

Environmental Noise Assessment

210 & 374 Burnhamthorpe Road West

Proposed Residential Subdivision
Oakville, Ontario

October 28, 2021
Project: 120-0270

Prepared for

Ankara Realty Ltd. and Eno Investments Ltd.

Prepared by



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VALCOUSTICS

Canada Ltd.

Version History

Version #	Date	Comments
1.0	October 28, 2021	Final – Issued to Client

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Environmental Noise Assessment

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Proposed Residential Subdivision

Oakville, Ontario

EXECUTIVE SUMMARY

Valcoustics Canada Ltd. (VCL) was retained to prepare an Environmental Noise Assessment to address the potential noise impact from the existing environment onto the proposed residential subdivisions in support of the Draft Plan of Subdivision application submission to the Town of Oakville and the Regional Municipality of Halton. The project consists of two sites located adjacent to each other at 210 and 374 Burnhamthorpe Road West. It is understood that these two sites will be developed together. The development will consist of 309 townhouses and 292 single detached dwellings.

The significant noise source in the vicinity is road traffic on William Halton Parkway, Neyagawa Boulevard and Old Burnhamthorpe Road. Internal Streets A (Carding Mill Trail) and B are also considered in the assessment. There are no stationary noise sources that are expected to have a significant impact at the subject site.

The sound levels on site have been determined and compared with the applicable Ministry of the Environment, Conservation and Parks (MECP) noise guideline limits to determine the need for noise mitigation.

To meet the applicable transportation noise source guideline limits at the proposed developments, the noise mitigation requirements are summarized below.

374 Burnhamthorpe

- Provision for adding air conditioning at a later date is required for all townhouses in Blocks 337 and 338 exposed to Old Burnhamthorpe Road and William Halton Parkway;
- Provision for adding air conditioning at a later date is required for all townhouses in Blocks 345, 349, 350, 351, and 352 which are at the intersection of Streets A and B; and
- For all townhouses and detached dwellings, exterior wall and window construction meeting the minimum non-acoustical requirement of the OBC is adequate to meet the indoor sound level criteria of the MECP noise guidelines.

Final requirements should be checked when detailed building plans are available. This could be done as a condition for obtaining a building permit.

210 Burnhamthorpe

- Provision for adding air conditioning at a later date is required for all townhomes in Block 339, closest to Old Burnhamthorpe Road; and
- For all townhouse dwellings, exterior wall and window construction meeting the minimum non-acoustical requirement of the OBC is adequate to meet the indoor sound level criteria of the MECP noise guidelines.

Final requirements should be checked when detailed building plans are available. This could be done as a condition for obtaining a building permit.

1.0 INTRODUCTION

1.1 SCOPE

Valcoustics Canada Ltd. (VCL) was retained to prepare an Environmental Noise Assessment to address the potential noise impact from the existing environment onto the proposed residential subdivision in support of the Draft Plan of Subdivision application submission to the Town of Oakville and the Regional Municipality of Halton. The project consists of two sites located adjacent to each other at 210 and 374 Burnhamthorpe Road West. It is understood that these two sites will be developed together. The development will consist of 309 townhouses and 292 single detached dwellings. The potential sound levels and noise mitigation measures needed for the proposed development to comply with the MECP noise guideline requirements are outlined herein.

1.2 THE SITE AND SURROUNDING AREA

The two adjacent sites are located along William Halton Parkway and Old Burnhamthorpe Road between Neyagawa Road and Sixth Line and are bounded by:

- William Halton Parkway with agricultural uses beyond, to the north;
- Agricultural uses with Neyagawa Boulevard beyond, to the west;
- Agricultural uses with Sixth Line beyond, to the east; and
- A wood lot and existing residential development beyond, to the south.

The 374 Burnhamthorpe site is identified as:

- Part of Lot 18 and 19
- Concession 1, N.D.S
- (Geographic Township of Trafalgar, County of Halton)
- Town of Oakville
- Regional Municipality of Halton

The 210 Burnhamthorpe site is identified as:

- Part of Lot 17
- Concession 1, North of Dundas Street
- Geographic Township of Trafalgar, County of Halton
- now in the Town of Oakville
- Regional Municipality of Halton

The Draft Plans for both sites have been consolidated into a single plan. Key Plan for both sites is included as Figure 1.

The study is based on the Draft Plan of Subdivision last revised September 10, 2021, prepared by Korsiak Urban Planning. The Draft Plan of Subdivision is included as Figure 2.

1.3 THE PROPOSED DEVELOPMENT

The development will consist of 309 townhouses and 292 single detached dwellings. All townhouses were assumed to be 3 storeys. The detached dwellings were assumed to be 2 storeys. Outdoor Living Areas (OLAs) are assumed to be provided above the garage for lane-based townhomes. For street townhomes and single detached residences, the rear yard is considered to be the OLA.

2.0 NOISE SOURCES

2.1 TRANSPORTATION SOURCES

The noise source with potential for impact on the proposed development is road traffic on William Halton Parkway, Nayagawa Boulevard, Old Burnhamthorpe Road, Street A (Carding Mill Trail) and Street B.

The road traffic data is summarized in Table 1. Correspondence is included as Appendix A.

