

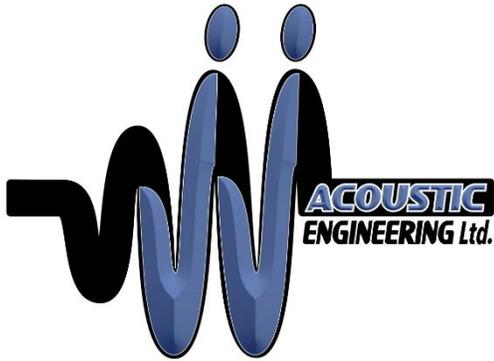


Road Traffic and Stationary Noise Impact Study

30 Shaftsbury Drive, Kitchener, Ontario

JJ-00765-NIS1





November 3, 2025

Reference No. JJ-00765-NIS1

Dave Aston
MHBC Planning Urban Design & Landscape Architecture
540 Bingemans Centre Drive, Suite 200
Kitchener ON, N2B 3X9

Dear Mr. Aston:

**Re: Road Traffic and Stationary Noise Impact Study
30 Shaftsbury Drive, Kitchener, Ontario**

1. Introduction

JJ Acoustic Engineering Ltd. (JJAE) was retained to complete a Road Traffic and Stationary Noise Impact Study (Study) for the residential development located at 30 Shaftsbury Drive in Kitchener, Ontario (Site). The Site will be developed into a 6-storey residential building (Block A) and a 2-storey townhouse building (Block B). JJAE has provided a copy of the most up-to-date Site Plan in Attachment A.

The Study was prepared consistent with Ontario Ministry of the Environment, Conservation and Park (MOECP) NPC 300, "Environmental Noise Guideline, Stationary and Transportation Sources— Approval and Planning" dated August 2013 and The Regional Municipality of Waterloo Noise Policy Implementation Guideline dated October 22, 2019.

This Study has determined that the potential environmental noise impact from road traffic noise is significant. The proposed development will need the following: a requirement for central air-conditioning and noise warning clauses. Road traffic noise control requirements for the Site were determined based on road traffic volumes provided by the Region of Waterloo (Region) and forecasted to 10 years from the date of this study. JJAE has also verified the data with the City of Waterloo and has been supplied in Attachment B.

JJ Acoustic Engineering Ltd.
joey@jjae.ca
226-346-6473

The following attachments were included with this Study:

- Attachment A – Site Plan
- Attachment B – Traffic Data Summary Table & Sample Stamson Traffic Model Outputs
- Attachment C – Stationary Noise Impact Figures
- Attachment D – Stationary Noise Impact Source Table
- Attachment E – Owners Statement
- Attachment F – Consultant’s Declaration

2. Road Traffic Analysis

2.1 Road Traffic Noise Modeling Methodology

The road traffic noise impact was conducted using STAMSON, the MOECP’s computerized model of ORNAMENT. The Application of the model for the site was consistent with the ORNAMENT technical documents. The computer model input parameters include, among other data, the number of road segments, number of house rows, the positional relationship of the receptor to a noise source or barrier in terms of distance, elevation and angle of exposure to the source, the basic site topography, the ground surface type, traffic volumes, traffic composition and speed limit.

The predicted sound level is based on the 1-hour equivalent sound level, designated as Leq, and is adjusted by the STAMSON program to the 16-hour daytime and the 8-hour nighttime equivalent sound level. The applicable noise criteria for noise sensitive spaces are specified in terms of the 16-hour daytime period (7:00 a.m. to 11:00 p.m.) and 8-hour nighttime period (11:00 p.m. to 7:00 a.m.) enabling a direct comparison between the STAMSON model output and the noise limits.

Where there are multiple sources of noise, such as road and rail, JJAЕ evaluated noise control measures by combining both road and rail sources and applying measures as described in Section C7.3 of NPC 300.

2.2 Road Traffic Model Input Parameters

This section describes the STAMSON model input parameters used to predict road traffic noise impact for the Site.

The Site has one significant roadway in the vicinity of the development: Ottawa Street North approximately 125 meters to the North of Block A. Where there are intervening and off-site structures that provide line-of-sight obstruction to the roads, JJAЕ did not include line-of-sight obstruction in our analysis as to calculate worst-case noise impact.

JJAЕ reviewed other surrounding roadways in the vicinity of the Site and only significant roadways were used in our modeling, other roadways were considered to be insignificant or beyond our red flag zone.

2.2.1 Road Traffic Parameters

The traffic data provided by the Region has been summarized below:

Ottawa Street North:

- Current AADT (2025): 14,800
- Forecast AADT (2035): 15,500
- Commercial Vehicle Rates: 1% medium trucks and 2% heavy trucks
- Posted Speed Limit: 50 km/h
- Day Night Splits: 90% day and 10% night

The traffic data is the foundation of this analysis and the Study will be updated if the values change. Traffic data was supplied by the Region. The Region's AADT report for this Noise Studies report has been supplied in Attachment B.

2.3 Road Traffic Noise Modeling Results

JJAE calculated the Plane of Window (POW) noise exposure for each floor at the Site for the separate daytime and nighttime periods.

