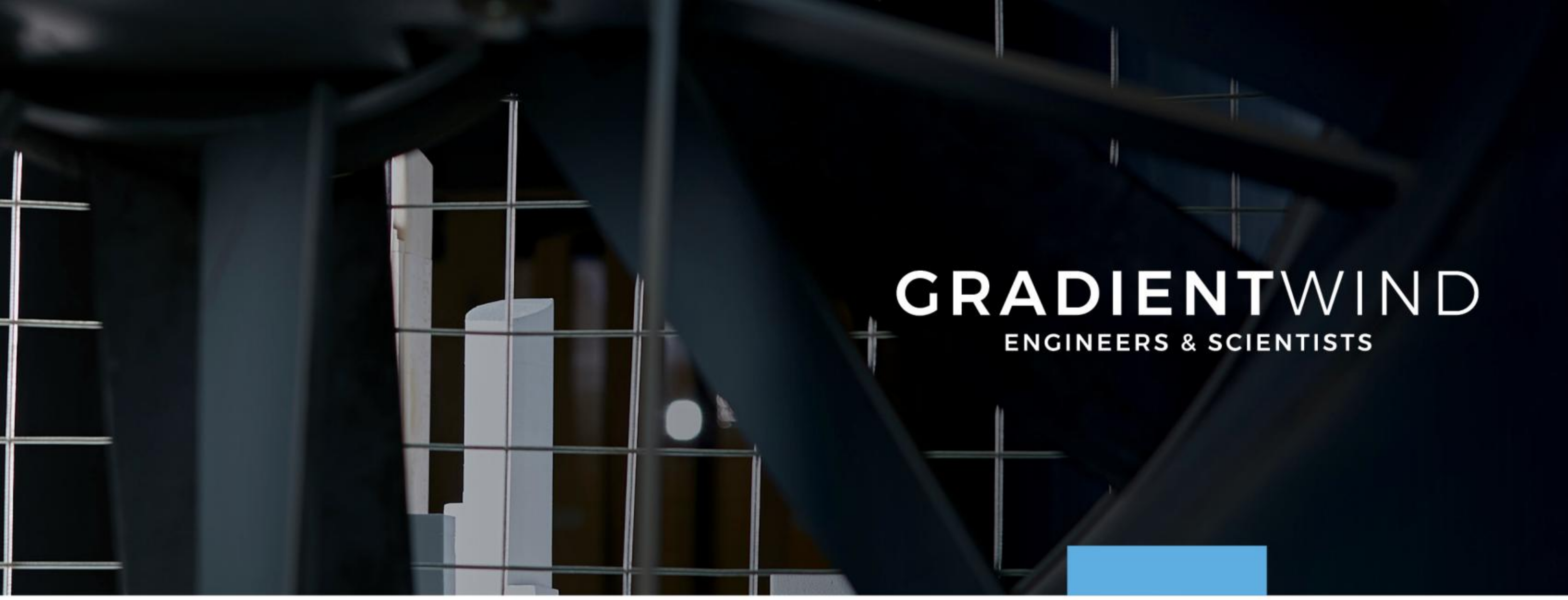
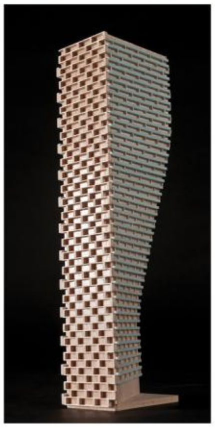
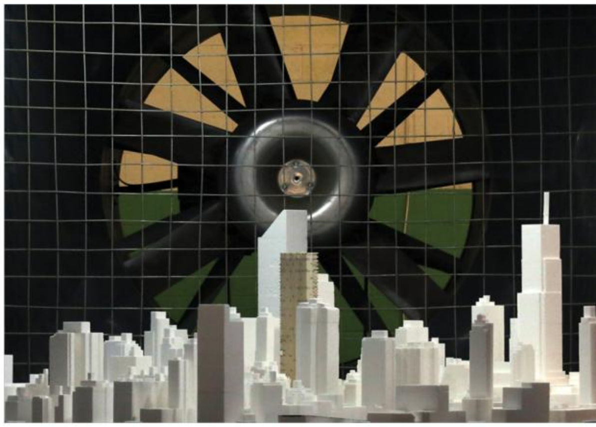


DETAILED TRAFFIC NOISE STUDY

522 Cambridge Street South
Ottawa, Ontario

Report: 24-048 – Detailed Traffic Noise





April 28, 2026

PREPARED FOR
522 Cambridge LTD.
187 Chelmin Old Chelsea,
Suite 101
Chelsea, QC J9B 1J3

PREPARED BY
Sergio Nunez Andres, B.Eng, Junior Environmental Scientist
Joshua Foster, P.Eng., Lead Engineer

EXECUTIVE SUMMARY

This report describes a detailed traffic noise study undertaken in support of a Site Plan Control (SPC) application for a proposed residential building located in Ottawa, Ontario. The proposed development comprises 4-storey buildings. The major sources of roadway traffic noise impacting the development include Carling Avenue, Bronson Avenue and Highway 417. Figure 1 illustrates the site location with the surrounding context.