Ultimate road Traffic data for William Halton Parkway and Neyagawa Boulevard was obtained from the Region of Halton. Truck percentages were calculated from the existing turning movement counts (TMC) provided by Halton Region.

Future traffic data for Street A (Carding Mill Trail) and Street B applicable to year 2030 was taken from the Traffic Impact Study prepared by CGH Transportation, dated October 2021. A multiplication factor of 10 was applied to convert the PM peak hour counts to the 24-hour volumes. A growth rate of 2% compounded annually was applied to obtain the future (year 2031) traffic volumes. This growth rate is suggested by the traffic impact study. Truck percentage was taken from the traffic impact study. Medium/heavy truck split was assumed to 60% / 40% of the total trucks.

Traffic volumes on the other internal streets within the development and other surrounding roadways are anticipated to be minor and no significant noise impact is expected.

2.2 STATIONARY SOURCES

There are no stationary noise sources that are expected to have a significant impact at the subject site based on a visit to the area on September 3, 2020.

3.0 ENVIRONMENTAL NOISE GUIDELINES

The applicable noise guidelines for new residential development are those in MECP Publication NPC-300, “Environmental Noise Guideline, Stationary, and Transportation Sources – Approval and Planning”.

The environmental noise guidelines of the MECP, as provided in Publication NPC-300, are discussed briefly below and summarized in Appendix B.

3.1 TRANSPORTATION SOURCE NOISE GUIDELINES

3.1.1 Architectural Elements

In the daytime (0700 to 2300), the indoor criterion for road noise is $L_{eq\ Day}^{(1)}$ of 45 dBA for sensitive spaces such as living/dining rooms, dens and bedrooms. At night, the indoor criterion for road noise is $L_{eq\ Night}^{(2)}$ of 45 dBA for sensitive spaces such as living/dining rooms and dens and 40 dBA for bedrooms. The architectural design of the building envelope (walls, windows, etc.) must provide adequate sound isolation to achieve these indoor sound level limits, based on the applicable outdoor sound level on the facades.

3.1.2 Ventilation

In accordance with the MECP noise guideline for road traffic sources, if the daytime sound level, $L_{eq\ Day}$, at the exterior face of a noise sensitive window is greater than 65 dBA, means must be provided so that windows can be kept closed for noise control purposes and central air conditioning is required. For daytime sound levels between 56 dBA and 65 dBA inclusive, there need only be the provision for adding air conditioning at a later date. A warning clause advising the occupant of the potential interference with some activities is also required. At nighttime, air conditioning would be required when the sound level exceeds 60 dBA ($L_{eq\ Night}$) at a noise sensitive window (provision for adding air conditioning is required when greater than 50 dBA).

3.1.3 Outdoors

For outdoor amenity areas (“Outdoor Living Areas” – OLAs), the guideline is $L_{eq\ Day}$ of 55 dBA, with an excess not exceeding 5 dBA considered acceptable if it is technically not practicable to achieve the 55 dBA objective, providing warning clauses are registered on title. Note that for road traffic sources, a balcony is not considered an OLA, unless it is the only OLA for the occupant, and it is:

- at least 4 m in depth; and
- unenclosed.

(1) 16-hour energy equivalent sound level (0700-2300 hours).

(2) 8-hour energy equivalent sound level (2300-0700 hours).

3.2 REGION OF HALTON

The Noise Abatement Guidelines for the Region of Halton specifies the requirement for the height of noise abatement walls to be a minimum 2.4 m to a maximum of 3.5 m, as measured from the barrier base elevation.

4.0 NOISE IMPACT ASSESSMENT

4.1 ANALYSIS METHOD

Using the road traffic data in Table 1, the sound levels, in terms of $L_{eq\ Day}$ and $L_{eq\ Night}$, were determined using STAMSON V5.04 – ORNAMENT, the computerized road traffic noise prediction models of the MOE.

The daytime and nighttime sound levels at the building facades were taken at 7.5 m above grade for the townhouses and at 4.5 m above grade for the detached dwellings representing the top floor plane of windows.

At the rear yard OLAs, sound levels were assessed at a height of 1.5 m above grade and 3 m from the midpoint of the rear façade for the townhouses and detached dwellings. For the lane based townhomes, the OLA sound level was taken at 1.5 m above the garage.

4.2 SOUND LEVEL PREDICTIONS

4.2.1 374 Burnhamthorpe

The highest daytime/nighttime sound levels of 59 dBA/52 dBA is predicted to occur at the north façade of the Block 337 exposed to William Halton Parkway and Old Burnhamthorpe Road. The highest unmitigated daytime OLA sound level of 50 dBA is predicted to occur at the Block 337 OLA.

Inherent screening of each building face due to its orientation to the noise source was considered. To be conservative, screening from the future development within the proposed development and the vicinity was not taken into account in the assessment.

Table 2 summarizes the predicted sound levels at specific locations in the subdivision.

4.2.2 210 Burnhamthorpe

The highest unmitigated daytime/nighttime sound levels of 59 dBA/ 52 dBA is predicted to occur at the north façade of the townhouse Block 339, closest to Old Burnhamthorpe road. The highest unmitigated daytime OLA level of 47 dBA is predicted to occur at the OLA of same townhouse dwelling.