The STAMSON road traffic model outputs are provided in Attachment B.

2.4 Road Traffic Modeling Discussion

Noise control requirements will be defined based on NPC 300.

Daytime Outdoor Living Area Assessment (NPC 300, Section C7.1.1)

NPC 300 section A5 (pages 13-14) defines an Outdoor Living Area (OLA). As part of this definition, a balcony or terrace is considered an OLA if it has a minimum depth of 4 meters. All balconies are less than 4 m in depth and therefore will not be considered as OLAs.

The OLA #1 is located approximately 5 meters from the North façade of Block A and OLA #2 is located approximately meters from the West façade of Block A. JJAE has calculated the noise impact on the OLAs to be **57 dBA** for both. Warning clause Type A is required for all units. The location of the OLA has been indicated on Attachment A – Site Plan.

Plane of a Window – Ventilation Requirements (NPC 300, Section C7.1.2)

The predicted daytime and nighttime Plane of Window (POW) noise impact assumes a worst-case and direct line of sight noise exposure to both roads, unless the building itself blocks line-of-sight (full or partial).

JJAE has used the following criteria, which is a summary of NPC 300 requirements, to evaluate the Site noise impacts from road traffic noise:

Daytime Level (dBA)	Nighttime Level (dBA)	Ventilation Requirements and Warning Clauses	Special Building Components
55	50	Not Required	Not Required
55 – 65	50 – 60	Yes, with Type C Warning Clause	Not Required
66 or more	61 or more	Yes, with Type D Warning Clause	Yes

Table B.1 summarizes the predicted worst-case sound levels and the requirements for the units. The following warning clause is required:

Warning Clause A: "Purchasers/tenants are advised that sound levels due to increasing (rail) traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

Warning Clause 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."

Indoor Living Areas – Building Components (NPC 300, Section C7.1.3)

At minimum, the building must be constructed to standard Ontario Building Code requirements.

3. Stationary Noise Impact Analysis

3.1 Stationary Noise Impact Sound Level Criteria

The general criteria for stationary noise sources are defined by NPC 300. The criteria defined in Table C-5 and C-6, "Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA) Outdoor Points of Reception" and "Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA) Plane of Window of Noise Sensitive Spaces" are used to evaluate the noise impact at the proposed development.

The criteria for a Class 1 area have been summarized below:

Receiver Category	Time Period	Stationary Noise Criteria
Outdoor Living Area (OLA)	Day = 7:00 to 23:00	Leq = 50 dBA
Plane of Window (POW)	Day = 7:00 to 23:00	Leq = 50 dBA
	Night = 23:00 to 7:00	Leq = 45 dBA

3.2 Modelling Methodology

The stationary noise impact was evaluated using the CADNA A acoustic modelling software that is based on the ISO 9613-2 standard. The data for all potential stationary noise sources was summarized in Attachment D.

JJAE used the following assumptions in our Cadna A model:

- **Ground Absorption:** Default ground absorption coefficient of 0.7 was used.
- **Temperature:** 10°C
- **Humidity:** 70%
- **Building Reflection Coefficient:** Absorption Coefficient Alpha of 0.37 (Reflection Loss of 2dB, Structured Façade) was used.
- **Time-Weighted Adjustment:** where sources operate non-continuously JJAE has provided operating times and as shown in Sections 4 and 5.
- **Tonality:** A 5 dbA tonal penalty was applied to all tonal sources, where applicable. JJAE has provided a (T) for sources identified as tonal in Sections 4 and 5.
- **Quasi-steady Impulse:** A 10 dbA tonal penalty was applied to all tonal sources, where applicable. JJAE has provided a (Q) for sources identified as tonal in Sections 4 and 5.
- **Reflection Order:** A maximum reflection order of 1 was used to evaluate indirect noise impact.

4. Noise Impact Summary – From Site to Environment

The noise from the Site to the neighboring buildings could not be accounted for because the site has not undergone mechanical design yet. An addendum to this report should be completed once a mechanical design is done to account for noise from the Site to the neighboring building.

5. Noise Impact Summary – From Environment to Site

There are several buildings near the site. JJAЕ has identified several potential stationary noise sources including:

- HVAC 1 Fan Units (60 minutes daytime, 30 minutes nighttime)
- Representative Chiller (60 minutes daytime, 30 minutes nighttime)
- Representative MUA (Steady)
- Heavy Trucks (5 Trucks During Daytime per hour, 2 Trucks Nighttime per hour, speed at 10km/hr)
- Heavy Trucks Idling (Steady)

A summary of the noise sources used in our modelling is provided in Attachment D.

JJAЕ modelled the noise impact from all significant noise sources to the Site. The results are summarized in the table below and illustrated on Figure 1.

Block A	Worst Case Daytime Sound Level (dBA)	Daytime Noise Limit (dBA)	Worst Case Nighttime Sound Level (dBA)	Nighttime Noise Limit (dBA)	Limits met
North	46	50	44	45	Yes
East	45	50	44	45	Yes
South	33	50	31	45	Yes
West	31	50	<30	45	Yes
WCPOR (6 th floor north Façade)	46	50	44	45	Yes
OLA #1	42	50	N/A	N/A	Yes
OLA #2	42	50	N/A	N/A	Yes

From the table above it can be seen that all points of reception are below noise limits.

