

# Frequently asked questions

## Strathcona Area Air Quality Study (SAAQS)

June 2023

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### About the study

#### **What is the Strathcona Area Air Quality Study?**

The Strathcona Area Air Quality Study is a two-year air monitoring study undertaken to measure and assess air quality in and around the City of Vancouver's Strathcona neighbourhood. It aims to better understand current air quality levels in the area, impacts of port-related emissions on air quality, and to identify potential opportunities for improvement. Through this study, we assess air quality across 18 strategic sites in and around Strathcona using a network of monitoring devices recording the levels of different air pollutants.

#### **What geographic area is the study focusing on?**

The study focuses on the Strathcona neighbourhood, with an emphasis on areas near port roads and access roads and railway lines, cargo handling facilities and other marine shipping-related activities. The study's steering committee, comprised of both community members and technical experts, worked together to determine the study area and identify appropriate air monitoring sites in and around the Strathcona community.

A map showing the locations of the air quality monitoring sites in and around the study area is available online: <http://www.portvancouver.com/strathcona-air-study>.

#### **Who is leading and funding the study?**

The study is guided by a steering committee co-chaired by the Strathcona Residents Association and the Vancouver Fraser Port Authority, which is funding the study. The steering committee also comprises 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.

#### **Who is the study's technical consultant?**

Consulting firm WSP was selected as our technical consultant, through a request for proposal procurement process. WSP has extensive experience in air quality monitoring and has previously studied air quality in this area.

#### **What is the study measuring?**

Through a network of air monitoring devices, the study aims to measure the levels of five different air pollutants: nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), particulate matter (PM), black carbon (BC), and carbon monoxide (CO).

***Brief description of air pollutants measured and why we care about them (information courtesy of Metro Vancouver, the Climate and Clean Air Coalition, the American Lung Association, and the US EPA)***

**Nitrogen dioxide (NO<sub>2</sub>)** – nitrogen dioxide is a highly-reactive, reddish-brown gas with a pungent and irritating odour and is partially responsible for the “brown haze” sometimes seen in the air.

Nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) are known collectively as nitrogen oxides (NO<sub>x</sub>). Human-made sources of nitrogen oxides include vehicles and equipment that burn fossil fuels. Nitrogen oxides also react with other pollutants to form ground-level ozone or fine particulate matter, both of which are also harmful air pollutants.

**Sulphur dioxide (SO<sub>2</sub>)** – sulphur dioxide is a colourless gas that smells like burnt matches. It is emitted when fossil fuels containing sulphur are burned. Sulphur dioxide can also react with other substances in the air to form particulate matter which can affect human health and create a “white haze” in the air. Human-made sources of sulphur dioxide include commercial ships that burn sulphur-containing fuels as well as petroleum refineries.

**Particulate matter (PM)** – particulate matter is made up of tiny solid or liquid particles that float in the air. It can be emitted directly or formed indirectly when nitrogen oxides or sulphur oxides react with ammonia in the atmosphere. Human-made sources of particulate matter include road dust, burning of fossil fuels by ship, locomotives, trucks and machinery, and industrial activities.

**Black carbon (BC)** – black carbon is a component of fine particulate matter that both impacts air quality and contributes to climate change. It is emitted from the burning of fossil fuels such as diesel, and biomass fuels such as wood.

**Carbon monoxide (CO)** – carbon monoxide is a colorless, practically odorless, gas or liquid. It results from incomplete oxidation of carbon in combustion (e.g., furnaces, fireplaces, vehicles, etc.).

Examples of air quality-related health impacts include headaches, eye, nose and throat irritation as well as respiratory and cardiovascular effects and cancer.

Please visit [Metro Vancouver's website](#) to learn more.

### **What is the duration of the study?**

Planning work to determine the study area, the technologies to use and the locations of the monitoring sites began in 2021. On January 1, 2023, the Strathcona Area Air Quality Study officially began, which includes air quality monitoring in and around Strathcona until December 31, 2024, with the final study report to be released in the summer of 2025.

### **Why study air quality in Strathcona now?**

The Strathcona Area Air Quality Study is a follow-up to the air quality survey conducted by the Strathcona Residents Association in 2021. The study will help better understand air quality levels and variations in Strathcona and address community concerns regarding the potential impacts of nearby port and terminal operations on local air quality.

### **What other air quality monitoring has occurred?**

The study builds on previous air quality monitoring conducted by the Vancouver Fraser Port Authority and Metro Vancouver which helped show that emission reduction efforts improve the levels of certain air pollutants in and around Vancouver.

