

# **Environmental Noise Feasibility Study**

## **17/19 Ann Street, 84 & 90 High Street East and Part of 91 Park Street East**

### **Proposed Mixed-Use Development**

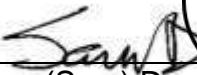
Ann Street and High Street  
City of Mississauga

December 14, 2021  
Project: 121-0145

Prepared for

**10 West GO GP Inc**



  
Guangsheng (Sam) Du, M.Sc., P.Eng.



## Version History

Version #	Date	Comments
1.0	December 16, 2021	Final – Issued to Client

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# **Environmental Noise Feasibility Study**

## **17/19 Ann Street, 84 & 90 High Street East and Part of 91 Park Street East**

### **Proposed Mixed-Use Development**

Ann Street and High Street  
City of Mississauga

#### **EXECUTIVE SUMMARY**

Valcoustics Canada Ltd. (VCL) was retained to prepare an Environmental Noise Feasibility Study to support the Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) applications for a proposed mixed-use development at 17/19 Ann Street, 84 & 90 High Street East and Part of 91 Park Street East in Mississauga, Ontario. The project will consist of one 22-storey, approximately 359-unit residential building with ground floor retail, up to five levels of underground parking and a mechanical penthouse.

The main noise sources with potential to impact the proposed development are road traffic on Hurontario Road and Lakeshore Road East as well as rail traffic on the Canadian National Railway (CNR) Oakville Subdivision. The sound levels on site have been determined and compared with the applicable Ministry of Environment, Conservation and Parks (MECP) noise guideline limits to determine the need for noise mitigation.

To meet the applicable transportation noise source guideline limits:

- All residential units in the proposed development require mandatory air conditioning;
- Exterior walls meeting a minimum STC of 54 (e.g., brick veneer) and windows meeting STC 39 are required to meet the indoor sound level criteria of the MECP noise guidelines; and

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**

VCL was retained to prepare an Environmental Noise Feasibility Study in support of the Official Plan Amendment and Zoning By-law Amendment application submission to the City of Mississauga. 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 proposed development is located at 17/19 Ann Street, 84 & 90 High Street East and Part of 91 Park Street East in the City of Mississauga. The site is bounded by:

- Park Street, with a parking lot and railway line beyond, to the North;
- Hurontario Street, with residential and commercial buildings beyond, to the East;
- High Street with residential buildings and Lakeshore Road beyond, to the South; and
- Ann Street, with residential and commercial buildings beyond, to the West.

A Key Plan is included as Figure 1

This report is based on the drawing set prepared by CORE Architects received in an email on November 2, 2021. The Site Plan is included as Figure 2.

## 1.3 THE PROPOSED DEVELOPMENT

The project will consist of one 22-storey, approximately 359-unit residential building with ground floor retail, up to five levels of underground parking and a mechanical penthouse. Two heritage homes at 84 and 90 High Street will be maintained. Outdoor living areas (OLA) will be provided at grade and on levels 2 and 16 rooftop terraces along the east and south sides of the proposed building.

## 2.0 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 A.

### 2.1 TRANSPORTATION SOURCE NOISE GUIDELINES

#### 2.1.1 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

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

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

provide adequate sound isolation to achieve these indoor sound level limits, based on the applicable outdoor sound level on the facades.

### **2.1.2 Ventilation**

In accordance with the MECP noise guideline for road traffic sources, if the daytime sound level,  $L_{eq \text{ Day}}$ , 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 ( $L_{eq \text{ Night}}$ ) at a noise sensitive window (provision for adding air conditioning is required when greater than 50 dBA).

### **2.1.3 Outdoors**

For outdoor amenity areas (“Outdoor Living Areas” – OLAs), the guideline is  $L_{eq \text{ Day}}$  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.

## **2.2 REGION OF PEEL GUIDELINES**

The Region of Peel guidelines are essentially the same as the MOE guidelines except that the nighttime level for triggering the air conditioning requirement is 1 dBA more stringent (i.e., lower) than the levels specified by the MOE – i.e., mandatory air conditioning for nighttime sound levels of 60 dBA or greater, and the provision for adding air conditioning for levels between 51 to 59 dBA inclusive.

## **2.3 FEDERATION OF CANADIAN MUNICIPALITIES/RAILWAY ASSOCIATION OF CANADA**

The standard mitigation requirements of the Federation of Canadian Municipalities and the Railway Association of Canada (FCM/RAC) suggest a dwelling setback of 30 m for a residential development adjacent to a principal main line, if in combination with a safety berm at least 2.5 m above the property line grade (at a 2.5:1 slope). A 5.5 m high sound barrier is also suggested (e.g., 3.0 m high acoustic fence atop a 2.5 m high safety berm). Due to the distance setback of the site and intervening development, the safety berm and acoustic fence would not be expected as a requirement.

Warning clauses specific to the railway for all dwellings within 300 m of the right-of-way are recommended.

Aside from “standard” requirements regarding the setback of dwellings and safety berm/sound barrier configuration, the sound level design objectives of FCM/RAC are similar to those of the MECP.

### **3.0 NOISE SOURCES**

#### **3.1 TRANSPORTATION SOURCES**

The noise sources with potential to impact the proposed development are road traffic on Hurontario Road and Lakeshore Road East as well as railway traffic on the CN Oakville Subdivision.

Ultimate road traffic data for Hurontario Road and Lakeshore Road East was obtained from the City of Mississauga. All other nearby roadways are expected to have low traffic volumes and hence, not expected to have a significant noise impact on the proposed development.

Way Freight, Passenger CN Oakville Subdivision were obtained from CN. The future rail volumes were forecast by compounding existing volumes by 2.5% annually for 10-years.

Commuter GO rail data for the GO Transit Oakville Subdivision was obtained from Metrolinx. Note, Metrolinx mentioned that at high speed, the noise level and spectrum of electric train is expected to be very similar to those of equivalent diesel trains. Thus, as suggested by Metrolinx, the electric trains were modelled as diesel trains.

The road and rail traffic data is summarized in Tables 1A and 1B. Correspondence is included as Appendix B.

#### **3.2 STATIONARY SOURCES**

The main stationary sources in this location are expected to be rooftop HVAC units at neighbouring buildings. Based on observations during the site visit, due to relatively high background noise from Hurontario Road and the railway line, these sources are not expected to create significant noise impact on the proposed development and therefore are not considered further in this assessment.

### **4.0 NOISE IMPACT ASSESSMENT**

#### **4.1 ANALYSIS METHOD**

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

The daytime and nighttime sound levels at the building facades were assessed at the top floor windows, the worst-case location. The daytime sound levels at the OLA were assessed 1.5 m above the rooftop terraces.



## 4.2 SOUND LEVEL PREDICTION

The highest daytime/nighttime unmitigated sound levels of 73 dBA/71 dBA are predicted to occur at the top floor northeast corner of the north Facade of the building. The highest unmitigated daytime OLA sound level of 60 dBA is predicted to occur at the 2<sup>nd</sup> floor rooftop terrace.

Inherent screening of each building face due to its orientation to the noise source was taken into account for this assessment.

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

The sound level calculations for all the assessment locations are 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 OLAs.

Noise abatement requirements are summarised in Table 3 and 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 apartment, exterior wall and window areas were assumed to be 20% and 80%, 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.

#### 4.3.1.1 Architectural requirements

For the apartment building, exterior walls meeting a minimum STC of 54 and windows meeting STC 39 are required 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.

#### 4.3.1.2 Ventilation requirements

The apartment building requires mandatory air conditioning to be installed in all units to allow the window to be remain for noise control purposes.

### 4.3.2 Outdoors

The unmitigated daytime sound levels of 60 dBA, 60 dBA and 54 dBA occur at the ground level, 2<sup>nd</sup> floor and the 16<sup>th</sup> floor rooftop terraces (OLAs), respectively. This is within the maximum permitted by the MECP noise guidelines, provided a warning clause is registered on title to make future occupants aware of the potential noise situation. Thus, sound barriers are not considered mandatory for noise control purposes.

Other balconies and private terraces are expected to be below 4 m in depth and hence, not considered OLAs 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 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.

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**TABLE 1A ROAD TRAFFIC DATA**

Roadway <sup>(1)</sup>	Year	24-hour Volume <sup>(2)</sup>	% Trucks		Day/Night (%)	Speed Limit (kph)
			Medium	Heavy		
Hurontario St	Ultimate	21300	3.85	3.15	90/10	50
Lakeshore E	Ultimate	36300	2.75	2.25	90/10	40

Notes:

- (1) Obtained from the City of Mississauga  
(2) AADT – Annual Average Daily Traffic

**TABLE 1B RAIL TRAFFIC DATA**

Subdivision	Period	Train Type	Maximum # of Trains	Maximum # of Cars	Maximum # of Locomotives per train	Maximum Speed (kph)
Oakville Subdivision	Daytime (0700 to 2300)	Way Freight <sup>(1)</sup>	0	25	4	100
		Passenger <sup>(1)</sup>	13	10	2	150
		GO1 <sup>(2)</sup>	161	12	1	153
		GO2 <sup>(2)</sup>	53	12	2	153
	Nighttime (2300 to 0700)	Way Freight <sup>(1)</sup>	5	25	4	100
		Passenger <sup>(1)</sup>	2	10	2	150
		GO1 <sup>(2)</sup>	29	12	1	153
		GO2 <sup>(2)</sup>	12	12	2	153

Notes:

- (1) Rail traffic volumes and Maximum speed applicable to year 2020 obtained from CN.  
(2) Rail traffic volumes and maximum speed applicable to year 2021 obtained from Metrolinx.  
(3) Values in parenthesis have been extrapolated to the year 2031 using a growth rate of 2.5%, compounded annually.