The assessment is based on (i) theoretical noise prediction methods that conform to the Ministry of the Environment, Conservation and Parks (MECP), Ministry of Transportation of Ontario (MTO), and City of Ottawa requirements; (ii) noise level criteria as specified by the City of Ottawa's Environmental Noise Control Guidelines (ENCG); (iii) future vehicular traffic volumes based on the City of Ottawa's Official Plan roadway classifications; and (iv) site plan drawings prepared by Linebox STUDIO in January 2026.

The results of the current analysis indicated that noise levels will range between 31 and 57 dBA during the daytime period (07:00-23:00) and between 24 and 49 dBA during the nighttime period (23:00-07:00). The highest noise level (57 dBA) occurs at the East façade, which is most exposed to Carling Avenue. Figures 4 and 5 illustrate daytime and nighttime noise contours throughout the site at a height of 4.5 m above grade.

Noise levels predicted due to roadway traffic are expected to fall below 65 dBA. As such the building will need forced air heating with provisions for central air conditioning as a minimum requirement which, if installed at the owner's discretion, will allow building occupants to keep windows closed and maintain a comfortable living environment. In addition to ventilation requirements, a Type C Warning Clause will also be required in all Lease, Purchase and Sale Agreements, as summarized in Section 6.

As for the Level 5 amenity area, noise levels are expected to fall below 60 dBA. Therefore, acoustic noise screen is not required, but is recommended reduce noise levels to 55 dBA. A barrier calculation has been added to this study.

Moreover, the stationary noise impacts of the buildings on the surroundings would be considered at a future stage once the mechanical design has progressed and equipment has been selected. Stationary noise sources associated with the development could include rooftop air handling units, cooling towers or dry coolers, and emergency generator. Should noise levels from these units exceed the criteria established in NPC-300 and ENCG, noise from these sources can be controlled to acceptable limits by judicious selection of the equipment, locating the equipment on a high roof away from nearby residential receptors, and where necessary, installing silencers or noise screens.

TABLE OF CONTENTS

1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by 522 Cambridge Ltd. to undertake a detailed traffic noise study for a proposed residential development located in Ottawa, Ontario. This report summarizes the methodology, results, and recommendations related to the assessment of exterior and interior noise levels generated by local roadway traffic.

This assessment is based on theoretical noise calculation methods conforming to the Ministry of the Environment, Conservation and Parks (MECP) NPC-300[1], Ministry of Transportation Ontario (MTO)[2], and City of Ottawa Environmental Noise Control Guidelines (ENCG)[3] guidelines. Noise calculations were based on site plan drawings prepared by Linebox STUDIO in January 2026, with future traffic volumes corresponding to the City of Ottawa's Official Plan (OP) roadway classifications.

2. TERMS OF REFERENCE

The focus of this Detailed Traffic Noise Study is a proposed residential development located at 522 Cambridge Street South in Ottawa, Ontario.

The proposed development consists of a mid-rise residential building with a basement level with 3 residential units and a storage room, and residential units extending from Level 1 through Level 4, with a rooftop amenity area located at Level 5. The building includes an elevator core, stairwells, and internal corridors providing access to the residential units.

The ground floor includes a mix of residential units, including studio, one-bedroom, and two-bedroom suites, along with building access areas such as vestibule, lobby, and circulation spaces.

Typical floors (Levels 2 to 4) consist of residential units arranged along a central corridor, with a combination of one-bedroom and two-bedroom suites.

---

[1] Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013
[2] Ministry of Transportation Ontario, "*Environmental Guide for Noise*", February 2022
[3] City of Ottawa, Environmental Noise Control Guidelines, January 2016

A rooftop outdoor amenity area is provided at Level 5, located adjacent to a mechanical room and accessed via the building core.

The site is within an established urban area characterized by residential buildings. It is located along Cambridge Street South and the main traffic noise sources are Carling Avenue, Bronson Avenue and Highway 417. Figure 1 illustrates the site location with the surrounding context.

3. OBJECTIVES

The principal objectives of this study are to (i) calculate the future noise levels on the study buildings produced by local roadway traffic, and (ii) ensure that interior and exterior noise levels do not exceed the allowable limits specified by the City of Ottawa's Environmental Noise Control Guidelines as outlined in Section 4.2 of this report.

4. METHODOLOGY

4.1 Background

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that particular source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Measurement of noise is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level (2×10^{-5} Pascals). The 'A' suffix refers to a weighting scale, which better represents how the noise is perceived by the human ear. With this scale, a doubling of power results in a 3 dBA increase in measured noise levels and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

4.2 Roadway Traffic Noise

4.2.1 Criteria for Roadway Traffic Noise

For surface roadway traffic noise, the equivalent sound energy level, L_{eq}, provides a measure of the time-varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time-varying noise level over a period of time. For roadways, the L_{eq} is commonly calculated on the basis of a 16-hour (L_{eq16}) daytime (07:00-23:00) / 8-hour (L_{eq8}) nighttime (23:00-07:00) split to assess its impact on residential buildings. The City of Ottawa's Environmental Noise Control Guidelines (ENCG) specify that the recommended indoor noise limit range (that is relevant to this study) is 45 and 40 dBA for living rooms and sleeping quarters respectively for roadway as listed in Table 1.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD) [4]

