



## Transportation

Novus Environmental Inc. specializes in the fields of air quality, wind & climate, sound & vibration, and sustainable water with a goal of harmonizing the built and natural environments. At Novus, we take pride in our ability to understand our client's needs and provide sensible solutions that work for them. Although our lead experts have considerable experience, we challenge ourselves to continually innovate and remain the new spirit in consulting.

Novus' lead experts have successfully completed hundreds of projects related to transportation. In addition to our vast Environmental Assessment experience, our lead experts have also assisted in the development of computer models and protocols for all levels of government. Having experts actively involved in the science and policy enables us to remain a leader in this sector.

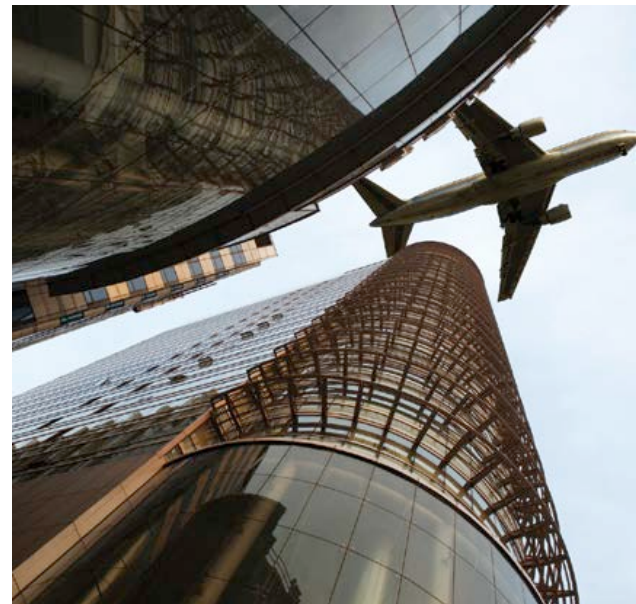
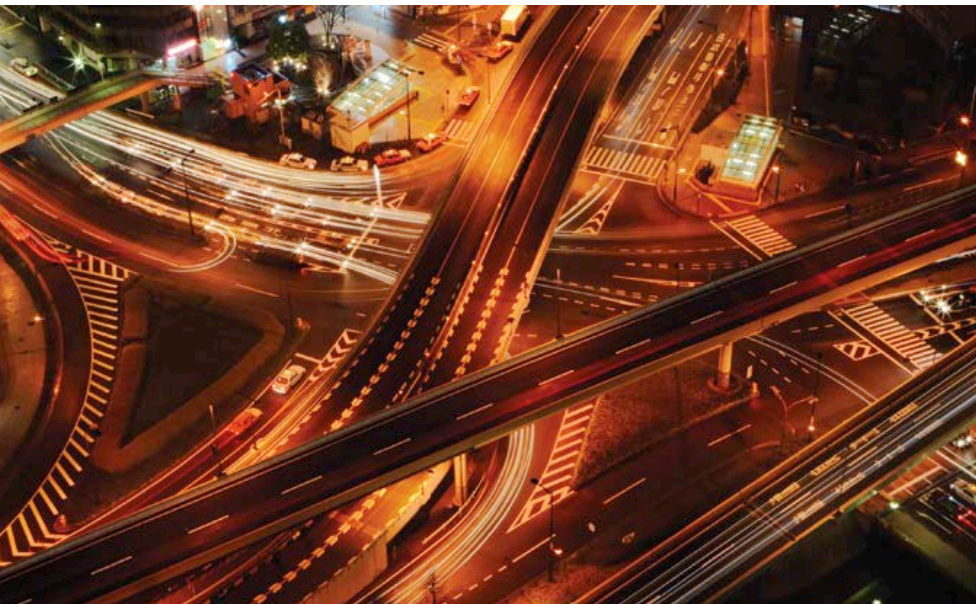


### SERVICES:

- Local Air Quality
- Regional Air Quality (Smog)
- Greenhouse Gases
- Environmental Noise
- Noise Mapping
- Environmental Vibration

### SECTORS:

- Highway
- Tunnels
- Railway
- Bridges
- Transit
- Airports



# Transportation

## AIR QUALITY

**Local Air Quality:** Computer modelling used to determine existing and future pollutant levels at sensitive receptors (i.e., residences, schools, hospitals, etc.) due to emissions from transportation sources. This type of modelling is typically completed for sensitive receptors within 500 m of the transportation source. Frequently used emissions and dispersion models include CAL3QHC, CALINE4, MOVES, MOBILE6.2, EDMS, and AERMOD.

**Regional Air Quality (Smog):** Regional computer modelling of primary and secondary air pollution at the city, census or provincial/state scale. Modelling is commonly used to determine ozone, fine particulate matter, and VOC concentrations on a regional basis. The most frequent models used for this type of analysis are CMAQ and CAMx.

**Greenhouse Gases:** Calculations to determine the total amount of greenhouse gases being emitted into the atmosphere. GHGs typically assessed include carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), and methane (CH<sub>4</sub>). This type of analysis is typically undertaken to determine the transportation sources contribution to provincial and country levels.

## SOUND & VIBRATION

**Environmental Noise:** Measurement and computer modelling of transportation sources, to determine existing and future sound levels at noise sensitive receptors (i.e., residences, schools, hospitals, etc.). This type of modelling is typically undertaken to determine the need for noise mitigation (e.g., barriers). Models applied include STAMSON, STAMINA, TNM, ISO-9613 (Cadna/A), INM, and MicroNEF.

**Noise Mapping:** Noise modelling conducted for a City or large region with the purpose of establishing ambient noise due to transportation sources. The ultimate use of the information would be to establish potential health effects of noise.

**Environmental Vibration:** Measurement and modelling to determine existing and future levels of ground-borne or structure-borne vibration due to transportation sources. Common vibration sources include light rail rapid transit, freight and passenger rail, and streetcars. Analysis is normally completed to determine the need for source-based, path-based, and receptor-based mitigation measures.

## WHY NOVUS:

- Hundreds of transportation projects successfully completed by our Principals
- Ontario Ministry of Transportation R.A.Q.S. approval for air quality and acoustics & vibration
- Extensive experience working with stakeholders and regulators
- Municipal, Provincial, and Federal project experience
- Class, Transit, Individual, and CEAA Environmental Assessment experience



EMAIL [info@novusenv.com](mailto:info@novusenv.com)  
[novusenv.com](http://novusenv.com)

**Novus Environmental Inc.**  
Research Park Centre  
150 Research Lane, Suite 105  
Guelph, Ontario, Canada N1G 4T2  
**PHONE** 226.706.8080

**Novus West Inc.**  
906 - 12 Avenue SW, Suite 600  
Calgary, Alberta Canada T2R 1K7  
**PHONE** 403.930.2770