CANDEVCON GROUP INC.
CONSULTING ENGINEERS & PLANNERS

GTA WEST OFFICE
9358 GOREWAY DRIVE
BRAMPTON, ONTARIO L6P 0M7
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Noise Impact Study

Proposed Estate Plan of Subdivision (Common Element Condominium) Condominium Development – Frisque Lands

869547 Ontario Inc.
3225 5th Concession Road
Part of Lots 3 and 4, Concession 5
City of Pickering

Project No: W21015

September 20, 2023

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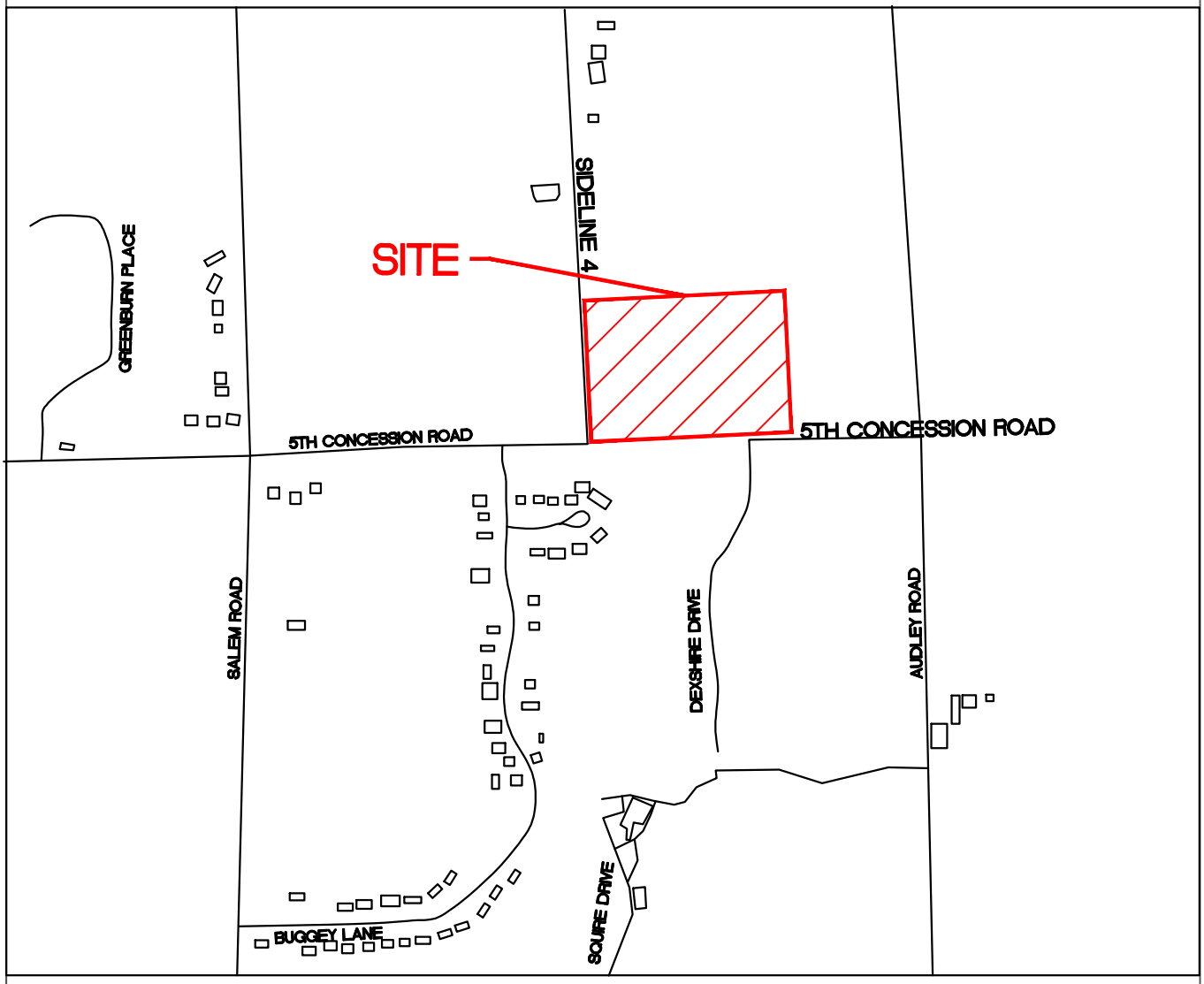
1. Introduction

This Noise Impact Study for the proposed Estate Subdivision Condominium Development in the City of Pickering that is immediately east of Sideline 4 (Balsam Road) and north of 5th Concession Road was prepared by CANDEVCON GROUP INC. on behalf of 869547 Ontario Inc. The purpose of the Study is to investigate the potential noise impacts on the proposed Estate Subdivision Condominium Development and to recommend appropriate mitigation measures to the satisfaction of the City of Pickering's pursuant to fulfilling the requirements of the zoning by-law amendment and draft plan application.