**TABLE 2 PREDICTED UNMITIGATED SOUND LEVELS<sup>(1)</sup>**

Location	Source	Distance (m) <sup>(2)</sup>	L <sub>eq</sub> Day (dBA)	L <sub>eq</sub> Night (dBA)
R1 Level 22 NE Corner N Facade	Hurontario St SB	55	57	50
	Hurontario St NB	70	56	49
	CN Rail	159	73	70
	<b>Total</b>	<b>0</b>	<b>73</b>	<b>70</b>
R2 Level 22 NE Corner E Facade	Hurontario St SB	55	60	53
	Hurontario St NB	70	59	52
	CN Rail	159	70	67
	<b>Total</b>	<b>-</b>	<b>71</b>	<b>67</b>
R3 Level 22 SE Corner E Facade	Hurontario St SB	55	60	53
	Hurontario St NB	70	59	52
	Lakeshore WB	180	51	44
	Lakeshore EB	196	50	44
	<b>Total</b>	<b>-</b>	<b>63</b>	<b>56</b>
R4 Level 22 SE Corner S Facade	Hurontario St SB	55	54	47
	Hurontario St NB	70	53	46
	Lakeshore WB	180	54	47
	Lakeshore EB	196	53	47
	<b>Total</b>	<b>-</b>	<b>59</b>	<b>53</b>
R5 Level 22 SW Corner S Facade	Lakeshore WB	188	53	46
	Lakeshore EB	204	53	46
	<b>Total</b>	<b>-</b>	<b>56</b>	<b>49</b>
R6 Level 22 NW Corner N Facade	CN Rail	161	71	67
	<b>Total</b>	<b>-</b>	<b>71</b>	<b>67</b>

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**TABLE 2 PREDICTED UNMITIGATED SOUND LEVELS<sup>(1)</sup> (continued)**

Location	Source	Distance (m) <sup>(2)</sup>	L <sub>eq</sub> Day (dBA)	L <sub>eq</sub> Night (dBA)
OLA1 Terrace in Level 2	Hurontario St SB	47	57	-
	Hurontario St NB	62	55	-
	Lakeshore WB	168	53	-
	Lakeshore EB	184	52	-
	<b>Total</b>	-	<b>60</b>	-
OLA2 Terrace in Level 16	Hurontario St SB	81	48	-
	Hurontario St NB	96	49	-
	Lakeshore WB	179	47	-
	Lakeshore EB	195	47	-
	<b>Total</b>	-	<b>54</b>	-
OLA3 Outdoor Amenity at Grade	Hurontario St SB	47	55	-
	Hurontario St NB	62	53	-
	Lakeshore WB	170	53	-
	Lakeshore EB	187	52	-
	<b>Total</b>	-	<b>60</b>	-

Notes:

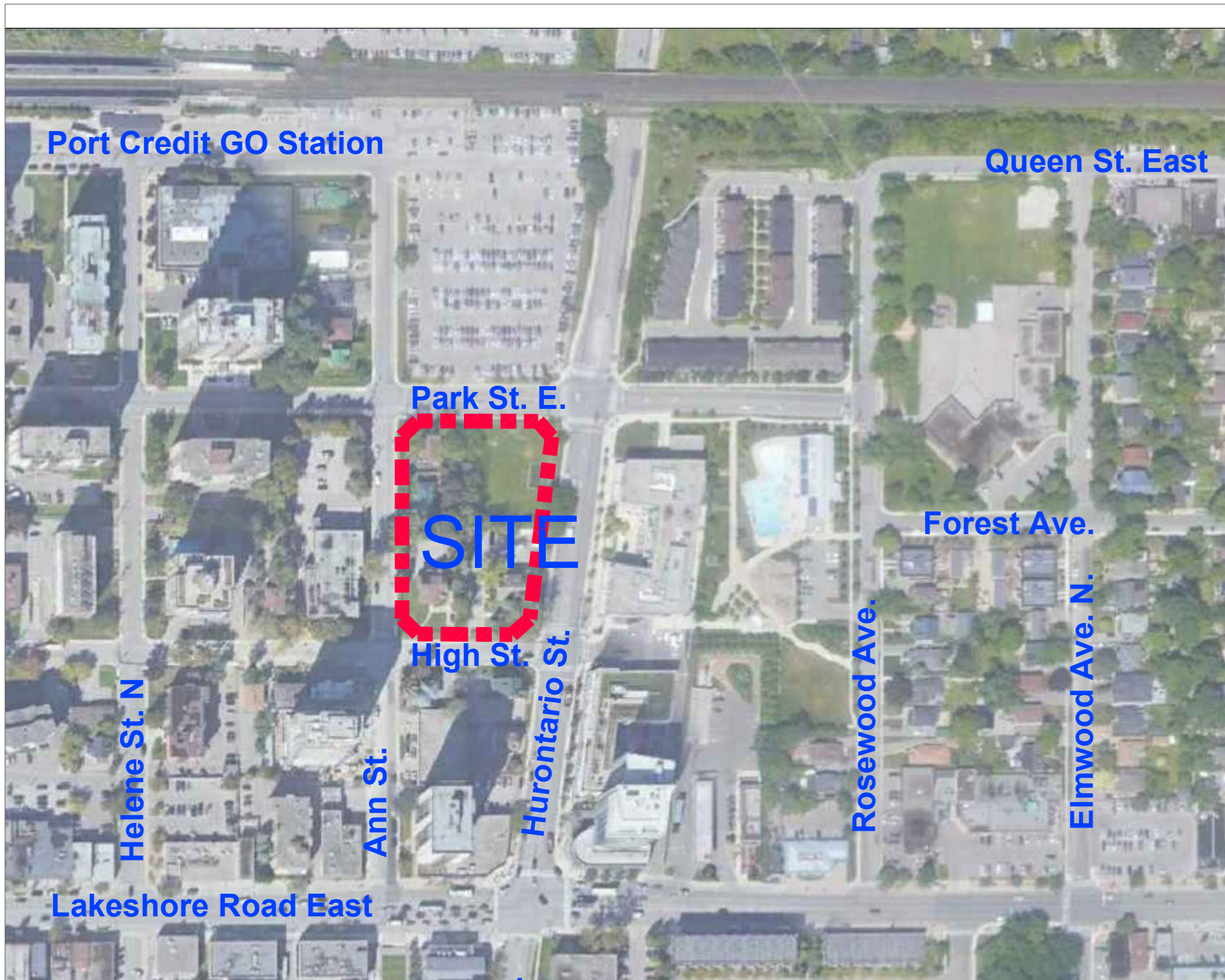
- (1) Daytime/nighttime receptors were taken at the top floor windows. OLA receptors were taken at 1.5 m above grade. Figure 2 shows the assessment receptor locations.
- (2) Distance indicated is from the centreline of the noise sources to facade or OLA.

**TABLE 3 MINIMUM NOISE ABATEMENT MEASURES**

Location	Air Conditioning <sup>(1)</sup>	Exterior Wall <sup>(2)</sup>	Window STC Rating <sup>(3)</sup>	Sound Barrier <sup>(4)</sup>	Warning Clauses <sup>(5)</sup>
All residential units	Mandatory	STC 54	STC 39	None	A + B + C + D

**Notes:**

- (1) Where methods must be provided to allow windows to remain closed for noise control purposes, a commonly used technique for is the use 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 4.3.1.1 of this report. 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 4.3.1.1 of this report. Requirements should be checked once floor plans have been finalized and exterior wall construction details are defined.
- (4) Sound barriers must be of solid construction with no gaps, cracks, or holes, and must meet a minimum surface density of 20 kg/m<sup>2</sup>. 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 supplied with an air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits the Municipality and the Ministry of the Environment, Conservation and Parks."
  - C. "Purchasers/tenants are advised that due to the proximity of the existing commercial/business establishments, noise from these facilities may at times be audible."
  - D. "Canadian National Railway/Metrolinx or its affiliated railway companies has or have a railway right-of-way within 300 m from this dwelling unit. There may be alterations to or expansions of the railway facilities of such right-of-way in the future, including the possibility that Canadian National Railway/Metrolinx or its affiliated railway companies as aforesaid, or their assigns or successors may expand their business operations. Such expansion may affect the living and business environment of the residents, tenants and their visitors, employees, customers and patients in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating features in the design of the development. Canadian National Railway/Metrolinx, its affiliated railway companies and their successors and assigns will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way."
- (6) All exterior doors shall be fully weather-stripped.



