at Home & Work. Promote car-pooling. Promote transit. Reduce # of Single-Occupancy Trips. Reduce idling. Encourage alternative modes. Educate re: Vehicle & Fuel Choices. Educate re: wood stoves. Encourage tree planting. Educate children	**Comm**	Develop a Communications Plan. Link website to other sites. Distribute pamphlets. Develop champions. Identify audiences for various products. Identify partners & programs. Work with HSR & downtown merchants re: promoting bus use (eg. Discount if show bus pass). Create information for science grades 5/6 curriculum. Encourage student journals.	Clean Air On-Line (CAOL) (GTA CAC) 2020 Social Marketing Campaign (Reduce vehicle & energy use by 20%). NRCan anti-idling program Env Can Smart Burn program Ecoschools curriculum for public/high school. • Waterloo Region curriculum for science students.	Public Health GTA- CAC Smart Commute Association. HSR ACT School Boards Parent Groups • The Spectator

Goal	Recom-mendations	CAH Group	Actions	Resources, Pressures &/or Opportunities	Potential Partners
Reduce Emissions from Transportation Sector **Urban Planning**	Improve efficient flow of traffic. Encourage mixed land use & compact urban form. Encourage alternative modes of transportation (walking, biking etc.) • Influence decision-makers re: urban development & air quality.	**Policy CC & AQC**	Provide input on Transportation Master Plan. Develop "lure care" to help make linkages for plans, policies, programs to guide buses, urban design, cycling, parking and to target industries and institutions. Participate in GRIDS: Transportation Master Planning. Present for decision-makers in City. • Present from Ewing to OPPI/CIP Conference	Provincial Land Use Policies re: Urban Sprawl & Green Belts. Provincial Transportation Growth Strategy	Public Health Bike advocates HSR Smart Commute Association ACT NGOs Business Assoc.
Reduce Emissions from Transportation Sector - **Greening Fleets**	Advocate for better fuel/ vehicle standards. Monitor & report on Drive Clean. Encourage use of alternative fuels/ technologies in City Fleets. • Encourage alternative fuels/technologies in Other Large Fleets in City.	**Policy AQC** **MOE** **CC Emiss**	Advocate for fuel/vehicle/engine standards prov & fed. Annual update Develop Model Fleet Management Policy for City Replace old equipment. Encourage alternative fuels & new technologies. Encourage rail/marine instead of trucks. • Encourage off-peak shipments.	Env Can Technical Diesel Emission Evaluation Project (DEEP)	City Fleets Fleet Managers of Large Companies. Operators of off-road equipment. • OPHA Env Health
Reduce Emissions from Energy Use **Green Energy**	Develop & Implement: Municipal Energy Reduction Programs Alternative energy pilots Industrial Energy Reduction Programs Energy Audit Subsidies • District Heating & Co-generation.	**Policy**	Identify Programs Identify local partners Advocate linkages to reduction in emissions.	• Climate Change Retrofit/Project Funds.	Hamilton Hydro Hamilton Community Energy Positive Power (NGO) Green Venture

Goal	Recom-mendations	CAH Group	Actions	Resources, Pressures &/or Opportunities	Potential Partners
Reduce Emissions from Large Point Sources **Improve Air Quality- Meet all AQ Criteria**	Advocate for Code of Best Practices	**CC**	Review & report to CC		
	Advocate for BACT EA & practices for major sources	**Emiss**	Compile Emiss Inventory. Identify Pollution Prevention measures. Develop action plan for major sources. Identify targets Approach Industries. Compile database of improvements. Contact HEIA		MOE EA Branch?
	Monitor the imp. of SOP for Iron & steel Sector	**CC**	Status report • Presentation to Cc		
Research to Guide & Drive Policy	Advocate for comprehensive emissions inventory & atmospheric modeling.	**MOE**	Assess prov & fed emiss inventories. Geo reference data Obtain funds ($20,000) to assemble data. Add complementary data to provincial template.		
	Expand monitoring capability re: Ozone, NOx, and PM2.5, & expand mobile monitoring capabilities.	**CC Chair**	Identify priorities for monitoring & advocate for MOE support. Provide real-time web-based geo-referenced air data.		
	Promote & advocate for research re: health impacts & characteristics of gaseous & particulate pollutants.	**Policy (Public Health)**	Keep current on health research. Monitor CCME air standards. Recruit someone with expertise to assist.		
	Advocate for health-based AQI system & asthma index.	**Policy AQC**	Identify contact in Health Sciences re: asthma index/ Update re: Fed/Prov AQI process		