Type of Space	Time Period	L_{eq} (dBA)
General offices, reception areas, retail stores, etc.	07:00 – 23:00	50
Living/dining/den areas of **residences**, hospitals, schools, nursing/retirement homes, day-care centres, theatres, places of worship, libraries, individual or semi-private offices, conference rooms, etc.	07:00 – 23:00	45
Sleeping quarters of hotels/motels	23:00 – 07:00	45
Sleeping quarters of **residences**, hospitals, nursing/retirement homes, etc.	23:00 – 07:00	40

Predicted noise levels at the plane of window (POW) dictate the action required to achieve the recommended sound levels. An open window is considered to provide a 10 dBA reduction in noise, while a standard closed window is capable of providing a minimum 20 dBA noise reduction[5]. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment[6]. Therefore, where noise levels exceed 55 dBA daytime and 50 dBA nighttime, the ventilation for the building should consider the need for having windows and doors closed, which triggers the need for forced air heating with provision for central air conditioning. Where noise levels exceed 65 dBA daytime and 60 dBA nighttime, air conditioning will be required and building components will require higher levels of sound attenuation[7].

[4] Adapted from ENCG 2016 – Tables 2.2b and 2.2c
[5] Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125
[6] MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8
[7] MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

The sound level criterion for outdoor living areas (OLA) is 55 dBA, which applies during the daytime (07:00 to 23:00). When noise levels exceed 55 dBA, mitigation should be provided to reduce noise levels where technically and administratively feasible to acceptable levels at or below the criterion. Furthermore, noise levels at the OLA must not exceed 60 dBA if mitigation can be technically and administratively achieved.

4.2.2 Theoretical Roadway Noise Predictions

The impact of transportation noise sources on the development was determined by two computer modelling programs. To provide a general sense of noise across the site, the employed software program was CadnaA which utilizes the United States Federal Highway Administration's Traffic Noise Model (TNM) to represent the roadway line sources. The TNM model has been accepted as the preferred model as per the revised guideline titled "*Environmental Guide for Noise"* prepared by the Ministry of Transportation Ontario (MTO)[8]. This computer program can represent three-dimensional surfaces and the first reflections of sound waves over a suitable spectrum for human hearing. A set of comparative calculations were performed in the current Ontario traffic noise prediction model, STAMSON, for comparisons to CadnaA simulation results.

The STAMSON model is, however, older and requires each receptor to be calculated separately. STAMSON also does not accurately account for building reflections and multiple screening elements, and curved road geometry. A total of 5 receptor locations were identified around the site, as illustrated in Figure 2.

Roadway noise calculations were performed by treating each road segment as separate line sources of noise, and by using existing and proposed building locations as noise barriers. In addition to the traffic volumes summarized in Table 2, theoretical noise predictions were based on the following parameters:

- Truck traffic on all roadways was taken to comprise 5% heavy trucks and 7% medium trucks, as per ENCG requirements for noise level predictions.
- The day/night split was taken to be 92% / 8% respectively for all streets.
- The ground surface was conservatively modelled as hard (reflective) ground to account for the hard, packed soil present at the site.
- Receptor heights were taken to be 4.5 m, 12.5 m above grade for the Plane of Window (POW), as well as 1.5 m above the walking surface at the Level 5 amenity area.

[8] Environmental Guide for Noise, February 2022. Ministry of Transportation Ontario

- The study site was treated as having flat or gently sloping topography.
- Massing associated with the study site and surrounding buildings were included as potential noise screening elements.
- 5 receptors were strategically placed throughout the study area, as shown in Figure 2.

4.2.3 Roadway Traffic Volumes

The ENCG dictates that noise calculations should consider future sound levels based on a roadway's classification at the mature state of development. Therefore, traffic volumes are based on the roadway classifications outlined in the City of Ottawa's Official Plan (OP) and Transportation Master Plan[9] which provide additional details on future roadway expansions. Average Annual Daily Traffic (AADT) volumes are then based on data in Table B1 of the ENCG for each roadway classification. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

[9] City of Ottawa Transportation Master Plan, November 2013

TABLE 2: ROADWAY TRAFFIC DATA

Segment	Roadway Traffic Data	Speed Limit (km/h)	Traffic Volumes
Bronson Avenue	4-Lanes Undivided Arterial Road	50	**30,000**
Carling Avenue	4-Lanes Divided Arterial Road	60	**35,000**
Highway 417	6 lanes Highway	100	**109,998**

4.3 Indoor Noise Calculations

The difference between outdoor and indoor noise levels is the noise attenuation provided by the building envelope. According to common industry practice, complete walls and individual wall elements are rated according to the Sound Transmission Class (STC). The STC ratings of common residential walls built in conformance with the Ontario Building Code (2012) typically exceed STC 35, depending on exterior cladding, thickness and interior finish details. For example, brick veneer walls can achieve STC 50 or more. Standard commercially sided exterior metal stud walls have around STC 45. Standard good quality double-glazed non-operable windows can have STC ratings ranging from 25 to 40, depending on the window manufacturer, pane thickness and inter-pane spacing. As previously mentioned, the windows are the known weak point in a partition.

