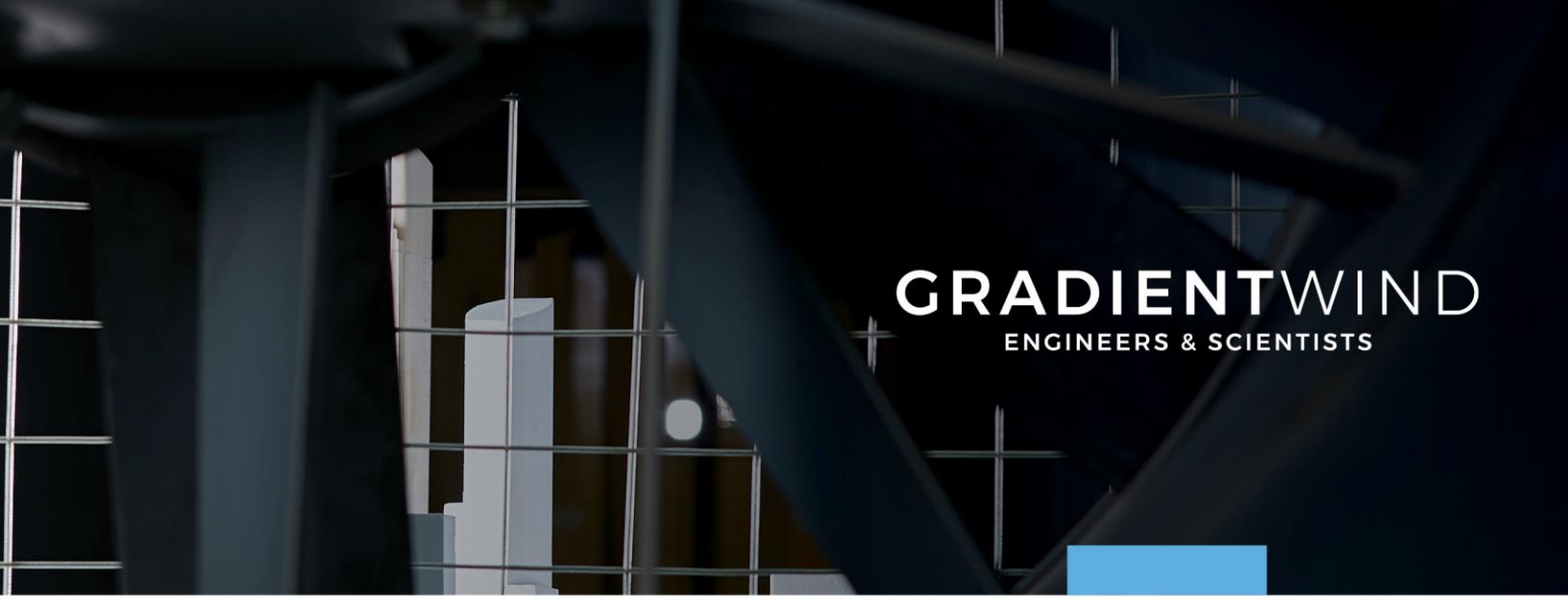
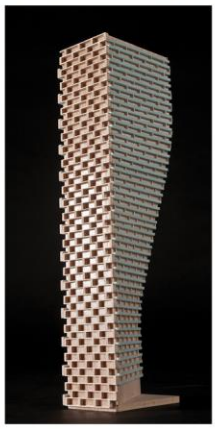


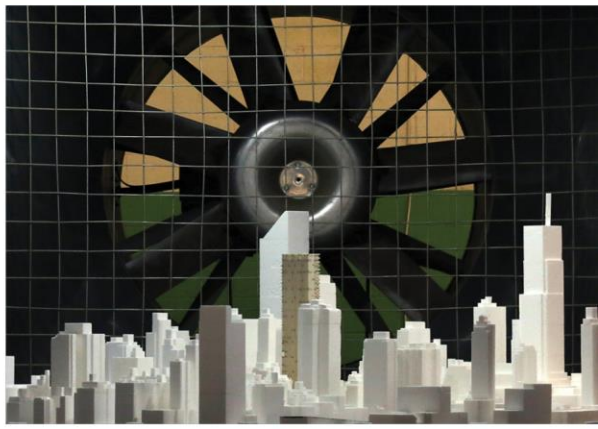
GRADIENTWIND
ENGINEERS & SCIENTISTS

TRAFFIC NOISE ASSESSMENT

1360 Ogilvie Road
Ottawa, Ontario

REPORT: GW23-269-Traffic Noise July 3, 2024





July 3, 2024

PREPARED FOR

CSV Architects
190 P'Connor Street, Suite 100
Ottawa, Ontario
K2P 2R3

PREPARED BY

Ben Page, Adv.Dip., Junior Environmental Scientist
Joshua Foster, P.Eng., Lead Engineer