Goal	Recom-mendations	CAH Group	Actions	Resources, Pressures &/or Opportunities	Potential Partners
	Analyse & model transportation emissions Analyse & model transportation emissions • Promote research for environmental impacts.	**Policy & Chair** **Policy (Env Can & MOE**	• Facilitate th development of Work Plan between City & McMaster (Pavlos Kanoraglou). • Follow-up re: lichen study. Develop template for lichen study. • MOE to provide phyto-toxic presentation for Hamilton.		
Reduce Trans-boundary Air Pollution **Tree Projects**	• Advocate for reduced transboundary air pollution. • Develop and/or enhance Community Tree Projects.	**CC AQC** **HEIA Comm**	• Organize bi-annual Upwind/Downwind Conference Green Venture program. • Advertise for volunteers		

Appendix C

Hamilton's Air Quality - Trends & Comparisons

Air Quality Trends in Hamilton

The following graphs illustrate trends in key air quality parameters in Hamilton. The data presented covers the period of the past ten years; more comprehensive data covering the past 30 years can be found in the 1997 HAQI reports. Dramatic reductions in all parameters were observed between 1970 and 1990 because many major industrial sources were outfitted with pollution abatement equipment.

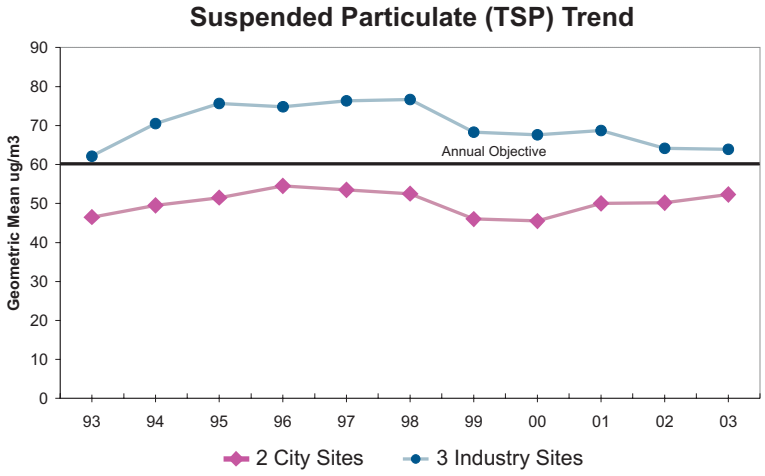
Since 1990, improvements have been less dramatic; however, pollution abatement technologies and strategies continue to be implemented and are having measurable impacts on Hamilton's air quality. Clean Air Hamilton strongly recommends that all stakeholders install the most efficient and non-polluting technologies and identify the best available pollution abatement technologies when constructing new facilities or when retrofitting existing facilities.

On most of the graphs below, one line represents the average air levels in residential areas based on data from two or more air monitoring stations located at City Sites, while the other line represents the average air levels near industrial sites based on data from two or more air monitoring stations located at Industry Sites. Trendlines have been added to several of the graphs to clarify the overall direction of air levels in the City, while a straight line is used for Total Suspended Particulate to indicate the annual air quality objective for that pollutant.

Total Suspended Particulate

Air levels of total suspended particulate (TSP) have been relatively stable in Hamilton since 1993. TSP includes all particulate material with a diameter less than about 50 micrometers (µm). The largest portion of TSP has a diameter similar to a human hair and is just visible to the eye.

A substantial portion of TSP is composed of road dust, soil and emissions from industrial activities and transportation sources.