The proposed Estate Subdivision Condominium Development is located at the northeast corner of the 5th Concession Road and Sideline 4 connection. **Figure 1** illustrates the location of the Subject Site. The proposed Estate Subdivision Condominium Development comprises 13 single detached homes with a private road to Sideline 4 that will service six (6) residential dwelling units and a private road to 5th Concession Road that will service seven (7) residential dwelling units. The proposed and Conceptual Building Envelope Plan that is based on the Draft Plan of Subdivision is provided in **Figure 2**.

This Study defines the projected sound levels from nearby roads, specifically 5th Concession Road, and evaluates the adequacy of the proposed noise mitigation measures.



NOISE IMPACT STUDY FOR

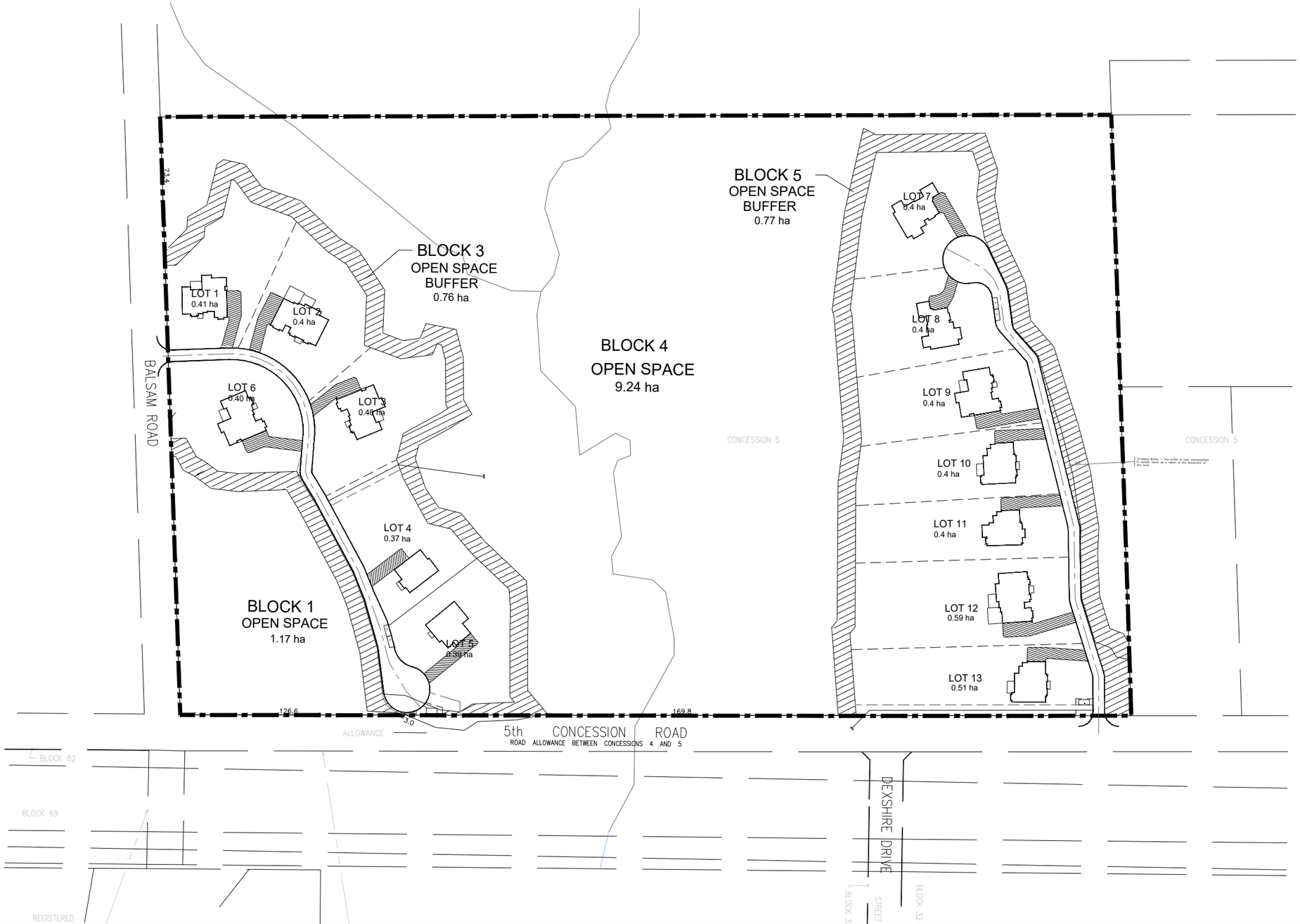
869547 ONTARIO INC.

CITY OF PICKERING

LOCATION PLAN

CANDEVCON GROUP INC.
CONSULTING ENGINEERS AND PLANNERS
9358 COREWAY DRIVE, BRAMPTON, ONTARIO L6P 0M7
TEL. (905) 794-0600 FAX (905) 794-0611

DRAWN BY: B.W.	PROJECT No. W21015
CHECKED BY: D.L.	FIGURE No. 1
SCALE: N.T.S.	
DATE: SEPTEMBER 20, 2023	



869547 ONTARIO INC.

PROPOSED ESTATE SUBDIVISION CONDOMINIUM DEVELOPMENT

CITY OF PICKERING

CONCEPTUAL BUILDING ENVELOPE PLAN

CANDEVCON GROUP INC.
CONSULTING ENGINEERS AND PLANNERS
9358 GOREWAY DRIVE BRAMPTON, ONTARIO L6P 0M7

DATE: SEPTEMBER 20, 2023	JOB No. W21015
DESIGN: B.W.	FIG. No. 2
SCALE: N.T.S.	