General Notes

No.	Revision/Issue	Date

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Project Name

17/19 Ann Street

Title

Key Plan

Project	Figure
121-0145	1
Date November 23, 2021	
Scale N.T.S.	





General Notes

BASE DRAWING BY CORE Architects

No.	Revision/Issue	Date

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Project Name

17/19 Ann Street

Title

Site Plan

Project	121-0145	Figure	2
Date	December 16, 2021		
Scale	N.T.S.		



# **APPENDIX A**

## **ENVIRONMENTAL NOISE GUIDELINES**

## APPENDIX A

### ENVIRONMENTAL NOISE GUIDELINES

#### MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP)

Reference: MECP Publication NPC-300, October 2013: “*Environmental Noise Guideline, Stationary and Transportation Source – 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 <sup>#</sup>
	Stationary Source Class 1 Area	07:00 to 19:00 <sup>(1)</sup>	50 <sup>+</sup> dBA
		19:00 to 23:00 <sup>(1)</sup>	50 <sup>+</sup> dBA
	Class 2 Area	07:00 to 19:00 <sup>(2)</sup>	50 <sup>+</sup> dBA
		19:00 to 23:00 <sup>(2)</sup>	45 <sup>+</sup> dBA
	Class 3 Area	07:00 to 19:00 <sup>(3)</sup>	45 <sup>+</sup> dBA
		19:00 to 23:00 <sup>(3)</sup>	40 <sup>+</sup> dBA
	Class 4 Area	07:00 to 19:00 <sup>(4)</sup>	55 <sup>+</sup> dBA
		19:00 to 23:00 <sup>(4)</sup>	55 <sup>+</sup> dBA

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SPACE	SOURCE	TIME PERIOD	CRITERION
Plane of a Window of Noise Sensitive Spaces	Stationary Source Class 1 Area	07:00 to 19:00 <sup>(1)</sup>	50* dBA
		19:00 to 23:00 <sup>(1)</sup>	50* dBA
		23:00 to 07:00 <sup>(1)</sup>	45* dBA
	Class 2 Area	07:00 to 19:00 <sup>(2)</sup>	50* dBA
		19:00 to 23:00 <sup>(2)</sup>	50* dBA
		23:00 to 07:00 <sup>(2)</sup>	45* dBA
	Class 3 Area	07:00 to 19:00 <sup>(3)</sup>	45* dBA
		19:00 to 23:00 <sup>(3)</sup>	45* dBA
		23:00 to 07:00 <sup>(3)</sup>	40* dBA
	Class 4 Area	07:00 to 19:00 <sup>(4)</sup>	60* dBA
		19:00 to 23:00 <sup>(4)</sup>	60* dBA
		23:00 to 07:00 <sup>(4)</sup>	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: MECP 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 B**

## **ROAD AND RAIL TRAFFIC DATA**

**Date:** 2020/10/29

**Project Number:** OAK – 12.68 – Hurontario St/ Park St

Dear Seema:

**Re: Train Traffic Data – CN Oakville Subdivision near Hurontario St/  
Park St in Mississauga, ON**

The following is provided in response to Seema's 2020/09/29 request for information regarding rail traffic in the vicinity of Hurontario St/ Park St in Mississauga at approximately Mile 12.68 on CN's Oakville Subdivision.

Typical daily traffic volumes are recorded below. However, traffic volumes may fluctuate due to overall economic conditions, varying traffic demands, weather conditions, track maintenance programs, statutory holidays and traffic detours that when required may be heavy although temporary. For the purpose of noise and vibration reports, train volumes must be escalated by 2.5% per annum for a 10-year period.

Typical daily traffic volumes at this site location are as follows:

**\*Maximum train speed is given in Miles per Hour**

Type of Train	0700-2300 Volumes	Max. Consist	Max. Speed	Max. Power
Freight	0	140	60	4
Way Freight	0	25	60	4
Passenger	13	10	95	2

Type of Train	2300-0700 Volumes	Max. Consist	Max. Speed	Max. Power
Freight	0	140	60	4
Way Freight	5	25	60	4
Passenger	2	10	95	2

The volumes recorded reflect westbound and eastbound freight and passenger operations on CN's Oakville Subdivision.

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There are two (2) at-grade crossings in the immediate vicinity of the study area at Mile 12.02 Revus Ave, and Mile 13.11 Stanebanic Rd. Anti-whistling bylaws are not in effect at these crossings. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

With respect to equipment restrictions, the gross weight of the heaviest permissible car is 286,000 lbs.

The double mainline track is considered continuously welded rail throughout the study area.

## Abhishek Thyagarajan

---

**From:** Umair Naveed <Umair.Naveed@cn.ca> on behalf of GLD-Permits <permits.gld@cn.ca>  
**Sent:** October 19, 2021 9:28 AM  
**To:** Abhishek Thyagarajan  
**Cc:** Sam Du  
**Subject:** RE: Rail data request - Hurontario Street, Mississauga (VCL file: 1210145.000)

Good Morning Abhishek,

The attached data is still valid.

Thanks,

GLD Team

---

**From:** Abhishek Thyagarajan <abhishek@valcoustics.com>  
**Sent:** Monday, October 18, 2021 1:55 PM  
**To:** GLD-Permits <permits.gld@cn.ca>  
**Cc:** Sam Du <sam@valcoustics.com>  
**Subject:** Rail data request - Hurontario Street, Mississauga (VCL file: 1210145.000)

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Hi,

We are working on a noise study for a proposed development near Ann Street and Hurontario Street in Mississauga. Can you please confirm if the data we have on hand is still valid? I have attached the data to this email. Please let me know if you need any other information on this.

Thank you,  
Abhishek Thyagarajan, M.S.  
Acoustic Specialist  
(He/Him)



30 Wertheim Court, Unit 25  
Richmond Hill, Ontario  
Canada L4B 1B9  
Tel: 905-764-5223 ext. 247  
Fax: 905-764-6813  
[abhishek@valcoustics.com](mailto:abhishek@valcoustics.com)

Our staff are working remotely during this period while our office is closed. We will continue to respond to emails and telephone inquiries at our regular extensions. The health and safety of our staff and clients is our top priority surrounding this uncertain period regarding COVID-19. We are closely monitoring the situation and have implemented policies to minimize the risk of exposure.

To help us stop the spread of viruses, we request that all e-mails sent to our office includes project name, number and recipient's name in the subject line.

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## Abhishek Thyagarajan

---

**From:** Rail Data Requests <RailDataRequests@metrolinx.com>  
**Sent:** May 21, 2021 2:49 PM  
**To:** Abhishek Thyagarajan  
**Cc:** Sam Du  
**Subject:** RE: 1210145.000 - 17-19 Ann St, Mississauga

**Follow Up Flag:** Flag for follow up  
**Flag Status:** Completed

Hi Abhishek

Further to your request dated May 6, 2021, the subject lands (17-19 Ann St, Mississauga) are located within 300 metres of the Metrolinx Oakville Subdivision (which carries Lakeshore West GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel and electric trains. The GO rail fleet combination on this Subdivision will consist of up to 2 locomotives and 12 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 255 trains. The planned detailed trip breakdown is listed below:

	1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives		1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives
Day (0700-2300)	60	11	101	42	Night (2300-0700)	8	4	21	8

The current track design speed near the subject lands is 95 mph (153 km/h).

There are *anti-whistling by-laws* in affect at Stavebank Rd and Revus Ave at-grade crossing.

With respect to future electrified rail service, Metrolinx is committed to finding the most sustainable solution for electrifying the GO rail network and we are currently working towards the next phase.

Options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the procurement phase. The successful proponent team will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. The contract is in a multi-year procurement process and teams are currently completing the bids that will close in 2021. GO Expansion construction will get underway in 2022.

However, we can advise that train noise is dominated by the powertrain at lower speeds and by the wheel- track interaction at higher speeds. Hence, the noise level and spectrum of electric trains is expected to be very similar at higher speeds, if not identical, to those of equivalent diesel trains.

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

It should be noted that this information only pertains to Metrolinx rail service. It would be prudent to contact other rail operators in the area directly for rail traffic information pertaining to non-Metrolinx rail service.



I trust this information is useful. Should you have any questions or concerns, please do not hesitate to contact me.

Regards,

**Lyndsy You**, B.Eng.

Project Manager

Third Party Projects Review, Capital Projects Group

Metrolinx | 30 Wellington St. W | Toronto, Ontario | M5J 2N8

C: 416.399.8284



---

**From:** Abhishek Thyagarajan <abhishek@valcoustics.com>  
**Sent:** May 6, 2021 4:49 PM  
**To:** Rail Data Requests <RailDataRequests@metrolinx.com>  
**Cc:** Sam Du <sam@valcoustics.com>  
**Subject:** 1210145.000 - Ann St, 17/19, et al/Mississauga-Noise

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Hello,

We are working on a noise study for a residential development near Hurontario Street in Mississauga (Please see attached map for reference). Would you be able to provide us rail data for this area?