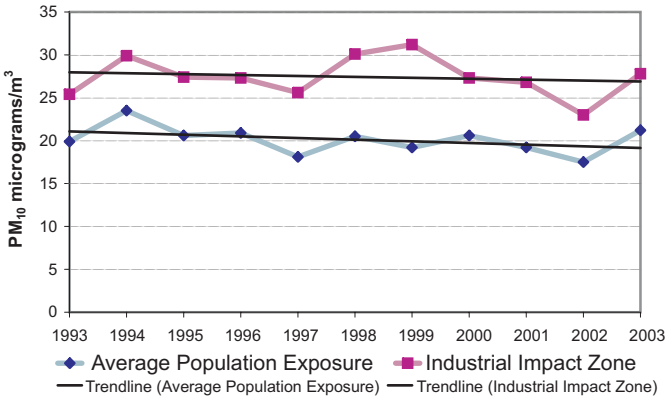


Inhalable Particulate Matter (PM_{10})

Inhalable particulate matter (PM_{10}), the airborne particles that have a diameter of 10 µm or less, is a subset of TSP. PM_{10}, which makes up about 40% of TSP, has been clearly and consistently linked to respiratory and cardiovascular health impacts.

For a few years, it appeared that air levels of PM_{10} in Hamilton were improving. However, when air levels for 2003 are added to the graph, it appears as if PM_{10} levels have remained relatively stable, or improved slightly, since 1993.

Annual Average Inhalable Particulate Matter (PM_{10})



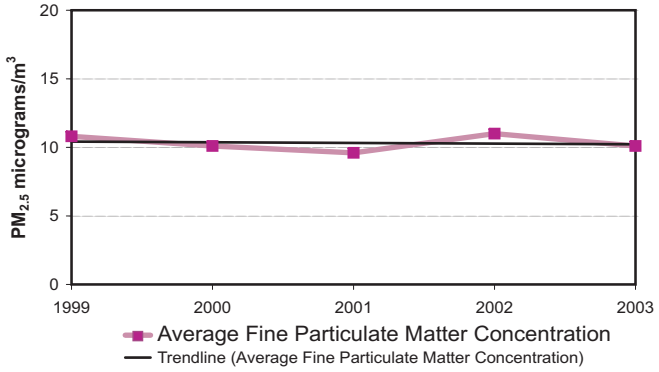
It has been estimated that: between 40 and 70% of the PM_{10} in Hamilton's air originates from outside the community; between 15 and 30% originates from urban sources such as vehicles and wood-burning fireplaces; and between 10 and 45% originate from industries that operate in the City.

Respirable Particulate Matter ($PM_{2.5}$)

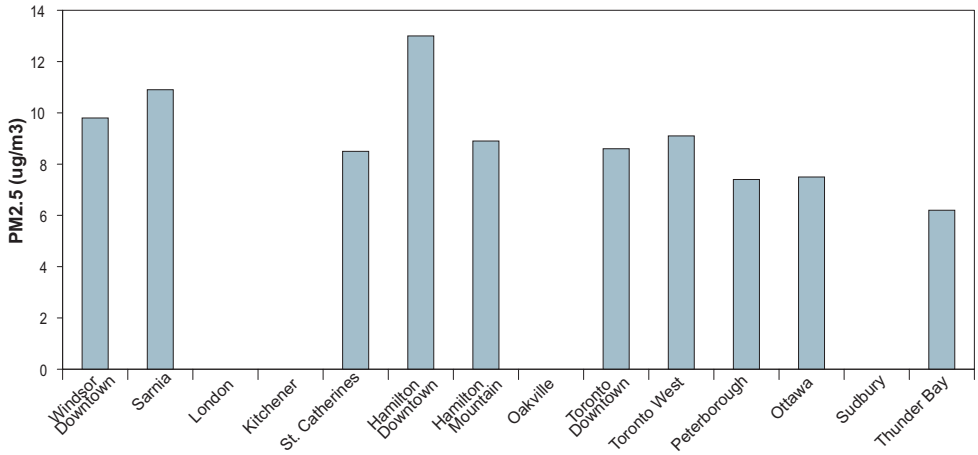
The Province of Ontario has recently begun to monitor respirable particulate matter ($PM_{2.5}$), airborne particles with a diameter of 2.5 µm or less. $PM_{2.5}$, which makes up about 60% of the PM_{10} in the air, has been more strongly linked to health impacts than PM_{10}.

When air levels of $PM_{2.5}$ in Hamilton are compared to those in other Ontario cities, it appears that Hamilton has the highest air levels of $PM_{2.5}$ in the province.