2. Noise Assessment

2.1 Roadway Traffic Noise Sources

The principal roadway noise source that will impact the Subject Development is the vehicular traffic on 5th Concession Road to the south.

5th Concession Road is an east-west Type "B" arterial road that is under the jurisdiction of the City of Pickering. Currently, within the vicinity of the proposed Estate Subdivision Condominium Development, sections of the roadway are divided with a gap that spans from Sideline 4 to Dexshire Drive. There are plans to connect the divided sections of the roadway and to extend 5th Concession Road easterly from Audley Road to Lake Ridge Road[1]. To determine the traffic volumes that were used in this Study, 24-hour counts on 5th Concession Road for the section between Westney Road and McNamara Court were utilized. The 24-hour counts were conducted between Tuesday December 5th, 2017 and Thursday December 7th, 2017. The 24-hour traffic volume counts that were provided by the City of Pickering are included in **Appendix A**. The traffic volumes were projected to the 10 years post build-out horizon (2035) using an annual growth rate of 2% to determine the noise impacts on the proposed Estate Subdivision Condominium Development. It is assumed that the section of 5th Concession Road that is immediately south of the proposed Estate Subdivision Condominium Development will comprise of two (2) lanes, a rural cross section and a posted speed limit of 60 km/h.

Table 1 summarizes the projected traffic volumes for 5th Concession Road.

TABLE 1
PROJECTED (ULTIMATE) ROADWAY TRAFFIC VOLUMES

Road Characteristic		5th Concession Road
Jurisdiction		City of Pickering
Ultimate No. Lanes		2
Ultimate AADT		1,291
Posted Speed Limit		60 km/h
% Trucks	**Medium**	2.65%
	Heavy	0.77%
Day/Night Volume Ratio		93%/7%

[1] City of Pickering – Integrated Transportation Master Plan, IBI Group, August 2021.

2. Noise Assessment- Continued

2.2 Other Noise Sources

The Subject Property is not situated near railways or major industrial facilities and is therefore not affected by rail or industrial noise sources.

2.3 Aircraft Noise

The Subject Property is not situated near any airports and is well outside the NEP/NEF 25 contour (the lowest threshold of Noise Exposure Projections); therefore, there are no specific noise concerns or requirements in relation to attenuation of aircraft noise at the proposed Estate Subdivision Condominium Development.

2. Noise Assessment - Continued

2.4 Noise Criteria

Noise impacts from the road traffic were assessed using the principles and procedures in the Ministry of the Environment, Conservation and Park's (MECP) Environmental Noise Guideline[2]. The sound level limits contained in the Environmental Noise Guideline have been used as criteria for acceptability. The criteria is summarized in **Table 2**.

TABLE 2
MECP'S NOISE CRITERIA (ROAD TRAFFIC)

Location	Outdoor	Indoor
Outdoor Living Area	55 dBA (7 am - 11 pm) L_{eq} (16 hour)	N/A
Bedroom Window	50 dBA (11 pm - 7 am) L_{eq} (8 hour)	40 dBA (11 pm - 7 am) L_{eq} (8 hour)
Living Room Window	55 dBA (7 am - 11 pm) L_{eq} (16 hour)	45 dBA (7 am - 11 pm) L_{eq} (16 hour)

An outdoor living area in a residential development generally refers to a rear yard, a rooftop, an outdoor amenity area and a patio or a balcony above the ground floor having a minimum depth of 4 metres. It is assumed that all of the single detached homes will have an outdoor living area in the form of a rear yard.

[2] Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning, Publication NPC-300: Ministry of the Environment, Conservation and Parks, August 2013.

2. Noise Assessment - Continued

2.4 Noise Criteria - Continued

The MECP's criteria specifies that, if the sound levels in the outdoor living area are greater than 60 dBA L_{eq}, noise mitigation measures such as barriers are required to attenuate the sound levels to 60 dBA or less (55 dBA being the desired level). After noise mitigation measures are implemented, if the sound levels exceed the noise criteria by no more than 5 dBA due to technical, economic or administrative reasons, a warning clause in all Offers of Purchase and Sale for the specific lot is required. Where the sound levels exceed the noise criteria by no more than 5 dBA, noise mitigation measures to attenuate the sound levels to the desired 55 dBA L_{eq} limit can be implemented or a warning clause in all Offers of Purchase and Sale for the specific lot is required.

For residential dwellings, the MECP have ventilation requirements which are based on the sound levels at the exterior building facade. Where the daytime (7:00-23:00) sound levels in the plane of a bedroom or living/dining room window are greater than 65 dBA L_{eq} and/or where the night-time (23:00-7:00) sound levels in the plane of a bedroom or living/dining room window are greater than 60 dBA L_{eq}, mandatory central air conditioning for the specific lots is required.