Specifically:

1. Train volumes (Day / Night)
2. Number of locomotives per train
3. Number of cars per train
4. Type of trains
5. Maximum speed
6. Rail type (welded / not)
7. Is the whistle sounded at nearby grade-level crossings?

Please let me know if you have any questions.

Thank you,

Abhishek Thyagarajan, M.S.  
Acoustic Specialist



30 Wertheim Court, Unit 25  
Richmond Hill, Ontario  
Canada L4B 1B9  
Tel: 905-764-5223 ext. 247  
Fax: 905-764-6813  
[abhishek@valcoustics.com](mailto:abhishek@valcoustics.com)

Our staff are working remotely during this period while our office is closed. We will continue to respond to emails and telephone inquiries at our regular extensions. The health and safety of our staff and clients is our top priority surrounding this uncertain period regarding COVID-19. We are closely monitoring the situation and have implemented policies to minimize the risk of exposure.

To help us stop the spread of viruses, we request that all e-mails sent to our office includes project name, number and recipient's name in the subject line.

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Date: 12-May-21

REQUESTED BY:

Name: Abhishek Thyagarajan

Company: Valcoustics Canada Ltd.

PREPARED BY:

Nam Steven Guan

Tel#: 905-615-3200 ext. 5933



ID 512

## NOISE REPORT FOR PROPOSED DEVELOPMENT

Location:

Hurontario Street - Lakeshore Road East to Park Street  
Lakeshore Road East (1) - Stavebank Road to Hurontario Street  
Lakeshore Road East (2) - Hurontario Street to Seneca Avenue

### ON SITE TRAFFIC DATA

Specific	Street Names				
	Hurontario St	Lakeshore Rd E (1)	Lakeshore Rd E (2)		
AADT:	21,300	36,300	31,800		
# of Lanes:	4 Lanes	4 Lanes	4 Lanes		
% Trucks:	7%	5%	4%		
Medium/Heavy Trucks Ratio:	55/45	55/45	55/45		
Day/Night Split:	90/10	90/10	90/10		
Posted Speed Limit:	50 km/h	40 km/h	40 km/h*		
Gradient Of Road:	<2%	<2%	<2%		
Ultimate R.O.W:	30 m	26 m	26 m		

Comments:

Ultimate Traffic Data Only.

\*Note: Lakeshore Road East transitions from 40 km/h to 50 km/h east of Woodlawn Avenue.

# **APPENDIX C**

## **SAMPLE SOUND LEVEL CALCULATIONS**

STAMSON 5.04                      NORMAL REPORT                      Date: 08-11-2021 09:50:28  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

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

Rail data, segment # 1: CN (day/night)

Train Type	! Trains !	! Speed ! (km/h)	!# loc !/Train!	!# Cars !/Train!	! Eng ! type	!Cont !weld
* 1. WayF	! 0.0/6.4	! 100.0	! 4.0	! 25.0	!Diesel!	! Yes
* 2. Pass	! 16.6/2.6	! 150.0	! 2.0	! 10.0	!Diesel!	! Yes
* 3. GO1	! 206.1/37.1	! 153.0	! 1.0	! 12.0	!Diesel!	! Yes
* 4. GO2	! 67.8/15.4	! 153.0	! 2.0	! 12.0	!Diesel!	! Yes

\* The identified number of trains have been adjusted for  
future growth using the following parameters:

Train type: No Name	! Unadj. ! Trains	! Annual % ! Increase	! Years of ! Growth	!
1. WayF	! 0.0/5.0	! 2.50	! 10.00	!
2. Pass	! 13.0/2.0	! 2.50	! 10.00	!
3. GO1	! 161.0/29.0	! 2.50	! 10.00	!
4. GO2	! 53.0/12.0	! 2.50	! 10.00	!

Data for Segment # 1: CN (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	:	:	159.00 / 159.00 m	
Receiver height	:	:	73.00 / 73.00 m	
Topography	:	:	1	(Flat/gentle slope; no barrier)
No Whistle	:	:		
Reference angle	:	:	0.00	

Results segment # 1: CN (day)

LOCOMOTIVE (0.00 + 72.34 + 0.00) = 72.34 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	82.59	-10.25	0.00	0.00	0.00	0.00	72.34

WHEEL (0.00 + 64.73 + 0.00) = 64.73 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	74.98	-10.25	0.00	0.00	0.00	0.00	64.73

Segment Leq : 73.03 dBA

Total Leq All Segments: 73.03 dBA

Results segment # 1: CN (night)

-----  
LOCOMOTIVE (0.00 + 68.93 + 0.00) = 68.93 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.18	-10.25	0.00	0.00	0.00	0.00	68.93

-----

WHEEL (0.00 + 61.07 + 0.00) = 61.07 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	71.33	-10.25	0.00	0.00	0.00	0.00	61.07

-----

Segment Leq : 69.59 dBA

Total Leq All Segments: 69.59 dBA

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

-----  
Car traffic volume : 8914/990 veh/TimePeriod \*  
Medium truck volume : 369/41 veh/TimePeriod \*  
Heavy truck volume : 302/34 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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: HurontSB (day/night)

-----  
Angle1 Angle2 : 0.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 55.00 / 55.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 8914/990 veh/TimePeriod \*  
Medium truck volume : 369/41 veh/TimePeriod \*  
Heavy truck volume : 302/34 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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: HurontNB (day/night)

-----  
Angle1 Angle2 : 0.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 70.00 / 70.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Results segment # 1: HurontSB (day)

-----  
Source height = 1.33 m

ROAD (0.00 + 56.62 + 0.00) = 56.62 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	65.28	0.00	-5.64	-3.01	0.00	0.00	0.00	56.62

-----  
Segment Leq : 56.62 dBA

Results segment # 2: HurontNB (day)

-----  
Source height = 1.33 m

ROAD (0.00 + 55.57 + 0.00) = 55.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	65.28	0.00	-6.69	-3.01	0.00	0.00	0.00	55.57

-----  
Segment Leq : 55.57 dBA

Total Leq All Segments: 59.14 dBA

Results segment # 1: HurontSB (night)

-----  
Source height = 1.34 m

ROAD (0.00 + 50.12 + 0.00) = 50.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	58.78	0.00	-5.64	-3.01	0.00	0.00	0.00	50.12

-----  
Segment Leq : 50.12 dBA

Results segment # 2: HurontNB (night)

-----  
Source height = 1.34 m

ROAD (0.00 + 49.07 + 0.00) = 49.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	58.78	0.00	-6.69	-3.01	0.00	0.00	0.00	49.07

-----  
Segment Leq : 49.07 dBA

Total Leq All Segments: 52.64 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 73.20  
(NIGHT): 69.68

STAMSON 5.04                      NORMAL REPORT                      Date: 08-11-2021 09:52:41  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

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

Rail data, segment # 1: CN (day/night)

Train Type	! Trains	! Speed ! (km/h)	! # loc ! /Train	! # Cars ! /Train	! Eng type	! Cont ! weld
* 1. WayF	! 0.0/6.4	! 100.0	! 4.0	! 25.0	! Diesel	! Yes
* 2. Pass	! 16.6/2.6	! 150.0	! 2.0	! 10.0	! Diesel	! Yes
* 3. GO1	! 206.1/37.1	! 153.0	! 1.0	! 12.0	! Diesel	! Yes
* 4. GO2	! 67.8/15.4	! 153.0	! 2.0	! 12.0	! Diesel	! Yes

\* The identified number of trains have been adjusted for future growth using the following parameters:

Train No	Train Name	! Unadj. ! Trains	! Annual % ! Increase	! Years of ! Growth
1.	WayF	! 0.0/5.0	! 2.50	! 10.00
2.	Pass	! 13.0/2.0	! 2.50	! 10.00
3.	GO1	! 161.0/29.0	! 2.50	! 10.00
4.	GO2	! 53.0/12.0	! 2.50	! 10.00

Data for Segment # 1: CN (day/night)

Angle1	Angle2	: -5.00 deg	90.00 deg
Wood depth	:	0	(No woods.)
No of house rows	:	0 / 0	
Surface	:	2	(Reflective ground surface)
Receiver source distance	:	159.00 / 159.00 m	
Receiver height	:	73.00 / 73.00 m	
Topography	:	1	(Flat/gentle slope; no barrier)
No Whistle	:		
Reference angle	:	0.00	

Results segment # 1: CN (day)

LOCOMOTIVE (0.00 + 69.56 + 0.00) = 69.56 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.00	82.59	-10.25	-2.78	0.00	0.00	0.00	69.56

WHEEL (0.00 + 61.95 + 0.00) = 61.95 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.00	74.98	-10.25	-2.78	0.00	0.00	0.00	61.95

Segment Leq : 70.25 dBA

Total Leq All Segments: 70.25 dBA



Results segment # 1: CN (night)

