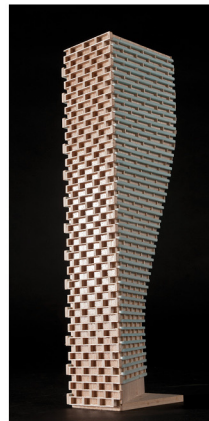


**ROADWAY TRAFFIC
NOISE ASSESSMENT**

2405 Mer Bleue Road
Ottawa, Ontario

Report: 23-153-Traffic Noise



November 27, 2023

PREPARED FOR

Service de la planification et des installations
Conseil des Écoles Publiques de l'Est de l'Ontario
2445, Boulevard St-Laurent
Ottawa, ON K1G 6C3

PREPARED BY

Efser Kara, MSc, LEED GA, Acoustic Scientist
Joshua Foster, P.Eng., Lead Engineer

EXECUTIVE SUMMARY

This report describes a detailed roadway traffic noise assessment performed for the proposed development located at 2405 Mer Bleue Road in Ottawa, Ontario. The development is a 2-storey, rectangular planform elementary school. The primary sources of roadway traffic noise are Jerome Jodoin Drive located to the northeast of the study site and Mer Bleue Road located to the southwest. Throughout this study, the Jerome Jodoin Drive façade of the study building and the Mer Bleue Road façade are referred to as east and west, respectively. The site is surrounded by low-rise residential buildings to the north and east, and mostly green land and empty parcels to the south and west. Figure 1 illustrates the site plan 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) 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) architectural drawings prepared by Edward J. Cuhaci & Associates Architects Inc.

The results of the current analysis indicate that the noise levels will range between 52 and 64 dBA during the daytime period (07:00-23:00) and 45 and 56 dBA during the nighttime period (23:00-07:00). The highest noise level (64 dBA) occur along the east façade of the building which is nearest and most exposed to Jerome Jodoin Drive.

As the noise levels do not exceed the 65 dBA criteria of NPC-300¹ and ENCG, upgraded building components will not be required. The noise level at the At-grade Outdoor Area does not exceed the ENCG criteria for outdoor living areas (OLA), therefore mitigation will not be required.

The results of the calculations also indicate that the development will require provisions for forced air heating and provision for the installation of central air conditioning, or a similar ventilation system. As noted in Section 6 a Type C warning clause will be required on purchase, sale, and lease agreements.

¹ Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013



With regards to stationary noise impacts, Gradient Wind conducted a survey of the study site, using the satellite view of the area. The survey of the satellite imagery indicates there are no significant existing sources of stationary noise surrounding the development site, therefore stationary noise impacts on the study site from the surroundings is not a concern.

With regards to the impacts of the proposed building on the surroundings and itself, by careful placing and judicious selection of noise-generating equipment such as RTUs (Rooftop Units), stationary noise impact from the proposed building can comply with the sound level limits defined in ENCG and NPC-300. Where necessary, noise screens, silencers, and other noise control measures can be added.

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1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Conseil des Écoles Publiques de l'Est de l'Ontario (CEPEO) to undertake a roadway traffic noise assessment study to satisfy the requirements for a site plan control application (SPA) submission for the proposed residential development located at 2405 Mer Bleue Road in Ottawa, Ontario. This report summarizes the methodology, results, and recommendations related to the assessment of exterior noise levels generated by local roadway traffic.

This assessment is based on theoretical noise calculation methods conforming to the City of Ottawa² and the Ministry of the Environment, Conservation and Parks (MECP)³ guidelines. Noise calculations were based on drawings prepared by Edward J. Cuhaci & Associates Architects Inc., dated June 2023, with future traffic volumes corresponding to roadway classification and theoretical roadway capacities.

2. TERMS OF REFERENCE

The subject site is located at 2405 Mer Bleue Road in Ottawa, Ontario and is situated on a parcel of land bordered by Monardia Way to the northwest and Jerome Jodoin Drive to the northeast. The development is a 2-storey, rectangular planform elementary school with an at-grade outdoor area located to the west of the building. An area to the westmost side of the parcel is reserved for future portable classrooms.

