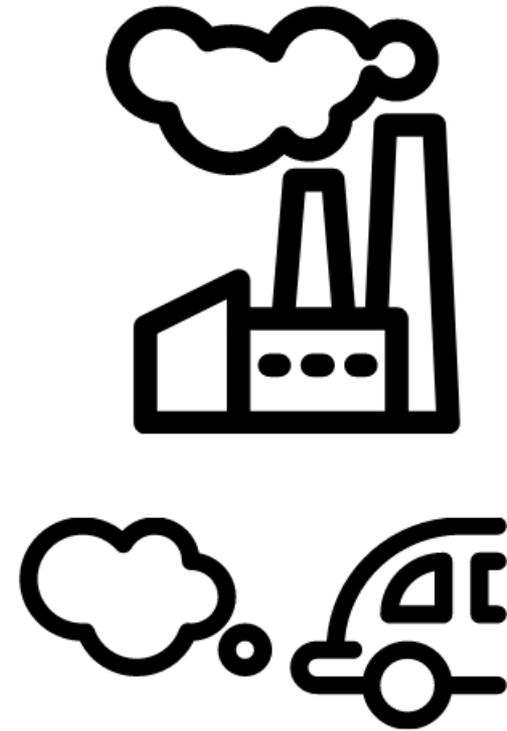


**Air Quality
in Hamilton:**
**Understanding
the Regulatory
Framework**
Tues Apr 12
7pm



MEETING AGENDA:

1. Welcome

2. Land Acknowledgement

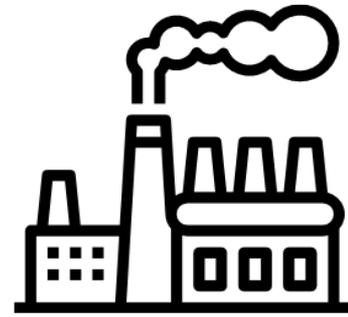
3. Understanding the Air Quality Regulatory Framework:

- MECP - Stephanie Gasko
- Health Canada - Shara Hong + Patrick Hamel
- City of Hamilton Public Health - Matthew Lawson

4. Questions

5. Project Update - Dr. Matthew Adams

6. Next Steps + Closing Comments



What is the Role of the Federal Government in Setting the Canadian Ambient Air Quality Standards?

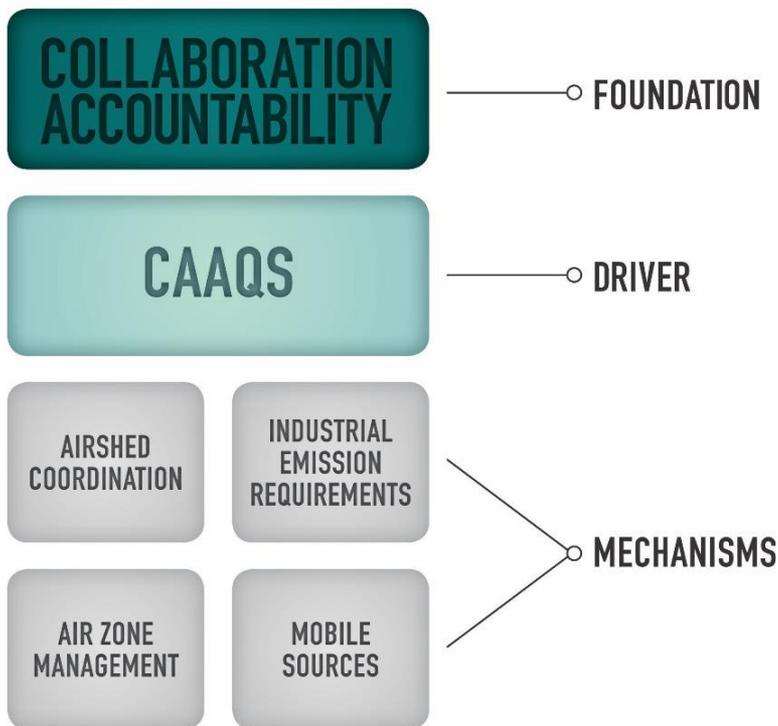
Presentation to the City of Hamilton
April 12th, 2022