Block B	Worst Case Daytime Sound Level (dBA)	Daytime Noise Limit (dBA)	Worst Case Nighttime Sound Level (dBA)	Nighttime Noise Limit (dBA)	Limits met
North	44	50	42	45	Yes
East	44	50	42	45	Yes
South	37	50	35	45	Yes
West	40	50	38	45	Yes
WCPOR (2 nd North Façade)	44	50	N/A	N/A	Yes

From the table above it can be seen that all points of reception are below noise limits.

6. Recommendations

The road traffic noise impacts were above the NPC 300 requirements. Noise mitigation measures include:

Block #A:

- Warning Clause Type C should be registered on Title and/or included in all agreements of purchase and sale and/or leases and/or disclosure statements and declarations for the development for units along the North façades.
- JJAЕ and the client require air conditioning for all units.

Block #B:

- Warning Clause Type C should be registered on Title and/or included in all agreements of purchase and sale and/or leases and/or disclosure statements and declarations for the development for units along the North façades.
- JJAЕ and the client require air conditioning for all units.

Outdoor Living Area:

- Warning Clause Type A

These have been summarized in Attachment B under Table B1.

The stationary noise impacts from the neighboring buildings were evaluated and the sound level predictions were determined to be below the noise limits for all points of reception.

The noise from the Site to the neighboring buildings could not be accounted for because the site has not undergone mechanical design yet. An addendum to this report should be completed once a mechanical design is done to account for noise from the Site to the neighboring building.

7. Conclusions

The results of this Study indicate that the potential environmental impact from road traffic noise sources are significant. Mitigation measures will be required including ventilation requirements and noise warning clauses for each unit. With the mitigation mentioned in Section 6, there will be minimal noise impact from the neighboring buildings to the Site.

Should you have any questions on the above, please do not hesitate to contact us.

Yours truly,

Written by:

Reviewed by:

Nov. 3, 2025



Emmanuel Ghiorghis,
Acoustic Technician

Joey Jraige, P.Eng., B.A.Sc.
President

ATTACHMENT A

CONCEPT PLAN

30 Shaftsbury Drive, City of Kitchener, Ontario

21207F

KEY PLAN



Subject Lands



NOT TO SCALE

LEGEND

Subject Lands

SITE STATISTICS

Zoning By-law Medium Rise Residential Six Zone (RES-6)		
Regulation	Required	Provided
Multiple Dwelling - Apartment		
Total Units	-	82 Units
Lot Area (min)	495 m ²	7,172 m ² (0.717 ha)
Lot Width (min)	30.0 m	22.0 m
Front Yard and Exterior Yard (min)	3.0 m	14.1 m
Interior Side Yard (min)	4.5 m	28.8 m
Rear Yard (min)	7.5 m	14.8 m
Landscaped Open Space (min)	20 %	42 %
Floor Space Ratio (min-max)	0.6-2.0	0.93
Building Height (min-max)	11.0 m-25.0 m	TBD
Number of Storeys (max)	8	6
Parking Spaces (min)	1.0/unit (82)	1.0/unit (82)
Visitor Parking Spaces (min)	0.1/unit (8)	0.15/unit (13)
Barrier-Free Accessible Parking	4% (4 Spaces)	4 Spaces
Street Townhouse		
Total Units	-	6 Units
Lot Area (min)	495 m ²	1,298 m ² (0.130 ha)
Lot Width (min)	30.0 m	45.0 m
Front Yard and Exterior Yard (min)	3.0 m	5.7 m and 6 m to Garage
Interior Side Yard (min)	4.5 m	2.4 m
Rear Yard (min)	7.5 m	6.0 m
Landscaped Open Space (min)	42 %	42 %
Floor Space Ratio (min-max)	0.6-2.0	0.94
Building Height (min-max)	11.0 m-25.0 m	TBD
Number of Storeys (max)	8	2
Minimum Number of Dwelling Units	5	6
Parking Spaces (min)	1.0/unit (6)	1.0/unit (6)

Area Summary:	Apartment	Street Townhouse
Building Coverage	1,113 m ² 16%	636 m ² 49%
Landscaped Area	3,012 m ² 42%	548 m ² 42%
Asphalt Area	3,047 m ² 42%	114 m ² 9%
Total	7,172 m ² 100%	1,298 m ² 100%

NOTES

- All dimensions are in metres unless otherwise shown.
- Contains information licensed under the Open Government Licence - Ontario.
- City of Kitchener Imagery, 2022
- FC - Flush Curb