The primary sources of roadway traffic noise are Jerome Jodoin Drive located to the northeast of the study site and Mer Bleue Road located to the southwest. Throughout this study, the Jerome Jodoin Drive façade of the study building and the Mer Bleue Road façade are referred to as east and west, respectively. The site is surrounded by low-rise residential buildings to the north and east, and mostly green land and empty parcels to the south and west. Figure 1 illustrates the site plan with the surrounding context.

² City of Ottawa Environmental Noise Control Guidelines, January 2016

³ Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013



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 (ENCG) 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 level 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 sound pressure 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 vehicular traffic, 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 and LRT, 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) specifies 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. Based on Gradient Wind's experience, more comfortable indoor noise levels should be targeted, towards 42 and 37, respectively, to control peak noise and deficiencies in building envelope construction.



TABLE 1: INDOOR SOUND LEVEL CRITERIA

Type of Space	Time Period	Leq (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

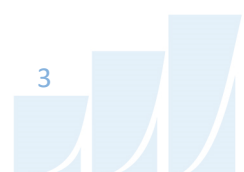
Predicted noise levels at the plane of window (POW) dictate the action required to achieve the recommended sound levels. An open window is considered to provide a 10 dBA reduction in noise, while a standard closed window is capable of providing a minimum 20 dBA noise reduction⁴. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment⁵. Therefore, where noise levels exceed 55 dBA during daytime and 50 dBA during 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 attenuation⁶.

The sound level criterion for outdoor living areas (OLA) is 55 dBA, which applies during the daytime period (07:00 to 23:00). When noise levels exceed 55 dBA and are less than or equal to 60 dBA, mitigation should be considered to reduce noise levels to as close to 55 dBA if technically, economically, and administratively feasible. If noise levels exceed 60 dBA, mitigation must be provided to reduce noise levels below 60 dBA.

⁴ Burberry, P.B. (2014). Mitchell’s Environment and Services. Routledge, Page 125

⁵ MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8

⁶ MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3



4.2.2 Theoretical Roadway Noise Predictions

Noise predictions were performed with the aid of the Ministry of the Environment, Conservations and Parks' (MECP) computerized noise assessment program, STAMSON 5.04, for road analysis. Appendix A includes the STAMSON 5.04 input and output data.

Roadway traffic noise calculations were performed by treating each roadway segment as separate line sources of noise. 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 for all roads was taken to be 92% / 8%, respectively.
- Ground surfaces were taken to be reflective due to the presence of hard (paved) ground.
- Topography was assumed to be a flat/gentle slope surrounding the study building.
- Plane of Window (POW) receptors were placed at the centre of window of the second level (at 4.5 metres high) on the north, east, west, and south façades. Also, an Outdoor Living Area (OLA) receptor was placed at the centre of -at-grade outdoor area on the west side of the development at 1.5 metres high.
- The receptor distances to roadway traffic and exposure angles are illustrated in Figures 3 and 4.

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 Plan⁷ 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.

⁷ City of Ottawa Transportation Master Plan, November 2013

TABLE 2: ROADWAY TRAFFIC DATA

Segment	Roadway Traffic Data	Speed Limit (km/h)	Traffic Volumes
Jerome Jodoin Drive	2-Lane Major Collector (2-UMCU)	40	12,000
Mer Bleue Drive	4-Lane Urban Arterial Divided (4-UAD)	60	35,000

5. ROADWAY TRAFFIC NOISE RESULTS AND DISCUSSION

5.1 Roadway Traffic Noise Levels

The results of the roadway traffic noise calculations are summarized in Table 3 below. A complete set of input and output data from all STAMSON 5.04 calculations are available in Appendix A.

TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROAD TRAFFIC

Receptor Number	Receptor Height Above Grade (m)	Receptor Location	STAMSON 5.04 Noise Level (dBA)	
			Day	Night
1	4.5	POW - North Façade	57	49
2	4.5	POW - North Façade	59	52
3	4.5	POW - East Façade	64	56
4	4.5	POW - South Façade	59	52
5	4.5	POW - West Façade	52	45
6	1.5	OLA - At-grade Outdoor Area	56	N/A*

* OLA levels during the nighttime period is not considered as per ENCG.

The results of the current analysis indicate that the noise levels will range between 52 and 64 dBA during the daytime period (07:00-23:00) and 45 and 56 dBA during the nighttime period (23:00-07:00). The highest noise level (64 dBA) occur along the east façade of the building which is nearest and most exposed to Jerome Jodoin Drive.