LOCOMOTIVE (0.00 + 66.15 + 0.00) = 66.15 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.00	79.18	-10.25	-2.78	0.00	0.00	0.00	66.15

WHEEL (0.00 + 58.30 + 0.00) = 58.30 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	90	0.00	71.33	-10.25	-2.78	0.00	0.00	0.00	58.30

Segment Leq : 66.81 dBA

Total Leq All Segments: 66.81 dBA

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

Car traffic volume	:	8914/990	veh/TimePeriod	*
Medium truck volume	:	369/41	veh/TimePeriod	*
Heavy truck volume	:	302/34	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):	10650
Percentage of Annual Growth	: 2.00
Number of Years of Growth	: 0.00
Medium Truck % of Total Volume	: 3.85
Heavy Truck % of Total Volume	: 3.15
Day (16 hrs) % of Total Volume	: 90.00

Data for Segment # 1: HurontSB (day/night)

Angle1	Angle2	:	-90.00 deg	90.00 deg
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	1	(Absorptive ground surface)	
Receiver source distance	:	55.00 / 55.00	m	
Receiver height	:	73.00 / 73.00	m	
Topography	:	1	(Flat/gentle slope; no barrier)	
Reference angle	:	0.00		

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

Car traffic volume	:	8914/990	veh/TimePeriod	*
Medium truck volume	:	369/41	veh/TimePeriod	*
Heavy truck volume	:	302/34	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):	10650
Percentage of Annual Growth	: 2.00
Number of Years of Growth	: 0.00
Medium Truck % of Total Volume	: 3.85
Heavy Truck % of Total Volume	: 3.15
Day (16 hrs) % of Total Volume	: 90.00

Data for Segment # 2: HurontNB (day/night)

-----  
Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 70.00 / 70.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Results segment # 1: HurontSB (day)

-----  
Source height = 1.33 m

ROAD (0.00 + 59.63 + 0.00) = 59.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	65.28	0.00	-5.64	0.00	0.00	0.00	0.00	59.63

-----  
Segment Leq : 59.63 dBA

Results segment # 2: HurontNB (day)

-----  
Source height = 1.33 m

ROAD (0.00 + 58.59 + 0.00) = 58.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	65.28	0.00	-6.69	0.00	0.00	0.00	0.00	58.59

-----  
Segment Leq : 58.59 dBA

Total Leq All Segments: 62.15 dBA

Results segment # 1: HurontSB (night)

-----  
Source height = 1.34 m

ROAD (0.00 + 53.13 + 0.00) = 53.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.78	0.00	-5.64	0.00	0.00	0.00	0.00	53.13

-----  
Segment Leq : 53.13 dBA

Results segment # 2: HurontNB (night)

-----  
Source height = 1.34 m

ROAD (0.00 + 52.09 + 0.00) = 52.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.78	0.00	-6.69	0.00	0.00	0.00	0.00	52.09

-----  
Segment Leq : 52.09 dBA

Total Leq All Segments: 55.65 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.88  
(NIGHT): 67.13

STAMSON 5.04                      NORMAL REPORT                      Date: 08-11-2021 10:10:20  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

Filename: r3.te                      Time Period: Day/Night 16/8 hours  
Description:

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod      \*  
Medium truck volume : 369/41      veh/TimePeriod      \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: HurontSB (day/night)

-----  
Angle1    Angle2 : -90.00 deg    90.00 deg  
Wood depth : 0      (No woods.)  
No of house rows : 0 / 0  
Surface : 1      (Absorptive ground surface)  
Receiver source distance : 55.00 / 55.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1      (Flat/gentle slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod      \*  
Medium truck volume : 369/41      veh/TimePeriod      \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: HurontNB (day/night)

-----  
Angle1 Angle2 : -90.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 70.00 / 70.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Road data, segment # 3: LakeshWB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: LakeshWB (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 : 180.00 / 180.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Road data, segment # 4: LakeshEB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: LakeshEB (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 : 196.00 / 196.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Results segment # 1: HurontSB (day)

-----  
Source height = 1.33 m

ROAD (0.00 + 59.63 + 0.00) = 59.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	65.28	0.00	-5.64	0.00	0.00	0.00	0.00	59.63

-----

Segment Leq : 59.63 dBA

Results segment # 2: HurontNB (day)

-----  
Source height = 1.33 m

ROAD (0.00 + 58.59 + 0.00) = 58.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	65.28	0.00	-6.69	0.00	0.00	0.00	0.00	58.59

-----

Segment Leq : 58.59 dBA

Results segment # 3: LakeshWB (day)

-----  
Source height = 1.23 m

ROAD (0.00 + 50.85 + 0.00) = 50.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	64.65	0.00	-10.79	-3.01	0.00	0.00	0.00	50.85

-----

Segment Leq : 50.85 dBA

Results segment # 4: LakeshEB (day)

-----  
Source height = 1.23 m

ROAD (0.00 + 50.48 + 0.00) = 50.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	64.65	0.00	-11.16	-3.01	0.00	0.00	0.00	50.48

-----

Segment Leq : 50.48 dBA

Total Leq All Segments: 62.73 dBA

Results segment # 1: HurontSB (night)

Source height = 1.34 m

ROAD (0.00 + 53.13 + 0.00) = 53.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.78	0.00	-5.64	0.00	0.00	0.00	0.00	53.13

Segment Leq : 53.13 dBA

Results segment # 2: HurontNB (night)

Source height = 1.34 m

ROAD (0.00 + 52.09 + 0.00) = 52.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.78	0.00	-6.69	0.00	0.00	0.00	0.00	52.09

Segment Leq : 52.09 dBA

Results segment # 3: LakeshWB (night)

Source height = 1.23 m

ROAD (0.00 + 44.33 + 0.00) = 44.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	58.13	0.00	-10.79	-3.01	0.00	0.00	0.00	44.33

Segment Leq : 44.33 dBA

Results segment # 4: LakeshEB (night)

Source height = 1.23 m

ROAD (0.00 + 43.96 + 0.00) = 43.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	58.13	0.00	-11.16	-3.01	0.00	0.00	0.00	43.96

Segment Leq : 43.96 dBA

Total Leq All Segments: 56.23 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.73  
(NIGHT): 56.23

STAMSON 5.04                      NORMAL REPORT                      Date: 08-11-2021 10:11:09  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

Filename: r4.te                      Time Period: Day/Night 16/8 hours  
Description:

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod      \*  
Medium truck volume : 369/41      veh/TimePeriod      \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: HurontSB (day/night)

-----  
Angle1    Angle2 : -90.00 deg    -44.00 deg  
Wood depth : 0      (No woods.)  
No of house rows : 0 / 0  
Surface : 1      (Absorptive ground surface)  
Receiver source distance : 55.00 / 55.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1      (Flat/gentle slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod      \*  
Medium truck volume : 369/41      veh/TimePeriod      \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: HurontNB (day/night)

-----  
Angle1 Angle2 : -90.00 deg -44.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 70.00 / 70.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Road data, segment # 3: LakeshWB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: LakeshWB (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 : 180.00 / 180.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Road data, segment # 4: LakeshEB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00



Data for Segment # 4: LakeshEB (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 : 196.00 / 196.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Results segment # 1: HurontSB (day)

-----  
Source height = 1.33 m

ROAD (0.00 + 53.71 + 0.00) = 53.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-44	0.00	65.28	0.00	-5.64	-5.93	0.00	0.00	0.00	53.71

-----

Segment Leq : 53.71 dBA

Results segment # 2: HurontNB (day)

-----  
Source height = 1.33 m

ROAD (0.00 + 52.66 + 0.00) = 52.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-44	0.00	65.28	0.00	-6.69	-5.93	0.00	0.00	0.00	52.66

-----

Segment Leq : 52.66 dBA

Results segment # 3: LakeshWB (day)

-----  
Source height = 1.23 m

ROAD (0.00 + 53.86 + 0.00) = 53.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.65	0.00	-10.79	0.00	0.00	0.00	0.00	53.86

-----

Segment Leq : 53.86 dBA

Results segment # 4: LakeshEB (day)

-----  
Source height = 1.23 m

ROAD (0.00 + 53.49 + 0.00) = 53.49 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.65	0.00	-11.16	0.00	0.00	0.00	0.00	53.49

-----

Segment Leq : 53.49 dBA

Total Leq All Segments: 59.47 dBA

Results segment # 1: HurontSB (night)

Source height = 1.34 m

ROAD (0.00 + 47.21 + 0.00) = 47.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-44	0.00	58.78	0.00	-5.64	-5.93	0.00	0.00	0.00	47.21

Segment Leq : 47.21 dBA

Results segment # 2: HurontNB (night)

Source height = 1.34 m

ROAD (0.00 + 46.16 + 0.00) = 46.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-44	0.00	58.78	0.00	-6.69	-5.93	0.00	0.00	0.00	46.16

Segment Leq : 46.16 dBA

Results segment # 3: LakeshWB (night)

Source height = 1.23 m

ROAD (0.00 + 47.34 + 0.00) = 47.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.13	0.00	-10.79	0.00	0.00	0.00	0.00	47.34