Patrick Hamel and Shara Hong
Health Canada



The Air Quality Management System (AQMS) in Canada

THE WHOLE SYSTEM



- Air quality management is a responsibility shared by federal, provincial and territorial governments*
- These governments have agreed to work collaboratively to implement the AQMS, under the Council of Ministers of the Environment (CCME)**
- **Goal:** Continuous improvement of air quality to protect human health and the environment, keeping clean areas clean
- Canadian Ambient Air Quality Standards (CAAQS) is the key driver

* Metro Vancouver and Ville de Montréal have also delegated authority to manage air quality within their boundaries

**Although Québec supports the general objectives of the AQMS, it will not implement the system. However, Québec is collaborating with jurisdictions on developing other elements of the system, notably air zones and airsheds.

Canadian Ambient Air Quality Standards (CAAQS)

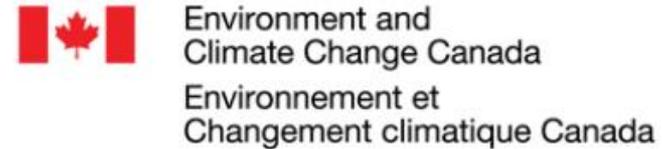
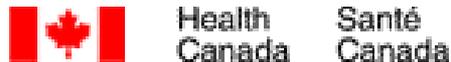
- There are CAAQS for 4 ubiquitous air pollutants (exposure throughout Canada)
 - Air quality objectives under the *Canadian Environmental Protection Act, 1999*
 - Considered multiple factors such as health and environmental effects, feasibility and achievability
- Setting the CAAQS involve consultations with various stakeholders
 - Indigenous Peoples
 - Industry
 - Health and environmental governmental and non-governmental organizations

CAAQS pollutants
Fine Particulate Matter (PM_{2.5})
Ground-level Ozone
Sulphur Dioxide (SO₂)
Nitrogen Dioxide (NO₂)



Role of the Federal Government in Setting the CAAQS

Involved departments:



- Support the review of CAAQS for continuous improvement of air quality in Canada
- Conduct periodic review of the scientific literature on:
 - Health and environmental effects
 - Current and projected pollutant levels
 - Sources and emission trends



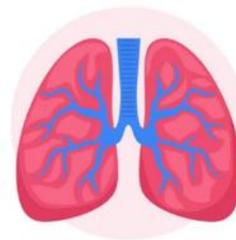
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Health Canada's Role

- Calculates health impact of air pollution (PM_{2.5}, NO₂, ground-level ozone):
 - 15,300 premature deaths per year,
 - 2.7 million asthma symptom days per year,
 - 35 million acute respiratory symptoms days per year in Canada (Health Canada, 2021)



- Reviews the health effects literature:
 - Causes a wide variety of health effects, such as heart, lung, and cancer outcomes, hospital visits and premature deaths
 - Growing evidence that it also increases the risk of adverse neurological, metabolic, reproductive and developmental outcomes
 - Scientific evidence indicates there are no safe levels for 3 CAAQS pollutants (PM_{2.5}, NO₂, ground-level ozone)
 - Risk of adverse effects is higher for certain Canadians (e.g., children, pre-existing health conditions, etc.)



images from:
<https://stock.adobe.com/>

CAAQS Review Approach

- The CAAQS are adopted by the CCME based on the recommendation of the CAAQS Development and Review Working Group (CDRWG)

1. Assessment Report

Led by ECCC and HC, with input from CDRWG

Review scientific literature on health and environmental effects, current and projected pollutant levels

2. CCME agrees on a range of concentrations as the basis for the future CAAQS

Goal: continuous air quality improvement

3. CDRWG selects a value for the future CAAQS from within the range

A collaborative and consensus-based process

Considers health and environmental effects, existing standards, current concentrations, and achievability

4. CCME considers adoption of CDRWG-recommended CAAQS

Considered by relevant CCME committees; final decision is made by the Council of Ministers