EXECUTIVE SUMMARY

This report describes a transportation noise assessment to satisfy requirements of the Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA), and Site Plan Control (SPA) applications for the proposed development located at 1360 Ogilvie Road Ottawa, Ontario. The major source of transportation noise is Ogilvie Road as identified in Figure 1. As the site is not within 75 metres (m) of any existing or proposed railways, a ground vibrations study will not be required. Figure 1 illustrates a complete 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) requirements; (ii) future vehicular traffic volumes based on theoretical values as directed by the City of Ottawa's Environmental Noise Control Guidelines (ENCG); and (iii) architectural drawings received from CSV Architects, provided in July 2023.

The results of the current analysis indicate that POW noise levels will range between 57 and 72 dBA during the daytime period (07:00-23:00) and between 50 and 64 dBA during the nighttime period (23:00-07:00). The highest noise levels (i.e. 72 dBA) occur along the north and west façades, which are nearest and more exposed to Ogilvie Road. The noise levels predicted due to roadway traffic exceed the criteria listed in Section 4.2 for building components. Upgraded building components, including STC rated glazing elements and exterior walls, will be required as described in Section 5.2 and indicated in Figure 3.

Results of the calculations also indicate that the development will require central air conditioning, which will allow occupants to keep windows closed and maintain a comfortable living environment. Additionally, a Type D Warning Clause will be required on all Lease, Purchase and Sale Agreements, as summarized in Section 6.

Near-field surroundings comprise low-rise buildings in all compass directions, with a midrise residential building directly to the east of the site and a recreational park to the west. As such, mechanical equipment servicing these properties is small and is not expected to produce adverse stationary noise impacts.

With regards to off-site stationary noise impacts, a stationary noise study will be performed once mechanical plans for the proposed building become available. This study would assess the impacts of stationary noise

from rooftop mechanical units serving the proposed building on surrounding noise-sensitive areas. Typically, off-site stationary noise levels can be controlled by judicious selection and placement of the equipment and the introduction of silencers or noise screens where needed. This study will include recommendations for any noise control measures that may be necessary to ensure noise levels fall below NPC-300 limits.

TABLE OF CONTENTS

1. INTRODUCTION

CSV Architects retained Gradient Wind Engineering Inc. (Gradient Wind) to undertake a traffic noise assessment to satisfy the Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA), and Site Plan Control (SPA) applications for the proposed development located at 1360 Ogilvie Road in Ottawa, Ontario. This report summarizes the methodology, results, and recommendations related to a transportation noise assessment investigating exterior noise levels generated by local roadway traffic.

The assessment was performed based on theoretical noise calculation methods conforming to the City of Ottawa's Environmental Noise Control Guidelines (ENCG). Noise calculations were based on architectural drawings received from CSV Architects, provided in July 2023, with future traffic volumes corresponding to theoretical values as directed by the City of Ottawa's Environmental Noise Control Guidelines (ENCG).

2. TERMS OF REFERENCE

The focus of this traffic noise study is the proposed 4-storey residential co-op building located at 1360 Ogilvie Road in Ottawa, Ontario. The study site is situated East of Palmerston Park and bounded by Ogilvie Road to the north, Palmerston Dr. to the West, and Halmont Dr. to the east.

The proposed development comprises a 32-unit, four-storey residential co-op building, including an outdoor playground area located directly south of the building, at-grade, and surface parking and driveway on the west side. This proposal is based on drawings prepared by CSV Architects dated June 5, 2023.

The major source of traffic noise on the development is Ogilvie Road, located north of the study site. Further, the Capital Railway – OC Transpo is located more than 100 meters (m) south of the proposed development, and as such, does not constitute a significant source of transportation noise. Please note that there are no existing or proposed rail or transit systems within 75 meters (m) of the study site, so a ground vibrations assessment will not be required. Figure 1 illustrates a complete site plan with the surrounding context.

3. OBJECTIVES

The main goals of this work are to (i) calculate the future noise levels on the study building produced by local transportation sources, (ii) determine whether exterior noise levels exceed the allowable limits specified by the MECP Noise Control Guidelines – NPC-300, outlined in Section 4 of this report, and (iii) explore mitigation as required.

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 Transportation Noise

4.2.1 Criteria for Transportation Noise

For vehicle 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, 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 NPC-300 guidelines specify that the recommended indoor noise limit range (that is relevant to this study) is 50, 45 and 40 dBA for office space, residence living rooms and sleeping quarters respectively, as listed in Table 1.