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that the noise levels will range between 52 and 64 dBA during the daytime period (07:00-23:00) and 45 and 56 dBA during the nighttime period (23:00-07:00). The highest noise level (64 dBA) occur along the east façade of the building which is nearest and most exposed to Jerome Jodoin Drive.

As the noise levels do not exceed the 65 dBA criteria of NPC-300⁸ and ENCG, upgraded building components will not be required. The noise level at the At-grade Outdoor Area does not exceed the ENCG criteria for outdoor living areas (OLA), therefore mitigation will not be required.

The results of the calculations also indicate that the development will require provisions for forced air heating and provision for the installation of central air conditioning, or a similar ventilation system. The building will also require a Type C warning clause on purchase, sale and lease agreements. Draft language is as follows:

"This school 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."

With regards to stationary noise impacts, Gradient Wind conducted a survey of the study site, using the satellite view of the area. The survey of the satellite imagery indicates there are no significant existing sources of stationary noise surrounding the development site, therefore stationary noise impacts on the study site from the surroundings is not a concern.

With regards to the impacts of the proposed building on the surroundings and itself, by careful placing and judicious selection of noise-generating equipment such as RTUs (Rooftop Units), stationary noise impact from the proposed building can comply with the sound level limits defined in ENCG and NPC-300. Where necessary, noise screens, silencers, and other noise control measures can be added.

⁸ Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013

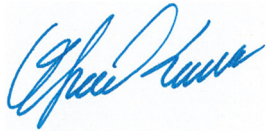
GRADIENTWIND

ENGINEERS & SCIENTISTS

This concludes our 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.