Segment Leq : 47.34 dBA

Results segment # 4: LakeshEB (night)

Source height = 1.23 m

ROAD (0.00 + 46.97 + 0.00) = 46.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.13	0.00	-11.16	0.00	0.00	0.00	0.00	46.97

Segment Leq : 46.97 dBA

Total Leq All Segments: 52.96 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.47  
(NIGHT): 52.96

STAMSON 5.04                      COMPREHENSIVE REPORT                      Date: 08-11-2021 10:45:01  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

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

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

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: LAKESHWB (day/night)

-----  
Angle1 Angle2 : -90.00 deg 62.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 188.00 / 188.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: LAKESHEB (day/night)

-----  
Angle1 Angle2 : -90.00 deg 62.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 204.00 / 204.00 m  
Receiver height : 73.00 / 73.00 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Segment # 1: LAKESHWB (day)

-----  
Source height = 1.23 m

ROAD (0.00 + 52.94 + 0.00) = 52.94 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	62	0.00	64.65	0.00	-10.98	-0.73	0.00	0.00	0.00	52.94

-----  
Segment Leq : 52.94 dBA

Segment # 2: LAKESHEB (day)

-----  
Source height = 1.23 m

ROAD (0.00 + 52.58 + 0.00) = 52.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	62	0.00	64.65	0.00	-11.34	-0.73	0.00	0.00	0.00	52.58

-----  
Segment Leq : 52.58 dBA

Total Leq All Segments: 55.77 dBA

Segment # 1: LAKESHWB (night)

-----  
Source height = 1.23 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
-90	62	0.00	58.13	0.00	-10.98	-0.73	0.00	0.00	0.00	46.41

-----  
Segment Leq : 46.41 dBA

Segment # 2: LAKESHEB (night)

-----  
Source height = 1.23 m

ROAD (0.00 + 46.06 + 0.00) = 46.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	62	0.00	58.13	0.00	-11.34	-0.73	0.00	0.00	0.00	46.06

-----  
Segment Leq : 46.06 dBA

Total Leq All Segments: 49.25 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.77  
(NIGHT): 49.25

STAMSON 5.04                      COMPREHENSIVE REPORT                      Date: 08-11-2021 10:39:08  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

Filename: R6.te                      Time Period: Day/Night 16/8 hours  
Description:

Rail data, segment # 1: CN (day/night)

Train Type	! Trains !	! Speed ! (km/h)	!# loc !/Train!	!# Cars !/Train!	! Eng type !	!Cont !weld
1. WayF	! 0.0/5.0	! 100.0	! 4.0	! 25.0	!Diesel!	! Yes
2. Pass	! 13.0/2.0	! 150.0	! 2.0	! 10.0	!Diesel!	! Yes
3. GO1	! 161.0/29.0	! 153.0	! 1.0	! 12.0	!Diesel!	! Yes
4. GO2	! 53.0/12.0	! 153.0	! 2.0	! 12.0	!Diesel!	! Yes

Data for Segment # 1: CN (day/night)

Angle1	Angle2	:	-90.00 deg	51.00 deg
Wood depth	:	:	0	(No woods.)
No of house rows	:	:	0 / 0	
Surface	:	:	2	(Reflective ground surface)
Receiver source distance	:	:	161.00 / 161.00 m	
Receiver height	:	:	73.00 / 73.00 m	
Topography	:	:	1	(Flat/gentle slope; no barrier)
No Whistle	:	:		
Reference angle	:	:	0.00	

Train # 1: WayF, Segment # 1: CN (day)

LOCOMOTIVE (0.00 + -11.37 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	0.00	-10.31	-1.06	0.00	0.00	0.00	-11.37

WHEEL (0.00 + -11.37 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	0.00	-10.31	-1.06	0.00	0.00	0.00	-11.37

Segment Leq : 0.00 dBA

Train # 2: Pass, Segment # 1: CN (day)

LOCOMOTIVE (0.00 + 58.87 + 0.00) = 58.87 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	70.24	-10.31	-1.06	0.00	0.00	0.00	58.87

WHEEL (0.00 + 49.59 + 0.00) = 49.59 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	60.96	-10.31	-1.06	0.00	0.00	0.00	49.59

Segment Leq : 59.35 dBA

Train # 3: GO1, Segment # 1: CN (day)

LOCOMOTIVE (0.00 + 67.95 + 0.00) = 67.95 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	79.32	-10.31	-1.06	0.00	0.00	0.00	67.95

WHEEL (0.00 + 61.00 + 0.00) = 61.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	72.37	-10.31	-1.06	0.00	0.00	0.00	61.00

Segment Leq : 68.75 dBA

Train # 4: GO2, Segment # 1: CN (day)

LOCOMOTIVE (0.00 + 65.24 + 0.00) = 65.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	76.61	-10.31	-1.06	0.00	0.00	0.00	65.24

WHEEL (0.00 + 56.50 + 0.00) = 56.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	67.86	-10.31	-1.06	0.00	0.00	0.00	56.50

Segment Leq : 65.78 dBA

Total Leq All Segments: 70.84 dBA

Train # 1: WayF, Segment # 1: CN (night)

LOCOMOTIVE (0.00 + 58.55 + 0.00) = 58.55 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	69.92	-10.31	-1.06	0.00	0.00	0.00	58.55

WHEEL (0.00 + 49.52 + 0.00) = 49.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	60.88	-10.31	-1.06	0.00	0.00	0.00	49.52

Segment Leq : 59.06 dBA

Train # 2: Pass, Segment # 1: CN (night)

LOCOMOTIVE (0.00 + 53.75 + 0.00) = 53.75 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	65.12	-10.31	-1.06	0.00	0.00	0.00	53.75

WHEEL (0.00 + 44.47 + 0.00) = 44.47 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	55.84	-10.31	-1.06	0.00	0.00	0.00	44.47

Segment Leq : 54.23 dBA

Train # 3: GO1, Segment # 1: CN (night)

LOCOMOTIVE (0.00 + 63.52 + 0.00) = 63.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	74.89	-10.31	-1.06	0.00	0.00	0.00	63.52

WHEEL (0.00 + 56.57 + 0.00) = 56.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	67.93	-10.31	-1.06	0.00	0.00	0.00	56.57

Segment Leq : 64.32 dBA

Train # 4: GO2, Segment # 1: CN (night)

LOCOMOTIVE (0.00 + 61.80 + 0.00) = 61.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	73.17	-10.31	-1.06	0.00	0.00	0.00	61.80

WHEEL (0.00 + 53.06 + 0.00) = 53.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	51	0.00	64.42	-10.31	-1.06	0.00	0.00	0.00	53.06

Segment Leq : 62.34 dBA

Total Leq All Segments: 67.39 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.84  
(NIGHT): 67.39

STAMSON 5.04                      NORMAL REPORT                      Date: 08-11-2021 12:20:33  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

Filename: ola1.te                      Time Period: Day/Night 16/8 hours  
Description:

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod    \*  
Medium truck volume : 369/41      veh/TimePeriod    \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: HurontSB (day/night)

-----  
Angle1    Angle2 : -71.00 deg    90.00 deg  
Wood depth : 0      (No woods.)  
No of house rows : 0 / 0  
Surface : 1      (Absorptive ground surface)  
Receiver source distance : 47.00 / 47.00 m  
Receiver height : 1.50 / 1.50 m  
Topography : 4      (Elevated; with barrier)  
Barrier angle1 : -71.00 deg    Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 6.50 m  
Barrier receiver distance : 5.00 / 5.00 m  
Source elevation : 0.00 m  
Receiver elevation : 6.50 m  
Barrier elevation : 6.50 m  
Reference angle : 0.00

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod    \*  
Medium truck volume : 369/41      veh/TimePeriod    \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00



Data for Segment # 2: HurontNB (day/night)

-----  
Angle1 Angle2 : -71.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 62.00 / 62.00 m  
Receiver height : 1.50 / 1.50 m  
Topography : 4 (Elevated; with barrier)  
Barrier angle1 : -71.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 6.50 m  
Barrier receiver distance : 5.00 / 5.00 m  
Source elevation : 0.00 m  
Receiver elevation : 6.50 m  
Barrier elevation : 6.50 m  
Reference angle : 0.00

Road data, segment # 3: LakeshWB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: LakeshWB (day/night)

-----  
Angle1 Angle2 : -34.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 168.00 / 168.00 m  
Receiver height : 1.50 / 1.50 m  
Topography : 4 (Elevated; with barrier)  
Barrier angle1 : -34.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 6.50 m  
Barrier receiver distance : 10.00 / 10.00 m  
Source elevation : 0.00 m  
Receiver elevation : 6.50 m  
Barrier elevation : 6.50 m  
Reference angle : 0.00

Road data, segment # 4: LakeshEB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: LakeshEB (day/night)

-----  
Angle1 Angle2 : -34.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 184.00 / 184.00 m  
Receiver height : 1.50 / 1.50 m  
Topography : 4 (Elevated; with barrier)  
Barrier angle1 : -34.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 6.50 m  
Barrier receiver distance : 10.00 / 10.00 m  
Source elevation : 0.00 m  
Receiver elevation : 6.50 m  
Barrier elevation : 6.50 m  
Reference angle : 0.00

Results segment # 1: HurontSB (day)

-----  
Source height = 1.33 m

Barrier height for grazing incidence

-----  
Source ! Receiver ! Barrier ! Elevation of  
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)  
-----+-----+-----+-----  
1.33 ! 1.50 ! 0.79 ! 7.29

ROAD (0.00 + 56.62 + 0.00) = 56.62 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.47	65.28	0.00	-7.29	-1.37	0.00	0.00	-1.54	55.08*
-71	90	0.47	65.28	0.00	-7.29	-1.37	0.00	0.00	0.00	56.62

-----

\* Bright Zone !