As per Section 4.2, when daytime noise levels from road sources at the plane of the window exceed 65 dBA, calculations must be performed to evaluate the sound transmission quality of the building components to ensure acceptable indoor noise levels are achieved. The calculation procedure[10] considers:

- Window type and total area as a percentage of total room floor area
- Exterior wall type and total area as a percentage of the total room floor area
- Acoustic absorption characteristics of the room
- Outdoor noise source type and approach geometry
- Indoor sound level criteria, which varies according to the intended use of a space

[10] Building Practice Note: Controlling Sound Transmission into Buildings by J.D. Quirt, National Research Council of Canada, September 1985

Based on published research[11], exterior walls possess specific sound attenuation characteristics that are used as a basis for calculating the required STC ratings of windows in the same partition. Due to the limited information available at the time of the study, detailed floor layouts have not been finalized; therefore, detailed STC calculations could not be performed at this time. As a guideline, the anticipated STC requirements for windows have been estimated based on the overall noise reduction required for each intended use of space (STC = Outdoor Noise Level – Targeted Indoor Noise Levels +safety factor).

5. RESULTS

5.1 Roadway Traffic Noise Levels

The results of the roadway traffic noise calculations are summarized in Table 3 below.

TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC

Receptor Number	Receptor Height Above Grade (m)	Receptor Location	Exteriro Noise Level (dBA)	
			Day	Night
R1	4.5	POW - East Facade	50	42
	12.5		57	49
R2	4.5	POW - North Facade	31	24
	12.5		52	44
R3	4.5	POW - West Facade	34	26
	12.5		52	45
R4	4.5	POW - South Facade	49	41
	12.5		55	48
R5	16	OLA – Level 5 terrace	60	N/A*

*Nighttime noise levels at the OLA are not considered as per ENCG.

The results of the current analysis indicated that noise levels will range between 31 and 57 dBA during the daytime period (07:00-23:00) and between 24 and 49 dBA during the nighttime period (23:00-07:00). The highest noise level (57 dBA) occurs at the East façade, which is most exposed to Carling Avenue. Figures 4 and 5 illustrate daytime and nighttime noise contours throughout the site at a height of 4.5 m above grade.

[11] CMHC, Road & Rail Noise: Effects on Housing

Table 4 shows a comparison in results between CadnaA and STAMSON. Noise levels calculated in STAMSON were found to have a good correlation with CadnaA and variability between the two programs was within an acceptable level of ±0-3 dBA. Sample calculations are presented in Appendix A.

TABLE 4: RESULTS OF STAMSON/CADNAA CORRELATION

Receptor ID	Receptor Location	Receptor Height (m)	STAMSON Noise Level (dBA)		CadnaA Noise Level (dBA)	
			Day	Night	Day	Night
R1	POW - East Facade	12.5	59	52	57	50
R4	POW - South Facade	12.5	57	50	55	48

5.2 Noise Control Measures

The noise levels predicted due to roadway traffic are expected to fall below 57 dBA. Since noise levels are less than 65 dBA at all façades, standard building components in compliance with Ontario Building Code standards will be sufficient to attenuate noise levels indoors when windows are closed.

Noise levels predicted due to roadway traffic are expected to fall between 30 and 57 dBA. The building should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion.

As for the Level 5 outdoor amenity area, noise levels are expected to exceed the noise level criteria for OLAs, with predicted sound levels of approximately 60 dBA during daytime conditions. Therefore, acoustic mitigation may be required to reduce sound levels to the recommended limits.

5.3 Noise Barrier Calculation

Noise levels at Level 5 amenity area are expected to exceed 55 dBA. As such, noise control measures are recommended to reduce the noise levels to 55 dBA or below. A solid acoustic barrier with a minimum height of 2 m is required to be partially surrounding the perimeter of the Level amenity area, as shown in Figure 3. The barrier must be constructed from materials having a minimum surface density of 20 kg/m^2 (STC rating of 30) and contain no gaps. Table 5 summarizes the results of the barrier investigation.

TABLE 5: RESULTS OF NOISE BARRIER INVESTIGATION

Receptor Reference	Height (m)	Location	24hLeq Noise Levels (dBA)		
			Without	1.5m Barrier	2 m Barrier
R5	16	OLA – Level 5 terrace	60	58	50

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicated that noise levels will range between 31 and 57 dBA during the daytime period (07:00-23:00) and between 24 and 49 dBA during the nighttime period (23:00-07:00). The highest noise level (57 dBA) occurs at the East façade, which is most exposed to Carling Avenue. Figures 4 and 5 illustrate daytime and nighttime noise contours throughout the site at a height of 4.5 m above grade.

Since noise levels are less than 65 dBA at all the building façades, standard building components in compliance with Ontario Building Code standards will be sufficient to attenuate noise levels indoors when windows are closed.

Noise levels predicted due to roadway traffic are expected to fall between 30 and 57 dBA. Where sound levels exceed 55 dBA at the plane of window, the building should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion. In addition to ventilation requirements, a Type C Warning Clause will also be required in all Lease, Purchase and Sale Agreements, as summarized below:

Type C

> *"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."*

Noise levels at Level 5 amenity area are expected to exceed 55 dBA. As such, noise control measures are recommended to reduce the noise levels to 55 dBA or below. A solid acoustic barrier with a minimum height of 2 m is required to be partially surrounding the perimeter of the Level amenity area, as shown in Figure 3. The barrier must be constructed from materials having a minimum surface density of 20 kg/m^2 (STC rating of 30) and contain no gaps.