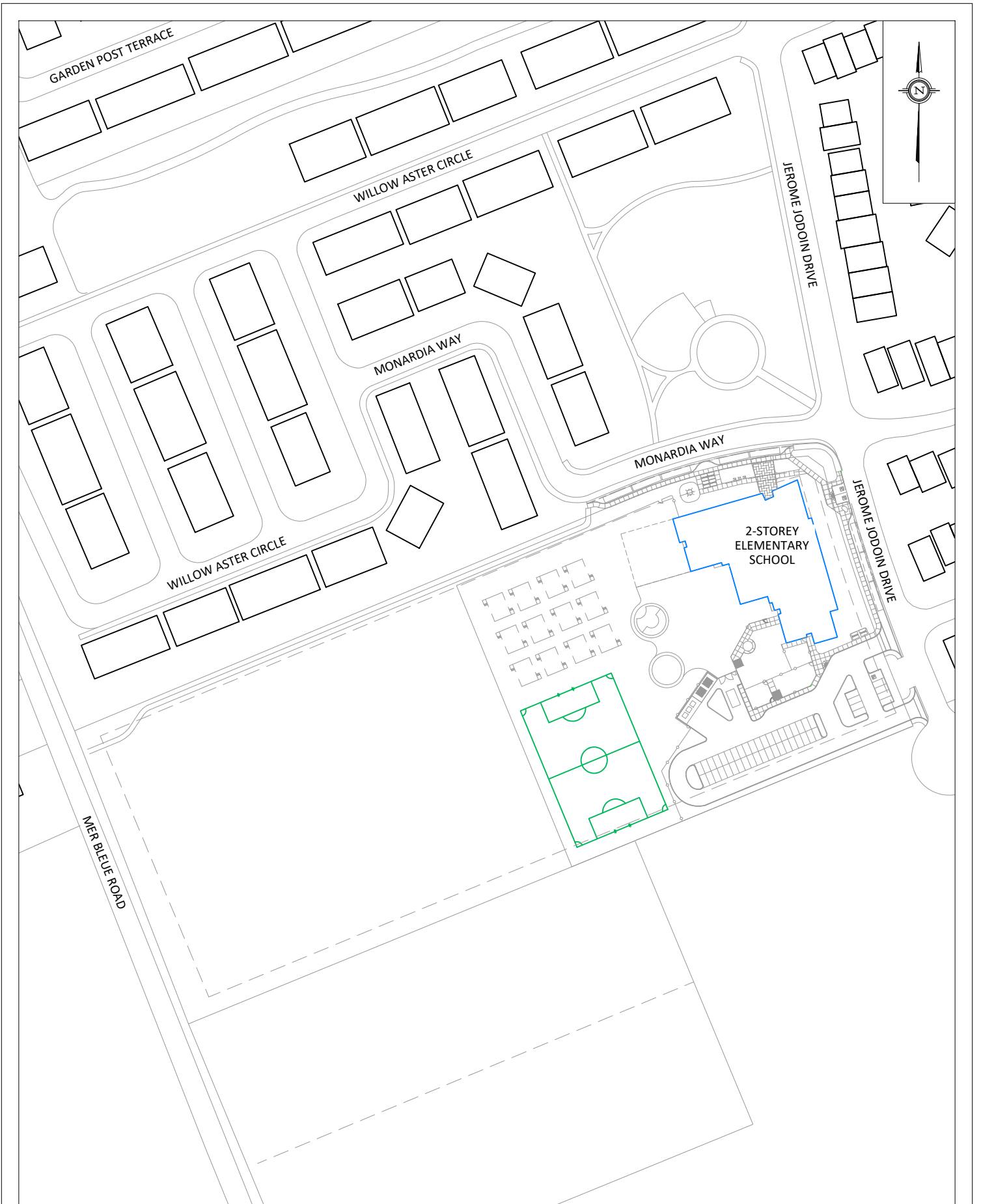


Efsar Kara, MSc, LEED GA
Acoustic Scientist