Where the daytime (7:00-23:00) sound levels in the plane of a bedroom or living/dining room window are greater than 55 dBA L_{eq} and less than or equal to 65 dBA L_{eq} and/or where the night-time (23:00-7:00) sound levels in the plane of a bedroom or living/dining room window are greater than 50 dBA L_{eq} and less than or equal to 60 dBA L_{eq}, forced air heating with provision for central air conditioning for the specific lots is required.

Where the daytime (7:00-23:00) sound levels outside the bedroom or living/dining room windows exceed 65 dBA L_{eq} and/or where the night-time (23:00-7:00) sound levels outside the bedroom or living/dining room windows exceed 60 dBA L_{eq}, special building components including windows, walls and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limit criteria specified in **Table 2**.

2.5 Projected Sound Levels

L_{eq} sound levels were projected for specific lots within the proposed Estate Subdivision Condominium Development to determine the noise mitigation requirements.

Daytime sound levels were projected for an outdoor living area at a point located 3 metres from the rear wall of the building facade and 1.5 metres above the ground.

For the exterior building facade, daytime sound levels were projected for the first storey facade at a height of 1.5 metres above the ground and night-time sound levels were projected for a point located at the second storey building facade at a height of 4.5 metres above the ground.

2. Noise Assessment - Continued

2.5 Projected Sound Levels – Continued

All of the sound level projections were calculated using the computerized model[3] of the MECP's ORNAMENT procedure[4]. The predicted daytime and night-time sound levels are provided in **Table 3**. Typical computer reports are included in **Appendix B**.

TABLE 3
PROJECTED L_{eq} SOUND LEVELS - NO ACOUSTICAL BARRIER

Location	Daytime L_{eq} Rear Yard	Night-time L_{eq} 2nd Storey (*)	Daytime L_{eq} Facade
Lot 5	40 dBA	43 dBA	46 dBA
Lot 13	47 dBA	50 dBA	53 dBA

Note: * Night-time sound level at the *2nd* storey bedroom window.

[3] STAMSON 5.04 computer model, Ministry of the Environment, 2000.
[4] ORNAMENT, Ontario Road Noise Analysis Method for Environment and Transportation, Technical document, Ministry of Environment, 1989.

3. Noise Attenuation Measures

3.1 Outdoor Recreation Areas

The projected outdoor daytime sound level for Lot 13 (the worst-case scenario) is 47 dBA L_{eq}, which is within the outdoor living area criteria of 55 dBA. Therefore, noise mitigation measures are not required.

The MECP's criteria specifies that, if the sound levels in the outdoor living area are greater than 60 dBA L_{eq}, noise mitigation measures such as barriers are required to attenuate the sound levels to 60 dBA or less (55 dBA being the desired level). After noise mitigation measures are implemented, if the sound levels exceed the noise criteria by no more than 5 dBA due to technical, economic or administrative reasons, a warning clause in all Offers of Purchase and Sale for the specific lot is required. Where the sound levels exceed the noise criteria by no more than 5 dBA, noise mitigation measures to attenuate the sound levels to the desired 55 dBA L_{eq} limit can be implemented or a warning clause in all Offers of Purchase and Sale for the specific lot is required.=

3.2 Ventilation and Warning Clause Components

The MECP have ventilation requirements for residential dwellings which are based on the sound level at the exterior building facades outside of a bedroom window (night-time sound level) and/or a living/dining room window. (daytime sound level)

For the worst-case scenario, the sound level at the second storey bedroom window during the night-time will be 50 dBA and the sound level at the first storey living/dining room window during the daytime will be 53 dBA.

For all of the lots, since the night-time sound levels in the plane of the bedroom window is within 50 dBA L_{eq}, and the daytime sound levels in the plane of the living/dining room window is within 55 dBA L_{eq}, there are no ventilation requirements.

3.3 Façade Components

To comply with the MECP's interior sound level criterion of 40 dBA L_{eq} (night-time) for bedrooms and 45 dBA L_{eq} (daytime) for living rooms, STC rating requirements were examined for building facade components, namely windows, walls and doors.

For all of the lots, since the night-time sound levels in the plane of the bedroom window is below 60 dBA L_{eq}, and the daytime sound levels in the plane of the living/dining room window is below 65 dBA L_{eq}, special building components for windows, walls, and doors are not required. Window and wall construction which satisfies the structural and safety requirements of the Ontario Building Code requirements will provide sufficient noise attenuation.

4. Summary and Recommendations

The daytime rear yard sound levels for the detached dwelling units is within 55 dBA L_{eq}. Therefoe, the installation of acoustic barriers and the inclusion of warning clauses on all titles and deeds to the properties are not required.

Since the night-time sound levels in the plane of the bedroom window is within 50 dBA L_{eq}, and the daytime sound levels in the plane of the living/dining room window is within 55 dBA L_{eq}, there are no ventilation requirements. Consequently, special building components for these lots are not required. Providing window and wall construction which satisfies the structural and safety requirements of the Ontario Building Code requirements is sufficient.

Based on the above analysis, the lots within the proposed Estate Subdivision Condominium Development will meet the noise criteria set forth by the Ministry of Environment, Conservation and Parks.

This report has been prepared by:

CANDEVCON GROUP INC.