Moreover, the stationary noise impacts of the buildings on the surroundings would be considered at a future stage once the mechanical design has progressed and equipment has been selected. Stationary noise sources associated with the development could include rooftop air handling units, cooling towers or dry coolers, and emergency generators. Should noise levels from these units exceed the criteria established in NPC-300 and ENCG, noise from these sources can be controlled to acceptable limits by judicious selection of the equipment, locating the equipment on a high roof away from nearby residential receptors, and where necessary, installing silencers or noise screens.

This concludes our roadway traffic noise assessment and report. If you have any questions or wish to discuss our findings, please advise us. In the interim, we thank you for the opportunity to be of service.

Sincerely,

Gradient Wind Engineering Inc.

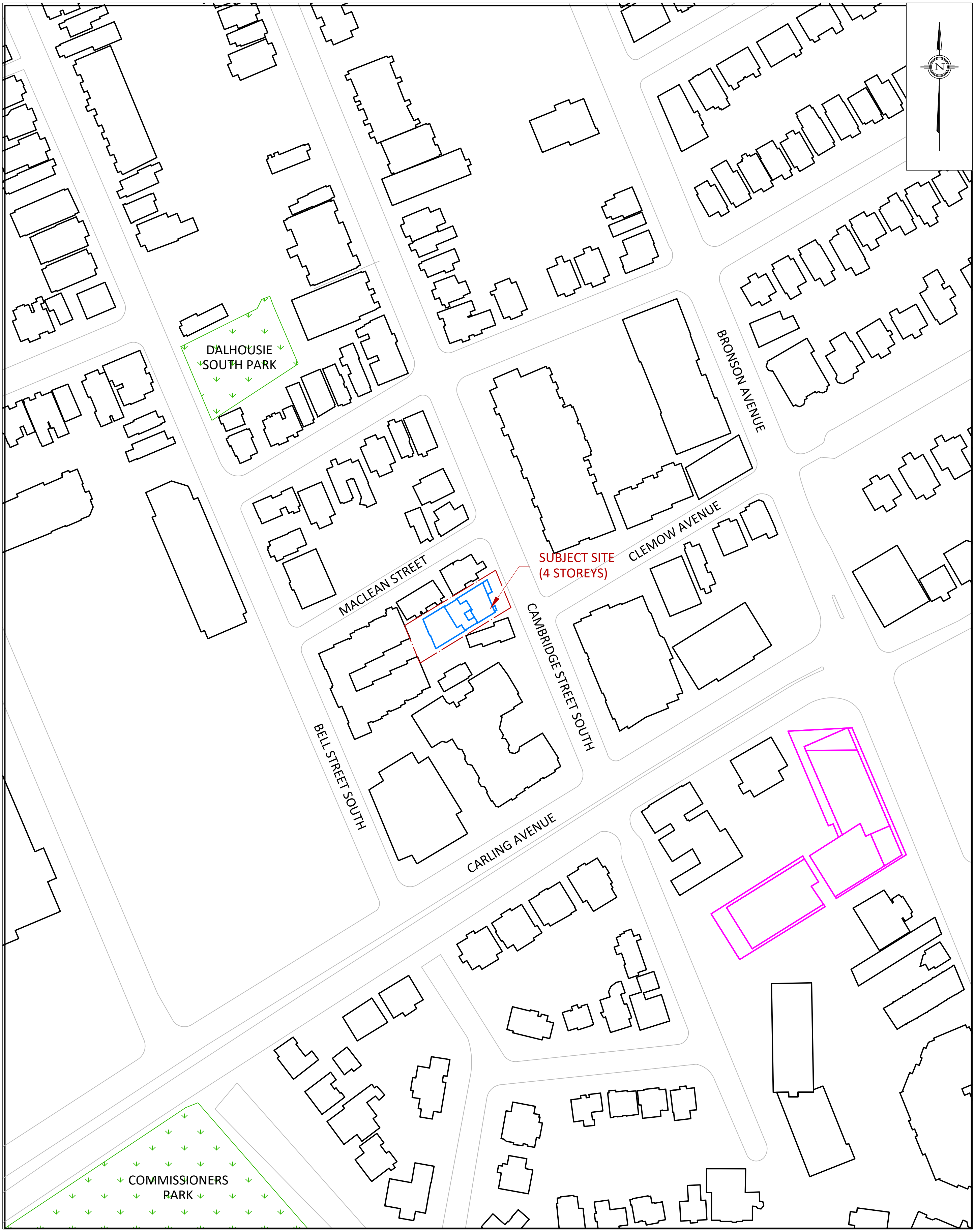
Sergio Nunez Andres

LICENSED PROFESSIONAL ENGINEER
J. R. FOSTER
100155655
2026-04-28
PROVINCE OF ONTARIO

Sergio Nunez Andres, B.Eng.
Junior Environmental Scientist

Joshua Foster, P.Eng.
Lead Engineer

Gradient Wind File #26-048



GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT: 522 CAMBRIDGE STREET, OTTAWA DETAILED TRAFFIC NOISE STUDY		DESCRIPTION: FIGURE 1: SITE PLAN AND SURROUNDING CONTEXT
	SCALE: 1:2000 (APPROX.)	DRAWING NO.: 26-048-ANV-1	
	DATE: APRIL 21, 2026	DRAWN BY: N.M.P.	