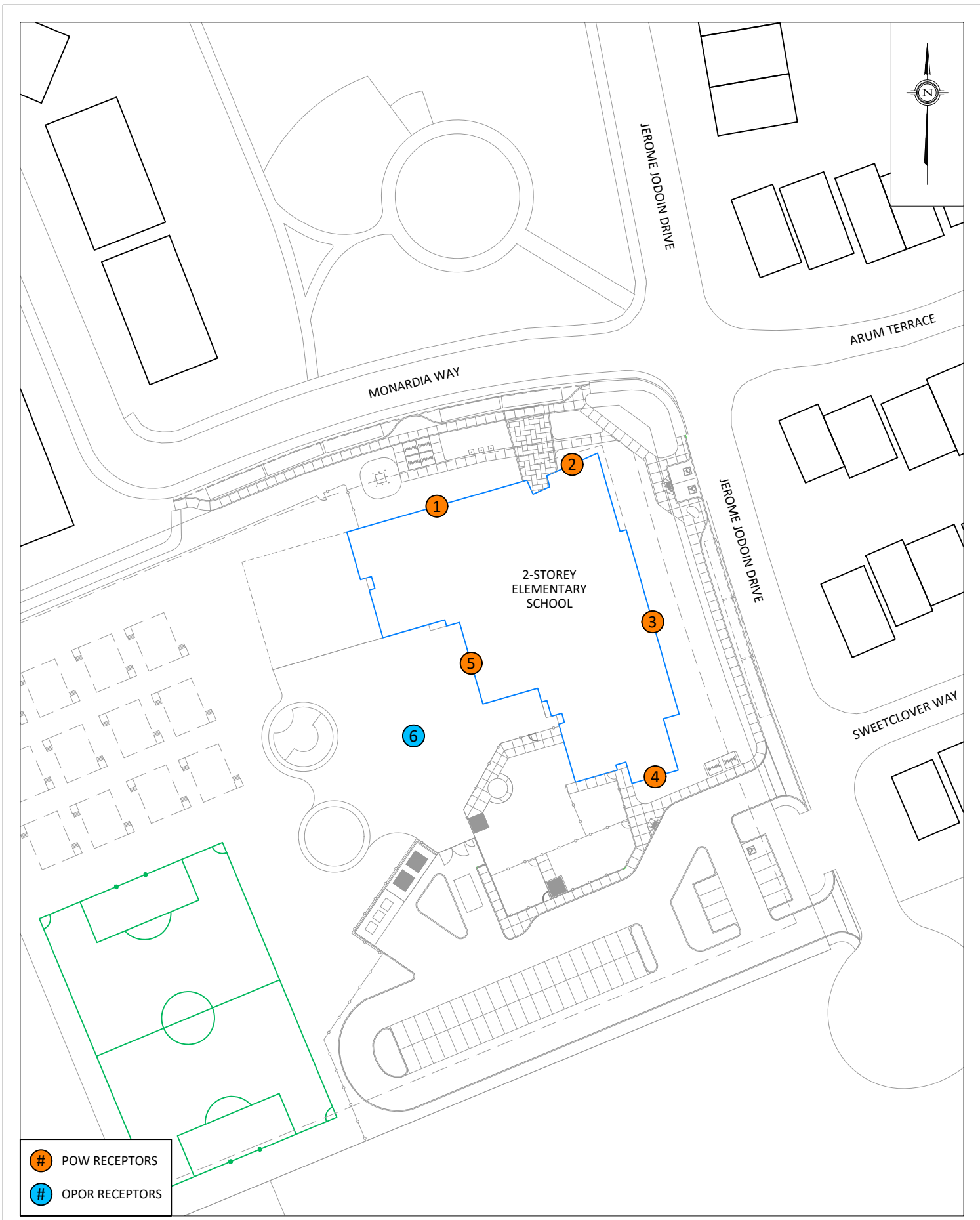
Gradient Wind File #23-153-Traffic Noise