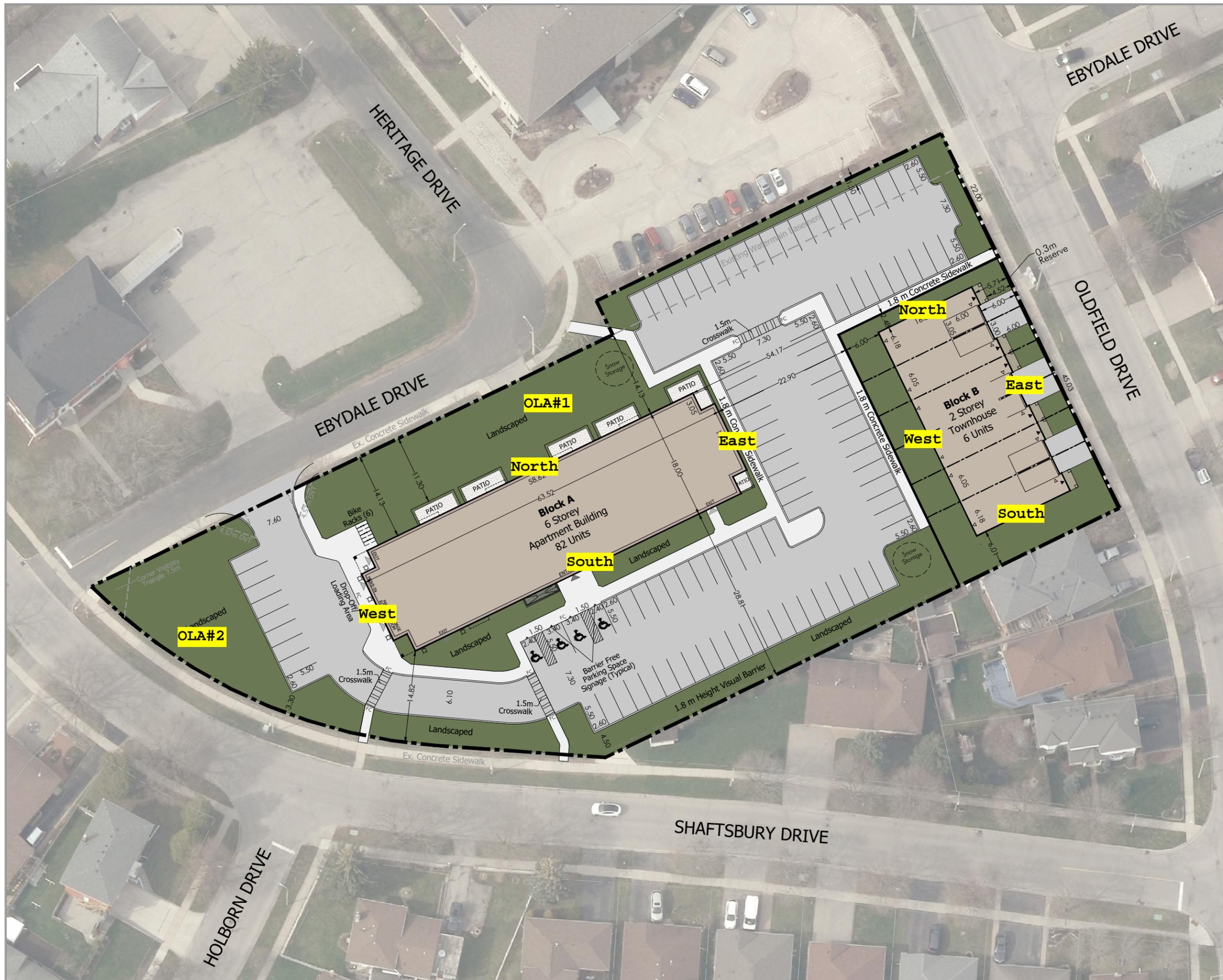
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ATTACHMENT B

Table B1.A

Road Traffic Noise Levels and Mitigation Measures Summary
30 Shaftsbury Drive, Kitchener, Ontario
Block A

Point of Reception	Road Sound Level Daytime (dBA)	Road Sound Level Nighttime (dBA)	Ventilation Requirements NPC 300	Warning Clauses From NPC 300	Special Building Components
North Façade					
Plane of Window Level 1	56 (dBA)	50 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 2	56 (dBA)	50 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 3	56 (dBA)	50 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 4	56 (dBA)	50 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 5	56 (dBA)	49 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 6	56 (dBA)	49 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
East Façade					
Plane of Window Level 1	52 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 2	52 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 3	52 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 4	52 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 5	52 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 6	52 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
South Façade (1)					
Plane of Window Level 1	46 (dBA)	40 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 2	46 (dBA)	40 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 3	46 (dBA)	40 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 4	46 (dBA)	40 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 5	46 (dBA)	39 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 6	46 (dBA)	39 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
West Façade					
Plane of Window Level 1	53 (dBA)	47 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 2	53 (dBA)	47 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 3	53 (dBA)	47 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 4	53 (dBA)	47 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 5	53 (dBA)	47 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code

Plane of Window Level 6	53 (dBA)	47 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
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Outdoor Living Area

OLA 1	57 (dBA)	N/A	N/A	Type A	N/A
OLA 2	57 (dBA)	N/A	N/A	Type A	N/A

Notes

(1) The South Facade is shielded by the building from the road. JJAЕ has assumed a conservative 10 dBA reduction in sound level from the North Façade for the South Façade