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

Type of Space	Time Period	L_{eq} (dBA)
		Road
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[2]. 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 normally triggers the need for central air conditioning (or similar systems). Where noise levels exceed 65 dBA daytime, and 60 dBA nighttime building components will require higher levels of sound attenuation[3].

For designated Outdoor Living Areas (OLAs), the sound level limit is 55 dBA during the daytime period. An excess of up to 5 dBA above the limit is acceptable only in cases where the required noise control measures are not feasible for technical, economic, or administrative reasons. In cases where noise levels at an OLA exceed 60 dBA, mitigation must be provided.

[1] Adapted from Table C-2, Part C, Section 3.2.3 of NPC-300
[2] Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125
[3] MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

4.2.2 Roadway Traffic Volumes

NPC-300 dictates that noise calculations should consider future sound levels based on a roadway's classification at the mature state of development. Therefore, traffic volumes have been considered for the mature state of development based on theoretical capacity conforming to traffic counts obtained from the City of Ottawa. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

TABLE 2: ROADWAY TRAFFIC DATA

Segment	Roadway/Transit Type	Speed Limit (km/h)	Ultimate AADT Count
Ogilvie Road	4-Lane Arterial Divided	60	**35,000**

* - Daytime/nighttime volumes

4.2.3 Theoretical Transportation Noise Predictions

Noise predictions were performed with the aid of the 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 Ogilvie Road was taken to comprise 5% heavy trucks and 7% medium trucks.
- The day/night split for all streets 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.
- For select sources where appropriate, receptors considered the proposed and/or existing buildings as a barrier partially or fully obstructing exposure to the source.
- Noise receptors were strategically placed at 5 locations around the study area (see Figure 2).

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, concrete and masonry walls can achieve STC 50 or more. Curtainwall systems typically provide around STC 35, depending on the glazing elements. 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. According to the NPC-300, when daytime noise levels (from road and rail sources) at the plane of the window exceed 60 dBA, calculations must be performed to evaluate the sound transmission quality of the building components to ensure acceptable indoor noise levels. The calculation procedure[4] 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.

Based on published research[5], 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, which was prepared for a zoning by-law amendment application, final detailed floor layouts and building elevations were unavailable and therefore detailed STC calculations could not be performed at this time. As a guideline, the anticipated STC requirements for

[4] Building Practice Note: Controlling Sound Transmission into Buildings by J.D. Quirt, National Research Council of Canada, September 1985
[5] CMHC, Road & Rail Noise: Effects on Housing

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 AND DISCUSSION

5.1 Transportation Noise Levels

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

TABLE 3: EXTERIOR NOISE LEVELS DUE TO TRANSPORTATION SOURCES

Receptor Number	Receptor Height (m)	Receptor Location / Type	STAMSON Noise Level (dBA)	
			DAY	NIGHT
1	10.5	POW / Level 4 North Façade	72	64
2	10.5	POW / Level 4 West Façade	68	60
3	10.5	POW / Level 4 East Façade	63	55
4	10.5	POW / Level 4 East Façade	57	50
5	10.5	POW / Level 4 West Façade	58	56

The results of the current analysis indicate that POW noise levels will range between 72 and 57 dBA during the daytime period (07:00-23:00) and between 64 and 50 dBA during the nighttime period (23:00-07:00). The highest noise levels (i.e. 72 dBA) occur along the north façade, which is nearest and more exposed to Ogilvie Road.

The noise levels predicted due to roadway traffic exceed the criteria listed in Section 4.3 for building components. Upgraded building components, including STC rated glazing elements and exterior walls, will be required where noise levels exceed 65 dBA, as discussed in Section 4. Results of the calculations also indicate that the development will require air conditioning, which will allow occupants to keep windows

closed and maintain a comfortable living environment. In addition to ventilation requirements, Warning Clauses will also be required to be placed on all Lease, Purchase and Sale Agreements.

5.2 Noise Control Measures

5.2.1 Upgraded Building Components

The noise levels predicted due to transportation exceed the criteria listed in Section 4 for building components. At the time of this study, window schedules, wall assemblies, and room layouts have not been finalized. Therefore, detailed STC calculations could not be performed at this time. 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). The estimated STC requirements for the windows are summarized below for a worst-case scenario. Once detailed plans are available for each building, the window and wall STC should be reviewed by a qualified acoustic consultant. The values listed in Table 6 are preliminary and are only provided to demonstrate it is commercially achievable to obtain the required STC ratings for windows and walls. For curtain wall and window wall elements, please revert to the window STC ratings.