Segment Leq : 56.62 dBA

Results segment # 2: HurontNB (day)

Source height = 1.33 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.33 !	1.50 !	0.96 !	7.46

ROAD (0.00 + 54.85 + 0.00) = 54.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.47	65.28	0.00	-9.06	-1.37	0.00	0.00	-0.75	54.10*
-71	90	0.47	65.28	0.00	-9.06	-1.37	0.00	0.00	0.00	54.85

\* Bright Zone !

Segment Leq : 54.85 dBA

Results segment # 3: LakeshWB (day)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.23 !	1.50 !	1.10 !	7.60

ROAD (0.00 + 52.54 + 0.00) = 52.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	64.65	0.00	-10.49	-1.62	0.00	0.00	-1.56	50.98*
-34	90	0.00	64.65	0.00	-10.49	-1.62	0.00	0.00	0.00	52.54

\* Bright Zone !

Segment Leq : 52.54 dBA

Results segment # 4: LakeshEB (day)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.23 !	1.50 !	1.13 !	7.63

ROAD (0.00 + 52.15 + 0.00) = 52.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	64.65	0.00	-10.89	-1.62	0.00	0.00	-1.27	50.87*
-34	90	0.00	64.65	0.00	-10.89	-1.62	0.00	0.00	0.00	52.15

\* Bright Zone !

Segment Leq : 52.15 dBA

Total Leq All Segments: 60.45 dBA

Results segment # 1: HurontSB (night)

Source height = 1.34 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.34 !	1.50 !	0.79 !	7.29

ROAD (0.00 + 50.12 + 0.00) = 50.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.47	58.78	0.00	-7.29	-1.36	0.00	0.00	-1.53	48.59*
-71	90	0.47	58.78	0.00	-7.29	-1.36	0.00	0.00	0.00	50.12

\* Bright Zone !

Segment Leq : 50.12 dBA

Results segment # 2: HurontNB (night)

Source height = 1.34 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.34 !	1.50 !	0.96 !	7.46

ROAD (0.00 + 48.35 + 0.00) = 48.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.47	58.78	0.00	-9.06	-1.36	0.00	0.00	-0.75	47.61*
-71	90	0.47	58.78	0.00	-9.06	-1.36	0.00	0.00	0.00	48.35

\* Bright Zone !

Segment Leq : 48.35 dBA

Results segment # 3: LakeshWB (night)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.23 !	1.50 !	1.10 !	7.60

ROAD (0.00 + 46.02 + 0.00) = 46.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	58.13	0.00	-10.49	-1.62	0.00	0.00	-1.56	44.46*
-34	90	0.00	58.13	0.00	-10.49	-1.62	0.00	0.00	0.00	46.02

\* Bright Zone !

Segment Leq : 46.02 dBA

Results segment # 4: LakeshEB (night)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)			
1.23	!	1.50	!	1.13	!	7.63

ROAD (0.00 + 45.62 + 0.00) = 45.62 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	58.13	0.00	-10.89	-1.62	0.00	0.00	-1.27	44.35*
-34	90	0.00	58.13	0.00	-10.89	-1.62	0.00	0.00	0.00	45.62

\* Bright Zone !

Segment Leq : 45.62 dBA

Total Leq All Segments: 53.94 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.45  
(NIGHT): 53.94

STAMSON 5.04                      NORMAL REPORT                      Date: 08-11-2021 10:29:28  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

Filename: ola2.te                      Time Period: Day/Night 16/8 hours  
Description:

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod      \*  
Medium truck volume : 369/41      veh/TimePeriod      \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: HurontSB (day/night)

-----  
Angle1    Angle2 : -71.00 deg    90.00 deg  
Wood depth : 0    (No woods.)  
No of house rows : 0 / 0  
Surface : 1    (Absorptive ground surface)  
Receiver source distance : 81.00 / 81.00 m  
Receiver height : 1.50 / 73.00 m  
Topography : 4    (Elevated; with barrier)  
Barrier angle1 : -71.00 deg    Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 52.50 m  
Barrier receiver distance : 5.00 / 5.00 m  
Source elevation : 0.00 m  
Receiver elevation : 52.50 m  
Barrier elevation : 52.50 m  
Reference angle : 0.00

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod      \*  
Medium truck volume : 369/41      veh/TimePeriod      \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: HurontNB (day/night)

-----  
Angle1 Angle2 : -71.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 96.00 / 96.00 m  
Receiver height : 1.50 / 73.00 m  
Topography : 4 (Elevated; with barrier)  
Barrier angle1 : -71.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 52.50 m  
Barrier receiver distance : 5.00 / 5.00 m  
Source elevation : 0.00 m  
Receiver elevation : 52.50 m  
Barrier elevation : 52.50 m  
Reference angle : 0.00

Road data, segment # 3: LakeshWB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: LakeshWB (day/night)

-----  
Angle1 Angle2 : -34.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 179.00 / 179.00 m  
Receiver height : 1.50 / 73.00 m  
Topography : 4 (Elevated; with barrier)  
Barrier angle1 : -34.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 52.50 m  
Barrier receiver distance : 7.00 / 7.00 m  
Source elevation : 0.00 m  
Receiver elevation : 52.50 m  
Barrier elevation : 52.50 m  
Reference angle : 0.00

Road data, segment # 4: LakeshEB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 4: LakeshEB (day/night)

-----  
Angle1 Angle2 : -34.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 195.00 / 195.00 m  
Receiver height : 1.50 / 73.00 m  
Topography : 4 (Elevated; with barrier)  
Barrier angle1 : -34.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 52.50 m  
Barrier receiver distance : 7.00 / 7.00 m  
Source elevation : 0.00 m  
Receiver elevation : 52.50 m  
Barrier elevation : 52.50 m  
Reference angle : 0.00

Results segment # 1: HurontSB (day)

-----  
Source height = 1.33 m

Barrier height for grazing incidence

-----  
Source ! Receiver ! Barrier ! Elevation of  
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)  
-----+-----+-----+-----  
1.33 ! 1.50 ! -1.75 ! 50.75

ROAD (0.00 + 47.88 + 0.00) = 47.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.00	65.28	0.00	-7.32	-0.48	0.00	0.00	-9.59	47.88

-----

Segment Leq : 47.88 dBA



Results segment # 2: HurontNB (day)

Source height = 1.33 m

Barrier height for grazing incidence

Source	!	Receiver	!	Barrier	!	Elevation of
Height (m)	!	Height (m)	!	Height (m)	!	Barrier Top (m)
1.33	!	1.50	!	-1.24	!	51.26

ROAD (0.00 + 48.67 + 0.00) = 48.67 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.00	65.28	0.00	-8.06	-0.48	0.00	0.00	-8.06	48.67

Segment Leq : 48.67 dBA

Results segment # 3: LakeshWB (day)

Source height = 1.23 m

Barrier height for grazing incidence

Source	!	Receiver	!	Barrier	!	Elevation of
Height (m)	!	Height (m)	!	Height (m)	!	Barrier Top (m)
1.23	!	1.50	!	-0.56	!	51.94

ROAD (0.00 + 46.52 + 0.00) = 46.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	64.65	0.00	-10.77	-1.62	0.00	0.00	-5.75	46.52

Segment Leq : 46.52 dBA

Results segment # 4: LakeshEB (day)

Source height = 1.23 m

Barrier height for grazing incidence

Source	!	Receiver	!	Barrier	!	Elevation of
Height (m)	!	Height (m)	!	Height (m)	!	Barrier Top (m)
1.23	!	1.50	!	-0.39	!	52.11

ROAD (0.00 + 46.51 + 0.00) = 46.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	64.65	0.00	-11.14	-1.62	0.00	0.00	-5.38	46.51

Segment Leq : 46.51 dBA

Total Leq All Segments: 53.51 dBA

Results segment # 1: HurontSB (night)

Source height = 1.34 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.34	73.00	65.34	117.84

ROAD (0.00 + 50.97 + 0.00) = 50.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.00	58.78	0.00	-7.32	-0.48	0.00	0.00	-0.00	50.96*
-71	90	0.00	58.78	0.00	-7.32	-0.48	0.00	0.00	0.00	50.97

\* Bright Zone !

