

# Strathcona Area Air Quality Study: Year 1 (2023) results

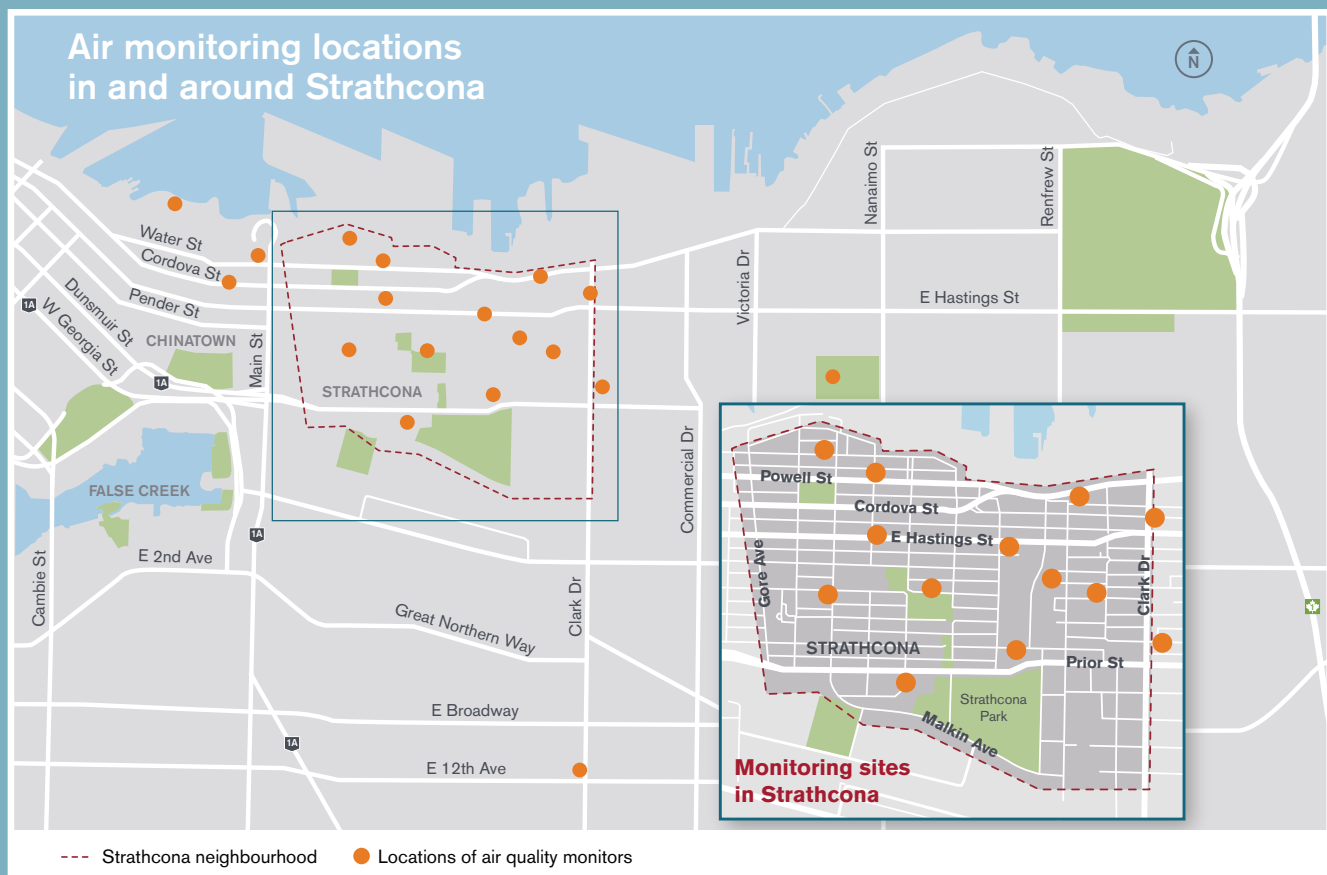
## Overview

The Strathcona Area Air Quality Study (SAAQS) is a two-year air quality monitoring initiative to better understand air quality levels around Strathcona and impacts of port-related emissions on air quality, and to identify opportunities for improvements. The study is a follow up to the Strathcona Residents Association's air quality survey conducted in 2021.

The study is guided by a steering committee co-chaired by the Strathcona Residents Association and the Vancouver Fraser Port Authority. The steering committee includes representatives from the City of Vancouver, Environment and Climate Change Canada, Metro Vancouver, the University of British Columbia, and Vancouver Coastal Health. Committee members represent a range of stakeholders and provide perspectives on and expertise in environmental and health issues. The port authority is funding the study.

Air monitoring began in January 2023 and will continue until the end of 2024, using a network of low-cost monitoring devices spread across 18 strategic sites around Strathcona. Collectively, the air quality monitors measure the levels of four different air pollutants—nitrogen dioxide, sulphur dioxide, fine particulate matter, and black carbon—in the community.

The study combines technical and community-based knowledge to characterize air quality conditions and support increased awareness and understanding of how air quality varies in the Strathcona neighbourhood.



## Study objectives

The SAAQS steering committee defined broad study objectives to:



**Engage the community and increase awareness and knowledge of local air quality (2022-2024)**



**Monitor, assess, and characterize changes in air quality within the Strathcona area over the study period (2023-2024)**



**Assess potential contributions from port activities (2025)**



**Identify potential opportunities to improve air quality (2025)**

## 2023 Monitoring results

Summary of SAAQS monitoring data collected from January 1 to December 31, 2023.

### Nitrogen dioxide (NO<sub>2</sub>)

Both the short-term (1-hour) and long-term (annual) NO<sub>2</sub> levels were generally higher in the Strathcona area than the rest of the Metro Vancouver region.

#### Short-term (1-hour)

- The Burrard Inlet Line station (next to a local rail line) had the highest 1-hour NO<sub>2</sub> results, slightly above the numerical value of the Metro Vancouver objective for NO<sub>2</sub>.
- Most of the monitoring stations showed traffic-related patterns of concentration.
- NO<sub>2</sub> levels were generally higher in the core of the neighborhood than on the outskirts.

#### Long-term (annual)

- All stations in the Strathcona area exceeded the annual Metro Vancouver NO<sub>2</sub> objective. The Burrard Inlet Line station recorded the highest annual NO<sub>2</sub> concentration.

#### Fine particulate matter (PM<sub>2.5</sub>)

- The highest PM<sub>2.5</sub> levels were found during wildfire smoke events. When wildfire smoke periods were excluded, PM<sub>2.5</sub> levels across all monitoring stations remained below Metro Vancouver short-term (24-hour) and long-term (annual) objectives.
- The PM<sub>2.5</sub> levels in the Strathcona area were generally like those from the rest of the Metro Vancouver region.
- All Strathcona stations behaved similarly in terms of the time of the day, monthly and seasonal patterns.
- There was little variability across the Strathcona area indicating relatively uniform levels throughout the community, regardless of wind speed or direction.

#### Sulphur dioxide (SO<sub>2</sub>)

- Monthly SO<sub>2</sub> samples were collected for the study. Annual averaged SO<sub>2</sub> levels were well below the numerical value of the annual Metro Vancouver SO<sub>2</sub> objective, with little differences between the SO<sub>2</sub> sampling stations.
- With monthly SO<sub>2</sub> sampling, the study is unable to compare how SO<sub>2</sub> varies with wind speed and wind direction.

#### Black carbon

- Monitors were deployed in April-May 2024 and results will be included in the 2025 final report.

#### For more information

Visit our study [website](#) to learn more

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