GRADIENTWIND
ENGINEERS & SCIENTISTS

127 WALGREEN ROAD, OTTAWA, ON
613 836 0934 • GRADIENTWIND.COM

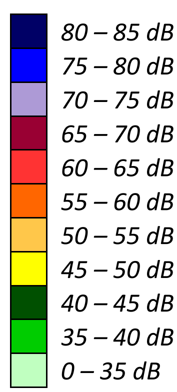
PROJECT	522 CAMBRIDGE STREET, OTTAWA DETAILED TRAFFIC NOISE STUDY		
SCALE	2:1000 (APPROX.)	DRAWING NO.	26-048-ANV-2
DATE	APRIL 21, 2026	DRAWN BY	N.M.P.

DESCRIPTION

FIGURE 2:
RECEPTOR LOCATION

GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT: 522 CAMBRIDGE STREET, OTTAWA DETAILED TRAFFIC NOISE STUDY			DESCRIPTION: FIGURE 3: PROPOSED BARRIER LOCATION
	SCALE: 3:1000 (APPROX.)	DRAWING NO.: 26-048-ANV-3		
	DATE: APRIL 21, 2026	DRAWN BY: N.M.P.		

FIGURE 4: DAYTIME TRAFFIC NOISE CONTOURS
(4.5 M ABOVE GRADE)