5. Federal government establishes the CAAQS as ambient air quality objectives under the *Canadian Environmental Protection Act* (1999)

Current and Proposed CAAQS

Pollutant	Averaging time	Standard (numerical value)		
		Effective 2015	Effective 2020	Effective 2025
Ground-level Ozone	8-hour	63 ppb	62 ppb	60 ppb
	24-hour	28 µg/m ³	27 µg/m ³	<i>Under review</i>
PM _{2.5}	Annual	10.0 µg/m ³	8.8 µg/m ³	<i>Under review</i>
	1-hour	--	70 ppb	65 ppb
SO ₂	Annual	--	5.0 ppb	4.0 ppb
	1-hour	--	60 ppb	42 ppb
NO ₂	Annual	--	17.0 ppb	12.0 ppb

<https://ccme.ca/en/air-quality-report#slide-7>

ppb = parts per billion

CAAQS and Management Levels

Management Level and Objective

RED (above CAAQS)

To reduce pollutant levels below the CAAQS through advanced air management actions

ORANGE

To improve air quality through active air management and prevent an exceedance of the CAAQS

YELLOW

To improve air quality using early and ongoing actions for continuous improvement

GREEN

To maintain good air quality through proactive air management measures to keep clean areas clean

- CAAQS are not “pollute-up-to” levels
- CAAQS are underpinned by a system of four colour-coded management levels
 - Require progressively more rigorous actions to be implemented in local air zones (i.e. geographic areas used to manage local air quality by the province or territory in which it is located)
- Provinces and Territories are responsible for reporting on CAAQS achievement and on the applicable management actions
- Federal government provides guidance and assistance to provinces and territories (e.g., guidance documents):
 - Air Zone Management
 - Achievement Determination for CAAQS
 - Transboundary Flows and Exceptional Events for Air Zone Management



Hamilton

PUBLIC HEALTH AND AIR QUALITY IN HAMILTON, ON

Public Webinar

April 12th, 2022

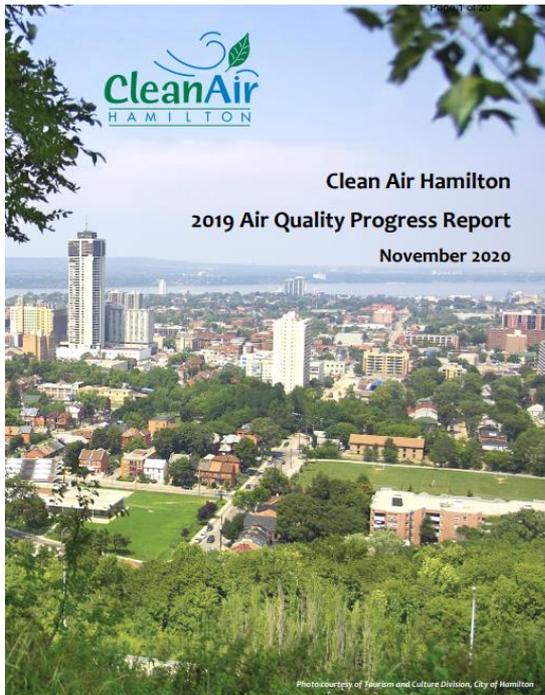
Ontario Public Health Standards

- Healthy Environments Program Standard (2018)
- Healthy Environments and Climate Change Guideline (2018)
- Health Hazards Response Protocol (2019)
- Rabies Prevention and Control Protocol (2019)