Inherent screening of each building face due to its orientation to the noise source was considered. Screening by the proposed development at 374 Burnhamthorpe site was also considered.

Table 2 summarizes the predicted sound levels outdoors at specific locations.

A sample sound level calculation is included in Appendix C.

4.3 NOISE ABATEMENT REQUIREMENTS

The noise control measures can generally be classified into two categories which are interrelated, but which can be treated separately for the most part:

- a) Architectural elements to achieve acceptable indoor noise guidelines for transportation sources; and
- b) Design features to protect the OLA's.

Noise abatement requirements are summarized in Table 3 and the notes to Table 3.

4.3.1 Indoors

The indoor sound level guidelines can be achieved by using appropriate construction for exterior walls, windows, and doors. In determining the worst-case architectural requirements for the townhouse and single-detached units, exterior wall and window areas were assumed to be 80% and 30%, respectively, of the associated floor area at a corner room with facades exposed directly or at an angle to the road traffic noise source, for both living/dining areas and sleeping quarters.

210 Burnhamthorpe

- Provision for adding air conditioning at a later date is required for all townhouses in Blocks 337 and 338, exposed to Old Burnhamthorpe Road and William Halton Parkway;
- Provision for adding air conditioning at a later date is required for all townhouses in Blocks 345, 349, 350, 351, and 352 which are at the intersection of Streets A and B; and
- For all townhouses and detached dwellings, exterior wall and window construction meeting the minimum non-acoustical requirement of the OBC is adequate to meet the indoor sound level criteria of the MECP noise guidelines.

374 Burnhamthorpe

- Provision for adding air conditioning at a later date is required for all townhomes in Block 339, closest to Old Burnhamthorpe Road; and
- For all townhouse dwellings, exterior wall and window construction meeting the minimum non-acoustical requirement of the OBC is adequate to meet the indoor sound level criteria of the MECP noise guidelines.

Note, the window frames themselves must also be designed to ensure that the overall sound isolation performance for the entire window unit meets the sound isolation requirement. This must be confirmed by the window manufacturer through the submission of acoustical test data.

The final sound isolation requirements should be reviewed when architectural plans are developed. Wall and window constructions should also be reviewed at this point to ensure that they will meet the required sound isolation performance.

4.3.2 Outdoors

374 Burnhamthorpe

The unmitigated daytime OLA sound levels at all dwelling units are expected to be below the 55 dBA design objective recommended by MECP guidelines. Sound barriers are therefore not required for noise control purposes.

210 Burnhamthorpe

The unmitigated daytime OLA sound levels at all dwelling units are expected to be below the 55 dBA design objective recommended by MECP guidelines. Sound barriers are therefore not required for noise control purposes.

4.3.3 Warning Clauses

Warning clauses are a tool to inform prospective owners/occupants of potential annoyance due to existing noise sources. Where the guideline sound level limits are exceeded, appropriate warning clauses should be registered on title or included in the development agreement that is registered on title. The warning clauses should also be included in agreements of Offers of Purchase and Sale and lease/rental agreements to make future occupants aware of the potential noise situation.

Table 3 and the notes to Table 3 summarize the warning clauses for the site.

5.0 CONCLUSIONS

With the incorporation of the recommended noise mitigation measures, the indoor and outdoor transportation noise guidelines can be met. Future occupants will be made aware of the potential noise situation through warning clauses, as per MECP guidelines.

The approvals and administrative procedures are available to ensure that the noise requirements are implemented.

6.0 REFERENCES

- 1) PC STAMSON 5.04, “Computer Program for Road Traffic Noise Assessment”, Ontario Ministry of the Environment.
- 2) Building Practice Note No. 56: “Controlling Sound Transmission into Buildings”, by J. D. Quirt, Division of Building Research, National Council of Canada, September 1985.
- 3) “Sound Level Limits for Stationary Sources in Class 1 and 2 Areas (URBAN)”, Ontario Ministry of the Environment, Publication NPC-205, October 1995.
- 4) “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning”, Ontario Ministry of the Environment, Publication NPC-300, August 2013
- 5) “Noise Abatement Guidelines – Regional Official Plan Guidelines”, Halton Region, 2009.

TABLE 1 ROAD TRAFFIC DATA

Roadway	Year	24-hour Volume ⁽¹⁾	% Trucks		Day/Night (%)	Speed Limit (kph)
			Medium	Heavy		
William Halton Parkway ⁽²⁾	Ultimate	36000	0.7	1.6	90/10	60
Nayagawa Blvd ⁽²⁾	Ultimate	36000	0.8	1.5	90/10	60
Old Burnhamthorpe Road ⁽³⁾	2030	5201	1.2	0.8	90/10	60
Street A ⁽³⁾	2030	1591	1.2	0.8	90/10	50
Street B ⁽³⁾	2030	1561	1.2	0.8	90/10	50

Notes:

- (1) AADT – Annual Average Daily Traffic.
- (2) Obtained from the Region of Halton.
- (3) Taken from the Traffic Impact Study prepared by CGH Transportation dated March 2021.