Table B1.A

Road Traffic Noise Levels and Mitigation Measures Summary
30 Shaftsbury Drive, Kitchener, Ontario
Block B

Point of Reception	Road Sound Level Daytime (dBA)	Road Sound Level Nighttime (dBA)	Ventilation Requirements NPC 300	Warning Clauses From NPC 300	Special Building Components
North Façade					
Plane of Window Level 1	55 (dBA)	49 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 2	55 (dBA)	49 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
East Façade					
Plane of Window Level 1	51 (dBA)	45 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 2	51 (dBA)	45 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
South Façade (1)					
Plane of Window Level 1	45 (dBA)	39 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 2	45 (dBA)	39 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
West Façade					
Plane of Window Level 1	52 (dBA)	45 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 2	52 (dBA)	45 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code

Notes

(1) The South Façade is shielded by the building from the road. JJA E has assumed a conservative 10 dBA reduction in sound level from the North Façade for the South Façade

Filename: b1north.te Time Period: Day/Night 16/8 hours
 Description: Block 1 North Facade Floor 1

Road data, segment # 1: Ottawa St N (day/night)

```
-----
Car traffic volume : 13532/1504 veh/TimePeriod *
Medium truck volume : 140/16 veh/TimePeriod *
Heavy truck volume : 279/31 veh/TimePeriod *
Posted speed limit : 50 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): 15500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Ottawa St N (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 : 125.00 / 125.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Ottawa St N (day)

Source height = 1.19 m

ROAD (0.00 + 56.04 + 0.00) = 56.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
- 90	90	0.00	65.25	0.00	- 9.21	0.00	0.00	0.00	0.00	56.04

Segment Leq : 56.04 dBA

Total Leq All Segments: 56.04 dBA

Results segment # 1: Ottawa St N (night)

Source height = 1.19 m

ROAD (0.00 + 49.52 + 0.00) = 49.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
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- 90	90	0.00	58.73	0.00	- 9.21	0.00	0.00	0.00	0.00	49.52
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Segment Leq : 49.52 dBA

Total Leq All Segments: 49.52 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.04
(NIGHT): 49.52

Filename: b1east.te Time Period: Day/Night 16/8 hours
 Description: Block 1 East Facade Floor 1

Road data, segment # 1: Ottawa St N (day/night)

```
-----
Car traffic volume : 13532/1504 veh/TimePeriod *
Medium truck volume : 140/16 veh/TimePeriod *
Heavy truck volume : 279/31 veh/TimePeriod *
Posted speed limit : 50 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): 15500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Ottawa St N (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 : 150.00 / 150.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Ottawa St N (day)

Source height = 1.19 m

ROAD (0.00 + 52.24 + 0.00) = 52.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
- 90	0	0.00	65.25	0.00	-10.00	- 3.01	0.00	0.00	0.00	52.24

Segment Leq : 52.24 dBA

Total Leq All Segments: 52.24 dBA

Results segment # 1: Ottawa St N (night)

Source height = 1.19 m

ROAD (0.00 + 45.72 + 0.00) = 45.72 dBA

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

- 90 0 0.00 58.73 0.00 -10.00 - 3.01 0.00 0.00 0.00 45.72

Segment Leq : 45.72 dBA

Total Leq All Segments: 45.72 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.24
(NIGHT): 45.72

Filename: b1west.te Time Period: Day/Night 16/8 hours
 Description: Block 1 West Facade Floor 1

Road data, segment # 1: Ottawa St N (day/night)

```
-----
Car traffic volume : 13532/1504 veh/TimePeriod *
Medium truck volume : 140/16 veh/TimePeriod *
Heavy truck volume : 279/31 veh/TimePeriod *
Posted speed limit : 50 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): 15500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Ottawa St N (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 : 120.00 / 120.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Ottawa St N (day)

Source height = 1.19 m

ROAD (0.00 + 53.21 + 0.00) = 53.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	65.25	0.00	- 9.03	- 3.01	0.00	0.00	0.00	53.21

Segment Leq : 53.21 dBA

Total Leq All Segments: 53.21 dBA

Results segment # 1: Ottawa St N (night)

Source height = 1.19 m

ROAD (0.00 + 46.69 + 0.00) = 46.69 dBA

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

0 90 0.00 58.73 0.00 - 9.03 - 3.01 0.00 0.00 0.00 46.69

Segment Leq : 46.69 dBA

Total Leq All Segments: 46.69 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.21
(NIGHT): 46.69

Filename: b2north.te Time Period: Day/Night 16/8 hours
 Description: Block 2 North Facade Floor 1

Road data, segment # 1: Ottawa St N (day/night)

```
-----
Car traffic volume : 13532/1504 veh/TimePeriod *
Medium truck volume : 140/16 veh/TimePeriod *
Heavy truck volume : 279/31 veh/TimePeriod *
Posted speed limit : 50 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): 15500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Ottawa St N (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 : 150.00 / 150.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Ottawa St N (day)

Source height = 1.19 m

ROAD (0.00 + 55.25 + 0.00) = 55.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
- 90	90	0.00	65.25	0.00	-10.00	0.00	0.00	0.00	0.00	55.25