Annual Average Respirable Particulate Matter ($PM_{2.5}$)



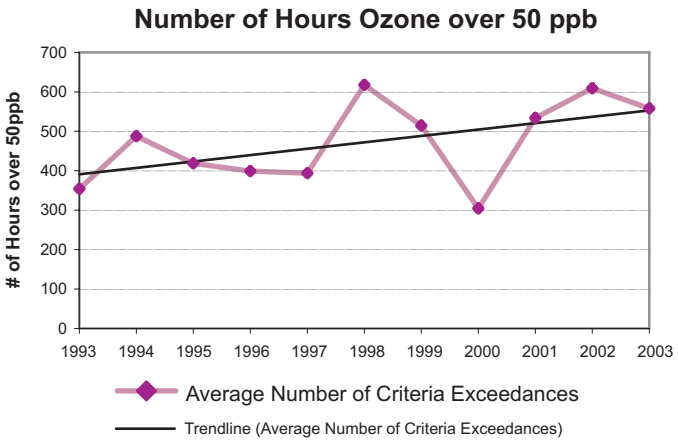
Respirable Particulate Matter Annual Mean - Hamilton Compared to Other Ontario Cities, 2002



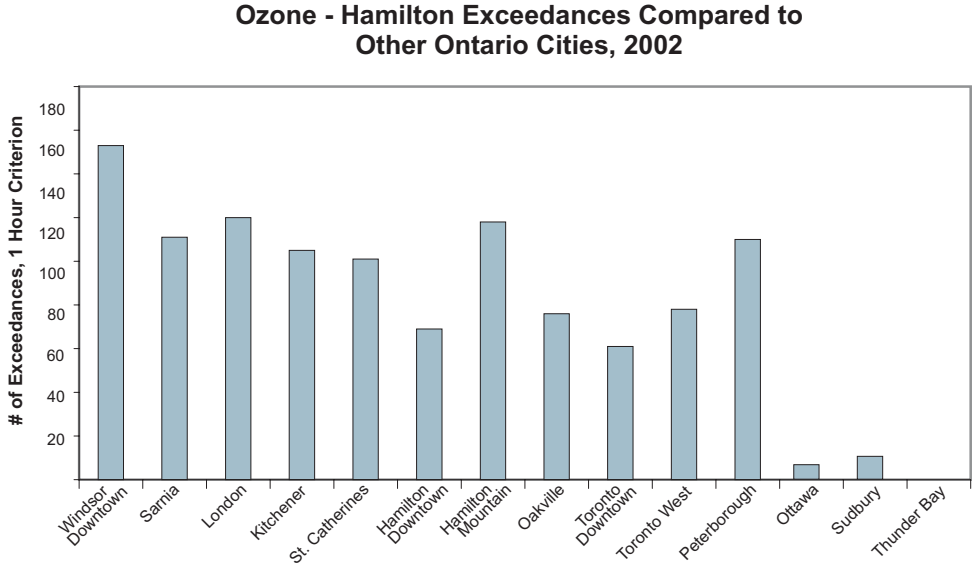
Ground Level Ozone

Ground level ozone is formed in the atmosphere when air pollutants such as nitrogen oxides (NO_x) and volatile organic compounds (VOC) react in the presence of sunlight. Consequently, air levels of ozone are higher in warmer seasons than in colder seasons. Air levels of ozone, which have varied substantially from one year to the next in response to varying weather conditions, appear to be increasing over time.

A substantial portion of the ozone that affects southern Ontario during smog episodes in the summer months originate from distant sources in the United States.

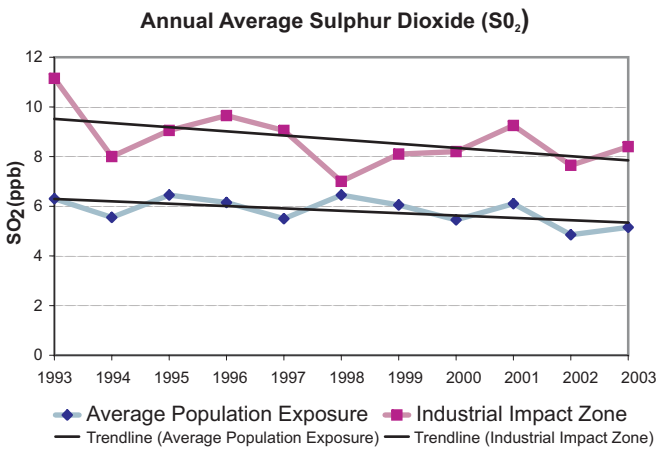


When we examine the number of times that air levels exceed the province's 1-hour ambient air quality criterion of 80 ppb in cities across the province, we see that Hamilton is among those cities with the highest number of exceedances. To a large extent, this reflects the influence of transboundary air pollution on the City. The lower ozone levels measured in downtown Hamilton likely reflect the scavenging effect that NO_2 has on ozone levels.