TABLE 2 UNMITIGATED SOUND LEVELS OUTDOORS⁽¹⁾

Location	Source	Distance (m) ⁽²⁾	L _{eq} Day (dBA)	L _{eq} Night (dBA)
374 Burnhamthorpe				
R1 Block 337 Lot 1	William Halton Parkway	84	57	51
	Old Burnhamthorpe	29	55	48
	Total	-	59	52
R2 Block 341 Lot 1	William Halton Parkway	174	45	39
	Total	-	45	39
R3 Block 336 Lot 1	William Halton Parkway	123	55	48
	Old Burnhamthorpe	164	36	29
	Total	-	55	48
R4 Block 317 Lot 1	William Halton Parkway	120	55	48
	Old Burnhamthorpe	313	27	20
	Total	-	55	48
R5 Block 314 Lot 1	William Halton Parkway	121	55	48
	Old Burnhamthorpe	440	21	15
	Neyagawa Blvd	413	42	35
	Total	-	55	49
R6 Block 1	William Halton Parkway	363	45	38
	Neyagawa Blvd	374	43	37
	Total	-	47	41
R7 Block 352 Lot 1	Street A	18	52	45
	Street B	15	54	43
	Total	-	56	47
OLA1 Block 337 Lot 1	William Halton Parkway	102	50	-
	Total	-	50	-
OLA2 Block 341 Lot 1	William Halton Parkway	168	43	-
	Total	-	43	-
OLA3 Block 314 Lot 1	Neyagawa Blvd	416	39	-
	Total	-	39	-
OLA4 Block 1	William Halton Parkway	363	43	-
	Neyagawa Blvd	369	42	-
	Total	-	46	-

.../cont'd

TABLE 2 UNMITIGATED SOUND LEVELS OUTDOORS⁽¹⁾ (continued)

Location	Source	Distance (m) ⁽²⁾	Leq Day (dBA)	Leq Night (dBA)
210 Burnhamthorpe				
R8 Block 339 Lot 6	William Halton Parkway	144	52	45
	Old Burnhamthorpe	20	58	51
	Total	-	59	52
R9 Block 340 Lot 8	Old Burnhamthorpe	58	46	-
	Total	-	46	-
OLA5 Block 339 Lot 6	Old Burnhamthorpe	43	47	-
	Total	-	47	-
OLA6 Block 340 Lot 8	Old Burnhamthorpe	55	46	-
	Total	-	46	-

Notes:

- (1) Daytime/nighttime receptors were taken at the top floor windows. OLA receptors were taken at 1.5 m above grade.
- (2) Distance indicated is from the centreline of the noise sources to façade or OLA.
- (3) Daytime/nighttime receptors were taken at the top floor windows. OLA receptors were taken at 1.5 m above grade.
- (4) Distance indicated is from the centreline of the noise sources to façade or OLA.

TABLE 3 MINIMUM NOISE ABATEMENT MEASURES

Location	Air Conditioning ⁽¹⁾	Exterior Wall ⁽²⁾	Window STC Rating ⁽³⁾	Sound Barrier ⁽⁴⁾	Warning Clauses ⁽⁵⁾
374 Burnhamthorpe					
Townhouse Blocks 337, 338, 345, 349, 350, 351, and 352	Provision for Adding	OBC	OBC	-	A + B
All remaining dwellings	No special acoustical requirements				
210 Burnhamthorpe					
Townhouse Block 339	Provision for adding	OBC	OBC	-	A + B
All remaining dwellings	No special acoustical requirements				

Notes:

