



Hamilton

INFORMATION REPORT

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	December 7, 2020
SUBJECT/REPORT NO:	Clean Air Hamilton 2019 Annual Report (BOH20023) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Trevor Imhoff (905) 546-2424 Ext. 1308
SUBMITTED BY:	Kevin McDonald Director, Healthy Environments Division Public Health Services
SIGNATURE:	

COUNCIL DIRECTION

Clean Air Hamilton reports annually to Board of Health on the trends of local air quality and the actions undertaken by members of Clean Air Hamilton to address local air quality in Hamilton.

INFORMATION

Clean Air Hamilton is a community initiative to improve air quality in the City of Hamilton. It has a diverse membership with representation from environmental organizations, industry, businesses, academic institutions, citizens and different levels of government (federal, provincial and municipal).

Initiated in 1998, Clean Air Hamilton works to improve air quality throughout the City of Hamilton and meet all ambient air quality criteria. Public Health Services' Air Quality and Climate Change team supports the work of Clean Air Hamilton and other work related to air quality and climate change.

Clean Air Hamilton continues to follow the previously developed five strategic themes related to air quality improvement:

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

1. Governance & Structure;
2. Air Zone Management;
3. Transportation;
4. Air Monitoring; and,
5. Dust and Particulate Matter (PM_{2.5}) Mitigation.

In 2019 Clean Air Hamilton agreed to actions identified by the Air Quality Task Force's (AQTF) 2018 workshop which identified three main areas of focus including:

1. Education;
2. Air Quality Monitoring; and,
3. Hamilton Airshed Modelling System.

These actions were assigned responsibility and created a three-year workplan for completion. By the end of 2019 Clean Air Hamilton has completed five of the fourteen actions within the 2019-2022 work plan. These actions included:

- Completion of a Communication and Education Awareness Strategy for Clean Air Hamilton to implement;
- Fresh Air for Kids 2019 program. More details on page four of this report;
- Friendly Streets Initiative 2019 program. More details on page four of this report;
- Trees Please 2019 program. More details on page five of this report; and,
- Hamilton's Airshed Model Sub-Regional Analysis. This information was presented to Board Health (BOH19039). More information can also be found at <http://cleanairhamilton.ca/>.

Further details can be found in Appendix "A" to Report BOH19039.

Air Quality in Hamilton

The Ministry of Environment, Conservation and Parks (MECP) monitors air quality across Hamilton using the network of air quality monitoring stations across Hamilton. This network consists of provincially owned air quality monitoring stations, air quality stations through the Hamilton Air Monitoring Network (HAMN), as well air pointers owned and operated by the City of Hamilton.

Air quality data is submitted to Clean Air Hamilton and Hamilton Public Health Services annually which is reported to Board of Health and the community. The air quality data submitted shows a significant reduction in many of the monitored air pollutants since 1996. Concentrations of air pollutants are still much lower than compared to 20 years ago. However, based on the 2019 air quality data submitted, there appears to be increase concentrations, as compared to previous years, from the following criteria air contaminants:

- Suspended Particulate Matter Trend – two Industry Stations increasing between 2017-2019;

- Respirable Particulate Matter (PM_{2.5}) – Mountain Station increasing between 2016-2019;
- Sulphur Dioxide (SO₂) – Industry and Downtown Stations above new annual average air standard;
- Benzene – Industry 1 and Industry 2 Stations increasing between 2018-2019; and,
- Benzo(a)pyrene – Industry 2 and Industry Stations increasing between 2018-2019.

In 2018 the Province of Ontario approved decision (EBR# 013-0903) to reduce annual average air standard for SO₂ to 10 µg/m³, based on vegetation damage with exposure to this substance. This decision contains a phase-in period and the air standard will take effect on July 1, 2023¹.

In recent years Hamilton has experienced reduced concentrations of the following criteria air contaminants:

- Ozone (O₃) – at Hamilton Downtown, Hamilton Mountain and Hamilton West Stations, including the annual average between 2018-2019
- Inhalable Particulate Matter (PM₁₀) – at 2 Industry and 2 City Stations between 2018-2019
- Respirable Particulate Matter (PM_{2.5}) – at Hamilton Downtown and Hamilton West Stations between 2018-2019

Although PM_{2.5} concentrations were reduced at several air quality stations across Hamilton, MECP data shows that Hamilton continues to have the highest concentrations of PM_{2.5} relative to other municipalities across Ontario that have air quality stations measuring PM_{2.5}.

2019 Air Quality Alerts

Two different air quality alerts are issued during periods of poor air quality. A Special Air Quality Statement will be issued when the Air Quality Health Index is a high risk (>6) and is forecast to last for one to two hours. If the high-risk Air Quality Health Index is forecast to be a persistent duration of at least three hours, then a Smog and Air Health Advisory will be issued by the Province of Ontario.

In 2019, Hamilton did not experience any Special Air Quality Statements or Smog and Air Health Advisory instances. For more information on current and historical air quality concentrations in Hamilton and across Ontario see: <http://www.airqualityontario.com/>.