Brian Wong, P.Eng.
Intermediate Transportation Engineer

David Lee, P.Eng.
Project Manager

APPENDIX A

Roadway Traffic Volume Data

Ontario Traffic, Inc.
17705 Leslie St., Unit 6
Newmarket, Ontario L3Y 3E3
Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 65
Station ID: D96
Whitevale Rd between Westney Rd (RR 31) & McNamara Crt
Date Start: 05-Dec-17
Date End: 07-Dec-17
Date Start: 05-Dec-17

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/05/17	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	9	6	0	**3**	0	0	0	0	0	0	0	0	18
08:00	0	**15**	**7**	0	0	0	0	0	0	0	**1**	0	0	**23**
09:00	0	7	4	0	0	0	0	0	0	0	0	0	0	11
10:00	0	12	4	0	0	**1**	0	0	0	0	0	0	0	17
11:00	0	12	1	0	1	0	0	0	0	0	0	0	0	14
12 PM	0	10	4	0	0	0	0	0	0	0	0	0	0	14
13:00	0	12	6	0	**1**	**1**	0	0	0	0	0	0	0	20
14:00	**1**	25	11	0	1	0	0	0	0	0	0	0	0	38
15:00	0	44	6	0	0	0	0	0	0	0	0	0	0	50
16:00	0	77	15	0	0	0	0	**1**	0	0	0	0	0	93
17:00	0	**86**	**18**	0	0	0	0	0	0	0	**1**	0	0	**105**
18:00	0	47	4	0	0	0	0	0	0	0	0	0	0	51
19:00	0	14	2	0	0	0	0	0	0	0	0	0	0	16
20:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
21:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
22:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Day Total	1	393	92	0	6	2	0	1	0	0	2	0	0	497
Percent	0.2%	79.1%	18.5%	0.0%	1.2%	0.4%	0.0%	0.2%	0.0%	0.0%	0.4%	0.0%	0.0%	
AM Peak		08:00	08:00		07:00	10:00					08:00			08:00
Vol.		15	7		3	1					1			23
PM Peak	14:00	17:00	17:00		13:00	13:00		16:00			17:00			17:00
Vol.	1	86	18		1	1		1			1			105

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Whitevale Rd between Westney Rd (RR 31) & McNamara Crt
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Date End: 07-Dec-17
Date Start: 05-Dec-17

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/06/17	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	9	6	0	**3**	0	0	0	0	0	**1**	0	0	19
08:00	0	11	4	0	0	0	0	0	0	0	0	0	0	15
09:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
10:00	0	**12**	**8**	0	1	0	0	0	0	0	0	0	0	**21**
11:00	0	12	2	0	0	0	0	0	0	0	0	0	0	14
12 PM	0	20	8	0	0	0	0	0	0	0	0	0	0	28
13:00	0	13	4	0	**1**	0	0	0	0	0	0	0	0	18
14:00	0	29	7	0	1	0	0	0	0	0	0	0	0	37
15:00	0	34	4	0	0	0	0	0	0	0	0	0	0	38
16:00	0	79	**14**	0	0	0	0	0	0	0	0	0	0	93
17:00	0	**102**	11	0	0	0	0	0	0	0	0	0	0	**113**
18:00	0	40	10	0	0	0	0	0	0	0	0	0	0	50
19:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
20:00	0	18	0	0	0	0	0	0	0	0	0	0	0	18
21:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
Day Total	0	423	83	0	6	0	0	0	0	0	1	0	0	513
Percent	0.0%	82.5%	16.2%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	
AM Peak		10:00	10:00		07:00						07:00			10:00
Vol.		12	8		3						1			21
PM Peak		17:00	16:00		13:00									17:00
Vol.		102	14		1									113

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Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/07/17	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
07:00	0	8	**7**	0	**4**	**1**	0	0	0	0	0	0	0	**20**
08:00	0	**14**	5	0	0	0	0	0	0	0	0	0	0	19
09:00	0	9	3	0	0	0	0	0	0	**1**	0	0	0	13
10:00	0	14	3	**1**	0	0	0	0	0	0	0	0	0	18
11:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
12 PM	0	16	3	0	**1**	0	0	0	0	0	0	0	0	20
13:00	0	16	3	0	0	0	0	0	0	0	0	0	0	19
14:00	0	29	5	**1**	0	0	0	0	0	0	0	0	0	35
15:00	**1**	45	15	0	0	0	0	0	0	0	0	0	0	61
16:00	0	**103**	**16**	0	0	0	0	0	0	0	0	0	0	**119**
17:00	0	78	11	0	0	**1**	0	0	0	0	0	0	0	90
18:00	0	37	7	0	0	0	0	0	0	0	0	0	0	44
19:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
20:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
21:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
22:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	1	418	90	2	5	2	0	0	0	1	0	0	0	519
Percent	0.2%	80.5%	17.3%	0.4%	1.0%	0.4%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	
AM Peak		08:00	07:00	10:00	07:00	07:00				09:00				07:00
Vol.		14	7	1	4	1				1				20
PM Peak	15:00	16:00	16:00	14:00	12:00	17:00								16:00
Vol.	1	103	16	1	1	1								119
Grand Total	2	1234	265	2	17	4	0	1	0	1	3	0	0	1529
Percent	0.1%	80.7%	17.3%	0.1%	1.1%	0.3%	0.0%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	