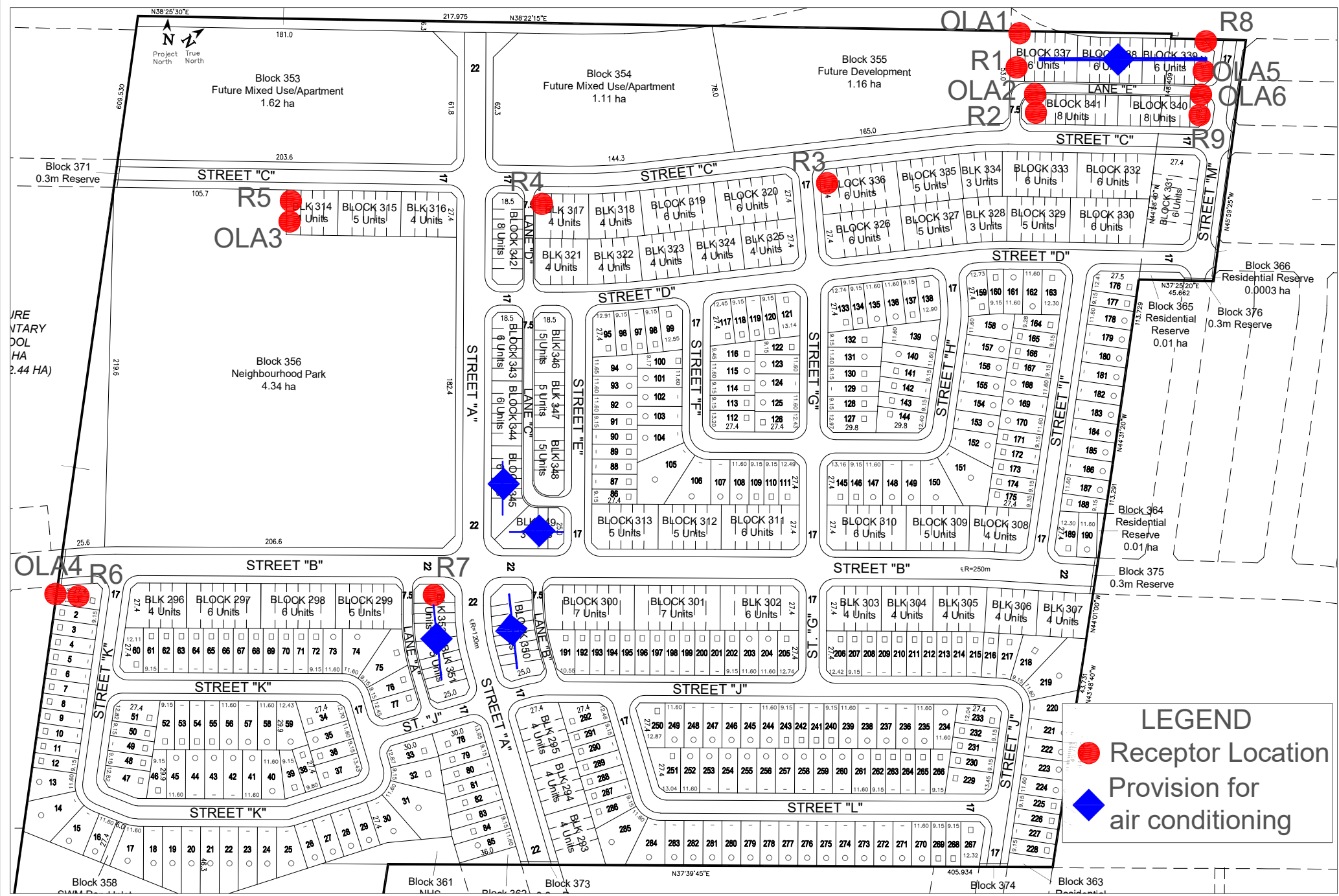
- (1) Where methods must be provided to allow windows to remain closed for noise control purposes, a commonly used technique is that of air conditioning.
- (2) STC - Sound Transmission Class Rating (Reference ASTM-E413). Analyses were based upon the assumption that wall and window areas are as indicated in Section 4.3.1 of text. Requirements should be checked once floor plans have been finalized and exterior wall construction details are defined.
- (3) STC values are based upon the assumption that all wall and window areas are as indicated in Section 4.3.1 of text. Requirements should be checked once floor plans have been finalized and exterior wall construction details are defined.
- (4) If provided, sound barriers must be of solid construction with no gaps, cracks or holes, and must meet a minimum surface density of 20 kg/m². Suitable material can include wood, concrete metal sandwich panel, glazing or a combination of these.
- (5) The warning clauses to be registered on title and be included in Offers of Purchase and Sale for designated lots:
 - A. "Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic may on occasions 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."
 - B. 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."
- (6) All exterior doors shall be fully weather-stripped.



Title KEY PLAN
 Project Name 210 & 374 Burnhamthorpe Road

Date 2021-09-28
 Project No. 120-0270

Figure 1



APPENDIX A

ROAD TRAFFIC DATA

Sam Du

From: Krusto, Matt <Matt.Krusto@halton.ca>
Sent: July 22, 2020 9:56 AM
To: Vivek Shankar
Subject: RE: Road Traffic Data Request, 1200270.000 - Burnhamthorpe Rd W, 210 & 374-Noise

Hi Vivek,

Please use the following for the future traffic assumptions (volume assumptions are 4 lane near/at capacity scenarios):

-William Halton Parkway (Burnhamthorpe Road): 36,000, 4% medium, 2% heavy, 4 lanes, ultimate ROW is 35m, posted speed 60 km/h, day/night split is usually 90/10 (document in the report is recommending something else), grade – use existing grade (William Halton Parkway (new road) will be on the existing Burnhamthorpe Road alignment/grade for the section east of Neyagawa Boulevard (general area of the development lands). This will have to be determined in the field.

-Neyagawa Boulevard: 36,000, 4% medium trucks, 2% heavy trucks, 4 lanes, ultimate ROW is 42m, posted speed 60 km/h, day/night split is usually 90/10 (document in the report is recommending something else), grade – use existing for Neyagawa Boulevard (to be determined in the field).

For existing traffic data, please send your request to our Road Operations group at trafficdatarequests@halton.ca

I hope this helps.

Thanks,

Matt

Matt Krusto

Transportation Planning Coordinator

Infrastructure Planning & Policy

Public Works

Halton Region

905-825-6000, ext. 7225 | 1-866-442-5866



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From: Vivek Shankar <vivek@valcoustics.com>

Sent: Tuesday, July 21, 2020 8:33 AM

Burnhamthorpe Rd W @ Neyagawa Blvd

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:45:00

To: 8:45:00

Municipality: Halton Region
Site #: 0000003297
Intersection: Neyagawa Blvd & Burnhamthorpe R
TFR File #: 3
Count date: 4-Dec-2019

Weather conditions:
Overcast/Wet
Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Neyagawa Blvd runs N/S