TABLE 6: NOISE CONTROL REQUIREMENTS

Façade	Window STC (Bedroom/Living Room)	Exterior Wall STC	Warning Clauses	A/C
North	35	45	Yes	Yes
West, and East	30	45	Yes	Yes

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that POW noise levels will range between 72 and 57 dBA during the daytime period (07:00-23:00) and between 64 and 50 dBA during the nighttime period (23:00-07:00). The highest noise levels (i.e. 60 dBA) occur along the north and west façades, which are nearest and more exposed to Ogilvie Road. The noise levels predicted due to roadway traffic exceed the criteria listed in Section 4.2 for building components. Upgraded building components, including STC rated glazing elements and exterior walls, will be required as described in Section 5.2 and indicated in Figure 3.

Results of the calculations also indicate the development will require central air conditioning, which will allow occupants to keep windows closed and maintain a comfortable living environment. The following Type D Warning Clause[6] will also be required to be placed on all Lease, Purchase and Sale Agreements, as summarized below:

Type D:

> *"This dwelling unit has been supplied with a central air conditioning system which 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."*

Near-field surroundings comprise low-rise buildings in all compass directions, with a midrise residential building directly to the east of the site and a recreational park to the west. As such, mechanical equipment servicing these properties is small and is not expected to produce adverse stationary noise impacts.

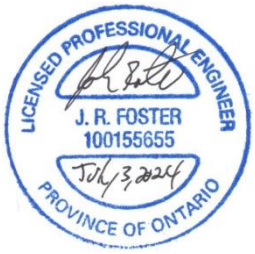
With regards to off-site stationary noise impacts, a stationary noise study will be performed once mechanical plans for the proposed building become available. This study would assess the impacts of stationary noise from rooftop mechanical units serving the proposed building on surrounding noise-sensitive areas. Typically, off-site stationary noise levels can be controlled by judicious selection and placement of the equipment and the introduction of silencers or noise screens where needed. This study will include recommendations for any noise control measures that may be necessary to ensure noise levels fall below NPC-300 limits.

[6] Ministry of the Environment, Conservation and Parks - Publication NPC-300

This concludes our 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,

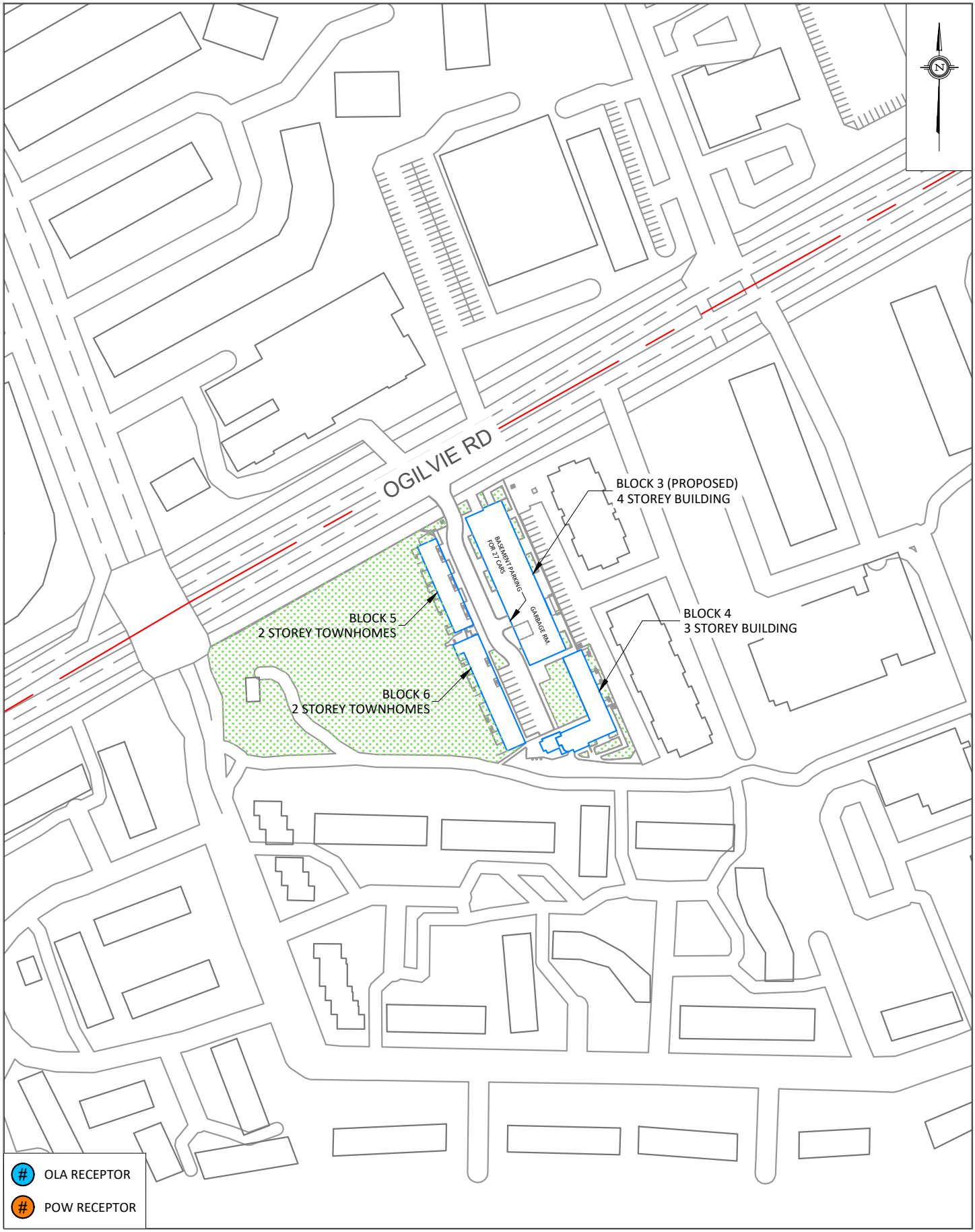
Gradient Wind Engineering Inc.