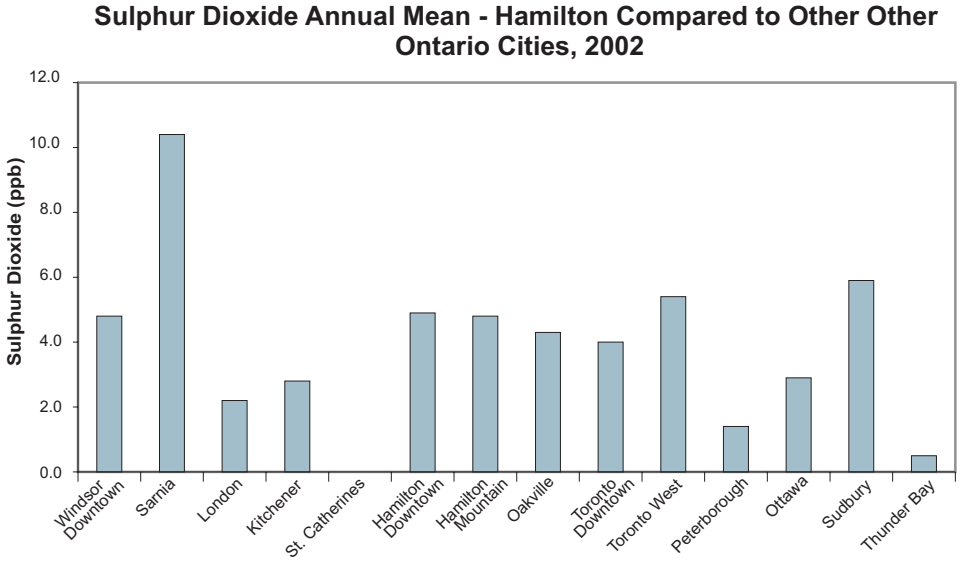


Sulphur Dioxide

Significant improvements in air levels of sulphur dioxide (SO_2) were made in the 1970s and 1980s. Since 1993, there has been a gradual and continuous decline in air levels of So_2. These reductions reflect actions taken to reduce emissions from the steel industry. They may also reflect improvements in fuel standards. Combustion of fuels containing sulphur are the main source of SO_2 in the city.



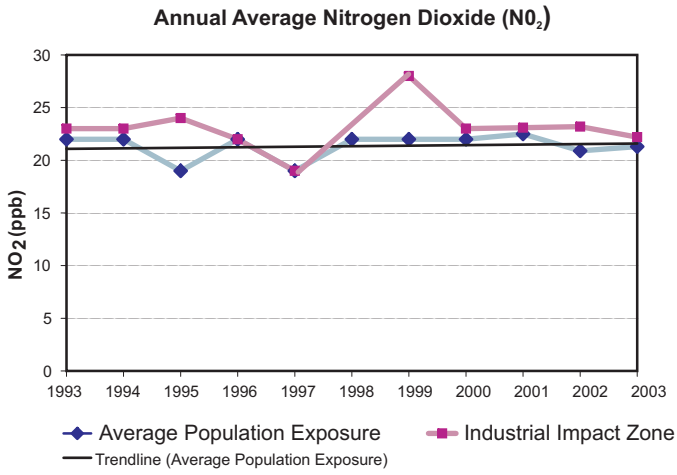
When we compare air levels of SO_2 in Hamilton to air levels in other Ontario cities, it appears that Hamilton has the 4th highest air levels of SO_2, with Sarnia, Sudbury and Toronto having higher air levels.