North Leg Total: 897

North Entering: 317

North Peds: 0

Peds Cross: \times

Heavys	2	7	2	11
Trucks	0	4	2	6
Cars	56	216	28	300
Totals	58	227	32	



Heavys 2

Trucks 1

Cars 577

Totals 580

East Leg Total: 684

East Entering: 306

East Peds: 0

Peds Cross: \times

Heavys	Trucks	Cars	Totals
16	1	294	311

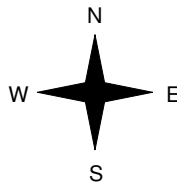


Burnhamthorpe Rd W

Heavys	Trucks	Cars	Totals
1	0	38	39
4	0	61	65
9	0	121	130
14	0	220	



Neyagawa Blvd



Cars	Trucks	Heavys	Totals
12	0	0	12
76	0	6	82
212	0	0	212
300	0	6	

Burnhamthorpe Rd W



Cars	Trucks	Heavys	Totals
368	3	7	378

Peds Cross: \times

West Peds: 0

West Entering: 234

West Leg Total: 545

Cars	549	Cars	162	527	279	968
Trucks	4	Trucks	1	1	1	3
Heavys	16	Heavys	8	1	1	10
Totals	569	Totals	171	529	281	



Peds Cross: \times

South Peds: 0

South Entering: 981

South Leg Total: 1550

Comments

Burnhamthorpe Rd W @ Neyagawa Blvd

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 14:00:00

One Hour Peak

From: 11:30:00

To: 12:30:00

Municipality: Halton Region
Site #: 0000003297
Intersection: Neyagawa Blvd & Burnhamthorpe R
TFR File #: 3
Count date: 4-Dec-2019

Weather conditions:
Overcast/Wet
Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Neyagawa Blvd runs N/S

North Leg Total: 209

North Entering: 93

North Peds: 0

Peds Cross: \times

Heavys	0	5	1	6
Trucks	0	3	0	3
Cars	5	70	9	84
Totals	5	78	10	



Heavys 1

Trucks 3

Cars 112

Totals 116

East Leg Total: 288

East Entering: 137

East Peds: 0

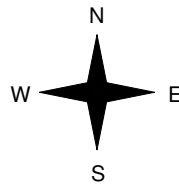
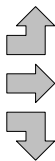
Peds Cross: \times

Heavys	Trucks	Cars	Totals
1	2	91	94



Burnhamthorpe Rd W

Heavys	Trucks	Cars	Totals
0	0	3	3
0	0	23	23
1	1	63	65
1	1	89	



Neyagawa Blvd



Cars	Trucks	Heavys	Totals
7	3	0	10
22	1	0	23
102	0	2	104
131	4	2	

Burnhamthorpe Rd W



Cars	Trucks	Heavys	Totals
145	3	3	151

Peds Cross: \times

West Peds: 1

West Entering: 91

West Leg Total: 185

Cars	235	Cars	64	102	113	279
Trucks	4	Trucks	1	0	3	4
Heavys	8	Heavys	1	1	2	4
Totals	247	Totals	66	103	118	



Peds Cross: \times

South Peds: 0

South Entering: 287

South Leg Total: 534

Comments

Burnhamthorpe Rd W @ Neyagawa Blvd

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 16:45:00

To: 17:45:00

Municipality: Halton Region
Site #: 0000003297
Intersection: Neyagawa Blvd & Burnhamthorpe R
TFR File #: 3
Count date: 4-Dec-2019

Weather conditions:
Overcast/Wet
Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Neyagawa Blvd runs N/S

North Leg Total: 671

North Entering: 446

North Peds: 0

Peds Cross: \times

Heavys	0	1	1	2
Trucks	0	0	0	0
Cars	9	419	16	444
Totals	9	420	17	



Heavys 4

Trucks 4

Cars 217

Totals 225

East Leg Total: 618

East Entering: 336

East Peds: 0

Peds Cross: \times

Heavys	1	Trucks	1	Cars	72	Totals	74
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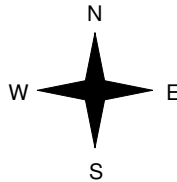


Burnhamthorpe Rd W

Heavys	0	Trucks	0	Cars	3	Totals	3
1	0	31	32				
0	0	40	40				
1	0	74					



Neyagawa Blvd



Cars	32	Trucks	0	Heavys	3	Totals	35
24	0	1	25				
276	0	0	276				
332	0	4					

Burnhamthorpe Rd W



Cars	277	Trucks	2	Heavys	3	Totals	282
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Peds Cross: \times

West Peds: 0

West Entering: 75

West Leg Total: 149

Cars	735	Cars	39	182	230	451
Trucks	0	Trucks	1	4	2	7
Heavys	1	Heavys	0	1	1	2
Totals	736	Totals	40	187	233	