An example of a previous study is the Burrard Inlet Area Local Air Quality Study that looked at the Central Burrard Inlet Area. The main sources of air emissions in the area included ocean-going vessels, harbour vessels, non-road engines, heavy duty trucks, locomotives, small aircraft, commuter traffic, industrial sources and commercial and residential sources. The study identified actions to reduce pollutants that were underway and proposed new actions to improve air quality in the Central Burrard Inlet area.

Additional information about this study, including findings and proposed actions, is available at [www.metrovancouver.org](http://www.metrovancouver.org).

**When will you share the study results?**

We will share updates, results, and opportunities to provide feedback with Strathcona residents, community stakeholders, and relevant industry groups throughout the study, as they become available.

Our website <https://portvancouver.civilspace.io/en/projects/strathcona-area-air-quality-study> is the primary source for all study-related information.

Real-time data from two types of monitoring devices used as part of the study is already available online and can be accessed here: [Clarity monitors](#), [PurpleAir monitors](#)

**What will you do with the study results?**

We will share the study results with Strathcona residents and with community and industry stakeholders to help increase the awareness and understanding of how air quality varies in the area and to identify potential opportunities for improvement.

**About the air monitors****What kind of air monitors are used as part of the study?**

Four types of air monitoring devices are being used to measure air pollutants and assess air quality in Strathcona: Clarity Node-S monitors for particulate matter and nitrogen dioxide; PurpleAir monitors for particulate matter; Bureau Veritas passive samplers for sulphur dioxide; and ObservAir monitors for black carbon, carbon monoxide and sulphur dioxide.

**What were the factors considered when selecting the monitoring technology?**

The monitors selected for this study enable us to measure a range of pollutants and provide important location flexibility, which were key selection criteria to allow for a greater number and variety of monitoring sites. By using more monitors throughout the study area, we increase our coverage and collect more air quality information which will help us better understand the sources of air pollutants and variations in air quality.

**How effective are the air quality monitors used as part of the study?**

The air quality monitors selected incorporate new, proven technology that allows the devices to be installed in locations not typically suited or accessible to larger, regulatory monitors. The monitors provide air quality data that supplements regulatory air quality monitoring near the study area.

By using these more flexible monitors in combination with existing regulatory monitors, we are able to create a comprehensive air quality network that generates more meaningful insights.

**How were air monitoring sites in Strathcona selected?**

To maximize the accuracy and value of the air quality data, we selected monitoring sites based on their suitability (e.g., power requirements, ability to capture outdoor air pollution, non-obstructed air flow, etc.) and with input from the study's steering committee.

**Are the air monitors weather-proof?**

Yes, the monitors are UV-resistant and can withstand typical weather conditions such as rain, ice, snow, and wind.

**About the study's steering committee****What is the role of the steering committee?**

The Strathcona Area Air Quality Study's steering committee facilitates the engagement and participation of community members and technical experts to improve the overall understanding of local air quality and the impact of port emissions on air quality and community health.

#### **Who sits on the steering committee?**

The committee includes members from:

- Strathcona Residents Association air quality working group – co-chair
- Vancouver Fraser Port Authority and its consultant(s) – co-chair
- University of British Columbia
- Metro Vancouver
- Vancouver Coastal Health
- City of Vancouver
- Environment and Climate Change Canada

#### **How were steering committee members selected?**

The Strathcona Residents Association and the Vancouver Fraser Port Authority engaged interested parties with expertise in air quality to support the study.

#### **How long has the steering committee been active?**

The steering committee has been active since 2021.

#### **Where can I get updates on the study?**

The committee will share updates throughout the study. You can sign up to receive email updates [here](#). To learn more, visit <http://www.portvancouver.com/strathcona-air-study> or email us at [Community.Feedback@portvancouver.com](mailto:Community.Feedback@portvancouver.com).

### About engagement opportunities

#### **How are you engaging with the community?**

Our goal is to actively involve Strathcona community residents, businesses and organizations throughout the study, and invite community participation.

Updates on the engagement process will be shared on the study's web page <http://www.portvancouver.com/strathcona-air-study>, the Strathcona Residents Association website <https://strathcona-residents.org/>, through newsletters as well as on the Vancouver Fraser Port Authority and Strathcona Residents Association's social media pages.

If you would like to discuss any ideas for community engagement, please contact us by email at [Community.Feedback@portvancouver.com](mailto:Community.Feedback@portvancouver.com)

#### **Where can I get updates on the study?**

We will share updates throughout the study. You can sign up to receive email updates [here](#). To learn more or to ask a study-related question, visit <http://www.portvancouver.com/strathcona-air-study> or email us at [Community.Feedback@portvancouver.com](mailto:Community.Feedback@portvancouver.com).

You can also contact the Strathcona Residents Association directly at [AQProject@strathcona-residents.org](mailto:AQProject@strathcona-residents.org) or visit <https://strathcona-residents.org/issues/air-quality/>.