Segment Leq : 55.25 dBA

Total Leq All Segments: 55.25 dBA

Results segment # 1: Ottawa St N (night)

Source height = 1.19 m

ROAD (0.00 + 48.73 + 0.00) = 48.73 dBA

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

- 90 90 0.00 58.73 0.00 -10.00 0.00 0.00 0.00 0.00 48.73

Segment Leq : 48.73 dBA

Total Leq All Segments: 48.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.25
(NIGHT): 48.73

Filename: b2east.te Time Period: Day/Night 16/8 hours
 Description: Block 2 East Facade Floor 1

Road data, segment # 1: Ottawa St N (day/night)

```
-----
Car traffic volume : 13532/1504 veh/TimePeriod *
Medium truck volume : 140/16 veh/TimePeriod *
Heavy truck volume : 279/31 veh/TimePeriod *
Posted speed limit : 50 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): 15500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Ottawa St N (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 : 180.00 / 180.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Ottawa St N (day)

Source height = 1.19 m

ROAD (0.00 + 51.45 + 0.00) = 51.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
- 90	0	0.00	65.25	0.00	-10.79	- 3.01	0.00	0.00	0.00	51.45

Segment Leq : 51.45 dBA

Total Leq All Segments: 51.45 dBA

Results segment # 1: Ottawa St N (night)

Source height = 1.19 m

ROAD (0.00 + 44.93 + 0.00) = 44.93 dBA

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

- 90 0 0.00 58.73 0.00 -10.79 - 3.01 0.00 0.00 0.00 44.93

Segment Leq : 44.93 dBA

Total Leq All Segments: 44.93 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 51.45
(NIGHT): 44.93

Filename: b2west.te Time Period: Day/Night 16/8 hours
 Description: Block 2 West Facade Floor 1

Road data, segment # 1: Ottawa St N (day/night)

```
-----
Car traffic volume : 13532/1504 veh/TimePeriod *
Medium truck volume : 140/16 veh/TimePeriod *
Heavy truck volume : 279/31 veh/TimePeriod *
Posted speed limit : 50 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): 15500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Ottawa St N (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 : 160.00 / 160.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Ottawa St N (day)

Source height = 1.19 m

ROAD (0.00 + 51.96 + 0.00) = 51.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	65.25	0.00	-10.28	-3.01	0.00	0.00	0.00	51.96

Segment Leq : 51.96 dBA

Total Leq All Segments: 51.96 dBA

Results segment # 1: Ottawa St N (night)

Source height = 1.19 m

ROAD (0.00 + 45.44 + 0.00) = 45.44 dBA

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

0 90 0.00 58.73 0.00 -10.28 - 3.01 0.00 0.00 0.00 45.44

Segment Leq : 45.44 dBA

Total Leq All Segments: 45.44 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 51.96
(NIGHT): 45.44

Filename: ola1.te Time Period: Day/Night 16/8 hours
 Description: Outdoor Living Area #1

Road data, segment # 1: Ottawa St N (day/night)

```
-----
Car traffic volume : 13532/1504 veh/TimePeriod *
Medium truck volume : 140/16 veh/TimePeriod *
Heavy truck volume : 279/31 veh/TimePeriod *
Posted speed limit : 50 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): 15500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Ottawa St N (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 : 105.00 / 105.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Ottawa St N (day)

Source height = 1.19 m

```
ROAD (0.00 + 56.80 + 0.00) = 56.80 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----
- 90 90 0.00 65.25 0.00 - 8.45 0.00 0.00 0.00 0.00 56.80
-----
```

Segment Leq : 56.80 dBA

Total Leq All Segments: 56.80 dBA

Results segment # 1: Ottawa St N (night)

Source height = 1.19 m

ROAD (0.00 + 50.28 + 0.00) = 50.28 dBA

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

- 90 90 0.00 58.73 0.00 - 8.45 0.00 0.00 0.00 0.00 50.28

Segment Leq : 50.28 dBA

Total Leq All Segments: 50.28 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.80
(NIGHT): 50.28

Filename: ola2.te Time Period: Day/Night 16/8 hours
 Description: Outdoor Living Area #2

Road data, segment # 1: Ottawa St N (day/night)

```
-----
Car traffic volume : 13532/1504 veh/TimePeriod *
Medium truck volume : 140/16 veh/TimePeriod *
Heavy truck volume : 279/31 veh/TimePeriod *
Posted speed limit : 50 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): 15500
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Ottawa St N (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 : 100.00 / 105.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Ottawa St N (day)

Source height = 1.19 m

ROAD (0.00 + 57.01 + 0.00) = 57.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
- 90	90	0.00	65.25	0.00	- 8.24	0.00	0.00	0.00	0.00	57.01

Segment Leq : 57.01 dBA

Total Leq All Segments: 57.01 dBA

Results segment # 1: Ottawa St N (night)

Source height = 1.19 m

ROAD (0.00 + 50.28 + 0.00) = 50.28 dBA

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

- 90 90 0.00 58.73 0.00 - 8.45 0.00 0.00 0.00 0.00 50.28

Segment Leq : 50.28 dBA

Total Leq All Segments: 50.28 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.01
(NIGHT): 50.28