Peds Cross: \times

South Peds: 0

South Entering: 460

South Leg Total: 1196

Comments

Burnhamthorpe Rd W @ Neyagawa Blvd

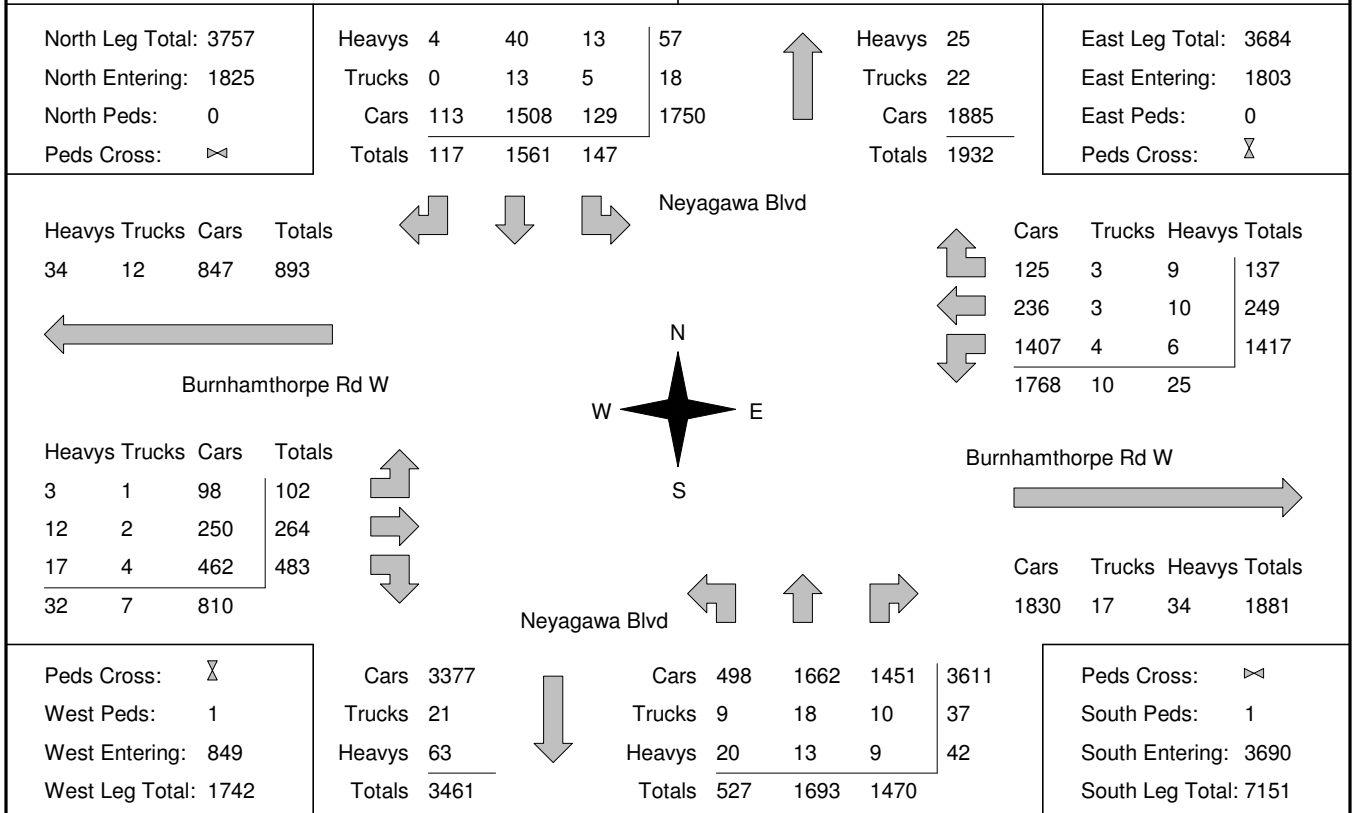
Total Count Diagram

Municipality: Halton Region
Site #: 0000003297
Intersection: Neyagawa Blvd & Burnhamthorpe R
TFR File #: 3
Count date: 4-Dec-2019

Weather conditions:
 Overcast/Wet
Person(s) who counted:
 Cam

**** Signalized Intersection ****

Major Road: Neyagawa Blvd runs N/S



Comments

APPENDIX B

ENVIRONMENTAL NOISE GUIDELINES

APPENDIX B
ENVIRONMENTAL NOISE GUIDELINES
MINISTRY OF THE ENVIRONMENT AND CLIMATE CHANGE (MOE)

Reference: MOE Publication NPC-300, October 2013: “*Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning*”.

SPACE	SOURCE	TIME PERIOD	CRITERION
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	Road	07:00 to 23:00	45 dBA
	Rail	07:00 to 23:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 5
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	Road	23:00 to 07:00	45 dBA
	Rail	23:00 to 07:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 5
Sleeping quarters	Road	07:00 to 23:00	45 dBA
	Rail	07:00 to 23:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 0
Sleeping quarters	Road	23:00 to 07:00	40 dBA
	Rail	23:00 to 07:00	35 dBA
	Aircraft	24-hour period	NEF/NEP 0
Outdoor Living Areas	Road and Rail	07:00 to 23:00	55 dBA
Outdoor Point of Reception	Aircraft	24-hour period	NEF/NEP 30 [#]
	Stationary Source		
	Class 1 Area	07:00 to 19:00 ⁽¹⁾	50 ⁺ dBA
		19:00 to 23:00 ⁽¹⁾	50 ⁺ dBA
	Class 2 Area	07:00 to 19:00 ⁽²⁾	50 ⁺ dBA
		19:00 to 23:00 ⁽²⁾	45 ⁺ dBA
	Class 3 Area	07:00 to 19:00 ⁽³⁾	45 ⁺ dBA
		19:00 to 23:00 ⁽³⁾	40 ⁺ dBA
	Class 4 Area	07:00 to 19:00 ⁽⁴⁾	55 ⁺ dBA
		19:00 to 23:00 ⁽⁴⁾	55 ⁺ dBA