Ben Page, Adv.Dip.
Junior Environmental Scientist

Joshua Foster, P.Eng.
Lead Engineer

Gradient Wind File No. 23-269–Traffic Noise July 3, 2024



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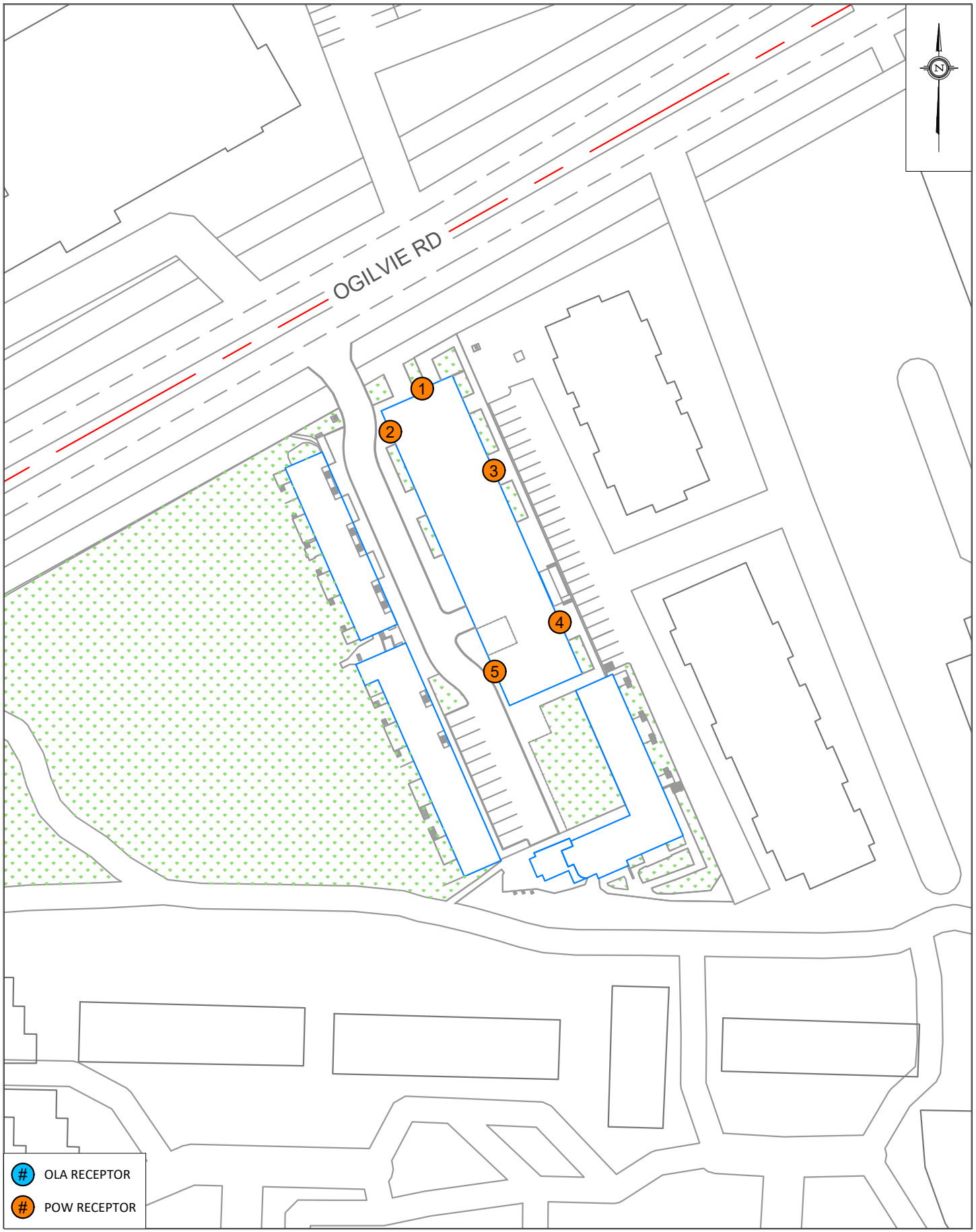
PROJECT	1360 OGILVIE ROAD, OTTAWA, ON TRAFFIC NOISE STUDY
SCALE	1:2000
DRAWING NO.	23-269-NOISE-FIG1
DATE	JULY 3, 2024
DRAWN BY	B.P.