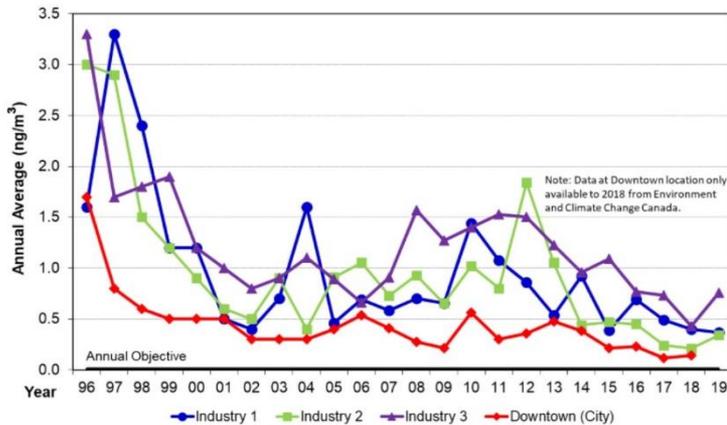
Core Public Health Work

- **Health Promotion and Education**
 - Stakeholder coordination and engagement
 - Education and Public Health Campaigns
 - Public Health 'upstream' Interventions
- **Surveillance & Epidemiology**
 - Air Quality Monitoring (this project)
 - Health Risk Assessments
- **Equity and Social Determinants of Health**
 - Identifying populations most in need

Existing and Ongoing Work



Benzo[a]pyrene Trend



Air Quality Work

- Coordinate and lead Clean Air Hamilton
- Provide \$30K in air quality grants through Clean Air Hamilton
- Project Manage City's AirPointers monitoring locations across the City
- Pilot innovative air quality hyper-local neighbourhood air quality monitoring
- Participate in Government and Industrial Working Groups Sub-Committees
- Ongoing tracking and reporting City-Wide Greenhouse Gas (GHG) Emissions





BUILDING HEALTHY, POST-CARBON CITIES

Join us at the
2022 Upwind Downwind Conference

📅 Thursday, June 16, 2022
🕒 9:00 AM to 4:30 PM EDT

Online: Virtual Webinar
In-person*: David Braley Health
Sciences Centre, McMaster University
100 Main Street West, Hamilton, ON, L8P 1H6

*In-person attendees are encouraged to join us starting 8:00 AM for a warm breakfast and stay until 5:30 PM for refreshments and networking. In-person tickets are inclusive of meals and refreshments throughout the day.