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WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/05/17	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
06:00	0	28	7	0	0	0	0	0	0	0	0	0	0	35
07:00	0	**55**	**14**	0	**2**	0	0	0	0	0	**1**	0	0	**72**
08:00	0	39	10	0	0	**1**	0	0	0	0	0	0	0	50
09:00	0	24	6	0	0	0	0	0	0	0	0	0	0	30
10:00	0	19	9	0	0	0	0	0	0	0	0	0	0	28
11:00	0	14	3	0	0	0	0	0	0	0	0	0	0	17
12 PM	0	9	1	0	0	0	0	0	0	0	0	0	0	10
13:00	0	12	6	0	0	0	0	0	0	0	0	0	0	18
14:00	0	6	**12**	0	1	0	0	0	0	0	0	0	0	19
15:00	0	**15**	5	0	**4**	0	0	0	0	0	0	0	0	**24**
16:00	0	10	2	0	0	0	0	0	0	0	**1**	0	0	13
17:00	0	11	4	0	0	**2**	0	0	0	0	0	0	0	17
18:00	0	5	4	0	0	0	0	0	0	0	0	0	0	9
19:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
20:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Day Total	0	275	91	0	7	3	0	0	0	0	2	0	0	378
Percent	0.0%	72.8%	24.1%	0.0%	1.9%	0.8%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	
AM Peak		07:00	07:00		07:00	08:00					07:00			07:00
Vol.		55	14		2	1					1			72
PM Peak		15:00	14:00		15:00	17:00					16:00			15:00
Vol.		15	12		4	2					1			24

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Site Code: 65
Station ID: D96
Whitevale Rd between Westney Rd (RR 31) & McNamara Crt
Date Start: 05-Dec-17
Date End: 07-Dec-17
Date Start: 05-Dec-17

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/06/17	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
06:00	0	24	**12**	0	0	0	0	0	0	0	0	0	0	36
07:00	0	**67**	10	0	**2**	0	0	0	0	0	0	0	0	**79**
08:00	0	40	3	0	0	0	0	0	0	0	0	0	0	43
09:00	0	15	6	0	0	0	0	0	0	0	0	0	0	21
10:00	0	17	5	0	0	0	0	0	0	0	0	0	0	22
11:00	0	13	8	0	0	0	0	0	0	0	0	0	0	21
12 PM	0	8	6	0	1	0	0	0	0	0	0	0	0	15
13:00	0	16	3	0	2	0	0	0	0	0	0	0	0	21
14:00	0	15	**12**	0	1	0	0	0	0	0	0	0	0	**28**
15:00	0	16	4	0	**4**	0	0	0	0	0	0	0	0	24
16:00	0	**19**	4	0	0	0	0	0	0	0	**1**	0	0	24
17:00	0	17	5	0	0	0	0	0	0	0	1	0	0	23
18:00	0	6	2	0	0	0	0	0	0	0	1	0	0	9
19:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
20:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
21:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Day Total	0	310	85	0	10	0	0	0	0	0	3	0	0	408
Percent	0.0%	76.0%	20.8%	0.0%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	
AM Peak		07:00	06:00		07:00									07:00
Vol.		67	12		2									79
PM Peak		16:00	14:00		15:00						16:00			14:00
Vol.		19	12		4						1			28

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Whitevale Rd between Westney Rd (RR 31) & McNamara Crt
Date Start: 05-Dec-17
Date End: 07-Dec-17
Date Start: 05-Dec-17

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/07/17	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
06:00	0	23	8	0	0	0	0	0	0	0	0	0	0	31
07:00	0	**63**	**12**	0	**2**	0	0	0	0	0	**1**	0	0	**78**
08:00	0	42	5	0	1	**1**	0	**1**	0	**1**	0	0	0	51
09:00	0	23	8	0	0	0	0	0	0	0	0	0	0	31
10:00	0	12	7	0	0	0	0	0	0	0	0	0	0	19
11:00	0	12	4	0	0	0	0	0	0	0	0	0	0	16
12 PM	0	13	2	1	1	0	0	0	0	0	0	0	0	17
13:00	0	12	3	**3**	0	0	0	0	0	0	0	0	0	18
14:00	0	13	7	0	**3**	0	0	0	0	0	0	0	0	23
15:00	0	14	**9**	0	1	0	0	0	0	0	0	0	0	**24**
16:00	0	**15**	4	0	0	0	0	0	0	0	0	0	0	19
17:00	0	15	7	0	0	0	0	0	0	0	0	0	0	22
18:00	0	8	4	0	0	0	0	0	0	0	0	0	0	12
19:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
20:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
21:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
22:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	294	87	4	8	1	0	1	0	1	1	0	0	397
Percent	0.0%	74.1%	21.9%	1.0%	2.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.3%	0.0%	0.0%	
AM Peak		07:00	07:00		07:00	08:00		08:00		08:00	07:00			07:00
Vol.		63	12		2	1		1		1	1			78
PM Peak		16:00	15:00	13:00	14:00									15:00
Vol.		15	9	3	3									24
Grand Total	0	879	263	4	25	4	0	1	0	1	6	0	0	1183
Percent	0.0%	74.3%	22.2%	0.3%	2.1%	0.3%	0.0%	0.1%	0.0%	0.1%	0.5%	0.0%	0.0%	