Joshua Foster, P.Eng.
Lead Engineer

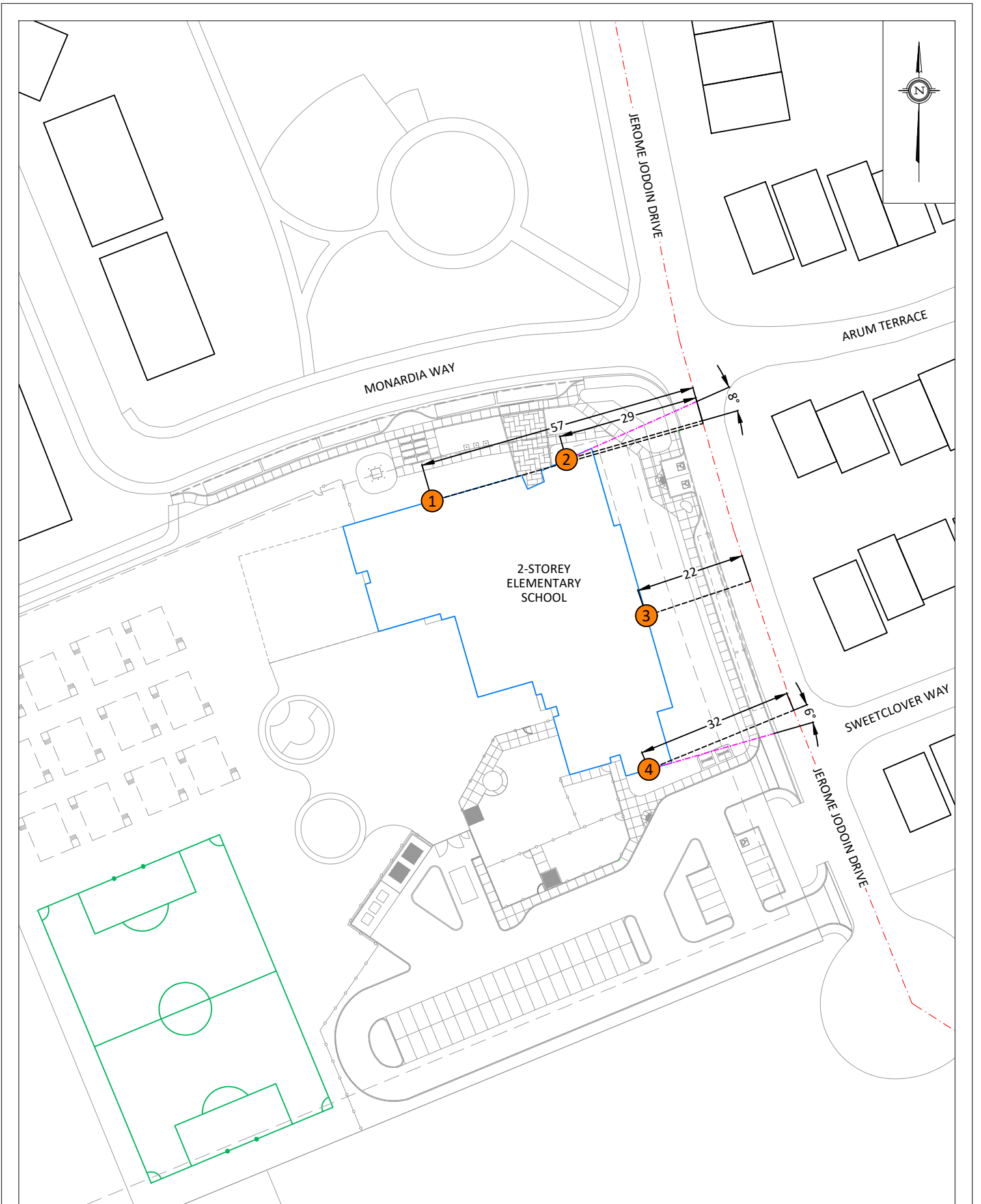


GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT 2405 MER BLEUE ROAD ROADWAY TRAFFIC NOISE ASSESSMENT		DESCRIPTION FIGURE 1: SITE PLAN AND SURROUNDING CONTEXT
	SCALE 1:1500 (APPROX.)	DRAWING NO. GW23-153-1	
	DATE JULY 12, 2023	DRAWN BY E.K.	