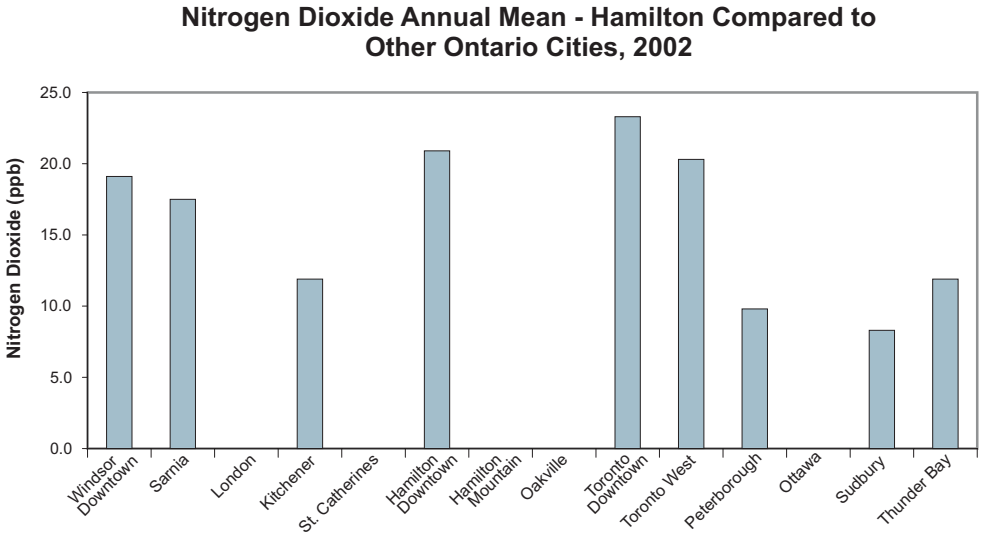


Nitrogen Dioxide

Nitrogen dioxide (NO_2) is responsible for a significant share of the air pollution related health impacts in Hamilton. Little progress has been made to reduce air levels of NO_2 over the last decade. NO_2 is emitted during the combustion of fuels such as gasoline, diesel, coal, wood, oil and natural gas. The leading source of NO_2 in Hamilton is the transportation sector followed by the industrial sector.

When we compare air levels of NO_2 in Hamilton to air levels in other cities, it appears that Hamilton has the second highest air levels. Only Toronto had higher levels of NO_2 in 2002.

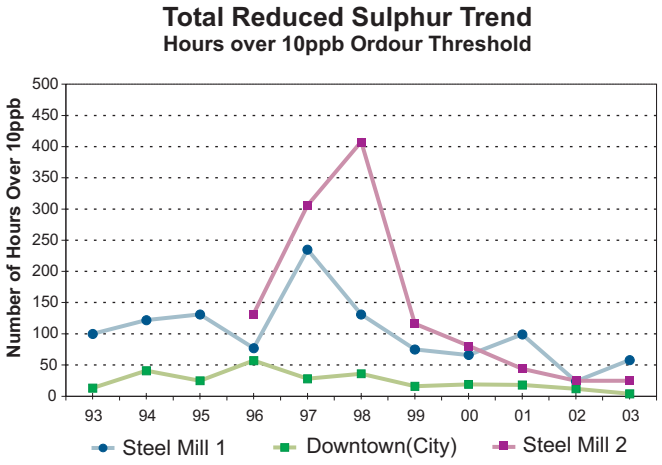




Total Reduced Sulphur

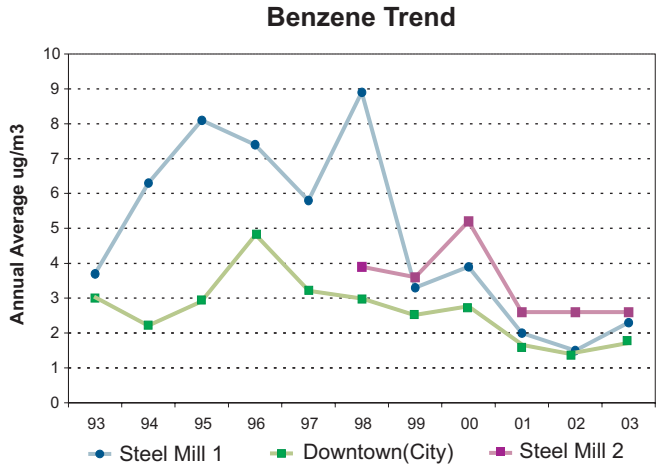
Total Reduced Sulphur (TRS) is a measure of the sulphur-containing compounds that are the basis of many of the odour complaints related to steel mill operations, particularly coke oven and blast furnace releases. At 10 parts per billion (ppb), many people can detect TRS as an odour similar to rotten eggs.