DESCRIPTION

FIGURE 1:
PROPOSED SITE PLAN AND SURROUNDING CONTEXT



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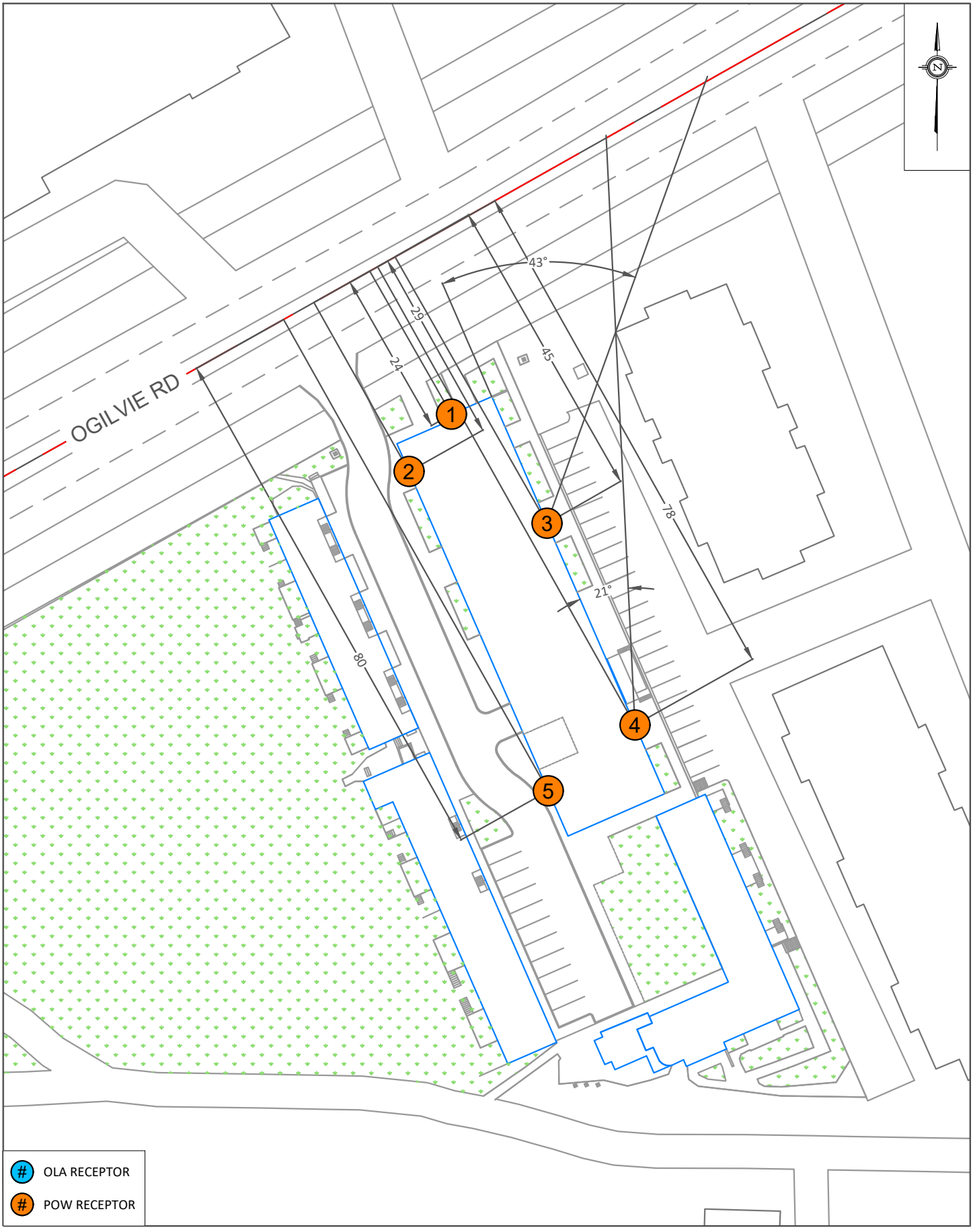
SCALE	1:1000
DRAWING NO.	23-269-NOISE-FIG2
DATE	JULY 3, 2024
DRAWN BY	B.P.