Segment Leq : 50.97 dBA

Results segment # 2: HurontNB (night)

Source height = 1.34 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.34	73.00	66.53	119.03

ROAD (0.00 + 50.23 + 0.00) = 50.23 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.00	58.78	0.00	-8.06	-0.48	0.00	0.00	-0.00	50.23*
-71	90	0.00	58.78	0.00	-8.06	-0.48	0.00	0.00	0.00	50.23

\* Bright Zone !

Segment Leq : 50.23 dBA

Results segment # 3: LakeshWB (night)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.23	73.00	68.14	120.64

ROAD (0.00 + 45.74 + 0.00) = 45.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	58.13	0.00	-10.77	-1.62	0.00	0.00	-0.00	45.74*
-34	90	0.00	58.13	0.00	-10.77	-1.62	0.00	0.00	0.00	45.74

\* Bright Zone !

Segment Leq : 45.74 dBA

Results segment # 4: LakeshEB (night)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.23	!	73.00	!
		68.54	!
			121.04

ROAD (0.00 + 45.37 + 0.00) = 45.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	58.13	0.00	-11.14	-1.62	0.00	0.00	-0.00	45.37*
-34	90	0.00	58.13	0.00	-11.14	-1.62	0.00	0.00	0.00	45.37

\* Bright Zone !

Segment Leq : 45.37 dBA

Total Leq All Segments: 54.81 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.51  
(NIGHT): 54.81

STAMSON 5.04                      NORMAL REPORT                      Date: 23-11-2021 13:24:39  
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS / NOISE ASSESSMENT

Filename: ola3.te                      Time Period: Day/Night 16/8 hours  
Description:

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod      \*  
Medium truck volume : 369/41      veh/TimePeriod      \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: HurontSB (day/night)

-----  
Angle1    Angle2 : -71.00 deg    90.00 deg  
Wood depth : 0    (No woods.)  
No of house rows : 0 / 0  
Surface : 1    (Absorptive ground surface)  
Receiver source distance : 47.00 / 47.00 m  
Receiver height : 1.50 / 1.50 m  
Topography : 4    (Elevated; with barrier)  
Barrier angle1 : -71.00 deg    Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 0.00 m  
Barrier receiver distance : 5.00 / 5.00 m  
Source elevation : 0.00 m  
Receiver elevation : 0.00 m  
Barrier elevation : 0.00 m  
Reference angle : 0.00

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

-----  
Car traffic volume : 8914/990      veh/TimePeriod      \*  
Medium truck volume : 369/41      veh/TimePeriod      \*  
Heavy truck volume : 302/34      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): 10650  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 3.85  
Heavy Truck % of Total Volume : 3.15  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: HurontNB (day/night)

-----  
Angle1 Angle2 : -71.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 62.00 / 62.00 m  
Receiver height : 1.50 / 1.50 m  
Topography : 4 (Elevated; with barrier)  
Barrier angle1 : -71.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 0.00 m  
Barrier receiver distance : 5.00 / 5.00 m  
Source elevation : 0.00 m  
Receiver elevation : 0.00 m  
Barrier elevation : 0.00 m  
Reference angle : 0.00

Road data, segment # 3: LakeshWB (day/night)

-----  
Car traffic volume : 15518/1724 veh/TimePeriod \*  
Medium truck volume : 449/50 veh/TimePeriod \*  
Heavy truck volume : 368/41 veh/TimePeriod \*  
Posted speed limit : 40 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18150  
Percentage of Annual Growth : 2.00  
Number of Years of Growth : 0.00  
Medium Truck % of Total Volume : 2.75  
Heavy Truck % of Total Volume : 2.25  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: LakeshWB (day/night)

-----  
Angle1 Angle2 : -34.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 2 (Reflective ground surface)  
Receiver source distance : 168.00 / 168.00 m  
Receiver height : 1.50 / 1.50 m  
Topography : 4 (Elevated; with barrier)  
Barrier angle1 : -34.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Elevation : 0.00 m  
Barrier receiver distance : 10.00 / 10.00 m  
Source elevation : 0.00 m  
Receiver elevation : 0.00 m  
Barrier elevation : 0.00 m  
Reference angle : 0.00

Road data, segment # 4: LakeshEB (day/night)

```
-----
Car traffic volume : 15518/1724 veh/TimePeriod *
Medium truck volume : 449/50 veh/TimePeriod *
Heavy truck volume : 368/41 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 18150
Percentage of Annual Growth : 2.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 2.75
Heavy Truck % of Total Volume : 2.25
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 4: LakeshEB (day/night)

```
-----
Angle1 Angle2 : -34.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 184.00 / 184.00 m
Receiver height : 1.50 / 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -34.00 deg Angle2 : 90.00 deg
Barrier height : 0.00 m
Elevation : 0.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00
```

Results segment # 1: HurontSB (day)

Source height = 1.33 m

Barrier height for grazing incidence

```
-----
Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.33 ! 1.50 ! 1.48 ! 1.48
```

ROAD (0.00 + 55.40 + 0.00) = 55.40 dBA

```
-----
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
-71 90 0.66 65.28 0.00 -8.23 -1.65 0.00 0.00 -0.19 55.20*
-71 90 0.66 65.28 0.00 -8.23 -1.65 0.00 0.00 0.00 55.40
-----
```

\* Bright Zone !

Segment Leq : 55.40 dBA

Results segment # 2: HurontNB (day)

Source height = 1.33 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)			
1.33	!	1.50	!	1.49	!	1.49

ROAD (0.00 + 53.40 + 0.00) = 53.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.66	65.28	0.00	-10.23	-1.65	0.00	0.00	-0.20	53.20*
-71	90	0.66	65.28	0.00	-10.23	-1.65	0.00	0.00	0.00	53.40

\* Bright Zone !

Segment Leq : 53.40 dBA

Results segment # 3: LakeshWB (day)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)			
1.23	!	1.50	!	1.48	!	1.48

ROAD (0.00 + 52.54 + 0.00) = 52.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	64.65	0.00	-10.49	-1.62	0.00	0.00	-0.56	51.98*
-34	90	0.00	64.65	0.00	-10.49	-1.62	0.00	0.00	0.00	52.54

\* Bright Zone !

Segment Leq : 52.54 dBA

Results segment # 4: LakeshEB (day)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)			
1.23	!	1.50	!	1.49	!	1.49

ROAD (0.00 + 52.15 + 0.00) = 52.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	64.65	0.00	-10.89	-1.62	0.00	0.00	-0.56	51.58*
-34	90	0.00	64.65	0.00	-10.89	-1.62	0.00	0.00	0.00	52.15

\* Bright Zone !

Segment Leq : 52.15 dBA

Total Leq All Segments: 59.59 dBA

Results segment # 1: HurontSB (night)

Source height = 1.34 m

Barrier height for grazing incidence

Source Height	!	Receiver Height	!	Barrier Height	!	Elevation of Barrier Top	(m)
1.34	!	1.50	!	1.48	!	1.48	

ROAD (0.00 + 48.90 + 0.00) = 48.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.66	58.78	0.00	-8.23	-1.65	0.00	0.00	-0.19	48.70*
-71	90	0.66	58.78	0.00	-8.23	-1.65	0.00	0.00	0.00	48.90

\* Bright Zone !

Segment Leq : 48.90 dBA

Results segment # 2: HurontNB (night)

Source height = 1.34 m

Barrier height for grazing incidence

Source Height	!	Receiver Height	!	Barrier Height	!	Elevation of Barrier Top	(m)
1.34	!	1.50	!	1.49	!	1.49	

ROAD (0.00 + 46.90 + 0.00) = 46.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-71	90	0.66	58.78	0.00	-10.23	-1.65	0.00	0.00	-0.20	46.70*
-71	90	0.66	58.78	0.00	-10.23	-1.65	0.00	0.00	0.00	46.90

\* Bright Zone !

Segment Leq : 46.90 dBA

Results segment # 3: LakeshWB (night)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height	!	Receiver Height	!	Barrier Height	!	Elevation of Barrier Top	(m)
1.23	!	1.50	!	1.48	!	1.48	

ROAD (0.00 + 46.02 + 0.00) = 46.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	58.13	0.00	-10.49	-1.62	0.00	0.00	-0.56	45.46*
-34	90	0.00	58.13	0.00	-10.49	-1.62	0.00	0.00	0.00	46.02

\* Bright Zone !

Segment Leq : 46.02 dBA



Results segment # 4: LakeshEB (night)

Source height = 1.23 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.23	!	1.50	!
		1.49	!
			1.49

ROAD (0.00 + 45.62 + 0.00) = 45.62 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	90	0.00	58.13	0.00	-10.89	-1.62	0.00	0.00	-0.56	45.06*
-34	90	0.00	58.13	0.00	-10.89	-1.62	0.00	0.00	0.00	45.62

\* Bright Zone !

Segment Leq : 45.62 dBA

Total Leq All Segments: 53.08 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.59  
(NIGHT): 53.08