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Whitevale Rd between Westney Rd (RR 31) & McNamara Crt
Date Start: 05-Dec-17
Date End: 07-Dec-17
Date Start: 05-Dec-17

EB, WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/05/17	0	2	1	0	0	0	0	0	0	0	0	0	0	3
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
06:00	0	28	7	0	0	0	0	0	0	0	0	0	0	35
07:00	0	**64**	**20**	0	**5**	0	0	0	0	0	**1**	0	0	**90**
08:00	0	54	17	0	0	**1**	0	0	0	0	1	0	0	73
09:00	0	31	10	0	0	0	0	0	0	0	0	0	0	41
10:00	0	31	13	0	0	1	0	0	0	0	0	0	0	45
11:00	0	26	4	0	1	0	0	0	0	0	0	0	0	31
12 PM	0	19	5	0	0	0	0	0	0	0	0	0	0	24
13:00	0	24	12	0	1	1	0	0	0	0	0	0	0	38
14:00	**1**	31	**23**	0	2	0	0	0	0	0	0	0	0	57
15:00	0	59	11	0	**4**	0	0	0	0	0	0	0	0	74
16:00	0	87	17	0	0	0	0	**1**	0	0	**1**	0	0	106
17:00	0	**97**	22	0	0	**2**	0	0	0	0	1	0	0	**122**
18:00	0	52	8	0	0	0	0	0	0	0	0	0	0	60
19:00	0	21	3	0	0	0	0	0	0	0	0	0	0	24
20:00	0	12	4	0	0	0	0	0	0	0	0	0	0	16
21:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
22:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
23:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Day Total	1	668	183	0	13	5	0	1	0	0	4	0	0	875
Percent	0.1%	76.3%	20.9%	0.0%	1.5%	0.6%	0.0%	0.1%	0.0%	0.0%	0.5%	0.0%	0.0%	
AM Peak		07:00	07:00		07:00	08:00					07:00			07:00
Vol.		64	20		5	1					1			90
PM Peak	14:00	17:00	14:00		15:00	17:00		16:00			16:00			17:00
Vol.	1	97	23		4	2		1			1			122

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Whitevale Rd between Westney Rd (RR 31) & McNamara Crt
Date Start: 05-Dec-17
Date End: 07-Dec-17
Date Start: 05-Dec-17

EB, WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/06/17	0	7	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	0	3	3	0	0	0	0	0	0	0	0	0	0	6
06:00	0	25	12	0	0	0	0	0	0	0	0	0	0	37
07:00	0	**76**	**16**	0	**5**	0	0	0	0	0	**1**	0	0	**98**
08:00	0	51	7	0	0	0	0	0	0	0	0	0	0	58
09:00	0	26	8	0	0	0	0	0	0	0	0	0	0	34
10:00	0	29	13	0	1	0	0	0	0	0	0	0	0	43
11:00	0	25	10	0	0	0	0	0	0	0	0	0	0	35
12 PM	0	28	14	0	1	0	0	0	0	0	0	0	0	43
13:00	0	29	7	0	3	0	0	0	0	0	0	0	0	39
14:00	0	44	**19**	0	2	0	0	0	0	0	0	0	0	65
15:00	0	50	8	0	**4**	0	0	0	0	0	0	0	0	62
16:00	0	98	18	0	0	0	0	0	0	0	**1**	0	0	117
17:00	0	**119**	16	0	0	0	0	0	0	0	1	0	0	**136**
18:00	0	46	12	0	0	0	0	0	0	0	1	0	0	59
19:00	0	16	3	0	0	0	0	0	0	0	0	0	0	19
20:00	0	27	0	0	0	0	0	0	0	0	0	0	0	27
21:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
22:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
23:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11
Day Total	0	733	168	0	16	0	0	0	0	0	4	0	0	921
Percent	0.0%	79.6%	18.2%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	
AM Peak		07:00	07:00		07:00						07:00			07:00
Vol.		76	16		5						1			98
PM Peak		17:00	14:00		15:00						16:00			17:00
Vol.		119	19		4						1			136

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Date Start: 05-Dec-17
Date End: 07-Dec-17
Date Start: 05-Dec-17