Hourly exceedances of the 10 ppb odour threshold have been reduced by between 70-90% since the mid 1990s due to significant changes in the management and operation of the coke ovens and blast furnaces used in Hamilton's steel plants.



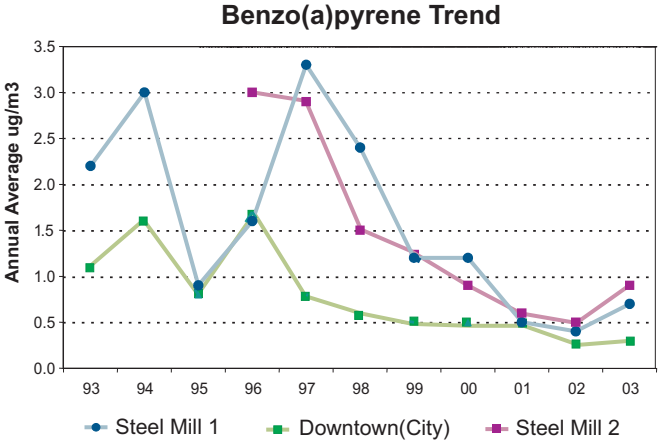
Benzene

Benzene is a volatile pollutant that is capable of producing cancer in humans. Benzene is emitted from the coke ovens and the by-product operations in the steel industry. Air levels of benzene have been dramatically reduced since the late 1990s due to improved controls applied to operations run by both Dofasco and Stelco. These reductions may also reflect improvements in fuel standards.



Benzo[a]pyrene

Benzo[a]pyrene (BaP) is a pollutant capable of producing cancer. It is emitted when carbon-based fuels such as coke, oil, wood, coal and diesel are burned. The principal sources of BaP in Hamilton are coke ovens. Air levels of BaP in downtown Hamilton have been greatly reduced since the late 1990s as a result of improvements made to the coke ovens in Hamilton's steel industry.



Appendix D

Upwind Downwind Conference 2004 Summary Report

Executive Summary

The 2004 Upwind Downwind Conference was held in Hamilton Ontario on March 29th and 30th 2004. The conference recognizes Hamilton as a leader in air initiatives, with several elements reported in all forms of local media. Upwind Downwind generates many ideas and is an excellent opportunity for Hamilton and other communities to share practical solutions to air quality problems. Approximately 120 planners, health promoters, environmental professionals, and citizens participated in the event. The Upwind Downwind: A Practical Conference on Improving Air Quality is hosted every two years by the City of Hamilton and Clean Air Hamilton.

Introduction

The 2004 Upwind Downwind Air Quality Conference was the third biennial conference focusing on practical solutions to the air quality problems facing urban and rural regions. The 2-day conference aimed to provide a forum to enable an improved understanding of air quality issues and human health impacts related to urban sprawl. Secondly, the conference highlighted the roles that industry, community groups and government can play in achieving air quality improvements.

Background information

In the mid-1990's Clean Air Hamilton studied the sources and impacts of air pollution in the Hamilton area and found that as much as 70% of the airborne particulates come from sources outside the community. The conference is a key strategy of Clean Air Hamilton and is designed to promote continued awareness of air quality issues and to address new matters that relate to transboundary air pollution. The first Upwind Downwind conference was hosted in Hamilton during September 1999 by the former Region of Hamilton Wentworth.

This year, the City of Hamilton and Clean Air Hamilton hosted the third biennial Upwind Downwind Air Quality Conference on March 29th and 30th, 2004, at the Hamilton Convention Centre. The conference brought together 115 delegates. These delegates were environmental managers, planners, public health professionals, non-profit project managers, and citizens from across Southern Ontario and from the United States.