Region of Waterloo AADT Forecast for Noise Studies

1. Development/Location 30 Shaftsbury Dr, Kitchener

2. Current AADT (2025)

Ottawa St N	Shaftsbury Dr	Heritage Dr	Oldfield Dr	Holborn Dr
14,800	1,200	500	1,900	1,200

3. Forecast AADT (2035)

Ottawa St N	Shaftsbury Dr	Heritage Dr	Oldfield Dr	Holborn Dr
15,500	1,400	500	2,100	1,300

4. Commercial Vehicle Rates

	Ottawa St N	Shaftsbury Dr	Heritage Dr	Oldfield Dr	Holborn Dr
% Medium Trucks	1%	14%	1%	14%	14%
% Heavy Trucks	2%	4%	1%	4%	2%

5. Posted Speed Limit

Ottawa St N	Shaftsbury Dr	Heritage Dr	Oldfield Dr	Holborn Dr
50 km/h	40 km/h	40 km/h	40 km/h	40 km/h

6. Day/Night Splits Regional Standard 90/10 Day/Night Split

7. Expiry Dec 31 2026

8. Notes

This forecast is intended for the purpose of carrying out a noise study for the development at 30 Shaftsbury, Kitchener only.

The above AADTs represents the traffic volumes on Ottawa St N to the north of the property, Shaftsbury Dr to the south and west of the property, Heritage Dr to the north of the property, Oldfield Dr to the east of the property, and Holborn Dr to the west of the property. Shaftsbury Dr, Heritage Dr, Oldfield Dr, and Holborn Dr are under the jurisdiction of City of Kitchener. Therefore, City of Kitchener should be contacted to verify the forecasts for these road segments.

This forecast remains valid up to the date indicated above. The Region of Waterloo should be contacted for an updated forecast if there are plans to use this forecast beyond the above validity period.

Joseph Sleiman

From: Connor Payne <Connor.Payne@kitchener.ca>
Sent: Friday, October 17, 2025 11:10 AM
To: Joseph Sleiman
Cc: Emmanuel
Subject: RE: Please Verify Road Traffic data

Hi Joesph,

Looks good, only note would be heritage is around 2000 vehicles and you have it showing 500.

Thanks,

Connor Payne

Project Manager, Transportation Safety | Transportation Services | City of Kitchener
519-783-8966 | TTY 1-866-969-9994 | connor.payne@kitchener.ca



From: Joseph Sleiman <Joseph@jjae.ca>
Sent: Friday, October 17, 2025 10:20 AM
To: Connor Payne <Connor.Payne@kitchener.ca>
Cc: Emmanuel <emmanuel@jjae.ca>
Subject: Please Verify Road Traffic data

You don't often get email from joseph@jjae.ca. [Learn why this is important](#)

Hello Connor.

Can you please verify the attached road traffic data is still valid?

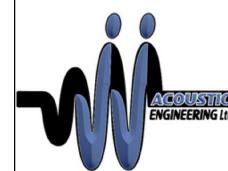
Thank you!

Regards,

*Joseph C. Sleiman
JJ Acoustic Engineering Ltd.
Tel: (226)344-8911
Available 24 hrs/day - 7 days/week
joseph@jjae.ca*

ATTACHMENT C



	<p>40.0 45.0 50.0 55.0 60.0 65.0 70.0 75.0</p>		<ul style="list-style-type: none"> + Point Source Line Source Building  Receiver  Building Evaluation 	<p>STATIONARY NOISE IMPACT 30 SHAFTSBURY DRIVE, KITCHENER, ONTARIO</p> <p>FIGURE 1 NOISE IMPACT FROM NEIGHBORING BUILDINGS TO THE SITE</p>
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ATTACHMENT D

Table D1
Stationary Noise Impact Source Data
30 Shaftsbury Drive, Kitchener, Ontario

Noise Source Description	Cadna ID	Total SWL (dBA)	Data Source or Representative Data	Height Absolute (m)	Above Roof (m)	Coordinates	
						x	y
S1	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17545996	4811532
S2	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546000	4811534
S3	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546005	4811540
S4	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546014	4811545
S5	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546024	4811551
S6	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546035	4811557
S7	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546043	4811561
S8	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546060	4811563
S9	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546066	4811567
S10	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546070	4811568
S11	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546074	4811569
S12	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546078	4811573
S13	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546088	4811581
S14	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546090	4811585
S15	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546093	4811588
S16	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546097	4811591
S17	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546101	4811593
S18	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546096	4811598
S19	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546102	4811599
S20	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546106	4811605
S21	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546108	4811608
S22	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546110	4811612
S23	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546113	4811614
S24	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.5	1.5	17546135	4811670
CH1	OS_Representative_Chiller	91.7	Representative_Chiller	8	2	17546145	4811632
CH2	OS_Representative_Chiller	91.7	Representative_Chiller	8	2	17546148	4811635
CH3	OS_Representative_Chiller	91.7	Representative_Chiller	8	2	17546168	4811651
CH4	OS_Representative_Chiller	91.7	Representative_Chiller	8.5	2.5	17545858	4811575
M1	OS_Representative_MUA	80.6	Representative_MUA	8	2	17545854	4811579
TID1	OS_Heavy_Truck_Idling	100	Heavy_Truck_Idling	2	2	17546168	4811614
TID1	OS_Heavy_Truck_Idling	100	Heavy_Truck_Idling	2	2	17546082	4811642
TID2	OS_Heavy_Truck_Idling	100	Heavy_Truck_Idling	2	2	17546182	4811648