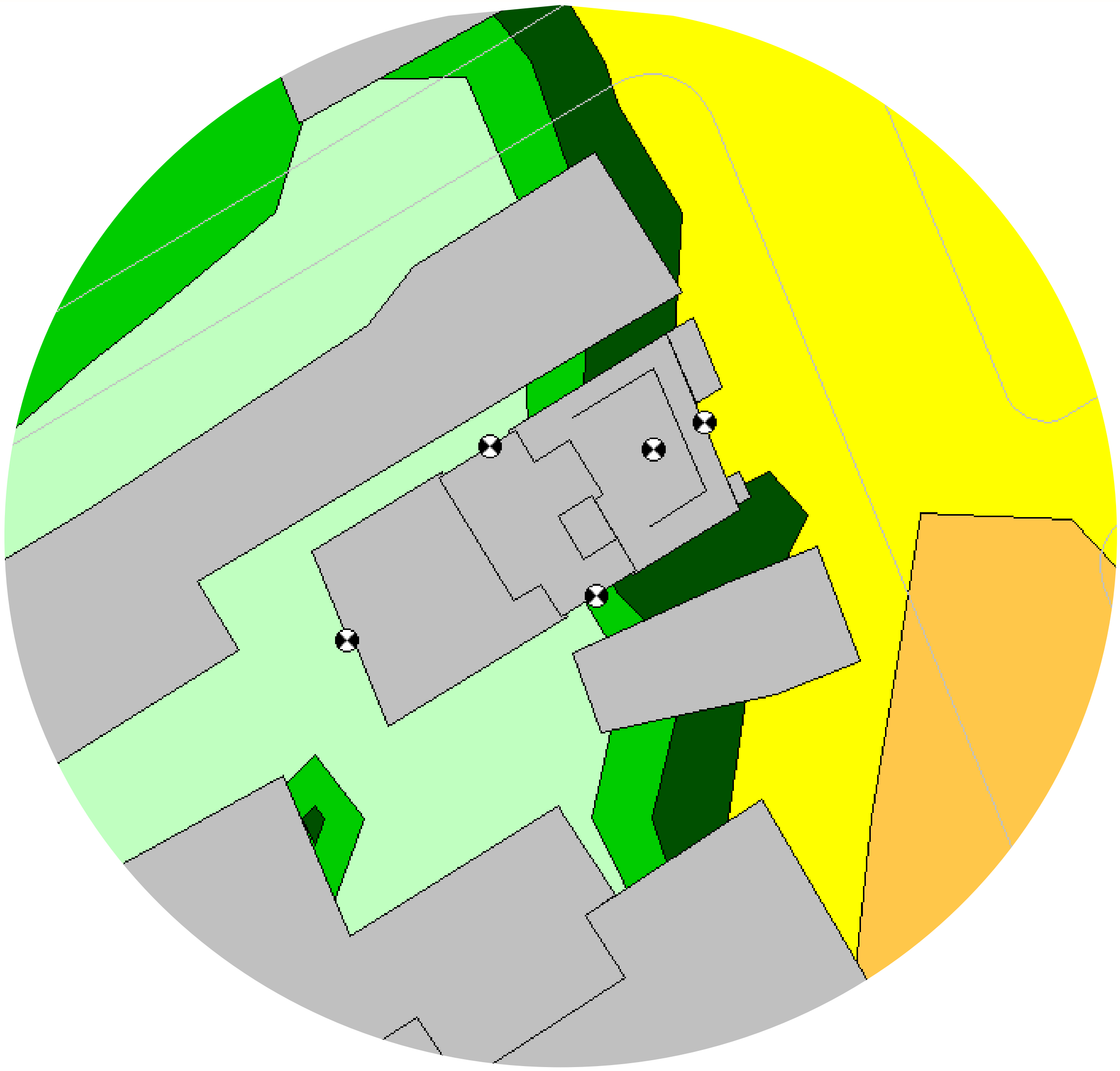
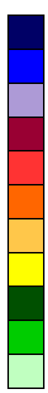
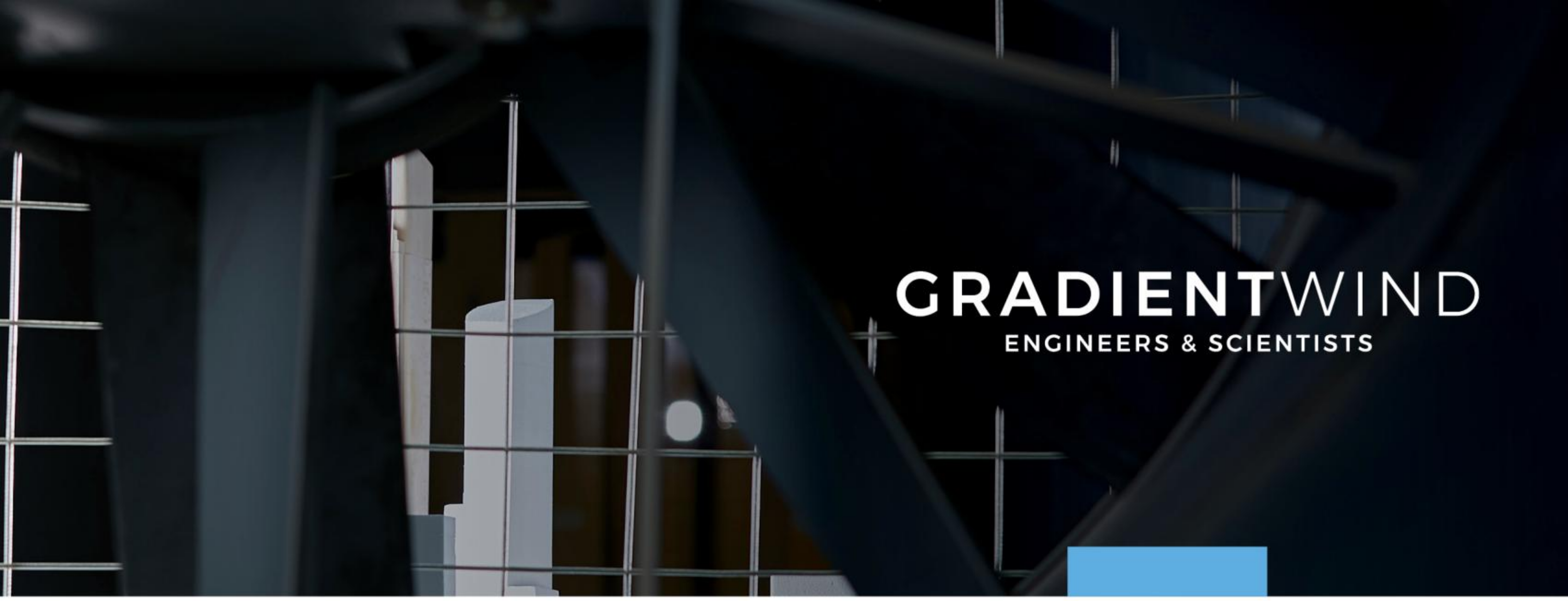
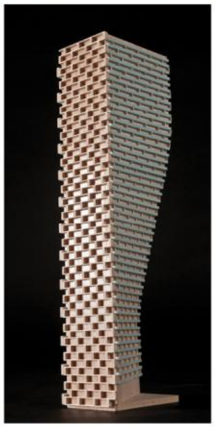
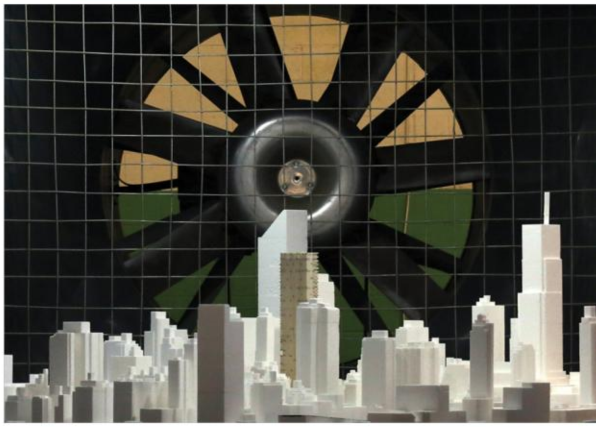


FIGURE 5: NIGHTTIME TRAFFIC NOISE CONTOURS
(4.5 M ABOVE GRADE)