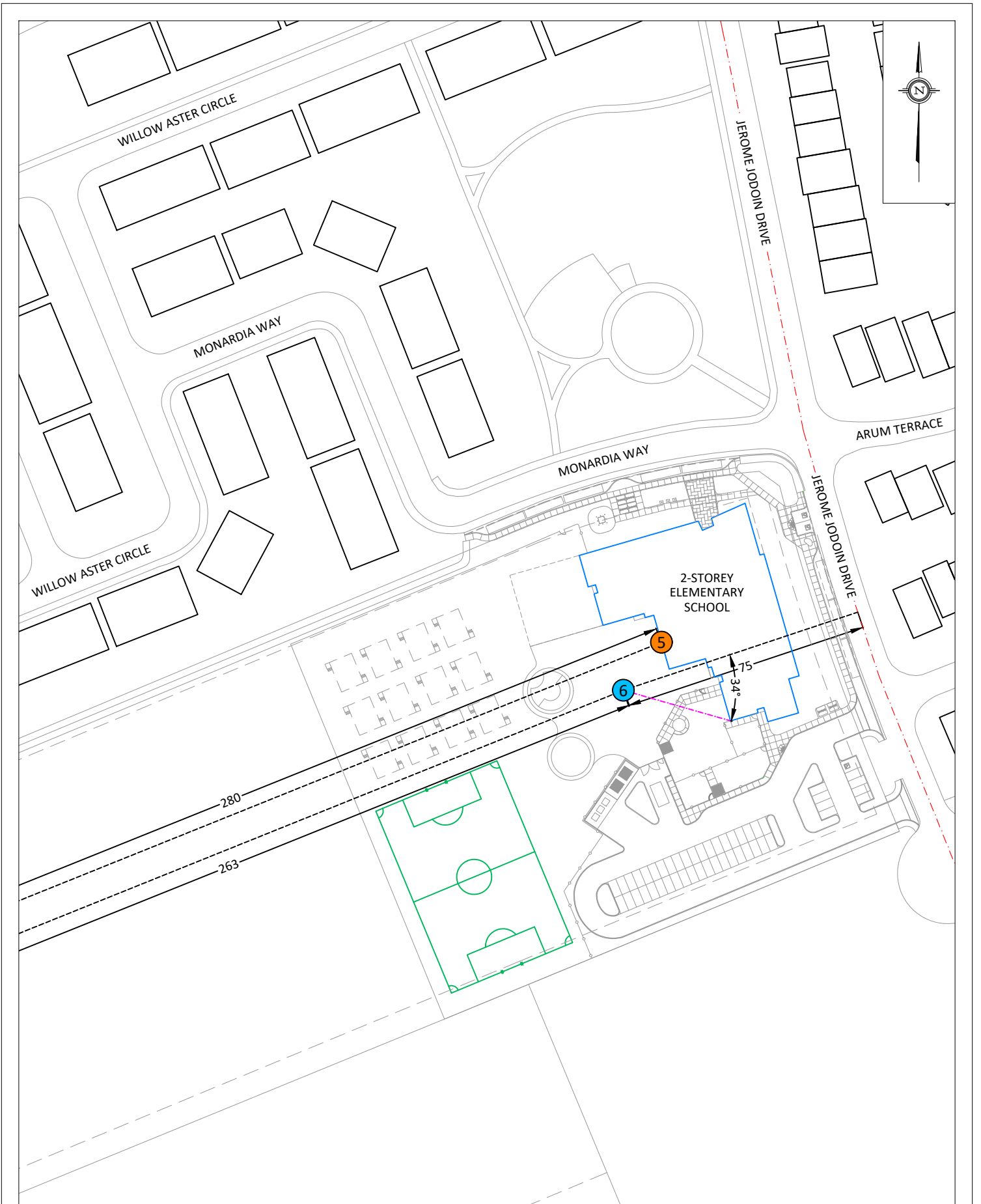


- # POW RECEPTORS
- # OPOR RECEPTORS

<p>GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM</p>	<p>PROJECT: 2405 MER BLEUE ROAD ROADWAY TRAFFIC NOISE ASSESSMENT</p>	<p>DESCRIPTION:</p>	
	<p>SCALE: 1:1000 (APPROX.)</p>	<p>DRAWING NO.: GW23-153-2</p>	<p>FIGURE 2: RECEPTOR LOCATIONS</p>
	<p>DATE: JULY 12, 2023</p>	<p>DRAWN BY: E.K.</p>	



GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT	2405 MER BLEUE ROAD ROADWAY TRAFFIC NOISE ASSESSMENT	DESCRIPTION
	SCALE	1:1000 (APPROX.)	FIGURE 3: STAMSON INPUT FOR RECEPTORS 1, 2, 3, & 4
	DATE	JULY 12, 2023	DRAWING NO. GW23-153-3
		DRAWN BY E.K.	



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	SCALE	1:1500 (APPROX.)	DRAWING NO. GW23-153-4
	DATE	JULY 12, 2023	DRAWN BY E.K.

FIGURE 4:
STAMSON INPUT FOR RECEPTORS 5 & 6

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APPENDIX A

STAMSON 5.04 – INPUT AND OUTPUT DATA

STAMSON 5.0 NORMAL REPORT Date: 12-07-2023 15:24:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R1.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Jerome Jodoi (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jerome Jodoi (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 57.00 / 57.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Jerome Jodoi (day)

Source height = 1.50 m

ROAD (0.00 + 56.91 + 0.00) = 56.91 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.00 65.72 0.00 -5.80 -3.01 0.00 0.00 0.00 56.91

Segment Leq : 56.91 dBA

Total Leq All Segments: 56.91 dBA

Results segment # 1: Jerome Jodoi (night)

Source height = 1.50 m

ROAD (0.00 + 49.31 + 0.00) = 49.31 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.00 58.12 0.00 -5.80 -3.01 0.00 0.00 0.00 49.31

Segment Leq : 49.31 dBA

Total Leq All Segments: 49.31 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.91

(NIGHT): 49.31



STAMSON 5.0 NORMAL REPORT Date: 12-07-2023 15:26:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R2.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Jerome Jodoi (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jerome Jodoi (day/night)

Angle1 Angle2 : -90.00 deg -8.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 29.00 / 29.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Jerome Jodoi (day)

Source height = 1.50 m

ROAD (0.00 + 59.44 + 0.00) = 59.44 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 -8 0.00 65.72 0.00 -2.86 -3.41 0.00 0.00 0.00 59.44

Segment Leq : 59.44 dBA

Total Leq All Segments: 59.44 dBA

Results segment # 1: Jerome Jodoi (night)

Source height = 1.50 m

ROAD (0.00 + 51.84 + 0.00) = 51.84 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 -8 0.00 58.12 0.00 -2.86 -3.41 0.00 0.00 0.00 51.84

Segment Leq : 51.84 dBA

Total Leq All Segments: 51.84 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.44

(NIGHT): 51.84

STAMSON 5.0 NORMAL REPORT Date: 12-07-2023 15:35:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R3.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Jerome Jodoi (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jerome Jodoi (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 22.00 / 22.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Jerome Jodoi (day)