Noise Source Description	Cadna ID	Total PWL (dBA)	Source	Height Absolute (m)	Above Roof (m)	Equipment Movements (#/Hour)			Speed (km/hr)	x	y
						Day	Night				
T1	OS_Heavy_truck_10kph	94.6	Heavy_truck_10kph	2.25	2.25	5	2	10	17546161	4811651	

Table D2
Receiver Noise Impact Data

Name	Level Lr Day (dBA)	Night (dBA)	Noise Type	Height (m)	x	y
OLA #1	41.8	39.6	Total	1.5	17545947.88	4811423.86
OLA #2	38.6	37		1.5	17545884.67	4811383.3
WCPORA	46	44.3	Total	15	17545962.61	4811421.21
WCPORB	40.2	38	Total	1.5	17546005.13	4811435.21

ATTACHMENT E

Owner's Name: Cook Homes Waterloo Limited
Owner's Address: 695 Rupert St. Unit B.
Waterloo, Ontario
N2V 1Z5

Re: Road Traffic and Stationary Noise Impact Study, 30 Shaftsbury Drive, Kitchener, Ontario

OWNER'S STATEMENT

I am the owner of the property, or the owner's agent, and that I understand and agree with the noise assessment and potential attenuation measures detailed in the study entitled Road Traffic and Stationary Noise Impact Study, 30 Shaftsbury Drive, Kitchener, Ontario, Ontario, dated November 3, 2025.

The application has been designed to avoid the use of berms or walls as noise attenuation features where feasible. Where berms or walls are recommended, the Noise Study provides economic, planning and engineering justification.

If the application is changed in a way that may affect the noise level calculations, I will have a revised noise study submitted to the Region of Waterloo.

Ian Cook
Name
[Signature]
Signature
Nov 10, 2025
Date

ATTACHMENT F

CANADA

PROVINCE OF ONTARIO

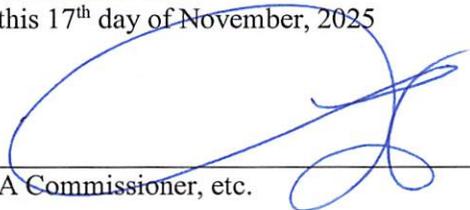
) In the Matter of the
) *Environmental Protection*
) *Act* and the *Planning Act*
)
)
) And in the Matter of
) 30 Shaftsbury Drive, Kitchener,
Ontario in the Regional
Municipality of Waterloo

I, Joey Jraige, of JJ Acoustic Engineering Ltd., of the Town of Wheatley, SOLEMNLY DECLARE THAT:

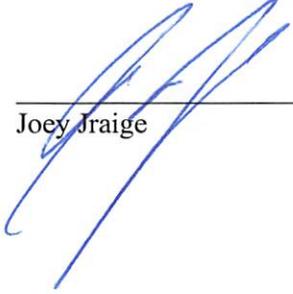
1. I am a Professional Engineer employed by JJ Acoustic Engineering Ltd. which holds a Certificate of Authorization and have personal knowledge of the matters set out below.
2. I was retained or employed as the principal consultant to undertake the assessment of noise impacts and recommendation of noise mitigation measures for the property described as 30 Shaftsbury Drive, Kitchener, Ontario.
3. I have the expertise required to perform these services. Any assessment activities or recommendations requiring the application of engineering principles have been undertaken or supervised by an engineer qualified to perform such services.
4. The information used in the letter report entitled "Road Traffic and Stationary Noise Impact Study" dated October 24, 2025, is the best available information as of the date of the study.
5. The noise level calculations, the interpretation of noise attenuation requirements and the recommended measures are in accordance with the Ministry of Environment Conservation and Parks Guidelines, Region of Waterloo policies, and any applicable policy or guidelines of the Area Municipality, and any other applicable policy or guideline.
6. The physical noise attenuation measures proposed in this study are feasible to implement and will provide the level of attenuation indicated in the study.
7. I acknowledge that this study may be subject to a peer review conducted at my cost.
8. I acknowledge that public authorities and future owners, occupants and others may rely on this statement.

AND I make this solemn Declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath.

DECLARED before me in the Town
of Tilbury, in the Municipality
of Chatham-Kent
this 17th day of November, 2025



A Commissioner, etc.

)
)
)
) 

Joey Jraige

LOUIS ELTERS
TAYLOR DELRUE
BARRISTER, SOLICITOR & NOTARY PUBLIC
40 QUEEN ST. S., P.O. BOX 459
TILBURY, ONTARIO N0P 2L0
MY COMMISSION DOES NOT EXPIRE