¹ Environmental Registry (2018). Regulatory amendments related to air emissions of sulphur dioxide and other items. Retrieved from: <https://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTMyOTQ1&statusId=MjA1MjUz>

Clean Air Hamilton notes that air pollution concentrations can be different at a local neighbourhood level and some areas of Hamilton can and do experience higher air pollution concentrations than others across the City.

Clean Air Hamilton Programs 2019

A. Fresh Air For Kids:

Throughout the 2019-2020 Fresh Air For Kids (FAFK) school year, five schools participated which had the MECP mobile air monitoring van visit, neighbourhood air monitoring, safe routes to school planning, and idling behaviour monitoring. The objectives of the program include:

1. To learn about air quality issues in Hamilton by taking an active role in collecting and analyzing data, and inspiring the scientists of the next generation;
2. To observe a reduction in engine idling at local schools and reduce Greenhouse Gas (GHG) emissions through education and student-led campaigning; and,
3. To reduce our impact on the environment by taking deliberate action to affect behavioural change.

Although the number of schools participating was lower in the Winter 2020 Term than the Fall 2019 Term due to the strike and COVID-19 pandemic, the FAFK programs still had 181 students participate with great signs and other engagement tools created.

B. Friendly Streets Hamilton:

Friendly Streets Hamilton is a collaborative initiative between Cycle Hamilton and Environment Hamilton. The program encourages active, safe travel and aims to secure safer streets. The program piloted in 2017 with great success. In 2019, the program received Clean Air Hamilton funding to continue their work from 2018 to combine street-level air quality monitoring with their street audits.

Due to concerns raised from local neighbourhood residents from previous street audits, Friendly Streets and the Truck Route collaborative conducted industrial truck counts over a total of eight days, with each truck counting day lasting for twelve hours. These counts were made possible from the dedicated list of volunteers. Count results ranged from 78 to 388 trucks per count with the highest frequency of trucks occurring at Queen St and York Blvd.

The Friendly Streets program also conducted walking and cycling audits around parts of Hamilton including Hamilton General Hospital and the Gibson and Landsdale neighbourhood. Community reception was very positive with approximately twenty-five participants, including a very young child on training wheels.

The Friendly Streets program completed several education and awareness strategies including local media, delegations to City Council and community surveys. Air quality continues to be of critical concern to residents and community members.

C. Trees Please:

Trees Please is a citizen science project with all data collected being completed by teams of volunteers who have been trained. The project comprised two main parts:

1. Tree inventorying (measuring, identifying and noting any challenges on trees); and,
2. Collecting air quality data, specifically particulate matter levels.

The tree inventory is completed using iTree Eco, a free software program from the USDA Forest Service that calculates tree benefits. For air quality data the project uses Dylos air quality monitoring device that measures levels of particulate matter.

The goal of this project is to engage residents on local issues around air quality and urban forest health, by helping community members to understand that trees can help improve air quality and provide many other benefits. This project focused on the Parkview Neighbourhood where 411 trees were inventoried that included species identification, tree size and tree health/damage assessment. A number of air monitoring walkabouts in the neighbourhood also took place. To promote the walkabouts over 600 flyers were handed out in the neighbourhood.

Other tree planting initiatives took place to increase the native tree canopy which included:

- Free trees giveaway that gave out thirty-one trees in total; and,
- Community tree planting in partnership with City of Hamilton Forestry Division, which planted 250 native trees with help from 45 volunteers.

Air Quality Programs in 2020

Clean Air Hamilton through third party adjudication of funding applications identified two programs to improve air quality in 2020:

1. Green Venture and Corr Research Inc. Fresh Air for Kids (\$10,700); and,
2. Environment Hamilton's – Trees Please (\$14,168).

Due to the COVID-19 pandemic there has been delays in releasing the funding. Funding agreements have been extended with final reports due to Clean Air Hamilton by July 31, 2021. The results of these programs will be reported in the Clean Air

Hamilton 2020 Air Quality Progress Report and presented to the Board of Health in 2021.

Future Actions

There has been substantial improvement in Hamilton's air quality since the 1970s; however, air pollution continues to create adverse health impacts to Hamilton residents. Continued, concerted actions are imperative to further improve air quality in the City of Hamilton. Collaboration from individuals, organizations, industries, the City of Hamilton and other levels of government are required to reach our goals. In the future, Clean Air Hamilton will:

- Continue to support and undertake all the recommendations of the Air Quality Task Force (BOH13029) and Board of Health report (BOH18016) in the areas of air modelling and monitoring, planning education and outreach, green infrastructure and advocating for municipal policies that encourage and facilitates behavioural change to active and sustainable transportation and alternative forms of efficiency and renewable energy for buildings;
- Continue to support and encourage Hamiltonians to reduce their transportation emissions through the use of alternatives including: public transit, bicycles, walking, hybrid or electric vehicles, etc. and support policies such as complete streets and transportation demand management; and,
- Encourage the continued efforts of the MECP and industry to reduce air borne contaminants in the City of Hamilton and the Province of Ontario.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report BOH20023: Clean Air Hamilton 2019 Air Quality Progress Report