DESCRIPTION

FIGURE 2:
RECEPTOR LOCATIONS



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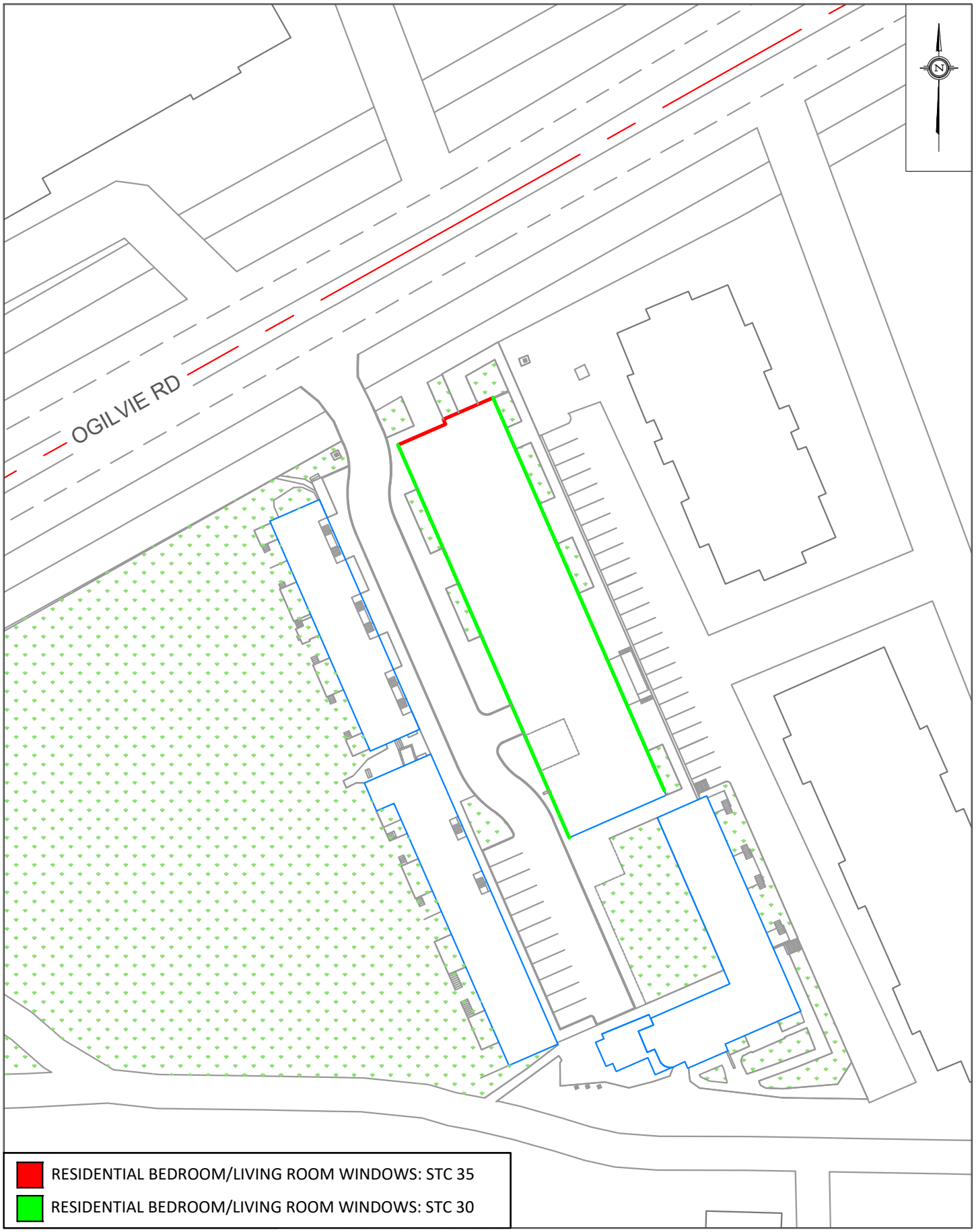
PROJECT	1360 OGILVIE ROAD, OTTAWA, ON TRAFFIC NOISE STUDY
SCALE	1:750
DRAWING NO.	23-269-NOISE-FIG3
DATE	JULY 3, 2024
DRAWN BY	B.P.
DESCRIPTION	FIGURE 3: STAMSON INPUT



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PROJECT	1360 OGILVIE ROAD, OTTAWA, ON TRAFFIC NOISE STUDY		DESCRIPTION
SCALE	1:750	DRAWING NO. 23-269-NOISE-FIG4	FIGURE 4: STC REQUIREMENTS
DATE	JULY 3, 2024	DRAWN BY B.P.	