Conference Goals

The goal of a biennial conference is to build on the momentum and strong networks initiated by previous conferences in order to facilitate continuous discussion and improvements on clean air issues. The conference aimed to provide a forum for understanding air quality issues and human health impacts related to urban sprawl and the air quality improvements that could result from smart growth initiatives and successful airshed management. The conference also sought to highlight the roles that industry, community groups and government can play in achieving air quality improvements.

Conference Coordination

Conference planning for the 2004 event began in the fall of 2003 with a team of 13 representatives from Clean Air Hamilton, represented by Environment Canada, the Ontario Ministry of the Environment, City of Hamilton, Clean Air Environmental, the Ecological Monitoring and Assessment Network, and McKibbon and Wakefield Incorporated (See Table 1). The City of Hamilton's Planning and Development Department's staff coordinated the planning activities with promotional support by Communications and Economic Development departments' staff members. The inaugural meeting of the coordinating committee occurred on September 11, 2003.

Table 1: 2004 Upwind Downwind Conference Planning Committee.

Organization	Representative	Position
Environment Canada	Hossein Naghdianei	Environmental Protection Services
Ministry of the Environment	Carl Slater	Supervisor of the Air, Pesticides, and Environmental Planning Department
City of Hamilton	Brent Bullough	Clean Air Hamilton Coordinator
	Linda Harvey1	Vision 2020 Coordinator
	Elise Willison	Planning Technician II
	Magda Wyszomierska	Assistant Environmental Planner
	Dilna Khory	Tourism and Convention Services
	Mark Nazar	Public Health & Community Services
	Robert Plant	Communications Officer
Clean Air Environmental	Neil Buonocore	
Ecological Monitoring and Assessment Network	Elizabeth Kilvert	
Clean Air Hamilton	Brian McCarry	Chair
McKibbon and Wakefield Incorporated	George McKibbon	Consultant

Advertising and Promotions

The objective for the promotion and advertising campaign of the 2004 Upwind Downwind Air Quality in Hamilton was to raise awareness of the event as an opportunity to share best practices and learn from others. Conference promotions may have reached in excess of 10,000 people; Flyers and registration packages were mailed to over 1200 representatives; 39 contacts agreed to promote the conference through publications, electronic mail, and websites. Promotion of the event included the use of many advertising mediums. Locally, the Hamilton Spectator, CH TV, Cable 14, 900 CHML AM, Y108, 820 CHAM AM, Oldies 1150 AM, 102.9 K-Lite FM, and 94.7 Wave FM agreed to promote the conference.

Funding

The total cost of the 2004 Upwind Downwind Conference was $29,171.00. Moreover, the total revenue was $36,626.00 which included $11,626 from registration fees and $25,000.00 from sponsorship funding (see Table 2). The City of Hamilton provided staff resources to co-ordinate logistics facilitate meetings, process registration and promote the conference agenda. Volunteer organizations offered time to advise on the conference agenda, compile information kits and consult with guest speakers.

Table 2: The 2004 Upwind Downwind Conference sponsors

Organizations	Donation
Environment Canada	$10,000.00
Ontario Ministry of the Environment	$5,000.00
Dofasco Inc.	$2,500.00
Honeywell Limited	$2,500.00
RPR Environmental	$1,000.00
Mohawk Collage	$1,000.00
Hamilton Air Monitoring Network	1,000.00
Stephen A. Jarislowsky Chair in Environment and Health, McMaster University	$1,000.00
Rotek Environmental	$500.00
McMaster Institute of Environment and Health	$500.00
Total	**$25,000.00**

Attendees Responses

The 2004 Upwind Downwind Conference received positive feedback from all delegates. Comments indicated that the conference was a huge success. Conference evaluation forms identified the interesting and wide range of subjects and the ability to link the range of topics as particularly well done. Aside from lighting and temperature, respondents felt the Convention Centre was an excellent venue and extra marks were given for the lunches and snacks provided by the Convention Centre.

Contact

Clean Air Hamilton, November 2004

Production: Planning and Development Department
City of Hamilton

For further information, please contact:

Kim Perrotta
Air Quality Coordinator
Planning and Development Department
71 Main Street West
Hamilton, Ontario L8P 4Y5
Phone: 905-546-2424 Ext. 1275
E-mail: cleanair@hamilton.ca

Or visit us on our website:
www.cleanair.hamilton.ca

CleanAir HAMILTON

Hamilton