EARLY BIRD TICKETS
AVAILABLE UNTIL
FRIDAY, APRIL 29, 2022



Learn more:
www.cleanairhamilton.ca/upwind-downwind-2022

2022 Upwind Downwind Conference

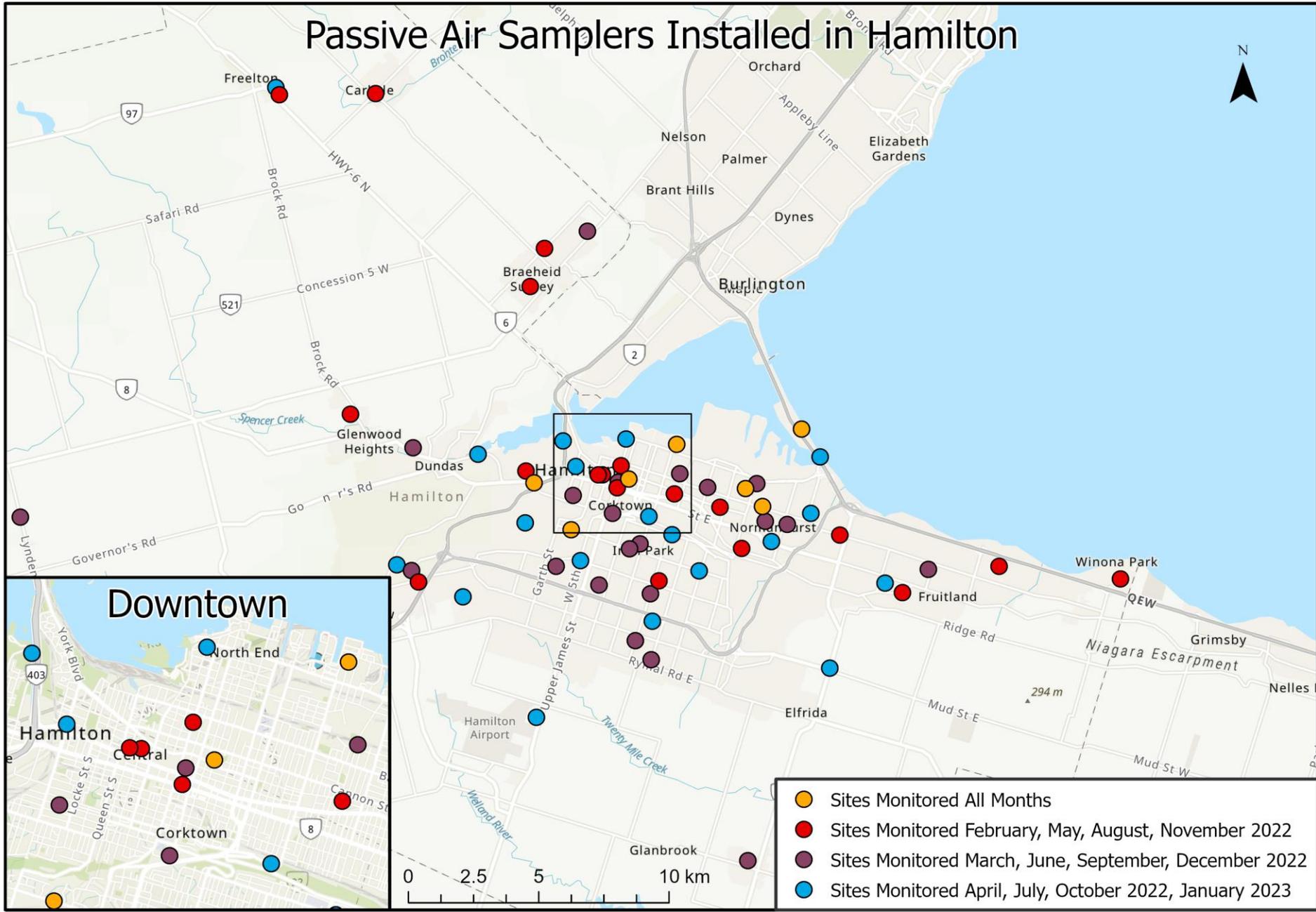
<https://cleanairhamilton.ca/upwind-downwind-2022/>



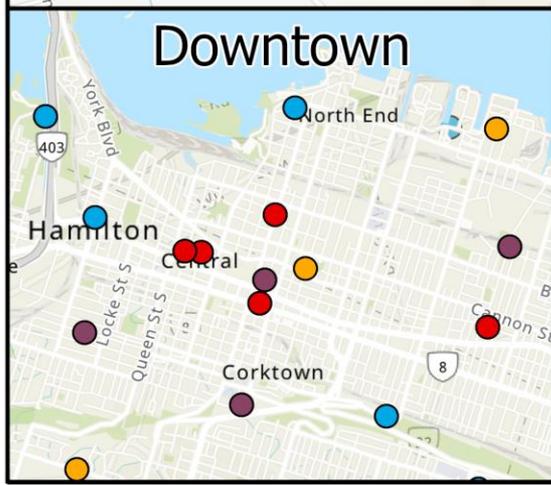
Hamilton

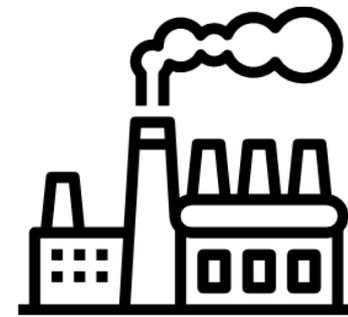
THANK YOU

Passive Air Samplers Installed in Hamilton



Downtown

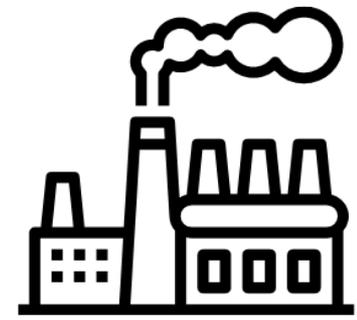




Next Steps:

Fall 2022 Community Meeting

- Presentation of preliminary results
- Community discussion of data presentation & use



Thank You!