APPENDIX A

STAMSON 5.04 – INPUT AND OUTPUT DATA

127 WALGREEN ROAD, OTTAWA, ON, CANADA K0A 1L0 | 613 836 0934
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STAMSON 5.0 NORMAL REPORT Date: 05-12-2023 14:15:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: Ogilvie Rd (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: Ogilvie Rd (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 : 24.00 / 24.00 m
Receiver height : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Ogilvie Rd (day)

Source height = 1.50 m

ROAD (0.00 + 71.63 + 0.00) = 71.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	73.68	0.00	-2.04	0.00	0.00	0.00	0.00	71.63

Segment Leq : 71.63 dBA

Total Leq All Segments: 71.63 dBA

Results segment # 1: Ogilvie Rd (night)

Source height = 1.50 m

ROAD (0.00 + 64.04 + 0.00) = 64.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	66.08	0.00	-2.04	0.00	0.00	0.00	0.00	64.04

Segment Leq : 64.04 dBA

Total Leq All Segments: 64.04 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.63
(NIGHT): 64.04

STAMSON 5.0 NORMAL REPORT Date: 05-12-2023 14:17:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: Ogilvie Rd (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: Ogilvie Rd (day/night)

Angle1 Angle2 : 0.00 deg 90.00 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 : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Ogilvie Rd (day)

Source height = 1.50 m

ROAD (0.00 + 67.80 + 0.00) = 67.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	73.68	0.00	-2.86	-3.01	0.00	0.00	0.00	67.80

Segment Leq : 67.80 dBA

Total Leq All Segments: 67.80 dBA

Results segment # 1: Ogilvie Rd (night)

Source height = 1.50 m

ROAD (0.00 + 60.21 + 0.00) = 60.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	66.08	0.00	-2.86	-3.01	0.00	0.00	0.00	60.21

Segment Leq : 60.21 dBA

Total Leq All Segments: 60.21 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.80
(NIGHT): 60.21

STAMSON 5.0 NORMAL REPORT Date: 05-12-2023 14:23:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: Ogilvie Rd (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: Ogilvie Rd (day/night)

Angle1 Angle2 : -43.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 45.00 / 45.00 m
Receiver height : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Ogilvie Rd (day)

Source height = 1.50 m

ROAD (0.00 + 62.69 + 0.00) = 62.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	0	0.00	73.68	0.00	-4.77	-6.22	0.00	0.00	0.00	62.69

Segment Leq : 62.69 dBA

Total Leq All Segments: 62.69 dBA

Results segment # 1: Ogilvie Rd (night)

Source height = 1.50 m

ROAD (0.00 + 55.09 + 0.00) = 55.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	0	0.00	66.08	0.00	-4.77	-6.22	0.00	0.00	0.00	55.09

Segment Leq : 55.09 dBA

Total Leq All Segments: 55.09 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.69
(NIGHT): 55.09

STAMSON 5.0 NORMAL REPORT Date: 05-12-2023 14:23:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: Ogilvie Rd (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: Ogilvie Rd (day/night)

Angle1 Angle2 : -21.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 78.00 / 78.00 m
Receiver height : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Ogilvie Rd (day)

Source height = 1.50 m

ROAD (0.00 + 57.19 + 0.00) = 57.19 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	0	0.00	73.68	0.00	-7.16	-9.33	0.00	0.00	0.00	57.19

Segment Leq : 57.19 dBA

Total Leq All Segments: 57.19 dBA

Results segment # 1: Ogilvie Rd (night)

Source height = 1.50 m

ROAD (0.00 + 49.59 + 0.00) = 49.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	0	0.00	66.08	0.00	-7.16	-9.33	0.00	0.00	0.00	49.59

Segment Leq : 49.59 dBA

Total Leq All Segments: 49.59 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.19
(NIGHT): 49.59

STAMSON 5.0 NORMAL REPORT Date: 05-12-2023 14:24:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R5.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Ogilvie Rd (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: Ogilvie Rd (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Ogilvie Rd (day)

Source height = 1.50 m

ROAD (0.00 + 57.60 + 0.00) = 57.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	73.68	0.00	-7.27	-3.01	0.00	-5.80	0.00	57.60

Segment Leq : 57.60 dBA

Total Leq All Segments: 57.60 dBA

Results segment # 1: Ogilvie Rd (night)

Source height = 1.50 m

ROAD (0.00 + 55.80 + 0.00) = 55.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	66.08	0.00	-7.27	-3.01	0.00	0.00	0.00	55.80

Segment Leq : 55.80 dBA

Total Leq All Segments: 55.80 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.60
(NIGHT): 55.80