APPENDIX A

STAMSON CALCULATIONS

127 WALGREEN ROAD, OTTAWA, ON, CANADA K0A 1L0 | 613 836 0934
GRADIENTWIND.COM

```
STAMSON 5.0        NORMAL REPORT        Date: 23-04-2026 15:19:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te                Time Period: Day/Night 16/8 hours
Description:


Road data, segment # 1: Bronson Ave (day/night)
-----------------------------------------------
Car traffic volume  : 27600/2800  veh/TimePeriod
Medium truck volume :  1932/196   veh/TimePeriod
Heavy truck volume  :  1380/140   veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Bronson Ave (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 125.00 / 125.00 m
Receiver height           :  12.50 / 12.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 2: Carling Ave (day/night)
-----------------------------------------------
Car traffic volume  : 32200/2800  veh/TimePeriod
Medium truck volume :  2254/196   veh/TimePeriod
Heavy truck volume  :  1610/140   veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: Carling Ave (day/night)
---------------------------------------------
Angle1   Angle2          : -13.00 deg   8.00 deg
Wood depth               :      0       (No woods.)
No of house rows         :      2 / 2
House density            :     50 %
Surface                  :      2       (Reflective ground surface)
Receiver source distance :  93.00 / 93.00  m
Receiver height          :  12.50 / 12.50  m
Topography               :      1       (Flat/gentle slope; no barrier)
Reference angle          :   0.00

Results segment # 1: Bronson Ave (day)
--------------------------------------

Source height = 1.45 m

ROAD (0.00 + 58.29 + 0.00) = 58.29 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
--------------------------------------------------------------------------
--
   -90     90   0.00  71.59   0.00  -9.21   0.00   0.00  -4.10   0.00
58.29
--------------------------------------------------------------------------
--

Segment Leq : 58.29 dBA
```

```
Results segment # 2: Carling Ave (day)
--------------------------------------

Source height = 1.45 m

ROAD (0.00 + 52.40 + 0.00) = 52.40 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
--------------------------------------------------------------------------
--
   -13      8   0.00  73.80   0.00  -7.92  -9.33   0.00  -4.14   0.00
52.40
--------------------------------------------------------------------------
--

Segment Leq : 52.40 dBA

Total Leq All Segments: 59.29 dBA


Results segment # 1: Bronson Ave (night)
----------------------------------------

Source height = 1.45 m

ROAD (0.00 + 51.36 + 0.00) = 51.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
--------------------------------------------------------------------------
--
   -90     90   0.00  64.67   0.00  -9.21   0.00   0.00  -4.10   0.00
51.36
--------------------------------------------------------------------------
--

Segment Leq : 51.36 dBA
```

```
Results segment # 2: Carling Ave (night)
----------------------------------------

Source height = 1.45 m

ROAD (0.00 + 44.80 + 0.00) = 44.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
--------------------------------------------------------------------------
--
   -13      8   0.00  66.20   0.00  -7.92  -9.33   0.00  -4.14   0.00
44.80
--------------------------------------------------------------------------
--

Segment Leq : 44.80 dBA

Total Leq All Segments: 52.23 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 59.29
                         (NIGHT): 52.23
```

```
STAMSON 5.0        NORMAL REPORT        Date: 23-04-2026 15:31:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4.te                Time Period: Day/Night 16/8 hours
Description:


Road data, segment # 1: Bronson Ave (day/night)
-----------------------------------------------
Car traffic volume  : 27600/2800  veh/TimePeriod
Medium truck volume :  1932/196   veh/TimePeriod
Heavy truck volume  :  1380/140   veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Bronson Ave (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     70 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 138.00 / 138.00 m
Receiver height           :  12.50 / 12.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 2: Carling Ave (day/night)
-----------------------------------------------
Car traffic volume  : 32200/2800  veh/TimePeriod
Medium truck volume :  2254/196   veh/TimePeriod
Heavy truck volume  :  1610/140   veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: Carling Ave (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   25.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     70 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  87.00 / 87.00  m
Receiver height           :  12.50 / 12.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Results segment # 1: Bronson Ave (day)
--------------------------------------

Source height = 1.45 m

ROAD (0.00 + 48.59 + 0.00) = 48.59 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
--------------------------------------------------------------------------
--
   -90      0   0.00  71.59   0.00  -9.64  -3.01   0.00 -10.36   0.00
48.59
--------------------------------------------------------------------------
--

Segment Leq : 48.59 dBA
```

```
Results segment # 2: Carling Ave (day)
--------------------------------------

Source height = 1.45 m

ROAD (0.00 + 56.71 + 0.00) = 56.71 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
--------------------------------------------------------------------------
--
   -90     25   0.00  73.80   0.00  -7.63  -1.95   0.00  -7.51   0.00
56.71
--------------------------------------------------------------------------
--

Segment Leq : 56.71 dBA

Total Leq All Segments: 57.33 dBA


Results segment # 1: Bronson Ave (night)
----------------------------------------

Source height = 1.45 m

ROAD (0.00 + 41.66 + 0.00) = 41.66 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
--------------------------------------------------------------------------
--
   -90      0   0.00  64.67   0.00  -9.64  -3.01   0.00 -10.36   0.00
41.66
--------------------------------------------------------------------------
--

Segment Leq : 41.66 dBA
```

```
Results segment # 2: Carling Ave (night)
----------------------------------------

Source height = 1.45 m

ROAD (0.00 + 49.11 + 0.00) = 49.11 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
--------------------------------------------------------------------------
--
   -90     25   0.00  66.20   0.00  -7.63  -1.95   0.00  -7.51   0.00
49.11
--------------------------------------------------------------------------
--

Segment Leq : 49.11 dBA

Total Leq All Segments: 49.83 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.33
                         (NIGHT): 49.83
```