Source height = 1.50 m

ROAD (0.00 + 64.05 + 0.00) = 64.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-90	90	0.00	65.72	0.00	-1.66	0.00	0.00	0.00	0.00	64.05
-----	----	------	-------	------	-------	------	------	------	------	-------

Segment Leq : 64.05 dBA

Total Leq All Segments: 64.05 dBA

Results segment # 1: Jerome Jodoi (night)

Source height = 1.50 m

ROAD (0.00 + 56.45 + 0.00) = 56.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-90	90	0.00	58.12	0.00	-1.66	0.00	0.00	0.00	0.00	56.45
-----	----	------	-------	------	-------	------	------	------	------	-------

Segment Leq : 56.45 dBA

Total Leq All Segments: 56.45 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.05

(NIGHT): 56.45



STAMSON 5.0 NORMAL REPORT Date: 12-07-2023 15:39:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R4.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Jerome Jodoi (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jerome Jodoi (day/night)

Angle1 Angle2 : 6.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 32.00 / 32.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Jerome Jodoi (day)

Source height = 1.50 m

ROAD (0.00 + 59.12 + 0.00) = 59.12 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

6 90 0.00 65.72 0.00 -3.29 -3.31 0.00 0.00 0.00 59.12

Segment Leq : 59.12 dBA

Total Leq All Segments: 59.12 dBA

Results segment # 1: Jerome Jodoi (night)

Source height = 1.50 m

ROAD (0.00 + 51.52 + 0.00) = 51.52 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

6 90 0.00 58.12 0.00 -3.29 -3.31 0.00 0.00 0.00 51.52

Segment Leq : 51.52 dBA

Total Leq All Segments: 51.52 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.12
(NIGHT): 51.52

STAMSON 5.0 NORMAL REPORT Date: 13-07-2023 14:45:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Mer Bleue (day/night)

Car traffic volume : 28336/2464 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)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Mer Bleue (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 280.00 / 280.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Mer Bleue (day)

Source height = 1.50 m

ROAD (0.00 + 52.42 + 0.00) = 52.42 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.57 73.68 0.00 -19.96 -1.30 0.00 0.00 0.00 52.42

Segment Leq : 52.42 dBA

Total Leq All Segments: 52.42 dBA

Results segment # 1: Mer Bleue (night)

Source height = 1.50 m

ROAD (0.00 + 44.82 + 0.00) = 44.82 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.57 66.08 0.00 -19.96 -1.30 0.00 0.00 0.00 44.82

Segment Leq : 44.82 dBA

Total Leq All Segments: 44.82 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.42

(NIGHT): 44.82

STAMSON 5.0 NORMAL REPORT Date: 13-07-2023 14:42:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Jerome Jodoi (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jerome Jodoi (day/night)

Angle1 Angle2 : 34.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Mer Bleue (day/night)

Car traffic volume : 28336/2464 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)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Mer Bleue (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 263.00 / 263.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Jerome Jodoi (day)

Source height = 1.50 m

ROAD (0.00 + 53.66 + 0.00) = 53.66 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

34 90 0.00 65.72 0.00 -6.99 -5.07 0.00 0.00 0.00 53.66

Segment Leq : 53.66 dBA

Results segment # 2: Mer Bleue (day)

Source height = 1.50 m

ROAD (0.00 + 51.57 + 0.00) = 51.57 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 73.68 0.00 -20.65 -1.46 0.00 0.00 0.00 51.57

Segment Leq : 51.57 dBA

Total Leq All Segments: 55.75 dBA



Results segment # 1: Jerome Jodoi (night)

Source height = 1.50 m

ROAD (0.00 + 46.06 + 0.00) = 46.06 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

34 90 0.00 58.12 0.00 -6.99 -5.07 0.00 0.00 0.00 46.06

Segment Leq : 46.06 dBA

Results segment # 2: Mer Bleue (night)

Source height = 1.50 m

ROAD (0.00 + 43.97 + 0.00) = 43.97 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 66.08 0.00 -20.65 -1.46 0.00 0.00 0.00 43.97

Segment Leq : 43.97 dBA

Total Leq All Segments: 48.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.75
(NIGHT): 48.15