EB, WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/07/17	0	2	2	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
06:00	0	25	11	0	0	0	0	0	0	0	0	0	0	36
07:00	0	**71**	**19**	0	**6**	**1**	0	0	0	0	**1**	0	0	**98**
08:00	0	56	10	0	1	1	0	**1**	0	**1**	0	0	0	70
09:00	0	32	11	0	0	0	0	0	0	1	0	0	0	44
10:00	0	26	10	**1**	0	0	0	0	0	0	0	0	0	37
11:00	0	19	7	0	0	0	0	0	0	0	0	0	0	26
12 PM	0	29	5	1	2	0	0	0	0	0	0	0	0	37
13:00	0	28	6	**3**	0	0	0	0	0	0	0	0	0	37
14:00	0	42	12	1	**3**	0	0	0	0	0	0	0	0	58
15:00	**1**	59	**24**	0	1	0	0	0	0	0	0	0	0	85
16:00	0	**118**	20	0	0	0	0	0	0	0	0	0	0	**138**
17:00	0	93	18	0	0	**1**	0	0	0	0	0	0	0	112
18:00	0	45	11	0	0	0	0	0	0	0	0	0	0	56
19:00	0	20	3	0	0	0	0	0	0	0	0	0	0	23
20:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
21:00	0	13	5	0	0	0	0	0	0	0	0	0	0	18
22:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Day Total	1	712	177	6	13	3	0	1	0	2	1	0	0	916
Percent	0.1%	77.7%	19.3%	0.7%	1.4%	0.3%	0.0%	0.1%	0.0%	0.2%	0.1%	0.0%	0.0%	
AM Peak		07:00	07:00	10:00	07:00	07:00		08:00		08:00	07:00			07:00
Vol.		71	19	1	6	1		1		1	1			98
PM Peak	15:00	16:00	15:00	13:00	14:00	17:00								16:00
Vol.	1	118	24	3	3	1								138
Grand Total	2	2113	528	6	42	8	0	2	0	2	9	0	0	2712
Percent	0.1%	77.9%	19.5%	0.2%	1.5%	0.3%	0.0%	0.1%	0.0%	0.1%	0.3%	0.0%	0.0%	

APPENDIX B

STAMSON 5.04 Sound Volume Calculations

STAMSON REPORT – LOT 13
[DAYTIME, REAR YARD, NO ACOUSTIC BARRIER]

```
STAMSON 5.0        NORMAL REPORT        Date: 13-07-2023 09:15:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 13d.te              Time Period: 16 hours
Description:


Road data, segment # 1: 5th Concess.
-----------------------------------
Car traffic volume  :  1160 veh/TimePeriod  *
Medium truck volume :    32 veh/TimePeriod  *
Heavy truck volume  :     9 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: 5th Concess.
-----------------------------------
Angle1   Angle2           : -90.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  29.00 m
Receiver height           :   1.50 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: 5th Concess.
-----------------------------------
Car traffic volume  :  1160 veh/TimePeriod  *
Medium truck volume :    32 veh/TimePeriod  *
Heavy truck volume  :     9 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: 5th Concess.
-----------------------------------
Angle1   Angle2           :  -4.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  29.00 m
Receiver height           :   1.50 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Results segment # 1: 5th Concess.
---------------------------------

Source height = 0.93 m

ROAD (0.00 + 35.77 + 0.00) = 35.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     -4   0.66  55.37   0.00  -4.75  -4.75   0.00 -10.10   0.00
35.77
-------------------------------------------------------------------------
---

Segment Leq : 35.77 dBA

Results segment # 2: 5th Concess.
---------------------------------

Source height = 0.93 m

ROAD (0.00 + 46.41 + 0.00) = 46.41 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
    -4     90   0.66  55.37   0.00  -4.75  -4.21   0.00   0.00   0.00
46.41
-------------------------------------------------------------------------
---

Segment Leq : 46.41 dBA

Total Leq All Segments: 46.77 dBA

TOTAL Leq FROM ALL SOURCES:       46.77
```

STAMSON REPORT – LOT 13
[NIGHT-TIME, FACADE, NO ACOUSTIC BARRIER]

```
STAMSON 5.0        NORMAL REPORT        Date: 13-07-2023 09:17:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 13n.te               Time Period: 8 hours
Description:


Road data, segment # 1: 5th Concess.
-----------------------------------
Car traffic volume  :   320 veh/TimePeriod
Medium truck volume :     8 veh/TimePeriod
Heavy truck volume  :     2 veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: 5th Concess.
-----------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  18.00 m
Receiver height           :   4.50 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: 5th Concess.
-----------------------------------

Source height = 0.88 m

ROAD (0.00 + 49.92 + 0.00) = 49.92 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     90   0.59  52.51   0.00  -1.26  -1.33   0.00   0.00   0.00
49.92
-------------------------------------------------------------------------
---

Segment Leq : 49.92 dBA

Total Leq All Segments: 49.92 dBA

TOTAL Leq FROM ALL SOURCES:       49.92
```

STAMSON REPORT – LOT 13
[DAYTIME, FACADE, NO ACOUSTIC BARRIER]

```
STAMSON 5.0        NORMAL REPORT        Date: 13-07-2023 09:16:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 13df.te              Time Period: 16 hours
Description:


Road data, segment # 1: 5th Concess.
-----------------------------------
Car traffic volume  :  1160 veh/TimePeriod  *
Medium truck volume :    32 veh/TimePeriod  *
Heavy truck volume  :     9 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: 5th Concess.
-----------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  18.00 m
Receiver height           :   1.50 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: 5th Concess.
-----------------------------------

Source height = 0.93 m

ROAD (0.00 + 52.60 + 0.00) = 52.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     90   0.66  55.37   0.00  -1.31  -1.46   0.00   0.00   0.00
52.60
-------------------------------------------------------------------------
---

Segment Leq : 52.60 dBA

Total Leq All Segments: 52.60 dBA

TOTAL Leq FROM ALL SOURCES:       52.60
```