.../cont'd

SPACE	SOURCE	TIME PERIOD	CRITERION
Plane of a Window of Noise Sensitive Spaces	Stationary Source Class 1 Area	07:00 to 19:00 ⁽¹⁾	50 ⁺ dBA
		19:00 to 23:00 ⁽¹⁾	50 ⁺ dBA
		23:00 to 07:00 ⁽¹⁾	45 ⁺ dBA
	Class 2 Area	07:00 to 19:00 ⁽²⁾	50 ⁺ dBA
		19:00 to 23:00 ⁽²⁾	50 ⁺ dBA
		23:00 to 07:00 ⁽²⁾	45 ⁺ dBA
	Class 3 Area	07:00 to 19:00 ⁽³⁾	45 ⁺ dBA
		19:00 to 23:00 ⁽³⁾	45 ⁺ dBA
		23:00 to 07:00 ⁽³⁾	40 ⁺ dBA
	Class 4 Area	07:00 to 19:00 ⁽⁴⁾	60 ⁺ dBA
		19:00 to 23:00 ⁽⁴⁾	60 ⁺ dBA
		23:00 to 07:00 ⁽⁴⁾	55 ⁺ dBA

- # may not apply to in-fill or re-development.
 * or the minimum hourly background sound exposure $L_{eq(1)}$, due to road traffic, if higher.
 (1) Class 1 Area: Urban.
 (2) Class 2 Area: Urban during day; rural-like evening and night.
 (3) Class 3 Area: Rural.
 (4) Class 4 Area: Subject to land use planning authority's approval.

Reference: MOE Publication ISBN 0-7729-2804-5, 1987: "Environmental Noise Assessment in Land-Use Planning".

EXCESS ABOVE RECOMMENDED SOUND LEVEL LIMITS (dBA)	CHANGE IN SUBJECTIVE LOUDNESS ABOVE	MAGNITUDE OF THE NOISE PROBLEM	NOISE CONTROL MEASURES (OR ACTION TO BE TAKEN)
No excess (<55 dBA)	—	No expected noise problem	None
1 to 5 inclusive (56 to 60 dBA)	Noticeably louder	Slight noise impact	If no physical measures are taken, then prospective purchasers or tenants should be made aware by suitable warning clauses.
6 to 10 inclusive (61 - 65 dBA)	Almost twice as loud	Definite noise impact	Recommended.
11 to 15 inclusive (66 - 70 dBA)	Almost three times as loud	Serious noise impact	Strongly Recommended.
16 and over (>70 dBA)	Almost four times as loud	Very serious noise impact	Strongly Recommended (may be mandatory).

APPENDIX C

SAMPLE SOUND LEVEL CALCULATION

STAMSON 5.04 NORMAL REPORT Date: 28-09-2021 11:53:28
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

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

Road data, segment # 1: WH Pkwy (day/night)

Car traffic volume : 31655/3517 veh/TimePeriod *
Medium truck volume : 227/25 veh/TimePeriod *
Heavy truck volume : 518/58 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): 36000
Percentage of Annual Growth : 2.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.70
Heavy Truck % of Total Volume : 1.60
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: WH Pkwy (day/night)

Angle1 Angle2 : -90.00 deg 51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 84.00 / 84.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Old BHT (day/night)

Car traffic volume : 4679/520 veh/TimePeriod *
Medium truck volume : 57/6 veh/TimePeriod *
Heavy truck volume : 38/4 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): 5201
Percentage of Annual Growth : 2.00
Number of Years of Growth : 1.00
Medium Truck % of Total Volume : 1.20
Heavy Truck % of Total Volume : 0.80
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Old BHT (day/night)

Angle1 Angle2 : -46.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 29.00 / 29.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: WH Pkwy (day)

Source height = 1.12 m

ROAD (0.00 + 57.03 + 0.00) = 57.03 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.49	70.07	0.00	-11.16	-1.89	0.00	0.00	0.00	57.03

Segment Leq : 57.03 dBA

Results segment # 2: Old BHT (day)

Source height = 0.94 m

ROAD (0.00 + 54.59 + 0.00) = 54.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-46	90	0.50	60.93	0.00	-4.29	-2.05	0.00	0.00	0.00	54.59

Segment Leq : 54.59 dBA

Total Leq All Segments: 58.99 dBA

Results segment # 1: WH Pkwy (night)

Source height = 1.13 m

ROAD (0.00 + 50.51 + 0.00) = 50.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.49	63.55	0.00	-11.16	-1.89	0.00	0.00	0.00	50.51

Segment Leq : 50.51 dBA

Results segment # 2: Old BHT (night)

Source height = 0.93 m

ROAD (0.00 + 47.97 + 0.00) = 47.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-46	90	0.50	54.31	0.00	-4.29	-2.05	0.00	0.00	0.00	47.97

Segment Leq : 47.97 dBA

Total Leq All Segments: 52.43 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.99
(NIGHT): 52.43